To the Planning Team, Tasman District Council

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Thank you for the opportunity to submit on Plan Change 85 Natural Hazards – Issues and Options (Issues and Options report hereafter)

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 to 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 creating for the future.

Tasman District is at risk from many natural hazards, including seismic hazards like liquefaction, earthquake shaking, and fault rupture, coastal hazards, flood, landslides, and wildfire. Climate change is predicted to increase sea level, and both the intensity of rainfall events and the intensity and length of drought in Tasman District in the next 20 years. This means that the risks from flooding, landslides, liquefaction, coastal hazards and wildfire are likely to increase in the near future.

NHC encourages territorial authorities to use risk-based frameworks in district plans to reduce risk and increase resilience to natural hazards. Updating the Tasman Regional Management Plan (TRMP) to include improved mapping and provisions to manage natural hazard risk is an opportunity to implement these risk-based frameworks and provide Tasman District with increased resilience to natural hazard risk now and in the future. In general, we agree with the identification of issues and desired outcomes in the Natural Hazards Issues and Options report, though we have made some suggested changes to increase the scope of risk reduction. We broadly agree with the options identified in the Issues and Options report as solutions to these issues, and have included suggested changes and additions.

Our submission and answers to the questions posed in the Natural Hazards Issues and Options Community Engagement Document can be found in Appendix 1.

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, Natural Hazards Commission Toka Tū Ake

Appendix 1 – Answers to questions posed in the Natural Hazards Issues and Options Community Engagement Document

Liquefaction

1. Have we correctly identified the issue for liquefaction? Are there other issues related to liquefaction that need to be addressed?

NHC considers that the Natural Hazards Issues and Options report correctly identifies the issue for liquefaction. Liquefaction was a significant cause of residential building damage during the 2010-2011 Canterbury earthquake sequence (figure 1) and accounted for a large number of NHC's high-value claims.

While risk to life from liquefaction is relatively low compared to building shaking and collapse, liquefaction can render homes which are otherwise resilient to earthquake shaking structurally unsound and unliveable. This contributes to higher displacement of people in the wake of an earthquake and higher costs and longer times for recovery.

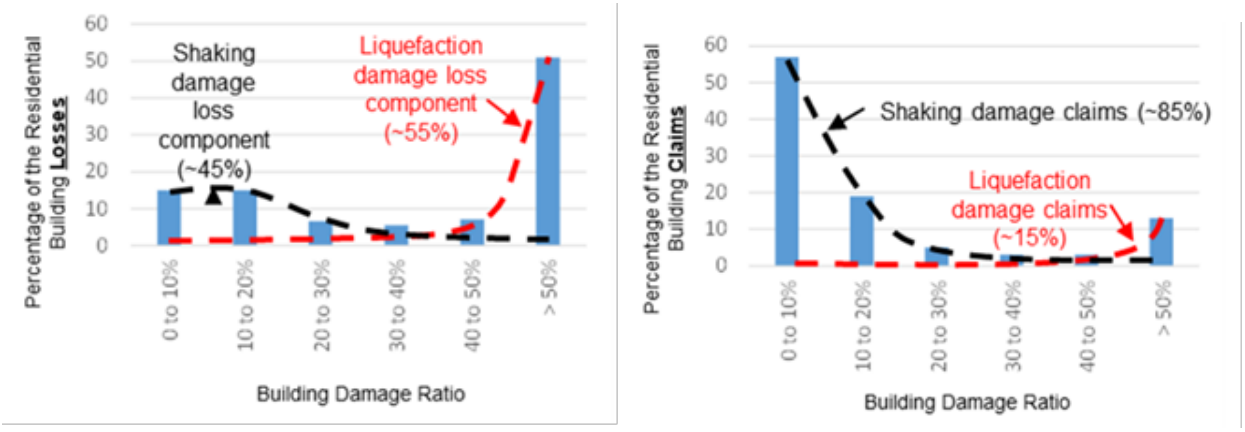

Figure 1: EQCover Claims showing the percentage of residential building claims (left) and percentage of residential building losses (right) for liquefaction and shaking damage during the 2010 to 2011 Canterbury Earthquake Sequence.

