To the Planning Team, Hutt City Council

Name of submitter: Sarah-Jayne McCurrach

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Date: 30 April 2025

Thank you for the opportunity to submit on the **Proposed District Plan**.

About the Natural Hazards Commission Toka Tū Ake (NHC)

The Natural Hazards Commission Toka Tū Ake (NHC) is a Crown Entity responsible for providing residential property owners (who have a current contract of fire insurance for their residential property) with insurance against damage from natural hazards, covered by the Natural Hazards Insurance Act 2023 (NHI Act). NHC provides limited cover for:

- building and land damage from earthquakes, landslides, tsunami, volcanic and hydrothermal activity, and fire following these hazards, and
- land damage only from storm or flood, and fire following these hazards.

Why NHC is providing this submission

NHC's primary objective is to *'reduce the impact of natural hazards on people, property, and the community'*. To achieve this objective, NHC's functions, as set out in the NHI Act, include facilitate research and education, and contribute to the sharing of information, knowledge, and expertise (with the Crown, public and private entities, and the public generally), including in relation to:

- natural hazards and their impacts,
- community resilience to natural hazards, and
- planning for, and recovering from, natural hazards.

As NHC is the 'first loss' insurer for residential damage resulting from natural hazards listed in the NHI Act, NHC carries financial risk on behalf of the Crown. We also see the impacts of natural hazards in the insurance claims we receive. This means that NHC has leading insights and a strong interest in reducing risk from, and building resilience to, natural hazards across New Zealand.

Our investments in research and education about natural hazards enable us to use and translate this information to support evidence-based, policy and planning. Our focus is on ensuring long-term resilience by encouraging building in areas that will remain safe and sustainable for future generations. Developing in zones at high risk from natural hazards exposes future owners to complex and potentially hazardous situations, which could compromise the longevity and safety of these developments.

Climate change is also increasing the occurrence and severity of natural hazards covered by the NHC Scheme. Therefore, we support clear, risk-based policy frameworks that reduce natural hazard risks, allow for resilient and sustainable land use planning to manage risk, and support community education and resilience towards natural hazards.

When we make submissions on council strategies and plans, our submissions relate to the suitability of the land proposed for development *without* mitigations. We do not submit on any individual planned or proposed developments. It is up to councils to decide whether the risks to land can be managed, and whether the appropriate mitigations and management strategies are in place for individual consent applications.

Our advice and recommendations are not intended to impede development, but to highlight the importance of careful and precautionary choices to ensure resilient and sustainable communities in the future. Our goal is to support councils ask the right questions and make risk-informed decisions.

Therefore, our advice to councils is to consider the risks and impacts on communities the district plan may create for the future. We encourage councils to ensure that they are satisfied that:

- Natural hazard risk has been assessed on a multi-hazard basis, over multiple timeframes, to at least 50, or preferably 100, years into the future, and using multiple climate change scenarios.
- Risks are mitigated to tolerable levels for the community and council. For example, is 'nuisance flooding' tolerable if it is ongoing?
- New developments do not create any new or further risks for neighbouring suburbs – now, or in the future.
- There is a plan for managing any residual risks after mitigation.
- 'Status quo' of risk and risk tolerance are acceptable where long-term decisions are being made. E.g., an existing community being flood-, liquefaction-, or tsunami-prone is not justification for a new development having the same risks.

We advise councils to engage with private insurers to assess their tolerance for providing insurance for locations, risks, and developments if there is any doubt. Insurability should be a key consideration when thinking about the risks and impacts on communities that are being created for the future.

Lower Hutt is susceptible to many natural hazards, including ground shaking, fault rupture, liquefaction, tsunami, slope instability, tectonic subsidence, flooding, coastal inundation, storm surge, the impacts from sea level rise, and wildfire. The proposed planning maps reflect many of these hazards through overlays for flooding, coastal inundation, the Wellington fault, liquefaction, tsunami and slope. The Proposed Hutt City District Plan (Proposed Plan) provides an opportunity to effectively manage these hazards and associated risks, to ensure that development can continue in the least hazardous areas and restrict development where it cannot be sustainable in the long term, and/or the consequences are far too great to be acceptable. Our detailed submission is in Appendix 1.

Hutt City's map viewer shows the overlays of some of these hazards, which predominantly affect the valley floor and Wainuiomata (Appendix 2). NHC's claims data also reflects this distribution of hazards (see Appendix 3).

Our feedback on the Proposed Plan is summarised below and is to be read in conjunction with our detailed submission. Further evidence-based information on the natural hazards of the Hutt is provided in the Appendices of our submission.

Key feedback

Cumulative hazards

Many locations in the Hutt are subject to more than one natural hazard. For example, many properties in Petone are susceptible to fault rupture, liquefaction, tsunami, tectonic subsidence, and flooding; and Wainuiomata is susceptible to flooding, liquefaction, and fault rupture. While these hazards are individually acknowledged and planned for within the Proposed Plan, the combined (cumulative) hazard and risk profile is not, despite the increased hazard and risk. We propose the following option for the Council to consider managing the cumulative hazards in Hutt City:

1. Include a definition of cumulative hazards; and
2. Include a spatially defined 'Petone Natural Hazards Precinct'. According to the Ministry for the Environment (MfE) National Planning Guidance[1], a "Precinct" spatially identifies and manages an area where additional place-based provisions apply to modify or refine aspects of the policy approach or outcomes anticipated in the underlying zone(s). Additionally, Precincts apply to a defined area where the description(s) of the underlying zone(s) and majority of provisions (especially objectives and policies) are still applicable and are relevant. This approach is therefore well suited to managing most cumulative hazards within Hutt City. The proposed spatial extent ranges from the railway line to the coast in the south, encompassing areas with the highest cumulative hazards, including fault rupture, liquefaction, tsunami, flood, and coastal inundation. This Precinct would form the spatial basis for cumulative policies and rules; and
3. Include policies and rules to manage cumulative hazards. These could be based on the approach to hazardous facilities in the Hazardous Substances chapter, which we have adapted as an example in Appendix 4. Please note that this is an example only, which would need further planning analysis to determine its appropriateness.

The outcome of your consideration of this option may change some of our submission points that specifically address this feedback.

Residual risk

Hutt City is the most densely populated floodplain in New Zealand[2] and is reliant on stopbanks for flood protection; the consequences of this protection failing would be catastrophic for the Hutt (see Figure 1). In addition, being subject to many cumulative hazards the residual risks may be increased, for example an earthquake could damage the stopbanks, compromising their flood protection value. Despite this, the residual risks are not well planned for in the Proposed Plan.

We recommend that a definition of residual risk is included in the Definitions chapter, and that policies and rules are included in the Proposed Plan to manage unacceptable levels of residual risk. These could be based on the approach to hazardous facilities in the Hazardous Substances chapter, which we have adapted as an example in Appendix 4. Please note that this is an example only, which would need further planning analysis to determine its appropriateness.

[1] https://environment.govt.nz/assets/Publications/Files/guidance-for-zone-framework-and-district-spatial-layers-standards.pdf
[2] https://www.huttcity.govt.nz/environment-and-sustainability/climate-change/climate-change-maps/floods

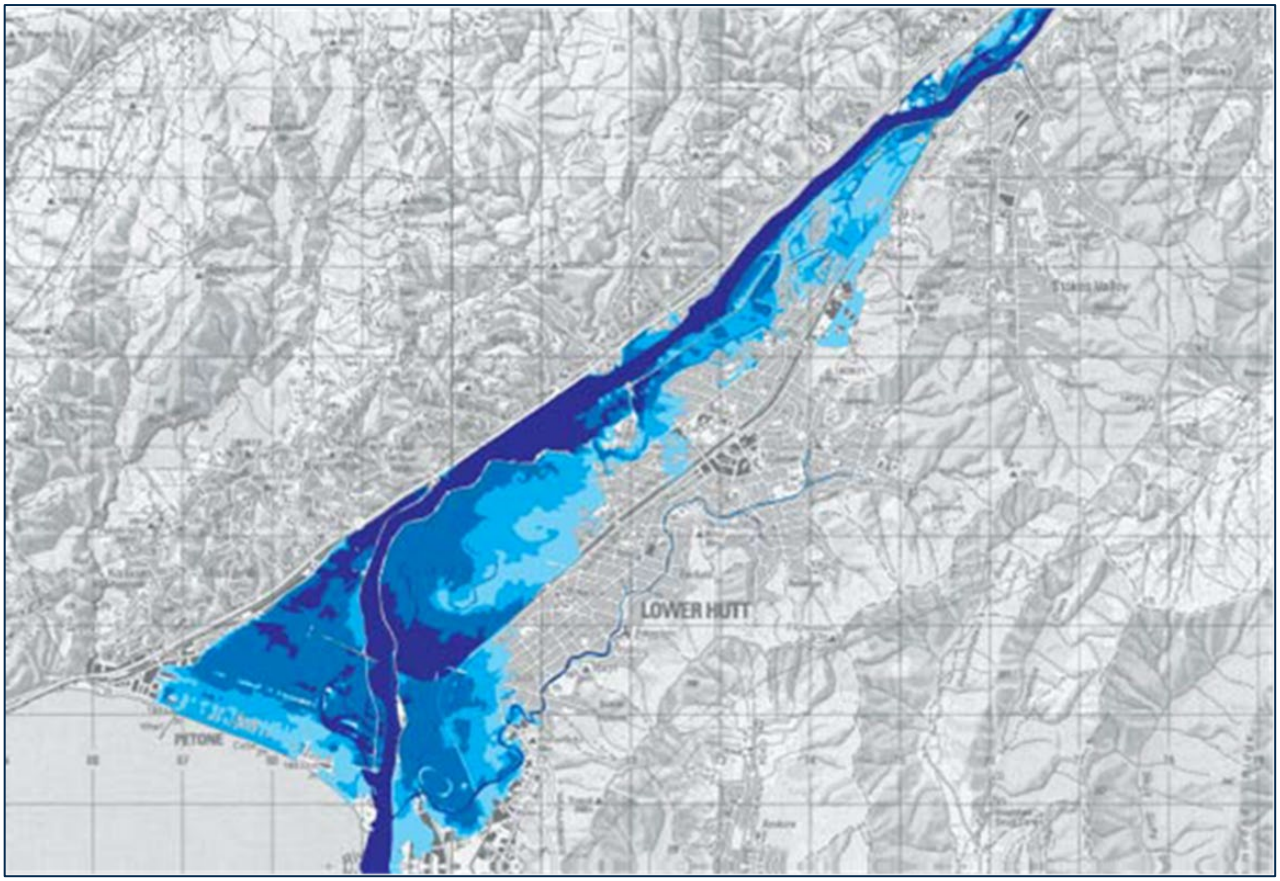

Figure 1. Flooding of the Hutt Valley with breaches for a 2300 cumec flood extent (440-year-event) under the upgraded flood protection system (Greater Wellington Regional Council, p8[3]).

Tsunami evacuation times

There is a high probability of major local earthquakes impacting the Hutt City. This includes a high probability of rupture occurring in the next 50 years on the Hikurangi subduction zone (25%)[4], and on other local faults that could affect Wellington harbour. Concerningly, the wave arrival times for Petone, Korokoro, Seaview and Eastbourne for these local events are well below the 30-minute requirement in CE-P14 and CE-P15. Tsunami arrival times are provided in Table 1 below for four different, possible fault ruptures.

Evacuation modelling by GNS Science shows that those in the eastern part of Petone, by the Hutt River mouth, may take more than 40 minutes to evacuate (see Appendix 5). This is more than the 30-minute requirement in CE-P14 and CE-P15. More residential development in this area will likely increase the number of people in this area, which in turn will likely extend evacuation time beyond 40 minutes and increase casualties. There will be no time for official warnings to be made for these local events and the reliance will be on natural warnings for people to evacuate. Based on this information, we recommend that the policies relating to evacuation in CE-14 and CE-15 are deleted, and the cumulative hazards and risks for Petone are considered further in our suggested 'Petone Natural Hazards Precinct'.

