

**Tasman Resource Management Plan  
Efficiency and Effectiveness Evaluation**

## **Chapter 13: Natural Hazards**

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**Lead author:** Diana Worthy

**Reviewed by:** Maxine Day

## Acronyms

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AEP	Annual Exceedance Probability, e.g. 1% change of flood occurring in any year
AMP	Activity Management Plan
CDEM	Civil Defence Emergency Management
CEA	Coastal Environment Area
EPC	Environment & Planning Committee
FDS	Future Development Strategy
FENZ	Fire and Emergency New Zealand
FRRA	Fault Rupture Risk Area
GIS	Geographic Information System
LiDAR	Light Detection and Ranging - technology that provides detailed contour data
LIM	Land Information Memorandum
MagiQ-BI/NCS	Two related Council information systems - used to manage data, including for resource consents and service requests, including complaints.
MBIE	Ministry of Building, Innovation and Employment
MfE	Ministry for the Environment
NTLDM	Nelson Tasman Land Development Manual
NZCPS	New Zealand Coastal Policy Statement
PIM	Project Information Memorandum
PC# or C#	Plan Change #/Change #, e.g. Change 3
Q#	A 1-in-# chance of occurring in any given year, e.g. flood, e.g. Q100
RMA	Resource Management Act
SIRA	Slope Instability Risk Area
TRMP	Tasman Resource Management Plan
V#	(Plan) Variation, e.g. Variation 1

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## Executive Summary

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This report reviews the efficiency and effectiveness of the natural hazards provisions in the Tasman Resource Management Plan. The natural hazards objectives and policies are primarily located in Chapter 13 Natural Hazards. However, there are also a number of policies within other chapters of the plan which address natural hazards considerations and contribute to wider plan objectives. This report should be read in conjunction with the assessments for Chapters 5, 6, 7, 8, 11, and 12.

The overall intent of the TRMP's natural hazards framework is to manage areas subject to natural hazards and to ensure that development is avoided or mitigated depending on the degree of risk. The TRMP's natural hazards policies fall into four categories, namely:

- general natural hazards policies
- policies addressing specific natural hazard topics e.g. inundation, river or coastal erosion, fault rupture, slope instability
- settlement-based policies addressing specific natural hazard issues
- policies that address a number of planning issues with natural hazards being one criteria.

The overall framework for management of natural hazards (primarily located in Chapter 13) has largely achieved the outcomes sought in the objectives and policies. There is a broad and thorough approach to hazard management across the TRMP, albeit repetitive in some policies. In addition, the rules have a moderate-strong relationship to the policies.

Some key weaknesses with the natural hazard provisions are:

1. Inefficient and ineffective rules where they rely on outdated or incomplete spatial representation of known hazards, which are either mapped as overlays in the plan and/or inform zone or specific rule provisions (e.g. slope instability risk, fault rupture risk, inundation).
2. Lack of public access to district-wide hazard information.
3. Inconsistent requirements for the management of similar hazard risks at the coastal margin, e.g. coastal risk areas; sea walls.

Natural hazard management is also heavily influenced by the Building Act 2004 – which provides a pathway for management of natural hazards in relation to new buildings; and Land Information Memoranda and Project Information Memoranda that assists in property purchases and resource/building consent processes.

The TRMP's rolling review of plan changes has addressed deficiencies in plan provisions where new hazards information has become available, for example freshwater inundation risk at Brightwater and Wakefield, coastal hazards at Mapua/Ruby Bay, and fault rupture risk areas associated with the Waimea Flaxmore Fault System. These plan changes have provided clear framework for management of these natural hazards issues.

The TRMP's suite of 'scattered' natural hazard policies may benefit from consolidating natural hazard objectives and policies into one chapter. An overarching approach to hazard management will reduce duplication and enable issues to be comprehensively addressed. This is likely to assist with efficient implementation of the rules by enabling a clearer relationship between the policies and rules.