Liquefaction can also damage infrastructure, including roads, port infrastructure, below ground cables, and water and sewage infrastructure. Damage to critical infrastructure such as this can result in communities (which have been badly affected by liquefaction) to be left isolated, and without power, clean water or sewage facilities even if their houses are largely undamaged due to resilient foundations.

2. Do you agree with the outcome for liquefaction, or are there other outcomes we should achieve

We agree that the risks to people and property from liquefaction should be avoided or mitigated. We suggest that the wording of this outcome be changed to:

"The risks to people and property from liquefaction are avoided or mitigated to a tolerable level".

The level of liquefaction risk which is considered tolerable by the council should be determined by a risk tolerability assessment and defined within the TRMP.

NHC has developed a Risk Tolerance Methodology[1] that is designed to integrate a risk tolerance assessment into existing risk management approaches. This methodology could be used by the Council to develop a metric to determine what level of risk from liquefaction is considered tolerable.

3. Should we stick with the status quo, or include liquefaction provisions in the TRMP? Why?

a. *Status quo – continue to have the liquefaction map outside of the TRMP, manage liquefaction hazards for subdivision through the TRMP, and continue to manage liquefaction hazards for buildings, development and alterations through the Building Act; OR*
b. *Change to include a liquefaction map in the TRMP and manage liquefaction hazards for subdivision, building alterations, and development through policies and rules in the TRMP*

Of these options, NHC prefers Option B, and considers that liquefaction should be included in the TRMP as a mapped overlay, using policies and rules to manage subdivision, building alterations and development. NHC encourages the use of land use planning pathways to reduce and avoid risk from natural hazards to people and properties. We recommend that objectives, policies and rules within the TRMP to manage risk from liquefaction align with MfE and MBIE's guidance document *Planning and engineering guidance for potentially liquefaction-prone land*[2]. An example of risk-based land use planning to manage risks from liquefaction can be found in the Christchurch District Plan[3].

We do not support Option A. We strongly advocate for reassessing the status quo with regards to reducing risk from natural hazards. Increasing development and population density exposes more people and properties to liquefaction risk – just because there is similar development elsewhere doesn't mean the risk is necessarily acceptable. Risk from liquefaction also increases with soil saturation and water table fluctuations. Sea level rise and increased rainfall due to climate change may increase the susceptibility of soils to liquefaction in the near future. Once an area has been zoned for development it is difficult to 'down-zone' and retreat from if natural hazard risk increases, due to the implementation of existing use rights.

Regarding the extent and detail of mapping, NHC encourages use of the best available mapping and modelling for use in district plans. Ideally, the third option explored in the Issues and Options report but not raised in the Community Engagement Document is preferred, i.e. to increase the degree and scope of liquefaction susceptibility mapping to level B assessment for those areas which have been identified as susceptible to liquefaction in the BECA 2021 assessment. This would allow a greater degree of certainty where the risk of liquefaction is highest and may reduce the area of land where development needs to be controlled or avoided.

However, we understand that due to the nature of Tasman District's gravel soils there is a risk that mapping at a level B scale may not change the extent of the level A overlay. In addition, the financial burden of higher-level mapping may not be justifiable for the council given that the resulting change

[1] https://www.naturalhazards.govt.nz/resilience-and-research/reducing-risk/risk-tolerance-methodology/
[2] https://environment.govt.nz/publications/planning-and-engineering-guidance-for-potentially-liquefaction-prone-land-resource-management-act-and-building-act-aspects/
[3] https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/plans/christchurch-district-plan

could be minimal. As such we would also support the use of the current 2021 level A mapping provided by BECA.

Fault Rupture

1. Have we correctly identified the issue for fault rupture? Are there other issues that need to be addressed?

NHC considers that the Natural Hazards Issues and Options report correctly identifies the issue for fault rupture. Tasman District has a number of active faults and is located in an area of relatively high seismic hazard[4].

2. Do you agree with the outcome for fault rupture, or are there other outcomes we should achieve?

We suggest that the wording of this outcome be changed to:

"The risks to people and property from fault rupture are avoided ~~or mitigated~~".