[3] https://www.gw.govt.nz/assets/Documents/2021/11/FP-Hutt-River-FMP-v2.pdf
[4] https://www.geonet.org.nz/news/6NmE92F2RZENz7UmqDKPTD

Table 1. Modelling arrival times into Wellington Harbour for four fault rupture scenarios[5].

	Petone		Korokoro		Seaview		Eastbourne	
	Arrival time for first wave peak	Arrival time for largest wave peak	Arrival time for first wave peak	Arrival time for largest wave peak	Arrival time for first wave peak	Arrival time for largest wave peak	Arrival time for first wave peak	Arrival time for largest wave peak
	Minutes after mainshock							
Hikurangi Fault	7.1	9.4	6.9	9.4	8.6	11.8	7.4	13.8
Wellington Fault	4.8	4.8	4.0	4.2	7.8	12.7	9.8	14.2
Wairarapa Fault	7.4	7.4	7.5	7.5	11.7	11.7	15.1	15.1
Wharekauhau Fault	29.5	45	28.8	45.1	39.7	47.7	20.8	32.4

Building life safety

Regarding fault rupture, Policies NH-P6 (existing buildings) and NH-P7 (new buildings) both include "Mitigation measures are incorporated into the building to maintain life safety of the occupants and the structural integrity of the building in the event of fault rupture". These policies are supported by rules, for example NH-R5, where matters of discretion are restricted to:

1. The ability of the existing building to maintain life safety during and after a fault rupture.
2. The ability of the existing building to remain structurally sound during and after a fault rupture.

It is unclear if these policies and rules are requiring existing (and new) buildings to be retrofitted to above the requirements of the Building Act, Code and Loading Standards, or if they are ultra vires with the Building Act.

If the intent is to require above code compliance, then two guidelines are available which should be referenced. This will assist the Council and applicants to assess the mitigation measures: Design Resilience[6] for structural measures above code; and the Code of Practice for non-structural elements[7].

We recommend the Council check to see if these policies and rules are ultra vires or revise the wording to make it clear that *above* Building Code compliance is required.

Wildfire

Wildfire is incorrectly identified in the introduction to the Natural Hazards chapter as being managed through the Building Act (which addresses fire safety requirements of buildings but not from wildfire), Civil Defence Emergency Management Act 2002, and the Local Government Act 1974 and 2002; nor is it included in the Fire & Emergency Act 2017. With the Hutt's steep, bush-clad hills, urban interface, wind, and projections of climate change (i.e., dry periods are expected to increase, see Appendix 6), the risk of wildfire will increase. While we acknowledge that wildfire appears to be out of scope for this plan review, it is a risk that the district plan can contribute to the management of, and will need to be considered in the future.

[5] From Wang, X.; Mueller, C.; Power, W.L.; Lukovic, B. 2016. Arrival time estimates for local source tsunami for Wellington suburbs, GNS Science Report 2016/03. 53 p.; doi: 10.21420/G25C73

[6] https://design.resilience.nz/

[7] https://bipnz.org.nz/code-of-practice-for-the-seismic-performance-of-non-structural-elements-nse-cop/

NHC encourages territorial authorities to use risk-based frameworks in district plans to reduce risk and increase resilience to natural hazards. The Proposed District Plan contains provisions that we support in this regard, and we have provided suggestions in other areas that could be improved.

We welcome the opportunity to discuss our submission with Council officers and provide further assistance, if this would be helpful. Please feel free to contact us at any time.

Yours sincerely,

Sarah-Jayne McCurrach
Head of Risk Reduction

Form 5, Clause 6 of Schedule 1, Resource Management Act 1991

Natural Hazards Commission Toka Tū Ake Submission on the Proposed Hutt City District Plan

To: Hutt City Council

Via Council submission email: district.plan@huttcity.govt.nz

Submitter: Natural Hazards Commission Toka Tū Ake (NHC)

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1. This is a submission on the following:

The District Plan Review notified on 17/02/2025.

2. NHC could not gain an advantage in trade competition through this submission.

3. NHC does wish to be heard in support of this submission.

4. This document and the Appendices attached are the NHC submission. This submission relates to the Proposed District Plan in its entirety.

5. The submission from NHC is:

NHC supports, proposes amendments, and opposes the Proposed District Plan to the extent outlined in this submission. Appendix 1 provides a table containing submission points that address the above, and other matters of relevance.

6. NHC seeks the following decision from the local authority:

That the specific amendments, additions or retentions, which are sought as specifically outlined in Appendix 1, are accepted and adopted into the Proposed District Plan. This includes such further, alternative, additional, or consequential relief as may be necessary to fully achieve the relief sought in this submission.

Date:	30/04/2025
Address for service:	Natural Hazards Commission Toka Tū Ake PO Box 790, Wellington 6140
Contact person:	Sarah-Jayne McCurrach
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Appendix 1

Submission table

Table 2. Submission table.

Provision	Description	Support/ Oppose/ Amend	Reasoning	Requested Action
DEFINITIONS				
Cumulative natural hazards	Include a definition of cumulative natural hazards	Add	To support the recommended policy framework for cumulative hazards, we recommend using the definition from the Natural Hazard Risk Communication Toolbox[8]	Include the following definition: Where two or more unrelated natural hazard events have the potential to affect human life and/or property
Freeboard	Include a definition of freeboard	Add	This could be open to interpretation. For example, Greater Wellington Guidelines for Floodplain Management Planning[9] states: "In setting floor levels, freeboard incorporates the following factors: • Uncertainties in estimates of flood levels; • Differences in water levels across the floodplain because of "local factors" not included in hydraulic models;	Include an explanation of freeboard in the definitions section, for example: In setting floor levels, freeboard incorporates the following factors: • Uncertainties in estimates of flood levels; • Differences in water levels across the floodplain because of "local factors" not included in hydraulic models; • The cumulative effect of subsequent infill development; • Increases in water level as a result of wave action – waves can be wind-

[8] https://www.civildefence.govt.nz/resources/natural-hazard-risk-communication-toolbox
[9] https://www.gw.govt.nz/assets/Documents/2015/06/Guidelines-for-Floodplain-Management-Planning.pdf

			• The cumulative effect of subsequent infill development; • Increases in water level as a result of wave action – waves can be wind-induced (across fetches of open water) and wave-induced (powerboats and vehicles moving through flooded areas); • Increases in water level as a result of debris effects and gravel build up in the riverbed."	induced (across fetches of open water) and wave-induced (powerboats and vehicles moving through flooded areas); • Increases in water level as a result of debris effects and gravel build up in the riverbed.
Minimise	Include a definition of minimise	Add	The terms 'minimise' and 'reduce' are used, and due to their similarity, it is important to provide clarification to ensure they are accurately interpreted. Depending on the Council's definition, changes may be needed for provisions that include both terms.	Include the following definition: The duty to take all reasonable steps to reduce the adverse effects of natural hazards on future activities.
Reduce (or risk reduction)	Include a definition of 'reduce' or 'risk reduction' specific to natural hazards	Add	The terms 'minimise' and 'reduce' are used, and due to their similarity, it is important to provide clarification to ensure they are accurately interpreted. Depending on the Council's definition, changes may be needed for provisions that include both terms.	Include the following definition: In relation to the Natural Hazards chapter, prevent new and reducing existing risks, and manage residual risks.
Residual risk	Means, in relation to the Hazardous Substances chapter, the level of any remaining risk of an adverse effect after other industry controls, legislation and regulations, including the Hazardous Substances and New Organisms Act 1996, the Land Transport Act 1998, the Health and Safety at Work (Hazardous Substances) Regulations 2017 and any other	Amend	Policy 51 in the proposed RPS Change 1 from GWRC requires that residual risk posed by hazard risk management and adaptation measures to mitigate natural hazard risk be considered.	Include the following definition: In relation to the Natural Hazards chapter, the risk that remains after risk(s) treatment has been applied to reduce the potential consequence(s).

	subordinate instruments, and regional plans have been complied with.		There is considerable residual risk from natural hazards in Hutt City, particularly the risk from flooding in the event of breaches in stopbanks on the Hutt River. As such we request that a separate definition is included in the District Plan for residual risk in relation to the Natural Hazards and Coastal Environment chapters which reflects the definition provided in the National Disaster Resilience Strategy (2019).	
NATURAL HAZARDS				
NH – Natural Hazard Overlays explanation	The explanation states that "Each of these natural hazards is assigned a Hazard Ranking, based on the risk associated with the hazard". It is unclear whether this hazard ranking is based on the *current* risk, or a *future* risk associated with hazard.	Amend	With the likely impacts from climate change well understood, we recommend clarifying whether this ranking is based on current or future risks. If based on current risk, then any required risk assessments need to include future development and climate change scenarios.	Amend as follows: Each of these natural hazards is assigned a Hazard Ranking, based on the <u>future</u> risk associated with the hazard <u>and likely development</u>.
NH – Other natural hazards	Other natural hazards such as severe winds, wildfires, and ground shaking from earthquakes are primarily managed by other statutory instruments or processes including the Building Act 2004, Civil Defence Emergency Management Act 2002 and the Local Government Act 1974 and 2002.	Amend	Wildfire is not specifically managed by the Building Act 2004 (which addresses fire safety requirements of buildings but not from wildfire), Civil Defence Emergency Management Act, Local Government Act 2002 or the Fire and Emergency New Zealand Act 2017. With the Hutt's steep, bush-clad hills, and projections of climate change, dry periods are	Amend to clarify that wildfire is not currently managed through other statutory instruments of processes.

			expected to increase, which will increase the risk of wildfire. While we acknowledge that wildfire appears to be out of scope for this plan review, it is a risk that the district plan can contribute to managing. This will need to be considered in the future.	
Hazard Ranking	Natural Hazard Overlay - Respective Hazard Ranking **High** Wellington Fault Stream Corridor (1% AEP flood event + 1.59m sea level rise) **Medium** Overland Flowpath (1% AEP flood event + 1.59m sea level rise) Slope Assessment Overlay **Low** Liquefaction Hazard Area Inundation Area (1% AEP flood event + 1.59m sea level rise)	Support with amendments	NHC supports the Natural Hazard Overlay - Respective Hazard Ranking, apart from the Liquefaction Hazard Area. We request the entire Liquefaction Hazard Area is either reclassified as a medium hazard, or reclassify as medium hazard in the areas designated as 'high' liquefaction susceptibility in the 2018 GNS Science report *Liquefaction hazard in the Wellington Region*[10]. While liquefaction does not generally pose risk to life safety, it is extremely damaging to the built environment. NHC analysis of insurance claims from the Canterbury Earthquake Sequence shows that while liquefaction damage claims only accounted for approximately 15% of all claims, they accounted for approximately 55% of the total losses. This means	Either: Classify Liquefaction Hazard Area as a Medium hazard. Or, Classify areas of the Liquefaction Hazard Area which are designated 'high liquefaction susceptibility' in the 2018 GNS Science report *Liquefaction hazard in the Wellington Region* as a Medium hazard.

[10] Dellow GD, Perrin ND, Ries WF. 2018. Liquefaction hazard in the Wellington Region. Lower Hutt (NZ): GNS Science. 71 p. (GNS Science report; 2014/16). doi:10.21420/G28S8J

			that while fewer properties were affected by liquefaction than ground shaking alone, they suffered significant damage where it was present. Tonkin + Taylor's 2022 analysis for NHC indicates that avoiding development in areas prone to liquefaction, such as Petone, would significantly reduce earthquake damage and costs in Lower Hutt. We recommend the Council ensure the liquefaction policies are consistent with the MBIE/MfE liquefaction guidance[11].	
NH-O1	Risk from Natural Hazards in High Natural Hazard Overlays Subdivision, use and development within the High Natural Hazard Overlays reduce or avoid increasing the existing risk from natural hazards to people, buildings and infrastructure.	Support	NHC supports the avoidance of subdivision, use and development within areas of high natural hazard risk; and allowing subdivision, use and development in High Natural Hazard Overlays where the risk from natural hazards is reduced or not increased.	Retain as written.
NH-O2	Risk from natural hazards in Low Natural Hazard Overlays and Medium Natural Hazard Overlays Subdivision, use and development within the Low Natural Hazard Overlays and Medium Natural Hazard Overlays minimise the risk from natural hazards to people, buildings and infrastructure.	Amend	We support requiring that subdivision, use and development minimises the risk from natural hazards in the Medium Natural Hazard Overlays. However, we suggest that the condition "as low as reasonably practicable" is added, to ensure that natural hazard mitigation	Amend as follows: Subdivision, use and development within the Low Natural Hazard Overlays and Medium Natural Hazard Overlays minimise the risk from natural hazards to people, buildings and infrastructure <u>to as low as reasonably practicable</u>.