Since the plan was first proposed, there has been a number of changes in respect of the relevant legislation, national guidance, and council work programmes focusing on climate change and natural hazards. More recent changes includes changes to the RMA Part 2 provisions, New Zealand Coastal Policy Statement, MfE's Coastal Hazards and Climate Change Guidance (2017) and existing council

work programmes including the implementation of the Future Development Strategy, land disturbance review, and the “Coastal Management Project - Responding to Climate Change”. These will need to be considered and implemented through the TRMP review.

The “Coastal Management Project - Responding to Climate Change”, in particular, will pick up many of the recommendations from this report relating to climate change impacts along the coast and enable a District-wide approach to be considered.

## Recommendations

The following recommendations provide a summarised assessment of the effectiveness and efficiency of the natural hazard plan provisions. It considers if there is a need for change with the objective and policy framework and are intended to inform the review of the TRMP. Refer to the body of this report for full analysis and detailed information from which these recommendations are drawn.

**Table 1: Recommendations**

Topic	Recommendations
<b>Inundation and Coastal Hazards Policies</b>	
<b>6.2.3.9</b> To avoid inappropriate further expansion of the existing Takaka urban area, where this land is found to be affected by flood risk.	Review – retain the intent of the policy as part of an overarching and consolidated suite natural hazard policies.
<b>6.2.3.10</b> To avoid or mitigate the expansion of the urban area in Richmond West Development Area on land subject to sea level rise and flooding by:...	Review – retain intent, but to be reviewed as part of the outcomes of the Coastal Management Project.
<b>6.4.3.4</b> In the Takaka-Eastern Golden Bay Area, to ensure that:... (d) new residential settlement in low-lying coastal areas at risk from coastal hazards are avoided;...	Review – retain intent, but to be reviewed as part of the outcomes of the Coastal Management Project.
<b>6.9.3.2 (Motueka)</b> To provide for the extension of residential development east of Woodlands Avenue, south of Fearon Street, south of Parker Street on either side of Wilkie Street and north of Courtney Street East, subject to minimum floor height requirements and adequate stormwater disposal.	Remove – unnecessary policy as area now largely developed and will be superseded as part of the outcomes of the Coastal Management Project. Minimum floor levels are addressed through the Building Act 2004 and stormwater disposal is being addressed strategically through the Stormwater AMP and at the time of resource consent.
<b>6.9.3.5 (Motueka)</b> To provide for future residential zoning in parts of the Thorp Street rural-residential zone, subject to an overall stormwater and drainage plan that takes account of potential sea-level rise.	Review – the broader intent of policy in relation to new development in Motueka will be reviewed as part of the outcomes of the Coastal Management Project. The policy does not take into account more recent understanding of climate change and sea level rise risks in this area as identified through the Coastal Management Project.