While the locations of many active faults are known, the magnitude and extent of fault rupture and damage cannot be predicted before an earthquake. Surface rupture along a fault can result in displacement of the ground surface by several metres, both in a horizontally and vertically. Property which spans a fault is effectively pulled or twisted apart, causing severe damage. As there is no way to predict in what way or how severely the ground will deform as each earthquake rupture is unique, attempting to mitigate the effects of ground deformation is not practicable, and is more effectively addressed by the likes of fault avoidance zones.

NHC recommends setting policies that seek to avoid establishing buildings over these known active faults to protect people and property. MfE's guidance document *Planning for Development of Land on or Close to Active Faults* [5] recommends that residential buildings or structures which may contain vulnerable activities (e.g. schools, emergency services facilities, medical facilities) are located at least 20m away from the identified fault trace, and that should be reflected in the planning maps for fault rupture.

3. Should we stick with the status quo, or make changes to the fault rupture provisions in the TRMP? Why?

a. *Status quo – no changes to the FRRA overlay in the TRMP and continue to manage subdivision in the overlay through resource consents and building construction or alteration via permitted activity (provided conditions can be met); OR*
b. *Change to include updated FRRA overlay in the TRMP and manage the active fault rupture hazard through revised provisions in the TRMP; OR*

[4] https://www.gns.cri.nz/assets/Research-projects/NSHM/Regional-Results/Nelso-NSHMregionalFS_2022_V1_NelsonTasman.pdf
[5] https://environment.govt.nz/publications/planning-for-development-of-land-on-or-close-to-active-faults-a-guideline-to-assist-resource-management-planners-in-new-zealand/

c. *In addition to Option b, should we also include an overlay for faults that do not exhibit ground surface deformation and/or faults with long recurrence intervals*.

NHC prefers Option C and considers that the Fault Rupture Risk Area overlay should be updated with new technical mapping of key faults in the district from BECA. Provisions are included in the TRMP to control subdivision, use and development within these areas, which should be aligned with the guidance in MfE's *Planning for Development of Land on or Close to Active Faults*. The permitted activity pathway whereby a proposal is permitted if a geotechnical report is prepared and the proposal meets the recommendations should be removed, as we do not consider it appropriate for any development within active fault overlays to have permitted activity status.

We also consider it appropriate to extend the overlay or include a separate overlay containing known but buried or low-return period faults, with associated provisions also included in the TRMP. The probability of these faults rupturing to the surface is low as they have an estimated return period class of V or VI (>10,000 years)[6], and as such it may not be appropriate to restrict subdivision, use and development within these overlays as per MfE's Active Fault Guidelines. However, we consider it in the interest of public awareness to make the locations of all active and potentially active faults in the district available within the TRMP maps. This enables residents to make more informed decisions about their homes and properties.

We also support Option B if the cost of implementing Option C is prohibitive. We strongly oppose continuing with the status quo (Option A), as just because there is similar development elsewhere doesn't mean the risk is acceptable. As population increases in the Tasman District, we consider it important to implement robust, risk-based land use planning to prevent development expanding into areas at risk from fault rupture.

We consider that a risk-based approach should be taken for control of subdivision, use and development within overlays in accordance with MfE Active Fault Guidelines, and that residential buildings should be avoided within the mapped overlays of faults with recurrence intervals of less than 3500 years.

Slope Instability and Debris Run-Out

1. Have we correctly identified the issue for slope instability and debris run-out? Are the other issues that need to be addressed?

NHC considers that the Natural Hazards Issues and Options report correctly identifies the issue for slope instability and debris run-out.

Landslides are one of the most common natural hazards in New Zealand due to our steep topography, relatively high rainfall and seismic instability, and are likely to increase in frequency and consequence with climate change. Landslides make up the largest proportion of NHC's day to day claims outside of large earthquake events; over the last 160 years landslides have caused up to 1800 fatalities, more

[6] https://data.gns.cri.nz/af/

than any other natural hazard including the Canterbury Earthquake sequence, and cost the country an estimated $250 - $300 million a year[7].

2. Do you agree with the outcome for slope instability and debris run-out, or are there other outcomes we should achieve?

We agree with the outcome that slope instability and associated debris run-out hazard is identified in susceptible areas of the district, and the risks to people and property associated with these hazards are avoided or mitigated. We suggest that the wording is changed to:

"Slope instability and associated debris run-out hazard is identified in susceptible areas of the district and the risks to people and property associated with these hazards, are avoided or mitigated to a tolerable level".