[11] https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/planning-engineering-liquefaction.pdf

			efforts are completed to a consistent and robust standard.	
NH-O3	Subdivision, Use and Development in the General Industrial Zone and Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone and within the Medium Flood Hazard Overlay or High Flood Hazard Overlay Provide for subdivision, use and development in the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Pito One and Seaview Marina Zone while also ensuring development and use in this area minimises the risk from flood hazards to people, buildings and infrastructure.	Amend	We support this objective, however, we suggest that the condition "as low as reasonably practicable" is added, to ensure that natural hazard mitigation efforts are completed to a consistent and robust standard.	Amend as follows: Provide for subdivision, use and development in the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Pito One and Seaview Marina Zone while also ensuring development and use in this area minimises the risk from flood hazards to people, buildings and infrastructure <u>to as low as reasonably practicable</u>.
NH-O4	Planned Natural Hazard Mitigation Works Risk to people, buildings and infrastructure from flood hazards is reduced through mitigation works.	Amend	Residual risk is an important consideration when planning flood mitigation works, particularly given that Hutt City is dependent on these works to protect large parts of the city. Residual risks need to be assessed and managed in case the mitigation works fail.	Amend as follows: Risk to people, buildings and infrastructure from flood hazards is reduced through: <u>1.</u> Mitigation works <u>where appropriate and practicable; and</u> <u>2. The management of residual risks.</u>
NH-O5	Natural Systems and Features Natural systems and features that reduce the susceptibility of people, buildings and infrastructure from damage from natural hazards are created, retained or enhanced.	Support	NHC supports the use of natural systems and features in natural hazard risk reduction measures. This is particularly appropriate for flood hazard, as MfE's 2010 guidance document *Preparing For Future Flooding*[12] recommends the use of soft engineering and natural features to reduce flooding risk.	Retain as written.

[12] Ministry for the Environment 2010 Manatū Mō Te Taiao. Preparing for future flooding: a guide for local government in New Zealand. Publication number: ME 1012

NH-P1	Risk-Based Approach Identify natural hazards within the District Plan and take a risk-based approach to the management of subdivision, use and development based on: 1. The sensitivity of the activities to the impacts of natural hazards, 2. The hazard posed to people's lives and wellbeing, property and infrastructure, by considering the likelihood and consequences of natural hazard events, and 3. The operational need or functional need for some activities to locate in Natural Hazard Overlays.	Support	NHC supports and advocates for risk-based land use planning for natural hazard risk reduction. We support the inclusion of property and infrastructure as considerations when assessing the consequences of natural hazards, as opposed to solely considering life safety. Retaining the useability of critical infrastructure and the liveability of dwellings is a crucial component in swifter and less costly response and recovery in the wake of a natural hazard event.	Retain this provision.
NH-P2	Levels of Risk Subdivision, use and development manages the natural hazard risk to people, buildings and infrastructure by: 1. Avoiding buildings and activities in the High Natural Hazard Overlays (with the exception of the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Pito One and Seaview Marina Zone) unless there is an operational need or functional need for the subdivision, use, or development to be located in this area and the subdivision, use, or development maintains or reduces the existing risk from the natural hazard to people, buildings and infrastructure. 2. Within the General Industrial Zone and Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone, recognise the regional importance of these areas, while ensuring that subdivision, use, or development located in these areas minimises the risk from flood	Support		Retain as written if the terms 'reduce' and 'minimise' are included in the Definitions chapter.

	hazards in the High Flood Hazard Overlay to people, buildings, and infrastructure. 3. Requiring subdivision, use, or development to minimise the risk to development from natural hazards to people, buildings and infrastructure in the Low Hazard Overlays and Medium Hazard Overlays, and 4. Enabling use, or development that have either low occupancy or low replacement value within the Natural Hazard Overlays.			
NH-P3	Natural systems and features Maintain and enhance natural systems and features where they will reduce the existing risk posed by natural hazards to people, buildings and infrastructure.	Support		Retain as written.
NH-P4	Natural hazard mitigation Enable natural hazard mitigation works undertaken by the Wellington Regional Council, Hutt City Council, New Zealand Transport Agency (Waka Kotahi), KiwiRail or their nominated contractors or agents within Natural Hazard Overlays where these will decrease the existing risk to people, buildings and infrastructure.	Support		Retain as written.
NH-P5	Green Infrastructure Encourage the use of green infrastructure or Mātauranga Māori approaches when undertaking natural hazard mitigation works by the Wellington Regional Council, Hutt City Council, New Zealand Transport Agency (Waka Kotahi), KiwiRail or their nominated contractors or agents within Natural Hazard Overlays.	Support		Retain as written.
NH-P6	Additions to existing buildings and structures within the Fault Location Area	Amend	Extensions should be limited to non-habitable rooms, i.e., not	Check if Policy 2b is ultra vires with the Building Act requirements, *OR* amed to

	Additions to existing buildings in the Fault Location Area are managed as follows: 1. Allow for additions to existing buildings for activities least sensitive to natural hazards within the poorly constrained, uncertain constrained, well defined and well defined extension areas of the Fault Location Area. 2. Provide for additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained, uncertain constrained, well-defined or well-defined extension areas where: a. They are located more than 20m from the edge of the fault deformation zone, or b. Mitigation measures are incorporated into the building to maintain life safety of the occupants and the structural integrity of the building in the event of fault rupture.		additional bedrooms, to limit the life safety risk. It is unclear if Policy 2b is requiring additions to be retrofitted to above the requirements of the Building Act, Code and Loading Standards, or if they are ultra vires with the Building Act.	clarify that above Building Code compliance and/or non-structural mitigation is required. Amend as follows: Additions to existing buildings in the Fault Location Area are managed as follows: ... 2. Provide for additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained, uncertain constrained, well-defined or well-defined extension areas where: a. They are located more than 20m from the edge of the fault deformation zone, ~~or~~ b. Mitigation measures are incorporated into the building to maintain life safety of the occupants and the structural integrity of the building in the event of fault rupture. c. Additions are for non-habitable rooms
NH-P7	Subdivision, use and development within the Fault Location Area New subdivision, use and development within the Fault Location Area are managed as follows: 1. Allow for new allotments, new buildings and the conversion of existing buildings for activities least sensitive to natural hazards within the poorly constrained, uncertain constrained, well defined and well defined extension areas of the Fault Location Area. 2. Provide for new allotments, new buildings and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities	Amend	The wording of 3c is confusing (emphasis added), as it appears that avoidance is not required if there is no functional or operational need: *3.* ***Avoid*** new allotments, new buildings and the conversion of existing buildings ***for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards*** within the well-defined or well-	Check if Policy 2b and Policy 3c are ultra vires with the Building Act requirements, *OR* amend to clarify that above Building Code compliance and/or non-structural mitigation is required. Amend as follows: New subdivision, use and development within the Fault Location Area are managed as follows: ... 2. Provide for new allotments, new buildings and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most

	most sensitive to natural hazards within the poorly constrained and uncertain constrained areas of the Fault Location Area where: a. The new building platforms, new buildings or conversions are located more than 20m from the edge of the fault deformation zone, or b. Mitigation measures are incorporated into the building to maintain life safety of the occupants and the structural integrity of the building in the event of fault rupture. 3. Avoid new allotments, new buildings and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the well-defined or well-defined extension areas of the Fault Location Area unless: a. The new building platforms, new buildings or conversions are located more than 20m from the edge of the fault deformation zone of the Fault Location Area, or b. If locating the activity more than 20m from the edge of the deformation zone is not a practicable option and there is an operational or functional need to locate within the well-defined or well-defined extension areas of the Fault Location Area; mitigation measures are incorporated into the building to minimise the risk to life of the occupants and the structural integrity of the building on the event of fault rupture, or c. If locating the activity more than 20m from the edge of the deformation zone is not a practicable option but there is no operational or functional need to locate within the well-defined or well-defined extension areas of the Fault Location		defined extension areas of the Fault Location Area ***unless***: c. If locating the activity more than 20m from the edge of the deformation zone is not a practicable option but ***there is no operational or functional need*** to locate within the well-defined or well-defined extension areas of the Fault Location Area; mitigation measures are incorporated into the building to not increase risk to life of the occupants and the structural integrity of the building in the event of fault rupture. If interpreted correctly, we recommend deleting 3c as it has the same intent as 3b, or rewording to make the intent clearer. It is unclear if Policy 2b and 3c are requiring existing (and new) buildings to be retrofitted to above the requirements of the Building Act, Code and Loading Standards, or if they are ultra vires with the Building Act. Policy 2b may need to change depending on the outcome.	sensitive to natural hazards within the poorly constrained and uncertain constrained areas of the Fault Location Area where: a. The new building platforms, new buildings or conversions are located more than 20m from the edge of the fault deformation zone, ~~or~~ b. Mitigation measures are incorporated into the building to maintain life safety of the occupants and the structural integrity of the building in the event of fault rupture. 3. Avoid new allotments, new buildings and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the well-defined or well-defined extension areas of the Fault Location Area unless: a. The new building platforms, new buildings or conversions are located more than 20m from the edge of the fault deformation zone of the Fault Location Area, or b. If locating the activity more than 20m from the edge of the deformation zone is not a practicable option and there is an operational or functional need to locate within the well-defined or well-defined extension areas of the Fault Location Area; mitigation measures are incorporated into the building to minimise the risk to life of the

	Area; mitigation measures are incorporated into the building to not increase risk to life of the occupants and the structural integrity of the building in the event of fault rupture.			occupants and the structural integrity of the building on the event of fault rupture, or c. ~~If locating the activity more than 20m from the edge of the deformation zone is not a practicable option but there is no operational or functional need to locate within the well-defined or well-defined extension areas of the Fault Location Area; mitigation measures are incorporated into the building to not increase risk to life of the occupants and the structural integrity of the building in the event of fault rupture.~~
NH-P8	Additions to existing buildings and structures in the Flood Hazard Overlays Additions to existing buildings and structures in the Flood Hazard Overlays are managed as follows: 1. Allow for additions to existing buildings and structures for activities least sensitive to natural hazards in the Flood Hazard Overlays. 2. Allow for additions to existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Low Flood Hazard Overlay, where: a. The risk to people, and buildings on site from the 1% Annual Exceedance Probability Flood is minimised due to the incorporation of mitigation measures, b. The existing risk to people and buildings on adjacent properties is reduced or not increased from the 1% Annual Exceedance Probability Flood, and	Amend	We recommend the policy is consistent with other policies within the Proposed Plan (i.e., CE-P14).	Amend as follows: Additions to existing buildings and structures in the Flood Hazard Overlays are managed as follows: 1. Allow for additions to existing buildings and structures for activities least sensitive to natural hazards in the <u>Low and Medium</u> Flood Hazard Overlays <u>and</u> <u>a. The conveyancing of flood waters through the Low and Medium Flood Hazard Overlay is still able to occur unimpeded and is not diverted onto adjacent properties</u> Add the following new provision: <u>5. People have access to safe evacuation routes in the event of a 1% Annual Exceedance Probability Flood event.</u>

	c. The Medium and High Hazard Areas remain unobstructed to allow for the conveyancing of flood waters and flood waters are not diverted onto adjacent properties or blocked. 3. Provide for additions to existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the Medium Flood Hazard Overlay and High Flood Hazard Overlay but also in the General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone or the Seaview Marina Zone, where the addition: a. is of a limited scale and size, b. does not create new residential units on the ground floor 4. Only allow additions to existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the Medium Flood Hazard Overlay and High Flood Hazard Overlay in all zones (excluding General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone or the Seaview Marina Zone), where it can be demonstrated that: a. The risk from the 1% Annual Exceedance Probability flood event is low due to either the: i. Proposed mitigation measures, or ii. Size of the addition, or iii. Nature of the activities undertaken within the addition. b. The conveyancing of flood waters through the Medium Flood Hazard Overlay and High Flood Hazard			