<p><b>6.9.3.12 (Motueka)</b> To control land use in areas subject to risk of flooding.</p>	<p>Review – retain intent, but to be included as part of a consolidated suite of natural hazard policies. Clarify if freshwater or sea level rise flood risk.</p>
<p><b>6.10.3.1(Takaka)</b> To ensure that land that is made available for residential settlement is either not subject to flood risk, or the flood risk can be mitigated.</p>	<p>Review – retain intent, as part of an overarching and consolidated suite natural hazard policies. Consolidate with policy 6.2.3.9.</p>
<p><b>6.15.3.6</b> To avoid new buildings on those parts of the coastal margins, Mapua channel entrance, and Ruby Bay/Te Mamaku cliffs which are most at risk from erosion, slips and inundation.</p>	<p>Review – retain intent of policy and consider expanding to include other coastal areas in the district. To be reviewed as part of the outcomes of the Coastal Management Project.</p>
<p><b>6.15.3.7</b> To identify a Coastal Risk Area between Mapua and Ruby Bay where all subdivision and development will be limited to avoid the long-term adverse effects of coastal erosion and inundation.</p>	<p>Review – policy has been implemented, but retain intent of policy and consider expanding to include other coastal areas in the district. To be reviewed as part of the outcomes of the Coastal Management Project.</p>
<p><b>6.16.3.3</b> To manage subdivision and development of industrial land in Brightwater to avoid significant flood hazard risks on the site or beyond the site.</p>	<p>Review – retain intent of policy. Consider including intent as part of an overarching and consolidated suite of natural hazard policies.</p>
<p><b>6.17.3.2 (Wakefield)</b> To avoid flood hazard risk when enabling urban development of land.</p>	<p>Review – retain intent of policy. Consider including intent as part of an overarching and consolidated suite of natural hazard policies.</p>
<p><b>6.18.3.1 (Murchison)</b> To restrict land uses at the northern end of Fairfax and Grey streets to rural purposes to minimise possible loss of assets in an area at risk from riverbank erosion by the Buller River.</p>	<p>Remove – the area is zoned rural and the general planning framework provides for the intent of this policy.</p>
<p><b>8.2.3.18</b> To avoid, remedy or mitigate adverse effects on natural coastal processes of the subdivision, use or development of land, taking account of sea-level rise.</p>	<p>Review – retain intent of policy. Consider including intent as part of an overarching and consolidated suite of natural hazard policies.</p>
<p><b>8.2.3.20</b> To ensure that where erosion protection works are deemed to be necessary to protect existing settlements or structures that these are designed as much as possible to harmonise with the natural character of the coastline, river bank or lake shore.</p>	<p>Review – retain intent of policy. Consider including intent as part of an overarching and consolidated suite of natural hazard policies.</p>
<p><b>12.1.3.2</b> To avoid, remedy, or mitigate the actual or potential soil erosion or damage, sedimentation, and other adverse effects of land disturbance activities consistent with their risks on different terrains in the District, including consideration of: ...(d) Coastal Risk Area.</p>	<p>Remove – duplication with other natural hazard policies and in addition to the wider land disturbance policies (refer to Chapter 12 Land Disturbance Effects assessment). Revised Natural Hazard chapter to retain a policy relationship with the Coastal Risk Area rules.</p>

<p><b>13.1.3.2</b></p> <p>When determining appropriate subdivision, use or development in the coastal environment to assess the likely need for coastal protection works and, where practicable, avoid those sites for which coastal protection works are likely to be required.</p>	<p>Retain – no need for change however may be considered as part of the outcomes of the Coastal Management Project.</p>
<p><b>13.1.3.3</b></p> <p>To avoid developments or other activities that are likely to interfere with natural coastal processes including erosion, accretion, inundation, except as provided for in Policy 13.1.3.10.</p>	<p>Review – the intent of the policy is strong, however the supporting rule framework should be strengthened to address current issues with permitted activity coastal protection structures, as the line of sight between policy and rule framework/activity status is ineffective. Policy to be reviewed as part of the outcomes of the Coastal Management Project.</p>
<p><b>13.1.3.5</b></p> <p>To avoid the construction of new habitable buildings in the Residential Closed Zone at Ruby Bay, other than on specified sites.</p>	<p>Review – to be reviewed as part of the outcomes of the Coastal Management Project. Intent of policy could be expanded to include other coastal areas in the district where there are coastal hazard risks.</p>
<p><b>13.1.3.6</b></p> <p>To limit the reconstruction or replacement of an existing habitable building to a position that is no further seaward than the original habitable building in the Residential Closed Zone at Ruby Bay.</p>	<p>Review – will be reviewed as part of the outcomes of the Coastal Management Project. Intent of policy could be expanded to include other coastal areas in the district where there are coastal hazard risks.</p>
<p><b>13.1.3.7</b></p> <p>On the coastal plain from Ruby Bay to Mapua, to limit further subdivision and habitable buildings in order to avoid their exposure to long term coastal inundation, flooding and erosion risks.</p>	<p>Review – will be reviewed as part of the outcomes of the Coastal Management Project. Intent of policy could be expanded to include other coastal areas in the district.</p>
<p><b>13.1.3.8</b></p> <p>To avoid, unless there is effective mitigation, the expansion of flood-prone settlements onto those parts of the surrounding flood plains where they might be subject to flood hazard.</p>	<p>Retain – intent of policy to be included in an overarching and consolidated suite natural hazard policies.</p>
<p><b>13.1.3.9</b></p> <p>To prevent damage or interference with the functioning of the major overland flood flow paths of rivers in the District, except as provided for in Policy 13.1.3.10.</p>	<p>Retain – intent of policy to be included in an overarching and consolidated suite natural hazard policies.</p>
<p><b>13.1.3.11</b></p> <p>To promote the maintenance and enhancement of coastal vegetation in areas at risk from coastal erosion.</p>	<p>Review – retain intent, but to be reviewed as part of the outcomes of the Coastal Management Project.</p>
<p><b>13.1.3.14</b></p> <p>To avoid damage by land use activities to flood control structures or works for flood or erosion control.</p>	<p>Retain – intent of policy to be included in an overarching and consolidated suite natural hazard policies.</p>
<p><b>Slope Instability</b></p>	
<p><b>13.1.3.13</b></p>	<p>Review – intent of policy to be consolidated with the wider land disturbance effects review (Chapter</p>