The level of risk from slope instability and debris run-out which is considered tolerable by the council should be determined by a risk tolerability assessment and defined within the TRMP.

NHC has developed a Risk Tolerance Methodology that is designed to integrate a risk tolerance assessment into existing risk management approaches. This methodology could be used by the Council to develop a metric to determine what level of risk from slope instability and debris run-out is considered tolerable.

3. Should we stick with the status quo, or make changes to the slope instability provisions in the TRMP? Why?

a. *Status quo – no changes to the SIRA overlay in the TRMP and continue to manage subdivision in the overlay areas through resource consents and land use via a permitted activity (provided conditions can be met); OR*
b. *Change to include updated SIRA overlay in the TRMP and manage slope instability hazard through updated policies and rules in the TRMP; OR*
c. *In addition to Option b, should we also include further areas of the Separation Point Granite geology in the overlays even though they are located in rural or backcountry areas where development is unlikely?*

NHC prefers Option C. Even though rural or backcountry areas of the Separation Point Granite may not be likely areas for development soon, we consider that provision of more detailed natural hazard information within the TRPM is important from a public awareness standpoint, and empowers landowners to make more informed decisions. There is also the possibility that further in the future these areas will be considered as potential areas for development, and identifying areas of high slope instability hazard now will enable future decision makers to avoid development in them.

As such, we do not support maintaining the status quo (Option A). Just because there is similar development elsewhere doesn't mean the risk is acceptable. Given the additional cost of this additional mapping for limited immediate and near future risk reduction in areas likely to be developed, we also support Option B.

[7] https://landslides.nz/nz-landslides-database/

NHC supports risk-based land use planning to reduce risk from slope instability and debris run-out in accordance with GNS Science's *Landslide Planning Guidance*[8]. Activities most vulnerable to the effects of slope instability and debris run-out should be avoided in areas where the hazard is greatest, and the hazard should be mitigated in areas of lower risk. Example of risk-based land use planning to manage risks from slope instability can be found in the Christchurch District Plan[9], and the Proposed Plan Change 29 – Housing and Hazards of the Nelson Regional Management Plan[10].

Coastal Flooding and Erosion

1. Have we correctly identified the issues for coastal flooding and erosion? Are there other issues that need to be addressed?

NHC considers that the Issues and Options report has correctly identified the issues for coastal flooding and erosion. Tasman District has a number of coastal settlements which are at risk from hazards like storm surges, coastal erosion and tsunami. With the effects of climate change and sea level rise the risk to these communities will increase in the near future, and the TRMP should be updated with policies and rules to control development in areas at risk at present and in the future and give effect to the New Zealand Coastal Policy Statement (NZCPS).

We agree with the Issues and Options report that a secondary issue exists in the long-term sustainability and residual risk posed by hard engineered coastal protection structures. NHC recommends implementation of hard engineered coastal protection solutions only in cases of necessity for significant existing development, for example infrastructure which has a functional need to exist in areas at risk from coastal hazards, in line with Policy 27 of the NZCPS. For residential and commercial activities and infrastructure that does not need to be located within coastal zones, we recommend avoiding development in areas at high risk from coastal hazards in line with the NZCPS and MfE's guidance document on *Coastal Hazards and Climate Change*[11], both now and projected into the future, accounting for sea level rise as detailed in MfE's guidance and the *National Adaptation Plan (NAP)*[12]. While avoidance and retreat from coastal hazards is the only way of reducing risk from natural hazards, where short-term mitigation of coastal hazard is warranted, we consider nature based solutions like dune and wetland restoration as best practice for resilience, as detailed in the NZCPS.