	Overlay is still able to occur unimpeded and is not diverted onto adjacent properties, and c. In the High Flood Hazard Overlay the existing risk to people, buildings and infrastructure is not increased from the 1% Annual Exceedance Probability flood event.			
NH-P9	Subdivision, use and development in the Flood Hazard Overlays	Support		Retain as written.
NH-P10	Residential Apartments in the Medium Flood Hazard Overlay and High Flood Hazard Overlay Provide for residential apartments within the Medium Flood Hazard Overlay and High Flood Hazard Overlay where: 1. The residential apartment building is at least four stories in height, 2. There are no residential apartments or habitable spaces provided on the ground floor of the building, 3. The building has been designed so that any flood sensitive services (for example power transformers) have been designed to be located above the 1% Annual Exceedance Probability Flood level, 4. Materials that are less susceptible to flood damage are used to construct the ground floor of the building (such as concrete blocks), and 5. There is no increase in the flood water depths within buildings that contain activities potentially sensitive to natural hazards or activities most sensitive to natural hazards on adjacent properties.	Amend	Include access to safe evacuation routes, as per CE-P14.	Amend as follows: Provide for residential apartments within the Medium Flood Hazard Overlay and High Flood Hazard Overlay where: ... <u>6. People have access to safe evacuation routes in the event of a 1% Annual Exceedance Probability Flood event.</u>

NH-P11	Subdivision, Use and Development in the Liquefaction Hazard Overlay Subdivision, use and development within the Liquefaction Hazard Overlay are managed as follows: 3. Provide for new building platforms, new buildings and structures and the conversion of existing buildings for activities most sensitive to natural hazards (with the exception of child care services, retirement villages, educational facilities, hospitals, emergency service facilities and health care facilities) within the Liquefaction Hazard Overlay, ...	Amend	We recommend that the MBIE/MFE guidelines for liquefaction[13] are followed.	Amend as follows: 3. Provide for new building platforms, new buildings and structures and the conversion of existing buildings for activities most sensitive to natural hazards (with the exception of child care services, retirement villages, educational facilities, hospitals, emergency service facilities and health care facilities) within the Liquefaction Hazard Overlay, <u>where:</u> <u>a. Foundations are designed by a certified engineer to prevent liquefaction induced deformation of the building,</u>
NH-P12	Subdivision in the Slope Assessment Overlay Provide for subdivision that creates additional building platforms in the Slope Assessment Overlay where: 1. A geotechnical assessment confirms that the site is suitable for subdivision, use and development, and that the risk from slope instability can be avoided, remedied or mitigated. 2. The subdivision does not cause land instability on the site or adjoining properties.	Support		Retain as written.
NH-R2	Additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained or the uncertain constrained areas of the Fault Location Area All Zones 1. Activity status: Permitted Where:	Amend	When an active fault ruptures, in addition to ground shaking, the land either side of the fault can move sideways, or up and down. Both movements can destroy buildings, but if they are located away from the fault, the damage may be able to be repaired, and life	Amend as follows: Additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained or the uncertain

[13] https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/planning-engineering-liquefaction.pdf

	a. The additions do not increase the Gross Floor Area by more than 25m2. All Zones 2. Activity status: Restricted discretionary Where: a. Compliance with NH-R2.1a cannot be achieved. Matters of discretion are restricted to: 1. The change in risk to life as a result of the additions being undertaken on the site. 2. The location of the additions relative to the fault line. 3. Any mitigation measures to reduce the impacts to life and buildings from fault rupture. 4. The relevant matters in Policy NH-P6: Additions to existing buildings and structures within the Fault Location Area.		safety can be increased. Limiting additions to non-habitable areas retains the status quo for life safety. We recommend the Ministry for the Environment Active Fault Guidelines[14] are considered in reviewing these rules.	constrained areas of the Fault Location Area All Zones 1. Activity status: Permitted Where: a. The additions do not increase the Gross Floor Area by more than 25m~~.~~, and b. The additions are located at least 20m away from the Fault; and c. The additions are not habitable areas.
NH-R3	Additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the well-defined or well-defined extension areas of the Fault Location Area All Zones 1. Activity status: Restricted discretionary Matters of discretion are restricted to: 1. The scale and size of the addition and how it changes the risk of building damage as a result of its construction. 2. The change in risk to life as a result of the additions being undertaken on the site.	Amend	It is unclear if the matters of discretion (3.) requires additions to be retrofitted to above the requirements of the Building Act 2004, Building Code (schedule 1 of the Building Regulations 1992) and Loading Standards, or if they are ultra vires with the Building Act 2004. The rule may need to change depending on the outcome.	Check if the matters of discretion (3.) are ultra vires with the Building Act 2004 requirements *OR* amend to clarify that above Building Code compliance and/or non-structural mitigation is required. Amend as follows: Additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the well-defined or well-defined extension areas of the Fault Location Area All Zones 1. Activity status: Restricted discretionary

[14] https://environment.govt.nz/assets/Publications/Files/planning-development-faults-graphics-dec04-1.pdf

	3. The location of the additions relative to the fault line and any mitigation measures to reduce the impacts to life and buildings from fault rupture. 4. The relevant matters in NH-P6: Additions to existing buildings and structures within the Fault Location Area.			Matters of discretion are restricted to: 1. The scale and size of the addition and how it changes the risk of building damage because of its construction. 2. The change in risk to life because of the additions being undertaken on the site. 3. The location of the additions relative to the fault line and any mitigation measures to reduce the impacts to life and buildings from fault rupture. 4. The relevant matters in NH-P6: Additions to existing buildings and structures within the Fault Location Area <u>(with requested amendments).</u>
NH-R5	New buildings and structures and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained or the uncertain constrained areas of the Fault Location Area All Zones 1. Activity status: Controlled Where: a. The building is being constructed on an existing vacant site. Matters of control are limited to: 1. The ability for the building to maintain life safety during and after a fault rupture. 2. The location of the building relative to the fault line and any mitigation measures to reduce the impacts from fault rupture. All Zones 2. Activity status: Restricted discretionary Where: a. Compliance with NH-R5.1a cannot be achieved.	Amend	It is unclear if the matters of discretion (3.) requires additions to be retrofitted to above the requirements of the Building Act 2004, Building Code (schedule 1 of the Building Regulations 1992) and Loading Standards, or if they are ultra vires with the Building Act 2004. The rule may need to change depending on the outcome.	Checks if this rule (in particular, matters of control and matters of discretion) is ultra vires with the Building Act 2004 requirements, *OR* amend to clarify that above Building Code compliance and/or non-structural mitigation is required. Amend as follows: New buildings and structures and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the poorly constrained or the uncertain constrained areas of the Fault Location Area All Zones 1. Activity status: ~~Controlled~~ <u>Restricted Discretionary</u> Where: a. The building is being constructed on an existing vacant site. Matters of control are limited to:

	Matters of discretion are restricted to: 1. The ability of the existing building to maintain life safety during and after a fault rupture. 2. The ability of the existing building to remain structurally sound during and after a fault rupture. 3. The location of the existing building relative to the fault line and any mitigation measures to reduce the impacts from fault rupture. 4. The relevant matters in NH-P7: Subdivision, use and development within the Fault Location Area.			1. ~~The ability for the building to maintain life safety during and after a fault rupture~~. 2. The location of the building relative to the fault line ~~and any mitigation measures to reduce the impacts from fault rupture.~~ All Zones 2. Activity status: Restricted discretionary where: a. Compliance with NH-R5.1a cannot be achieved. Matters of discretion are restricted to: 1. ~~The ability of the existing building to maintain life safety during and after a fault rupture.~~ ~~2. The ability of the existing building to remain structurally sound during and after a fault rupture.~~ 3. The location of the existing building relative to the fault line ~~and any mitigation measures to reduce the impacts from fault rupture.~~ 4. The relevant matters in NH-P7: Subdivision, use and development within the Fault Location Area (with requested amendments).
NH-R6	New buildings and structures and the conversion of existing buildings for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards within the well-defined or well defined extension areas of the Fault Location Area All Zones 1. Activity status: Non-complying	Support		Retain as written.

NH-R7	Additions to existing buildings and structures for activities least sensitive to natural hazards in the Flood Hazard Overlays All Zones 1. Activity status: Permitted	Amend	Support, if it meets NH-P8.	Amend as follows: Additions to existing buildings and structures for activities least sensitive to natural hazards in the Flood Hazard Overlays All Zones 1. Activity status: Permitted <u>where:</u> <u>Compliance is achieved with relevant matters in NH-P8.</u>
NH-R8	Additions to existing buildings and structures for activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Low Flood Hazard Overlay All Zones 1. Activity status: Permitted Where: a. When located within a Low Flood Hazard Overlay, the finished floor levels of the building are located above the 1% Flood Annual Exceedance Probability level, plus the height of the floor joists or the base of the concrete floor slab and an allowance for freeboard. All Zones 2. Activity status: Restricted discretionary Where: a. Compliance is not achieved with NH-R8.1a. Matters of discretion are restricted to: 1. The relevant matters in NH-P8: Additions to existing buildings and structures in the Flood Hazard Overlays.	Amend	Support with requested amendments to NH-P8.	Retain as written, with the recommended changes made to NH-P8. Include the appropriate freeboard requirement for a 1% AEP flood in the District Plan. NHC suggest 0.5m for residential activities and 0.3m for commercial, in line with other territorial authorities[15].
NH-R9	Additions to existing buildings that contain activities potentially sensitive to natural hazards and activities	Amend	We recommend the following status for these activities:	Amend as follows: Additions to existing buildings that contain activities potentially sensitive to natural

[15] https://www.waternz.org.nz/Article?Action=View&Article_id=1157

	most sensitive to natural hazards in the Low Flood Hazard Overlay General Industrial Zone in Seaview, Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone, Seaview Marina Zone 1. Activity status: Permitted Where: a. The gross floor area of the addition is no more than 200m, and b. The addition does not result in the in the establishment of a residential activity on the ground floor of the building. General Industrial Zone in Seaview, Heavy Industrial Zone in Seaview. Metropolitan Centre Zone in Petone, Seaview Marina Zone 2. Activity status: Restricted discretionary Where: a. Compliance with the requirements of NH-R9.1 cannot be achieved. Matters of discretion are restricted to: 1. The risk to people and buildings on site from the 1% Annual Exceedance Probability Flood and the mitigation measures to reduce this risk. 2. The risk to people and buildings on adjacent properties from the 1% Annual Exceedance Probability Flood, and the mitigation measures to reduce this risk. 3. The impacts of the additions on the conveyance of flood waters, including any potential for flood waters to be blocked or diverted onto adjacent properties. All Zones except for General Industrial Zone in Seaview, Heavy Industrial Zone in Seaview. Metropolitan Centre Zone in Petone, Seaview Marina Zone		1. Controlled status for activities potentially sensitive to natural hazards. 2. Restricted discretionary status for activities potentially sensitive to natural hazards. 3. Discretionary status for activities most sensitive. We also recommend that flood resistant design is encouraged to reduce the impacts from flooding and allow a faster recovery following an event.	hazards and activities most sensitive to natural hazards in the Low Flood Hazard Overlay General Industrial Zone in Seaview, Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone, Seaview Marina Zone 1. Activity status: Permitted Where: a. The gross floor area of the addition is no more than 200m, ~~and~~ b. The addition does not result in the in the establishment of a residential activity on the ground floor of the building~~.~~, and c. Flood resistant design is incorporated into additions where practicable.