To regulate land disturbance so that slope instability and other erosion processes and inundation are not initiated or accelerated.	12). Development and land disturbance activities that are undertaken on vulnerable slopes/soil types creates the hazard 'risk' that the plan seeks to manage. It is appropriate that this forms part of a framework which deals with all land disturbance issues together.
<b>Wild Fire</b>	
<b>5.5.3.1</b> To avoid, remedy or mitigate the likely adverse effects on land uses from fire, arising from the location of buildings or flammable vegetation.	Review – intent of policy could be included in an overarching and consolidated suite of natural hazard policies.
<b>8.2.3.15</b> To limit the potential for the spread of fire in or to areas of natural character in the coastal environment and on the margins of lakes, rivers and wetlands.	Review – intent of policy could be included in an overarching and consolidated suite of natural hazard policies.
<b>Fault Rupture</b>	
<b>6.13.3.10</b> Re-subdivision of existing residentially-zoned allotments crossed by the Alpine Fault in Robert Street, Holland Street and Borlase Avenue at St Arnaud will not be permitted.	Remove – intent of policy could be included as part of wider fault rupture risk considerations as part of an overarching and consolidated suite of natural hazard policies. Specifics of policy captured at a rule level.
<b>General Natural Hazards Policies</b>	
<b>5.1.3.1</b> To ensure that any adverse effects of subdivision and development on site amenity, natural and built heritage and landscape values, and contamination and <u>natural hazard risks</u> are avoided, remedied, or mitigated.	Review – intent of policy could be included in an overarching and consolidated suite of natural hazard policies.
<b>6.2.3.4</b> To avoid extending urban development onto natural flood plains with a moderate to high risk of flooding or areas that have a moderate to high risk of river or coastal erosion or inundation or land instability.	Review – intent of policy could be included in an overarching and consolidated suite of natural hazard policies.
<b>6.12.3.4 (Collingwood)</b> To avoid, remedy or mitigate the adverse effects of locating development on natural hazard areas.	Remove – policy is Collingwood-specific and there is duplication with other natural hazard policies. Intent of policy would be captured in an overarching and consolidated suite of natural hazard policies.
<b>7.2.3.4</b> To enable further subdivision and residential development within any existing Rural Residential Zone location where the land: (a) is not affected by natural hazards, within and beyond the boundaries of the site, including wildfire risk, and coastal, flood, stormwater, geotechnical or earthquake hazards; and...	Remove – policy is zone-specific and there is duplication with other natural hazard policies. Intent of policy would be captured in an overarching and consolidated suite of natural hazard policies.
<b>7.2.3.5</b> To enable further subdivision and residential development to urban densities within any existing	Remove – policy is zone-specific and there is duplication with other natural hazard policies.