We disagree with the decision to leave tsunami hazards out of the natural hazards chapter. Tasman District is at risk from tsunami originating from the Hikurangi Subduction Zone, South America and earthquakes on local offshore faults[13]. Some coastal settlements in the district like Motueka and Mapua are almost entirely located within the tsunami evacuation zones, with a high proportion of buildings in the orange zone (Figure 2). While damage from tsunami is difficult to mitigate against,

[8] de Vilder SJ, Kelly SD, Buxton RB, Allan S, Glassey PJ. 2024. Landslide planning guidance: reducing landslide risk through land-use planning. Lower Hutt (NZ): GNS Science. 77 p. (GNS Science miscellaneous series; 144). https://doi.org/10.21420/R2X8-FJ49
[9] https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/plans/christchurch-district-plan
[10] https://shape.nelson.govt.nz/plan-change-29
[11] https://environment.govt.nz/publications/coastal-hazards-and-climate-change-guidance/
[12] https://environment.govt.nz/publications/aotearoa-new-zealands-first-national-adaptation-plan/
[13] Power, W.L., Burbidge, D.R., Gusman, A.R. 2022. The 2021 update to New Zealand's National Tsunami Hazard Model. Lower Hutt (NZ): GNS Science. 63 p. (GNS Science Report, 2022/06).

including tsunami hazard maps within the TRMP and incorporating risk based land use planning can be used to minimise damage and loss of life from tsunami in several ways:

- Avoiding development of vulnerable activities and activities which may be difficult to evacuate like medical centres, residential care homes, schools and daycares within tsunami evacuation zones, and avoiding residential development within areas that are high risk from tsunami,
- Avoiding development of emergency response facilities and facilities that will need operational functionality in the wake of a natural hazard event within tsunami hazard zones,
- Requiring that development within tsunami hazard zones enables and facilitates swift evacuation to safe ground in the event of a 'long or strong' earthquake.

Consideration of the potential effects of tsunami and ways to avoid or mitigate them is required by Policy 25 (f) in the NZCPS. Examples of risk-based land use planning to minimise risk from tsunami can be found in the proposed 2024 Wellington City District Plan[14], and the 2024 Porirua District Plan[15].