	2. Activity status: Discretionary			
NH-R10	New buildings and structures and the Conversion of Existing Buildings for activities least sensitive to natural hazards within the Low Flood Hazard Overlay All Zones 1. Activity status: Permitted	Amend	If it meets NH-P9.	Amend as follows: Additions to existing buildings and structures for activities least sensitive to natural hazards in the Flood Hazard Overlays All Zones 1. Activity status: Permitted <u>where:</u> <u>Compliance is achieved with relevant matters in NH-P9.</u>
NH-R11	New buildings and structures and the conversion of existing buildings for activities least sensitive to natural hazards within the Medium Flood Hazard Overlay and High Flood Hazard Overlay All Zones 1. Activity status: Restricted discretionary Matters of discretion are restricted to: 1. The relevant matters in NH-P9: Subdivision, Use and Development in the Flood Hazard Overlays.	Amend		Retain as written, with the recommended changes made to NH-P9.
NH-R12	New buildings and structures and the conversion of existing buildings for activities potentially sensitive to natural hazards or activities most sensitive to natural hazards within the Low Flood Hazard Overlay All Zones 1. Activity status: Permitted Where: a. The finished floor levels of the building are located above the 1% Flood Annual Exceedance Probability level, plus the height of the floor joists or the base of the concrete floor slab and an allowance for freeboard. All Zones 2. Activity status: Restricted discretionary Where: a. Compliance is not achieved with NH-R12.1. Matters of discretion are restricted to:	Amend	Relevant matters in NH-P9 should be included.	Include the appropriate freeboard requirement for a 1% AEP flood in the District Plan. NHC suggests 0.5m for residential activities and 0.3m for commercial, in line with other territorial authorities[15]. Amend as follows: 1. Activity status: Permitted Where: a. The finished floor levels of the building are located above the 1% Flood Annual Exceedance Probability level, plus the height of the floor joists or the base of the

	1. The relevant matters in NH-P9: Subdivision, Use and Development in the Flood Hazard Overlays.			concrete floor slab and an allowance for freeboard. b. The relevant matters in NH-P9: Subdivision, Use and Development in the Flood Hazard Overlays.
NH-R13	New buildings and structures and the conversion of existing buildings for activities potentially sensitive to natural hazards or activities most sensitive to natural hazards within the Medium Flood Hazard Overlay and High Flood Hazard Overlay General Industrial Zone in Seaview Heavy Industrial Zone in Seaview Metropolitan Centre Zone in Petone Seaview Marina Zone 1. Activity status: Permitted Where: a. The gross floor area of the new building or conversion is no more than 200m, and b. The new building or conversion does not result in the establishment of a residential activity on the ground floor of the building.	Amend	Relevant matters in NH-P9 should be included.	Amend as follows: 1. Activity status: Permitted Where: a. The gross floor area of the new building or conversion is no more than 200m, and b. The new building or conversion does not result in the establishment of a residential activity on the ground floor of the building, and c. The new building or conversion meets the matters in NH-P9.
NH-R15	Additions to existing buildings and structures for activities least sensitive to natural hazards, activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Liquefaction Hazard Overlay All Zones: 1. Activity status: Permitted	Amend	Needs to meet the requirements of NH-P11(4).	Amend as follows: Additions to existing buildings and structures in the Liquefaction Hazard Overlay. All Zones: 1. Activity status: Permitted Where: a. Meets the matters in NH-P11(4).
NH-R16	New buildings and structures and the conversion of existing buildings for activities least sensitive to	Amend	Needs to meet the requirements of NHP-11.	Amend as follows: New buildings and structures in the Liquefaction Hazard Overlay

	natural hazards and activities potentially sensitive to natural hazards in the Liquefaction Hazard Overlay All Zones: 1. Activity status: Permitted			All Zones: 1. Activity status: Permitted Where: a. Meets the matters in NH-P11.
NH-R17	New buildings and structures and the conversion of existing buildings for activities most sensitive to natural hazards in the Liquefaction Hazard Overlay	Support		Retain as written.
SUBDIVISION				
SUB-O2	Subdivision design Subdivision results in development patterns and allotments that: ... 5. Manages the risk from natural hazards.	Amend	Avoidance can be a key strategy within a subdivision. This needs to be an explicit option in addition to 'mitigate' or 'mitigation'.	Amend as follows: Subdivision design Subdivision results in development patterns and allotments that: ... 5. ~~Manages~~ Avoids or mitigates the risk from natural hazards to as low as reasonably practicable.
SUB-P9	Subdivision for infrastructure Control the creation of allotments for the purposes of infrastructure to ensure that: ...	Amend	Infrastructure needs to be resilient to the effects of climate change and natural hazards.	Amend as follows: Subdivision for infrastructure Control the creation of allotments for the purposes of infrastructure to ensure that: ... 4. Infrastructure is resilient to natural hazards and climate change.
SUB-P10	Subdivision in residential zones Provide for subdivision in residential zones where: 1. The subdivision enables flexibility, innovation, and choice for future development, and 2. Allotments are of a size, shape, and orientation that is compatible with the nature, scale, and intensity anticipated for the underlying zone.	Amend	Subdivision in residential zones should be resilient to climate change and natural hazards.	Amend as follows: Provide for subdivision in residential zones where: 1. The subdivision enables flexibility, innovation, and choice for future development, and 2. Allotments are of a size, shape, and orientation that is compatible with the nature, scale, and intensity anticipated for the underlying zone, and

				3. Subdivisions are resilient to natural hazards and climate change.
SUB-P22	Subdivision of land in natural hazard risk areas 1. Take a risk-based approach to the management of subdivision of land affected by natural hazards identified in the District Plan based on: a. The sensitivity of activities to the impacts of natural hazards, and b. The hazard posed to people's lives and wellbeing and property by considering the likelihood and consequences of differing natural hazard events.	Support	While we support this provision, we recommend that guidance is developed to ascertain what likelihood and consequence is deemed to require a more restrictive risk-based approach. This will aid the implementation of the policy and rules for both the Council and applicants.	Retain as written.
SUB-R12	Subdivision within the Fault Location Area	Support with amendments		Retain as written, with the recommended changes made to NH-P7.
SUB-R13	Subdivision within the Liquefaction Hazard Overlay	Support		Retain as written.
SUB-R14	Subdivision within the Low Flood Hazard Overlay	Support with amendments		Retain as written, with the recommended changes made to NH-P9.
SUB-R15	Subdivision within the Medium Flood Hazard Overlay	Support with amendments		Retain as written, with the recommended changes made to NH-P9.
SUB-R16	Subdivision within the High Flood Hazard Overlay All Zones 1. Activity status: Non-complying Where: a. The subdivision will result in building platforms for activities least sensitive to natural hazards, activities potentially sensitive to natural hazards or activities most sensitive to natural hazards located within the High Flood Hazard Overlay.	Support		Retain as written.
SUB-R17	Subdivision within the Low Tsunami Hazard Overlay	Support with amendments		Retain as written, with the recommended changes are made to CE-P15.
SUB-R18	Subdivision within the Medium Coastal Inundation Hazard Overlay and Medium Tsunami Hazard Overlay	Support with amendments		Retain as written, with the recommended changes made to CE-P15.

SUB-R19	Subdivision within the High Coastal Inundation Hazard Overlay or High Tsunami Hazard Overlay 1. Activity status: Controlled 2. Activity status: Restricted discretionary Where: 3. Activity status: Non-complying	Support		Retain as written.
SUB-R20	Subdivision within the Slope Assessment Overlay	Support		Retain as written.
HAZARDOUS SUBSTANCES				
HS-P1	Location of hazardous facilities Ensure facilities and activities involving the manufacture, use, storage, transportation, or disposal of hazardous substances, including significant hazardous facilities, are appropriately located and managed by: ... 4. Locating significant hazardous facilities outside of High Natural Hazard Overlays unless there is an operational need or functional need for the significant hazardous facility to be located in the area and the significant hazardous facility mitigates the risk from natural hazards to people, buildings and infrastructure.	Support	Significant hazardous facilities should be located outside of High Natural Hazard Overlays unless there is an operational or function need.	Retain as written.
HS-R2	New significant hazardous facilities Heavy Industrial Zone 1. Activity status: Restricted discretionary Matters of discretion are restricted to: 1. The matters in HS-P1: Location of hazardous facilities, ... 6. Measures to avoid or manage risks associated with natural hazards, including the potential for sea level rise to impact on the operation of the activity.	Support		Retain as written.

	7. The extent to which adverse effects can be avoided, or where avoidance is not possible, remedied or mitigated.			
EARTHWORKS				
EW-O1	Earthworks Earthworks are undertaken in a manner that:... 6. Does not cause or exacerbate risks from natural hazards, 7. Minimises risks associated with slope instability, and...	Support		Retain as written.
EW-P1	Minor earthworks Enable minor earthworks where: 1. The stability and structural integrity of land, infrastructure, and buildings are not compromised ...	Support		Retain as written.
EW-P2	Appropriate earthworks Enable earthworks associated with subdivision, land use, and development where: 3. The stability of land is maintained, including the stability of land on adjoining sites, 4. The structural integrity of infrastructure, buildings, and structures on the site and on adjoining sites is not compromised,	Support		Retain as written.
EW-P5	Earthworks associated with Natural Hazard Mitigation Works	Support		Retain as written.
EW-P6	Earthworks within Flood Hazard Overlays Provide for earthworks in Flood Hazard Overlays where any increase in flooding risk for neighbouring properties is minimised when compared to the existing situation by: 1. Managing the displacement of flood waters, and	Amend	Flood risk should be minimised whenever possible, not just when the risk is increased.	Amend as follows: Earthworks within Flood Hazard Overlays Provide for earthworks in Flood Hazard Overlays where ~~any increase in~~ flooding risk for neighbouring properties is ~~minimised when compared to the existing situation~~ reduced or not increased by:

	2. Ensuring the earthworks do not impede floodwaters from being conveyed along Overland Flowpaths or Stream Corridors.			1. Managing the displacement of flood waters, and 2. Ensuring the earthworks do not impede floodwaters from being conveyed along Overland Flowpaths or Stream Corridors.
EW-P7	Earthworks on slopes On slopes greater than 34 degrees, where the 34 degree slope angle is sustained over a distance of at least 3m, measured horizontally, provide for earthworks where a geotechnical assessment confirms that: 1. The proposed earthworks will minimise the risk from slope instability to people and buildings, and 2. The proposed earthworks will not increase the risk of slope failure on adjacent sites.	Amend		Amend as follows: Earthworks on slopes On slopes greater than 34 degrees, where the 34 degree slope angle is sustained over a distance of at least 3m, measured horizontally, provide for earthworks where a geotechnical assessment confirms that: 1. The proposed earthworks will ~~minimise~~ reduce or not increase the risk from slope instability to people and buildings, and 2. The proposed earthworks will reduce or not increase the risk of slope failure on adjacent sites.
EW-P8	Earthworks in the Slope Assessment Overlay Provide for earthworks in the Slope Assessment Overlay, where a geotechnical assessment confirms that: 1. The earthworks will minimise the risk from slope instability to people and buildings, and 2. The earthworks will not increase the risk of slope failure on adjacent sites.	Amend		Amend as follows: Earthworks in the Slope Assessment Overlay Provide for earthworks in the Slope Assessment Overlay, where a geotechnical assessment confirms that: 1. The earthworks will ~~minimise~~ reduce or not increase the risk from slope instability to people and buildings, and 2. The earthworks will reduce or not increase the risk of slope failure on adjacent sites.

EW-R6	Earthworks within Flood Hazard Overlays All Zones 1. Activity status: Permitted Where: a. The earthworks are located within the low hazard area of the Flood Hazard Overlay, or b. The earthworks are located within a medium hazard area, or high hazard area of the Flood Hazard Overlay and, the finished ground level upon the completion of the earthworks are the same as the natural ground level at the start of the earthworks. All Zones 2. Activity status: Restricted discretionary Where: a. Compliance is not achieved with EW-R6.1. Matters of discretion are restricted to: 1. The matters in EW-P6: Earthworks within Flood Hazard Overlays	Amend	Residual risk and risk of flooding to other properties needs to be managed.	Amend as follows: Earthworks within Flood Hazard Overlays All Zones 1. Activity status: Permitted Where: <u>a. The risk from flooding is not increased in adjacent properties; and either</u> b. ~~a.~~ The earthworks are located within the low hazard area of the Flood Hazard Overlay, or c. ~~b.~~ The earthworks are located within a medium hazard area, or high hazard area of the Flood Hazard Overlay and, the finished ground level upon the completion of the earthworks are the same as the natural ground level at the start of the earthworks.
EW-R7	Earthworks on community scale natural hazard mitigation structures	Support		Retain as written.
EW-R8	Earthworks for a building platform in the Slope Assessment Overlay	Support with amendments		Retain as written, with the recommended changes made to EW-P8.
EW-S1	Area of earthworks Matters of discretion for each zone 1. The stability of land or structure in or on the site of adjacent sites.	Support		Retain as written.
EW-S3	Existing slope angle, where outside the Slope Assessment Overlay	Support		Retain as written.
COASTAL ENVIRONMENT				
Coastal Hazard Overlay - Respective	High Tsunami – 1% AEP scenario inundation extent with 1m Sea Level Rise Medium	Support		Retain as written.