<p>Rural Residential Zone location where the land:... (b) is not affected by natural hazards, within and beyond the boundaries of the site, including wildfire risk, and coastal, flood, stormwater or geotechnical hazards; and...</p>	<p>Intent of policy would be captured in an overarching and consolidated suite of natural hazard policies.</p>
<p><b>7.2.3.9</b> To enable sites in specific locations to be used primarily for rural industrial, tourist services and papakainga purposes, having regard to... (b) natural hazards;...</p>	<p>Remove – policy is zone-specific and there is duplication with other natural hazard policies. Intent of policy would be captured in an overarching and consolidated suite of natural hazard policies.</p>
<p><b>11.1.3.10</b> To avoid or mitigate likely adverse effects on the integrity of the road network arising from sea-level rise, climatic change and natural hazards.</p>	<p>Remove – intent of policy has duplication with the two new policies included under PC69 in relation to design and resilience of network asset infrastructure. The policy is also outdated as transportation activity management focuses on preserving connections between roads, rather than the integrity of the road network as a whole.</p>
<p><b>13.1.3.1</b> To avoid the effects of natural hazards on land use activities in areas or on sites that have a significant risk of instability, earthquake shaking, fault rupture, flooding, erosion or inundation, or in areas with high groundwater levels.</p>	<p>Review – intent of policy could be included in an overarching and consolidated suite of natural hazard policies. Remove reference to ‘in areas with high groundwater levels’ as this is unnecessary.</p>
<p><b>13.1.3.4</b> To avoid or mitigate adverse effects of the interactions between natural hazards and the subdivision, use and development of land.</p>	<p>Review – retain intent of policy, but consider including in an overarching and consolidated suite of natural hazard policies.</p>
<p><b>13.1.3.10</b> To maintain or consider the need for protection works to mitigate natural hazard risk where: (a) there are substantial capital works or infrastructure at risk; or (b) it is impracticable to relocate assets; or (c) it is an inefficient use of resources to allow natural processes to take their course; or (d) protection works will be effective and economic; or (e) protection works will not generate further adverse effects on the environment, or transfer effects to another location.</p>	<p>Retain with updates – include as part of an overarching and consolidated suite of natural hazard policies. Recommend that the policy should be clear that it applies to council infrastructure only and not private interests.</p>
<p><b>13.1.3.12</b> To provide warnings and emergency response systems for areas at risk from or affected by natural hazards.</p>	<p>Remove – the policy would be better suited to delivery through non-plan methods (e.g. civil defence, monitoring, AMPs).</p>
<p><b>13.1.3.15</b> To prepare a hazard management strategy identifying hazards and hazardous areas, and management options for these areas.</p>	<p>Remove – the policy intent of identifying hazard areas and management options for these areas is better suited to delivery through a number of council functions (e.g. environmental information,</p>