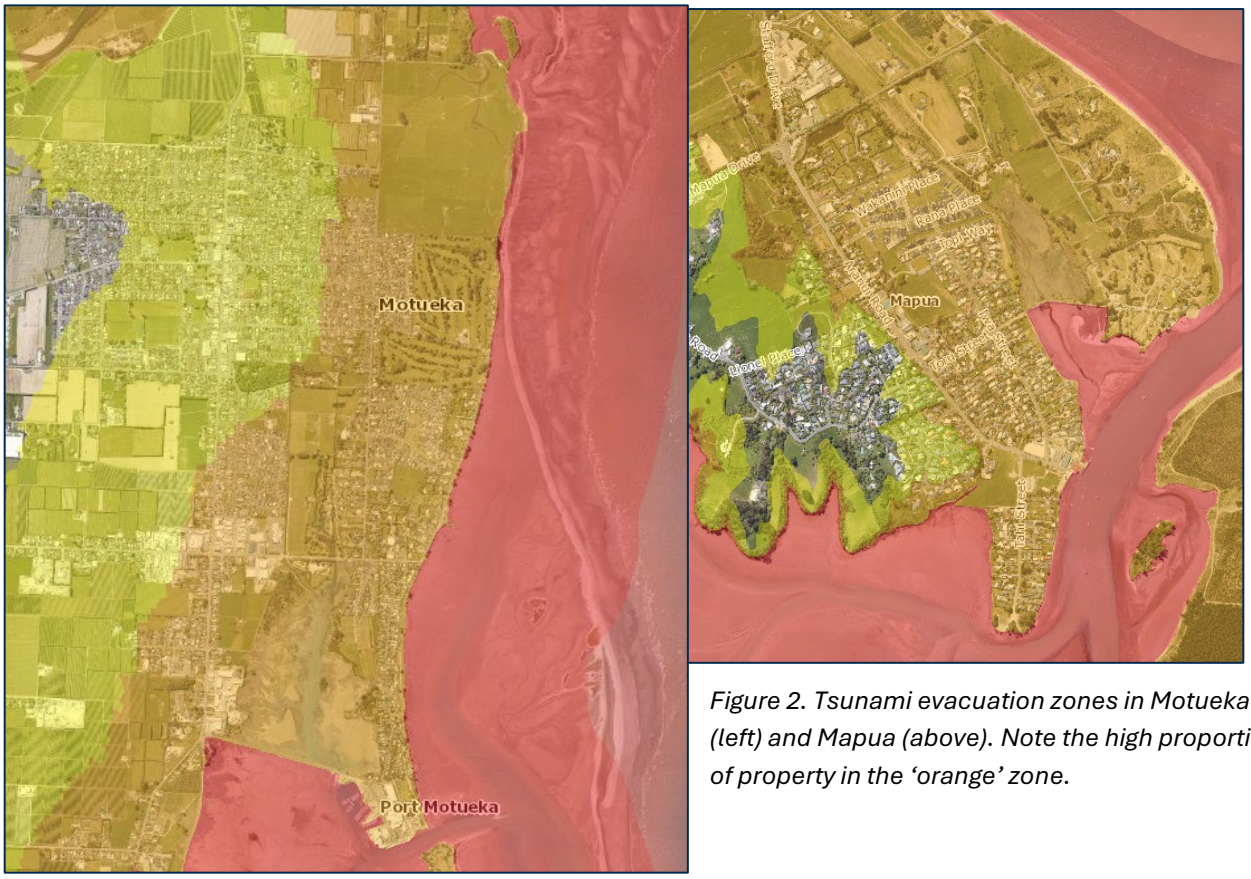

Figure 2. Tsunami evacuation zones in Motueka (left) and Mapua (above). Note the high proportion of property in the 'orange' zone.

2. Do you agree with the outcome for coastal flooding and erosion, or are there other outcomes we should achieve?

[14] https://eplan.wellington.govt.nz/proposed/
[15] https://eplan.poriruacity.govt.nz/districtplan/property/0/0/175?_fp=true

We agree with the outcome that the risks to people, property and the environment associated with coastal inundation and coastal erosion hazards, including the effects of climate change and sea level rise, are avoided or mitigated in low-lying coastal areas of the district. We suggest that tsunami hazard is included in this definition, and that the wording is changed to:

"The risks to people, property and the environment associated with tsunami, coastal inundation and coastal erosion hazards, including the effects of climate change and sea level rise, are avoided or mitigated to a tolerable level in low-lying coastal areas of the district."

The level of risk from these hazards which is considered tolerable by the council should be determined by a risk tolerability assessment and defined within the TRMP.

NHC has developed a Risk Tolerance Methodology that is designed to integrate a risk tolerance assessment into existing risk management approaches. This methodology could be used by the Council to develop a metric to determine the level of risk from coastal hazards that is tolerable.

3. Should we stick with the status quo, or make changes to the coastal flooding and erosion provisions in the TRMP? Why?

a. *Status quo – continue with restrictions in the Māpua/Ruby Bay Coastal Risk Area and resource consent requirements for new builds within the Coastal Environment Area. Building extensions, alterations, and coastal protection structures remain permitted (criteria dependent) above MHWS, while restrictions and resource consents apply below MHWS; OR*
b. *Change to include a coastal hazard overlay(s) for additional areas in the TRMP and make new development and alterations more resilient to coastal hazards. This could be achieved by having policies and rules that restrict land uses and activities, including coastal protection structures, in areas across the District exposed to coastal hazards. Review the Māpua/Ruby Bay Coastal Risk Area and associated provisions, and update zoning of undeveloped land to ensure land use is resilient to coastal hazards.*

NHC supports Option B. We encourage the use of up to date coastal hazard maps embedded within district plans and tied to risk-based policies and rules to control or avoid development in areas at risk from coastal hazards. We consider that Option B best gives effect to the NZCPS Objective 5 and Policies 24-27 if hazard maps and provisions for reducing the risk from tsunami are included. We do not support the continuation of the status quo risk – just because there is similar development elsewhere doesn't mean the risk is acceptable.

We recommend policies and rules that avoid activities that are sensitive to the effects of coastal hazards, for example residential development, emergency facilities, and schools in areas which are or will be in future at high risk from coastal hazards.

An example of risk-based land use planning to minimise risk from coastal hazards including tsunami can be found in the proposed 2024 Wellington City District Plan[16].

[16] https://eplan.wellington.govt.nz/proposed/

Flooding and Overland Flow Paths

1. Have we correctly identified the issues for flooding and overland flow paths? Are there other issues that need to be addressed?