Hazard Ranking	Existing Coastal Inundation Extent with 1% AEP storm tide and wave setup Tsunami — 0.2% AEP scenario inundation extent with 1m Sea Level Rise Coastal Inundation Extent — 1.59m Relative Sea Level Rise and 1% AEP storm tide and wave setup Low Tsunami 0.1% AEP scenario inundation extent with 1m Sea Level Rise			
Coastal Hazards Overlays	Coastal Hazard Overlays — Means the mapped extent within the District Plan of the following Coastal Hazards: Tsunami Hazards, including the effects of climate change: - Low Tsunami Hazard Overlay (1:1,000 year tsunami scenario including 1m sea level rise) - Medium Tsunami Hazard Overlay (1:500 year tsunami scenario including 1m sea level rise) - High Tsunami Hazard Overlay (1:100 year tsunami scenario including 1m sea level rise) Coastal Inundation Hazard, including the effects of climate change and Vertical Land Movement - Medium Coastal Inundation Hazard Overlay (1.59m Relative Sea Level Rise, 1% Annual Exceedance Probability storm tide and wave setup (the average raised elevation of sea level at the shore caused by breaking waves) - High Coastal Inundation Hazard Overlay — Coastal inundation from a 1% Annual Exceedance Probability storm tide and wave setup based on current sea levels.	Amend	We note that between the Coastal Hazard Overlay – respective ranking and the 'overlays' section, both AEPs and 1:XXX are used, which may cause confusion.	Amend the Coastal Hazard Overlay – respective ranking and the 'overlays' section, so probabilities are communicated consistently. We recommend: - All probabilities are communicated as AEPs, *OR* - All probabilities are communicated in the format 1:XXX, *OR* - All probabilities are communicated as AEPs and in the format 1:XXX.

CE-O3	Risk from Coastal Hazards in the High Tsunami Hazard Overlay and High Coastal Inundation Hazard Overlay Subdivision, use and development within the High Tsunami Hazard Overlay and High Coastal Inundation Hazard Overlay reduce or avoid increasing the existing risk from coastal hazards to people, buildings and infrastructure.	Support		Retain as written.
CE-O4	Risk from Coastal Hazards in the Low Tsunami Hazard Overlay, Medium Tsunami Hazard Overlay, and Medium Coastal Inundation Hazard Overlay Subdivision, use and development within the Low Tsunami Hazard Overlay, Medium Tsunami Hazard Overlay, and Medium Coastal Inundation Hazard Overlay minimise the risk from natural hazards to people, buildings and infrastructure.	Amend	This provision will benefit from the term 'minimise' being included in the Definitions chapter. Risk should be as low as reasonably practicable.	Include the term 'minimise' in the Definitions chapter. Amend as follows: Subdivision, use and development within the Low Tsunami Hazard Overlay, Medium Tsunami Hazard Overlay, and Medium Coastal Inundation Hazard Overlay minimise the risk from natural hazards to people, buildings and infrastructure to as low as reasonably practicable.
CE-O5	Subdivision, use and development in the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone and Seaview Marina Zone and within Medium and High Hazard Areas of the Coastal Hazard Area Provide for subdivision, use and development in the General Industrial Zone and Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone while also ensuring development and use in this area minimises the risk from coastal hazards to people, buildings and infrastructure.	Amend	This provision will benefit from the term 'minimise' being included in the Definitions chapter. Risk should as low as reasonably practicable.	Include the term 'minimise' in the Definitions chapter. Amend as follows: Provide for subdivision, use and development in the General Industrial Zone and Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone while also ensuring development and use in this area minimises the risk from coastal hazards to people, buildings and infrastructure to as low as reasonably practicable.
CE-O6	Measures to reduce damage from sea level rise, coastal inundation and coastal erosion	Support		Retain as written.

	Green infrastructure is the primary method used to reduce damage from sea level rise, coastal inundation, and coastal erosion.			
CE-O7	Natural Systems and Features Natural Systems and features that reduce the susceptibility of people, buildings and infrastructure from damage from coastal hazards are created, retained or enhanced.	Support		Retain as written.
CE-P8	Risk-Based Approach Identify coastal hazards within the District Plan and take a risk-based approach to the management of subdivision, use and development based on: 1. The sensitivity of the activities to the impacts of natural hazards, 2. The hazard posed to people's lives and wellbeing, property and infrastructure, by considering the likelihood and consequences of natural hazard events, and 3. The operational need or functional need for some activities to locate in Coastal Hazard Overlays.	Support		Retain as written.
CE-P9	Levels of Risk Ensure, subdivision, use and development manages the coastal hazard risk to people, buildings and infrastructure by: 1. Avoiding buildings and activities in the High Tsunami Hazard Overlay and High Coastal Inundation Hazard Overlay (with the exception of the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone and Seaview Marina Zone) unless there is an operational need or functional need for the subdivision, use, or development to be located in this area and the subdivision, use, or development minimises the	Amend	Risk should be as low as reasonably practicable.	Amend as follows: Ensure, subdivision, use and development manages the coastal hazard risk to people, buildings and infrastructure by: 1. Avoiding buildings and activities in the High Tsunami Hazard Overlay and High Coastal Inundation Hazard Overlay (with the exception of the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone and Seaview Marina Zone) unless there is an operational need or functional need for the subdivision, use, or development to be

	existing risk from coastal hazards to people, buildings and infrastructure. 2. Within the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone and Seaview Marina Zone, recognise the regional importance of these areas, while ensuring that subdivision, use, or development located in these area minimises the risk from coastal hazards in the Medium and High Coastal Hazard Overlays to people, buildings, and infrastructure. 3. Requiring subdivision, use, or development to minimise the risk to development from coastal hazards to people, buildings and infrastructure in the Low and Medium Coastal Hazard Overlays; and 4. Enabling use, or development that have either low occupancy or low replacement value within the Coastal Hazard Overlays.			located in this area and the subdivision, use, or development minimises the existing risk from coastal hazards to people, buildings and infrastructure. 2. Within the General Industrial Zone and Heavy Industrial Zone in Seaview, Metropolitan Centre Zone in Petone and Seaview Marina Zone, recognise the regional importance of these areas, while ensuring that subdivision, use, or development located in these area minimises the risk from coastal hazards in the Medium and High Coastal Hazard Overlays to people, buildings, and infrastructure to as low as reasonably practicable. 3. Requiring subdivision, use, or development to minimise the risk to development from coastal hazards to people, buildings and infrastructure in the Low and Medium Coastal Hazard Overlays to as low as reasonably practicable; and 4. Enabling use, or development that have either low occupancy or low replacement value within the Coastal Hazard Overlays.
CE-P10	Natural systems and features Maintain and enhance natural systems and features where they will reduce the existing risk posed by coastal hazards to people, buildings and infrastructure	Support		Retain as written.
CE-P11	Coastal hazard mitigation works Enable coastal hazard mitigation works undertaken by central government, local government, and their agents within Coastal Hazard Overlays where these	Support		Retain as written.

	will decrease the existing risk to people, buildings and infrastructure.			
CE-P12	Coastal hazard mitigation works involving green infrastructure Encourage the use of green infrastructure and encourage Mātauranga Māori approaches when undertaking coastal hazard mitigation works by central government, local government, and their agents within Coastal Hazard Overlays.	Support		Retain as written.
CE-P13	Hard engineering coastal hazards mitigation works Only allow for hard engineering coastal hazards mitigation works for the reduction of the risk from coastal hazards where: 1. There is a demonstrable risk to life, private property or existing nationally or regionally significant infrastructure from the coastal hazard and it can be demonstrated that there is no practicable alternative to reduce this risk, 2. The construction of the hard engineering measures will not increase the risk from Coastal Hazards on adjacent properties that are not protected by the hard engineering measures, 3. It minimises the modification or alteration of natural features and systems in a way which ensures their function as natural defences is not compromised, 4. Hard engineering structures are designed to minimise adverse effects on the coastal environment, significant natural features and	Support	There is a risk that allowing hard protection works for private property will set an expectation for these works, when other options may be available at a community scale (i.e., beyond the individual property scale). We recommend the New Zealand Coastal Policy Statement 2010 (NZCPS) [16] is reviewed and applied where relevant, particularly Policy 25(e) to discourage hard protection structures and promote the use of alternatives to them, including natural defences; and Policy 27 - Strategies for protecting significant existing development from coastal hazard risk. We recommend that an additional clause is added to this policy, like those outlined on p. 70 of the NZCPS guidance (Policy 27(1)(d)), to make clear what the	Amend as follows: 6. Relevant matters to consider when assessing the environmental and social costs of permitting hard protection structures to protect private property include assessments of: a. the short- and long-term direct and indirect costs from the proposed hard protection structure, b. the impacts of sea-level rise and other climate change effects, and how long the proposed hard protection structure would be viable, c. the likelihood that more development (or development intensification) will be undertaken that relies on the hard protection structures over the long term; and d. the impacts on communities (including future costs and liabilities for councils) associated with:

[16] https://www.doc.govt.nz/Documents/conservation/marine-and-coastal/coastal-management/guidance/policy-24-to-27.pdf

	systems and any adverse effects are avoided, remedied or mitigated, and 5. It can be demonstrated that green infrastructure measures would not provide an appropriate level of protection in relation to the significance of the risk.		assessment matters should include. This is consistent with the approach taken for policies elsewhere in the Proposed Plan.	i. any future abandonment of hard protection structures (particularly where constructed on public land); and ii. assistance to (and compensation actions by) private property owners in the event of failure of the hard protection structures and damage to private property.
CE-P14	Additions to existing buildings and structures within the Coastal Hazard Overlays Additions to existing buildings and structures in the Coastal Hazard Overlays are managed as follows: 1. Allow for additions to existing buildings and structures for activities least sensitive to natural hazards in all areas of the Coastal Hazard Overlays. 2. Allow for additions to existing buildings and structures containing activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Low Tsunami Hazard Overlay. 3. Provide for additions to existing buildings and structures containing activities potentially sensitive to natural hazards or activities most sensitive to natural hazards in the Medium Coastal Hazard Overlays where: a. The addition is of limited size, b. The addition enables the continued use of the existing building, c. The addition incorporates measures that minimise the risk to people and buildings from coastal inundation from sea level rise, and d. There is the ability to access safe pedestrian evacuation routes for occupants of the building	Amend	It is unclear what a 'limited size' of an addition is, therefore we recommend that, like NH-R2, additions do not increase the Gross Floor Area by more than 25m^2. We support the intent of Policy 3d, 4d and 5b, as evacuation is a key mechanism to save lives in a tsunami. However, as detailed in our introduction, local source tsunami may arrive within 4-15 minutes, not within 30 minutes. We recommend Policy 3d is removed, as it sets an expectation that 30 minutes is enough time to evacuate, which is incorrect. Storm surge should be included in the renumbered 3d, as in addition to sea level rise, storm surge can also result in coastal inundation.	Amend as follows: 3. Provide for additions to existing buildings and structures containing activities potentially sensitive to natural hazards or activities most sensitive to natural hazards in the Medium Coastal Hazard Overlays where: a. The additions ~~is of limited size,~~ do not increase the Gross Floor Area by more than 25m^2, b. the additions are for a non-habitable room, ~~b~~c. The addition enables the continued use of the existing building, ~~c~~d. The addition incorporates measures that minimise the risk to people and buildings from coastal inundation from sea level rise and storm surge to as low as reasonably practicable, and ~~d. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.~~

	from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture. 4. Provide for additions to existing buildings and structures containing activities potentially sensitive to natural hazards in the High Coastal Hazard Overlays where: a. The addition enables the continued use of the existing building, b. The addition incorporates measures that reduce or do not increase the risk to people and buildings from coastal inundation from sea level rise, and c. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture. 5. Only allow for additions to existing buildings and structures containing activities most sensitive to natural hazards in the High Coastal Hazard Overlays where: a. The addition incorporates measures that reduce or do not increase the risk to people and buildings from the coastal hazard, and b. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.			4. Provide for additions to existing buildings and structures containing activities potentially sensitive to natural hazards in the High Coastal Hazard Overlays where: a. The additions do not increase the Gross Floor Area by more than 25m^2, b. the additions are for a non-habitable room, ~~a~~b. The addition enables the continued use of the existing building, ~~b~~c. The addition incorporates measures that reduce or do not increase the existing risk to people and buildings from coastal inundation from sea level rise and storm surge, and ~~cd. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.~~ 5. Only allow for additions to existing buildings and structures containing activities most sensitive to natural hazards in the High Coastal Hazard Overlays where: a. The additions do not increase the Gross Floor Area by more than 25m^2, b. the additions are for a non-habitable room, ~~a~~b. The addition incorporates measures that reduce or do not increase the existing risk to people and buildings from the coastal hazard, and