NHC considers that the Issues and Options report has correctly identified the issues for flooding and overland flow paths.

Flooding is a common natural hazard in New Zealand, and flood frequency and severity is likely to increase with climate change in Tasman District, due to increasing severity of rainfall and increased likelihood of ex-tropical cyclone impact[17].

As seen in the North Island Severe Weather Event in February 2023, floods can be devastating events which result in loss of life and severe damage to land and property. Overland flow paths and stream corridors, where both the depth and velocity of flow is predicted to be high, should be considered high hazard areas. The flow of floodwater through overland flow paths and stream corridors is not only immediately hazardous to life and property, allowing these to be blocked by development can impede the natural dissipation of floodwaters and increase the severity and duration of a flood.

2. Do you agree with the outcome for flooding and overland flow paths, or are there other outcomes we should achieve?

We agree with the outcome that flooding and overland flow path hazards are identified, and the risks to people and property associated with these hazards are avoided or mitigated. We suggest that the wording is changed to:

"Flooding and overland flow path hazards are identified, and the risks to people and property associated with these hazards are avoided or mitigated to a tolerable level".

The level of risk from slope instability and debris run-out, which is considered tolerable by the council, should be determined by a risk tolerability assessment and defined within the TRMP.

NHC has developed a Risk Tolerance Methodology that is designed to integrate a risk tolerance assessment into existing risk management approaches. This methodology could be used by the Council to develop a metric to determine what level of risk from flooding and overland flow paths is considered tolerable.

3. Should we stick with the status quo, or make changes to the flooding provisions in the TRMP? Why?

a. *Status quo – continue managing flood risk on a case-by-case basis, where the provisions enable the flood hazard to be considered for most activities. Flood hazard maps (with one exception) sit outside the TRMP; OR*
b. *Change to include flood hazard overlays in the TRMP and make new development, alterations, and activities more resilient to flood and overland flow hazards by having provisions that restrict activities in areas susceptible to flood hazards across the District.*

[17] https://niwa.co.nz/climate-change-adaptation-toolbox/projected-regional-climate-change-hazards/regional-projections-zone-4

NHC considers Option B to be preferable. Embedding flood hazard maps within the TRMP enables the policies and rules which restrict activities within these overlays to be more robust and reduces the possibility that rules are applied inconsistently. If flood hazard maps are located outside of the TRMP, issues of natural justice may arise if the maps are updated or changed without the due process of a plan change and this impacts peoples' rights to develop their land.

We do not support the continuation of the status quo risk – just because there is similar development elsewhere doesn't mean the risk is acceptable. We recommend updating the flood hazard maps using the best currently available modelling and information, and distinguishing between high, medium and low hazard flood areas with different overlays. Activities which have different levels of vulnerability to flood hazard can then be restricted to a greater or lesser degree depending on the level of hazard. For example, it may be appropriate to allow residential activities in an area which is modelled to have low-depth, low-flow inundation in a flood event if there are suitable mitigation measures in place like a level of freeboard above the modelled flood level. Residential development in areas of high hazard, like overland flow paths or areas of very deep inundation, would not be appropriate.

In line with other territorial authorities in New Zealand, we recommend that the design flood used for planning purposes is at least 1% AEP flood, accounting for the effects of climate change and sea level rise in Tasman District. We recommend the use of flood hazard vulnerability curves from the Australian Institute of Disaster Resilience to determine the levels of hazard posed (Figure 3)[18].