				~~b. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.~~
CE-P15	Subdivision, Use and Development within the Coastal Hazard Overlays Subdivision, use and development in the Coastal Hazard Overlay are managed as follows: 1. Allow for new buildings and structures, building platforms and the conversion of existing buildings for activities least sensitive to natural hazards in all areas of the Coastal Hazard Overlays. 2. Allow for the conversion of existing buildings containing activities potentially sensitive to natural hazards in all areas of the Coastal Hazard Overlays. 3. Allow for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards in the Low Tsunami Hazard Overlay. 4. Provide for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Medium and High Coastal Hazard Overlays when located in the General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone where: a. The building or structure does not exceed an appropriate gross floor area, b. The building or structure incorporates measures that minimise the risk to people and buildings from coastal hazards,		4a. an appropriate gross floor level should be included, to be consistent with other policies in the plan. 4b. Risk should be as low as reasonably practicable. We support the intent of Policy 4d, 5d, 6b, 8c and 9b(iii), as evacuation is a key mechanism to save lives in a tsunami. However, as detailed in our introduction, local source tsunami may arrive within 4-15 minutes, not within 30 minutes. We recommend Policy 4d is removed, as it sets an expectation that 30 minutes is enough time to evacuate, which is incorrect.	Amend as follows: 4. Provide for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards and activities most sensitive to natural hazards in the Medium and High Coastal Hazard Overlays when located in the General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone where: a. The building or structure does not exceed ~~an appropriate~~ 200m^2 gross floor area, b. The building or structure incorporates measures that minimise the risk to people and buildings from coastal hazards to as low as reasonably practicable, c. If the building is a Major Hazardous Facility, measures that minimise the risk from the release of hazardous goods from a coastal hazard are incorporated into the design of the building or the storage of the hazardous goods, ~~d. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture,~~ and

	c. If the building is a Major Hazardous Facility, measures that minimise the risk from the release of hazardous goods from a coastal hazard are incorporated into the design of the building or the storage of the hazardous goods, d. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture, and e. The impact of any local government or central government planned climate change adaptation methods on the hazard susceptibility of the development has been considered. 5. Provide for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards in the Medium Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that minimise the risk to people and buildings from the coastal hazard, and b. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture. 6. Only allow for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards in the High Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that reduce or do not increase the existing risk to people and buildings from the coastal hazard, and b. There is the ability to access safe pedestrian evacuation routes for occupants of the building			e. The impact of any local government or central government planned climate change adaptation methods on the hazard susceptibility of the development has been considered. 5. Provide for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards in the Medium Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that minimise the risk to people and buildings from the coastal hazard <u>to as low as reasonably practicable</u>, and ~~b. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.~~ 6. Only allow for new buildings and structures and building platforms containing activities potentially sensitive to natural hazards in the High Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that reduce or do not increase the existing risk to people and buildings from the coastal hazard, and ~~b. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture.~~

	from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture. 7. Provide for new buildings and structures, building platforms and the conversion of existing buildings containing activities most sensitive to natural hazards in the Low Tsunami Hazard Overlay where: a. The building will not be occupied by a sensitive activity with vulnerable residents or occupants; or more than three residential units on a site unless mitigation measures are incorporated into the development to minimise the risks to people and buildings from the coastal hazard. 8. Only allow for new buildings and structures, building platforms and the conversion of existing buildings containing activities most sensitive to natural hazards in the Medium Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that minimise the risk to people and buildings from the coastal hazard, b. The new development does not involve or require the removal or modification of a natural system or feature that provides protection to other properties from the natural hazard, and c. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture. 9. Avoid new buildings and structures, building platforms and the conversion of existing buildings containing activities most sensitive to natural hazards in the High Coastal Hazard Overlays in all zones (excluding the General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the			8. Only allow for new buildings and structures, building platforms and the conversion of existing buildings containing activities most sensitive to natural hazards in the Medium Coastal Hazard Overlays in all other zones where: a. The new building incorporates measures that minimise the risk to people and buildings from the coastal hazard <u>to as low as reasonably practicable</u>, b. The new development does not involve or require the removal or modification of a natural system or feature that provides protection to other properties from the natural hazard, and ~~c. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture~~. 9. Avoid new buildings and structures, building platforms and the conversion of existing buildings containing activities most sensitive to natural hazards in the High Coastal Hazard Overlays in all zones ~~(excluding the General Industrial Zone in Seaview, the Heavy Industrial Zone in Seaview, the Metropolitan Centre Zone in Petone and the Seaview Marina Zone)~~ unless: a. ~~For activities that have~~ <u>There is</u> an operational need and functional need to locate or occur within the High Coastal Hazard Overlays and

	Metropolitan Centre Zone in Petone and the Seaview Marina Zone) unless: a. For activities that have an operational need and functional need to locate or occur within the High Coastal Hazard Overlays and locating or occurring outside these areas is not a practicable option: i. Mitigation measures are incorporated to minimise the risk of damage to buildings and loss of life to people associated with the activity, or b. For any other activities: i. The new building, building platform or conversion of the building does not increase the risk to life, or ii. The new building, building platform or conversion of the building incorporates measures that minimise the risk to people and buildings from the coastal hazard, iii. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture, iv. The new building, or building platform does not involve or require the removal or modification of a natural system or feature that provides protection to other properties from the natural hazard.			locating or occurring outside these areas is not a practicable option~~:~~. and ~~i.~~b. Mitigation measures are incorporated to minimise the risk of damage to buildings and loss of life to people associated with the activity, ~~or~~ ~~b. For any other activities:~~ ~~i. The new building, building platform or conversion of the building does not increase the risk to life, or~~ ~~ii. The new building, building platform or conversion of the building incorporates measures that minimise the risk to people and buildings from the coastal hazard,~~ ~~iii. There is the ability to access safe pedestrian evacuation routes for occupants of the building from tsunami hazards, assuming the tsunami arrives within 30 minutes of fault rupture,~~ ~~iv. The new building, or building platform does not involve or require the removal or modification of a natural system or feature that provides protection to other properties from the natural hazard~~.

Appendix 2

Screenshot of Hutt City's map viewer showing the mapped hazard overlays

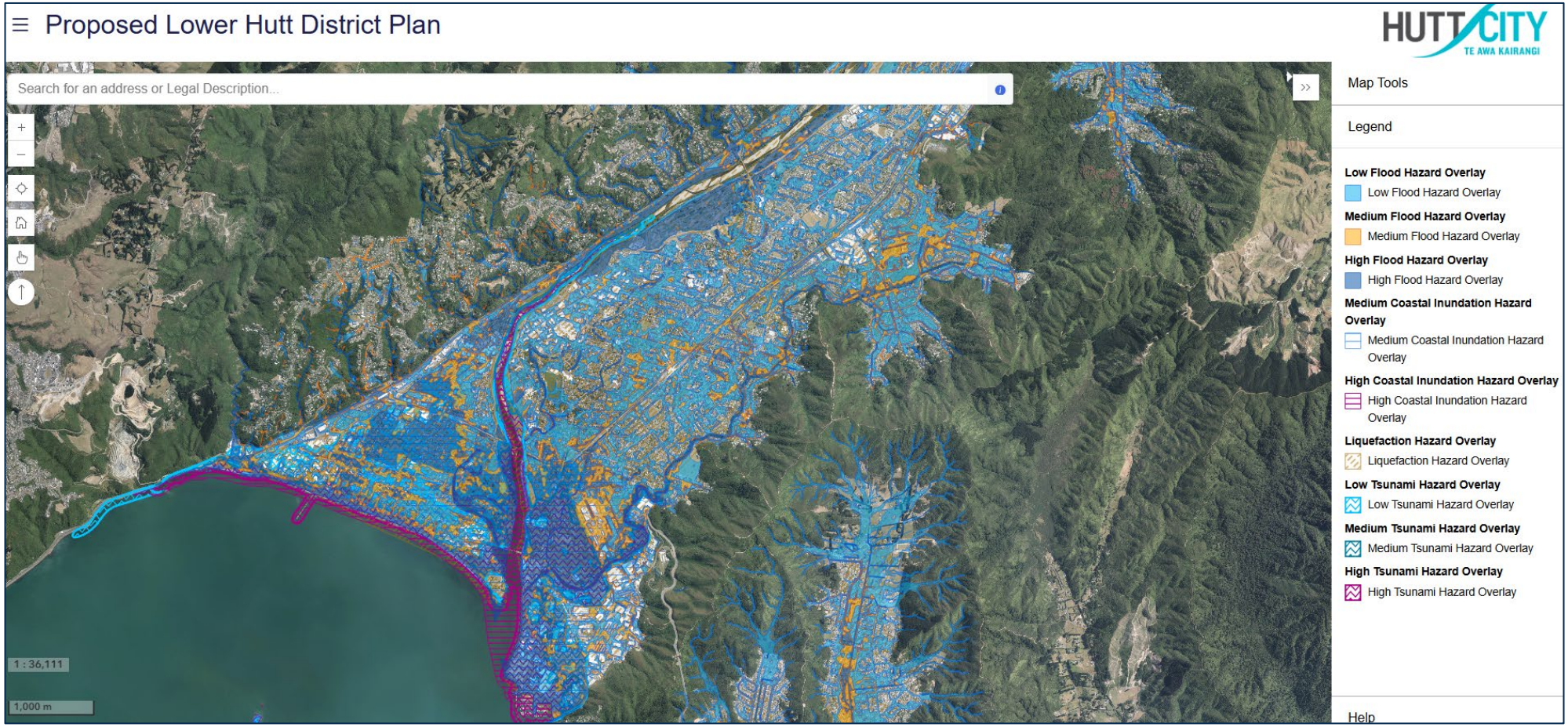

Figure 2. Screenshot of Hutt City's map viewer showing the mapped hazard overlays.

Appendix 3

NHC claims data since 1997 for Hutt City

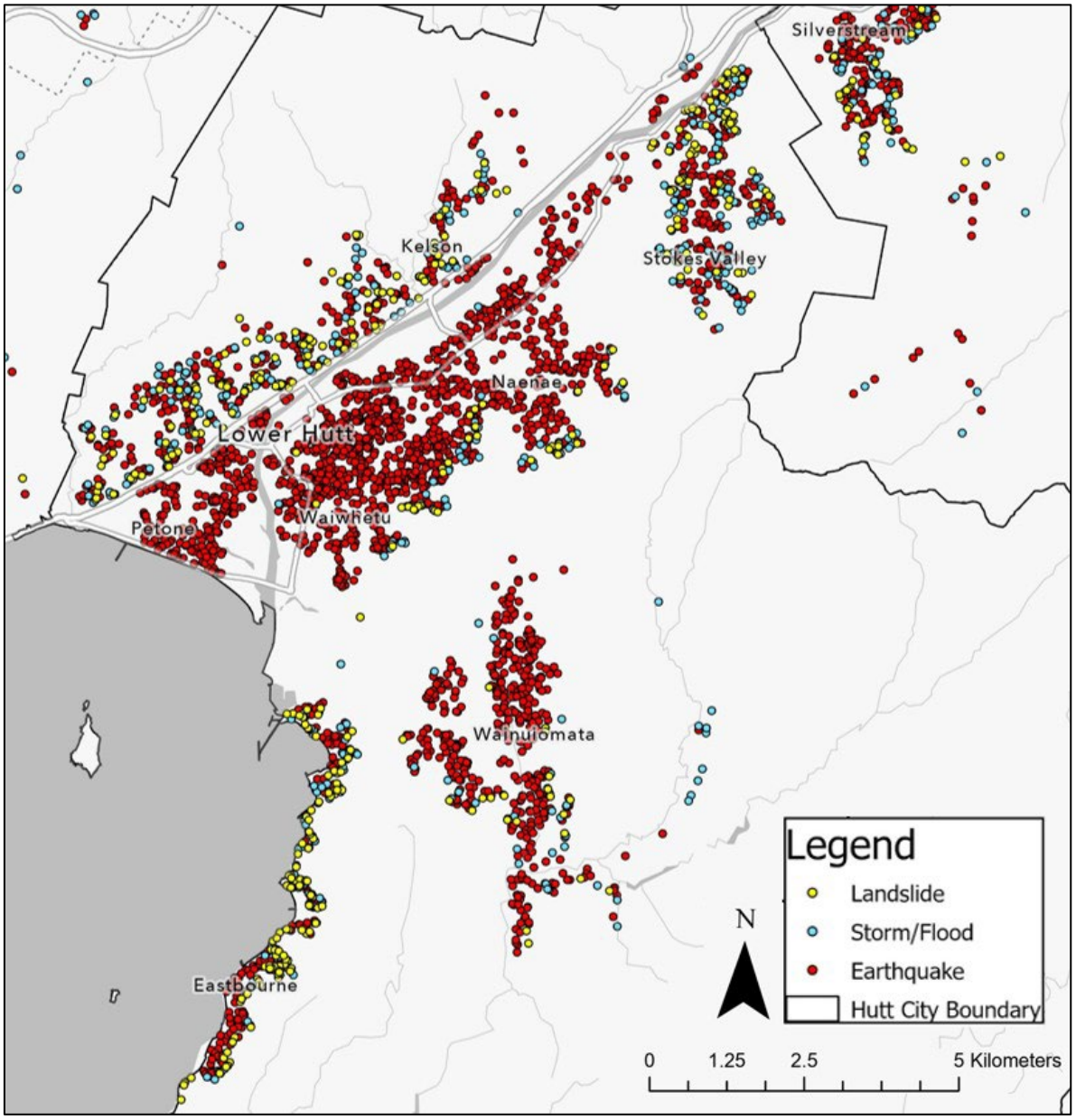

Figure 3. NHC claims data since 1997 for Hutt City.

Appendix 4

Suggested framework for Petone Natural Hazards Precinct

The following is a suggested policy and rule framework to manage cumulative hazards and risks in the proposed 'Petone Natural Hazards Precinct'. These are based on the approach to hazardous facilities in the Hazardous Substances chapter. Please note that this is an example of objectives and policies only, which would need further planning analysis to determine its appropriateness and associated rule framework.

Objectives

Management of cumulative natural hazard risks and residual risk
The cumulative risks from natural hazards on people and communities are managed to acceptable levels.
Avoid areas exposed to unacceptable residual risk from cumulative natural hazards.

Policies

Location of activities sensitive to natural hazards
Require activities sensitive to natural hazards to assess the combined consequences of the cumulative natural hazards and residual risks to: 1. Avoid new activities sensitive to cumulative natural hazard risks locating in areas exposed to unacceptable risks from the cumulative natural hazards.
Identify areas of unacceptable residual risk
Identify areas exposed to unacceptable residual risk from existing cumulative natural hazards.

Appendix 5

Modelled tsunami evacuation times for Petone

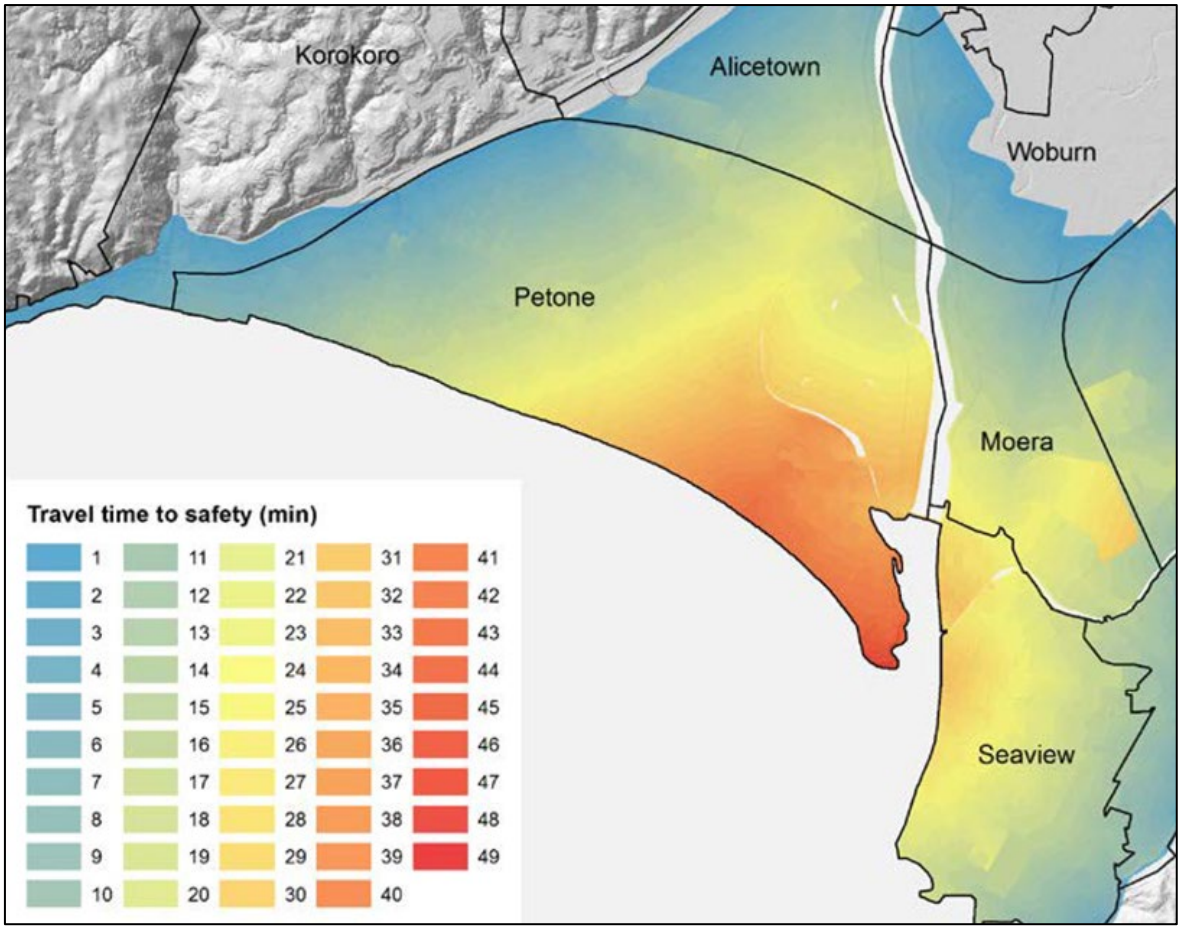

Figure 4. Modelled evacuation times[17] for parts of Lower Hutt to get to tsunami safe zones. The western side of the Hutt River mouth has over 40 minutes evacuation times.

[17] Lukovic B, Heron DW, Wang X, Power WL. 2017. Evacuation time estimates for local source tsunami for Wellington suburbs. Lower Hutt (NZ): GNS Science. 159 p. (GNS Science Report; 2017/05).

Appendix 6

Wildfire

According to a Fire and Emergency NZ evidence brief[18], New Zealand is likely to experience more severe fire weather and fire danger in central regions, including Lower Hutt. Lower Hutt would have a 68% increase in fire season length in 2071-2090.

In addition to this modelling, Greater Wellington Regional Council has produced wildfire hazard maps, which show the eastern and western hills have a 'high' severity rating – see Figure 5. Greater Wellington Regional Council has also analysed climate change scenarios based on RCP8.5, which show an increase in both hot and dry days[19].

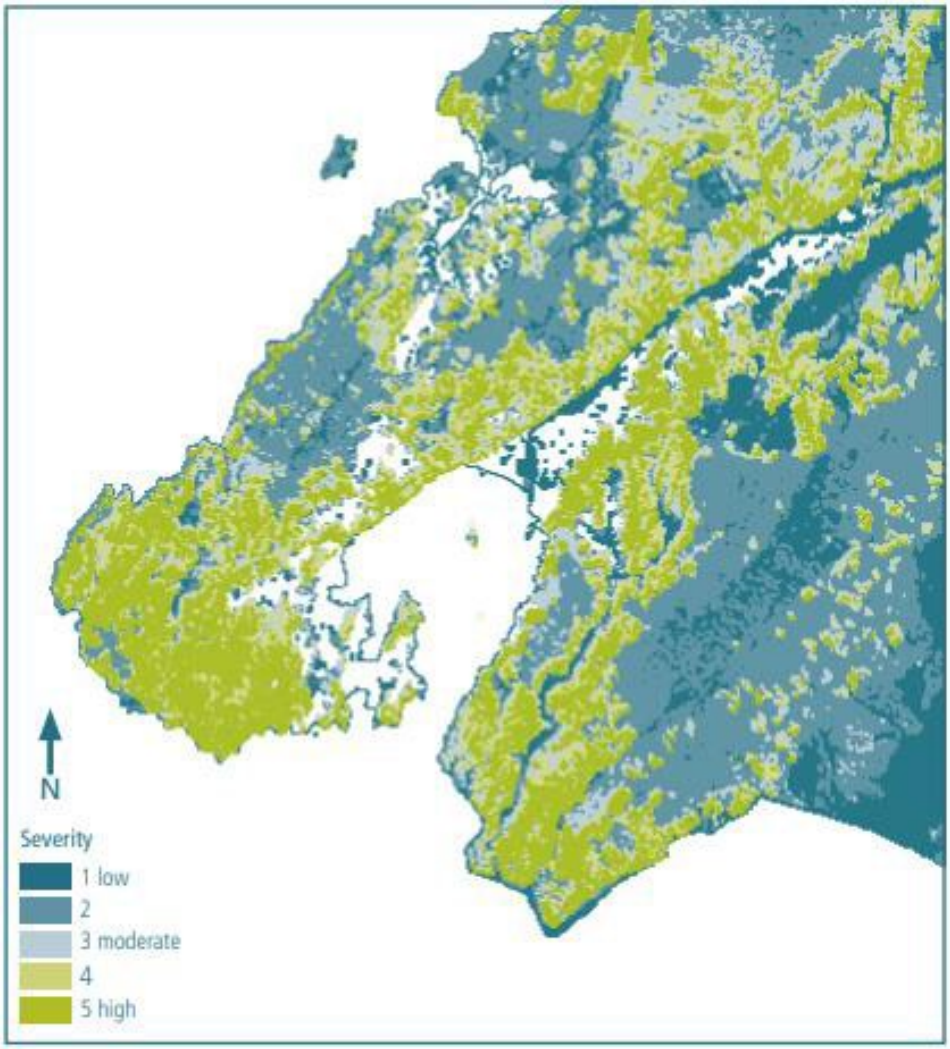

Figure 5. High wildfire hazard shown in the Hutt City hills[20].

[18] https://www.fireandemergency.nz/assets/Documents/Research-and-reports/Report-205-Climate-and-Wildfire-Risk-Evidence-Brief-2023.pdf
[19] https://mapping1.gw.govt.nz/GW/ClimateChange_StoryMap/#
[20] https://www.gw.govt.nz/assets/Documents/2009/07/wildfire_hazard.pdf