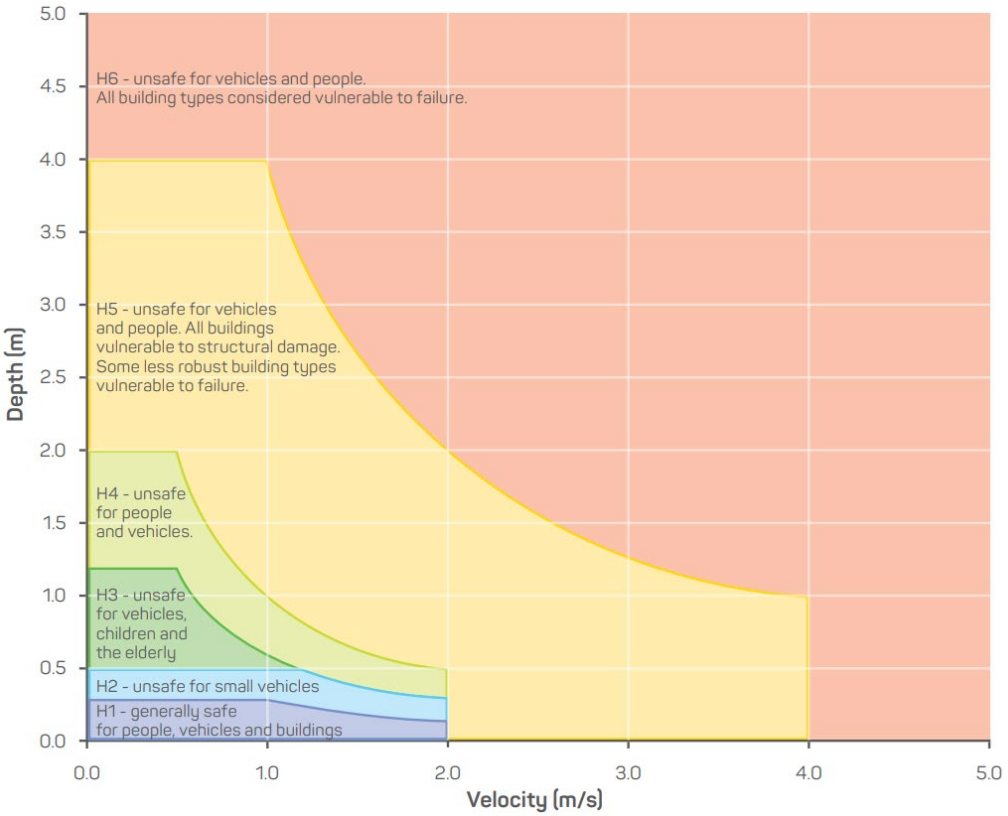

Figure 3. Flood hazard vulnerability curves from the Australian Institute for Disaster Resilience[15].

[18] https://knowledge.aidr.org.au/media/3518/adr-guideline-7-3.pdf

Wildfire

1. Have we correctly identified the issues for wildfire? Are there other issues that need to be addressed?

NHC considers that the Issues and Options report has correctly identified the issues for wildfire.

Instances of wildfires in New Zealand have almost doubled in the last 30 years, and evidence shows that climate change will likely increase the weather conditions that promote dangerous wildfires, particularly in plantation forests[19]. Tasman District is predicted to have an increasing average temperatures and increased periods of drought by 2040[20] which will likely increase the risk of wildfire in the region.

2. Do you agree with the outcome for wildfire, or are there other outcomes we should achieve?

NHC agree with the outcome that the risk to people, property and the environment from wildfire should be managed, but we request that the wording is changed to be in line with the outcomes for other hazards, i.e., that the risk should be avoided and mitigated. We suggest the following wording:

"The risks to people, property and the environment from wildfire are ~~managed~~ avoided or mitigated to a tolerable level".

3. Should we stick with the status quo, or make changes to the wildfire provisions in the TRMP? Why?

a. *Status quo – continue requiring setbacks for dwellings from commercial forestry and vegetation clearance provisions for the St Arnaud Landscape Priority Area. In non-reticulated areas continue to require a water supply for firefighting purposes; OR*
b. *Change to strengthen setback provisions with an approach to minimise wildfire risk in terms of location of buildings to existing vegetation and placement of new vegetation near existing buildings. Clarify the requirements for servicing new developments with water for building firefighting and wildfires.*

NHC prefers Option B. We support strengthening setback provisions in areas at risk from wildfire. We consider it important that provisions managing the risk from wildfire in the TRMP are consistent and any requirements for developments are clearly identified within the plan. We do not support the continuation of the status quo risk – just because there is similar development elsewhere doesn't mean the risk is acceptable.

[19] https://www.fireandemergency.nz/assets/Documents/Research-and-reports/Report-205-Climate-and-Wildfire-Risk-Evidence-Brief-2023.pdf
[20] https://niwa.co.nz/climate-change-adaptation-toolbox/projected-regional-climate-change-hazards/regional-projections-zone-4