	AMPs, long term plan (funding), and resource management plan).
<p><b>13.1.3.16</b></p> <p>To avoid new subdivision, use or development that would hinder the ability of natural systems and features (such as beaches, dunes, wetlands or barrier islands) to protect existing subdivision, use or development from natural hazards (such as erosion, inundation, storm surge, or sea level rise).</p>	Review – retain intent of policy, but consider including in an overarching and consolidated suite of natural hazard policies.
<p><b>13.1.3.17</b></p> <p>To mitigate natural hazard risks through the design and construction of network asset infrastructure.</p>	Retain – include as part of an overarching and consolidated suite natural hazard policies. Opportunity to expand policy out to general risk management issues for new buildings etc. The policy should be broadened include the intent of Policy 8.2.3.20 which seeks to ensure that any mitigation is designed as much as possible to harmonise with the natural character at that location (e.g coast, riverbank).
<p><b>13.1.3.18</b></p> <p>To design and construct resilient network asset infrastructure.</p>	Retain – include as part of an overarching and consolidated suite natural hazard policies. Opportunity to expand policy out to general community resilience (new development etc).
<b>Chapter 13 Natural Hazards Objectives</b>	
<p><b>Objective 13.1.2.1</b></p> <p>Management of areas subject to natural hazard, particularly flooding, instability, coastal and river erosion, inundation and earthquake hazard, to ensure that development is avoided or mitigated, depending on the degree of risk.</p>	Review - intent of objective to be included in an overarching and consolidated suite natural hazard policies. Opportunity to consider if there is a need to create a hierarchy of objectives that focus on (a) avoidance in areas of 'significant risk' and (b) management in other areas where mitigation is possible.
<p><b>Objective 13.1.2.2</b></p> <p>Land development, including supporting network infrastructure asset services, is resilient against natural hazards.</p>	Review – intent of objective to be included in an overarching and consolidated suite natural hazard policies. Opportunity to expand objective out to include general community resilience rather than the current focus on network infrastructure asset services.
<p><b>Other Actions</b></p>	<ol style="list-style-type: none"> <li>1. Continue to enable development in areas subject to natural hazards, relative to the extent of risk.</li> <li>2. The natural hazards provisions need to be updated to recognise legislative changes, national guidance and existing council work programmes, including: <ul style="list-style-type: none"> <li>• RMA s6(h) “management of significant risks of natural hazards”</li> <li>• Give effect in full to the New Zealand Coastal Policy Statement 2010, Policies 24-27</li> <li>• Take better account of iwi management plans.</li> <li>• Strengthen links to the Nelson Tasman Civil Defence Group Plan and the ‘reduction’ aspect of the “4Rs”</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Consider MBIE/MfE’s guidance on liquefaction and what role the TRMP plays in managing liquefaction versus other legislation, given recent changes to the Building Code require councils to complete liquefaction mapping by November 2021 and the building consent process will require specifically designed building foundations on ground that has been identified as prone to liquefaction.</li> <li>• Consider what role resource management plans play in the management of wild fire hazard and if there is other legislation/regulation such as the Building Act 2004 or Fire and Emergency New Zealand Act 2017 which can address issues regarding personal and building fire safety.</li> <li>• Consider Council’s regional functions for management of natural hazards (RMA 1991 s30) and options for using regional rules to reduce hazard risk for existing development.</li> <li>• Implement the outcomes of the Coastal Management Project (once completed) to provide a District-wide approach to coastal hazards; and to improve public access to information about sea level rise.</li> <li>• Implement the Nelson Tasman Future Development Strategy, including further investigation of areas identified for future development potential.</li> <li>• Implement the outcomes of the land disturbance review in relation to Slope Instability Risk Areas (Chapter 12).</li> </ul> <p>3. Develop and update natural hazard technical information and mapping, where required, to enable more accurate and comprehensive hazard management.</p> <p>4. Consider if natural hazards should be mapped in the plan with a specific rule framework, or sit outside the plan as information only (e.g. a webmap) and rely on a generic rule framework to manage risks. There are pros and cons with each approach.</p> <p>5. Consider the need to apply consistent planning rules to similar hazard risks e.g. stormwater flow paths; and fault rupture locations.</p> <p>6. Consider how climate change may influence natural hazard management. For example, the management of wild fire hazards, storm frequency and severity, and droughts.</p> <p>7. Consider the need to strengthen the objective/policy framework where there are existing rule sets which are clear and prescriptive e.g. fault risk rupture area, coastal environment area.</p>
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## 1. Purpose Statement

The purpose of this evaluation of the TRMP is to determine the effectiveness and efficiency of the provisions contained within it. It helps us understand if the TRMP provisions are doing what they're meant to do.

This evaluation process is a fundamental step in the policy review cycle and a requirement of the Resource Management Act. It informs good quality plan-making and helps maintain confidence and integrity in the process.

The results of this evaluation will inform the review of the Tasman Resource Management Plan.

### What do the terms mean?

**Effectiveness:** *“assess the contribution ... provisions make towards achieving the objectives and how successful they are likely to be in solving the problem they were designed to address”*

**Efficiency:** *“measures whether the provisions will be likely to achieve the objectives at the lowest total cost to all members of society, or achieves the highest net benefit to all of the society”*

(Ministry for the Environment s.32 Guidance)

## Key Evaluation Questions

### What we need to keep in mind:

- ✓ Are we focused on the right issues?
- ✓ Have we done what we said we'd do?
- ✓ Have we achieved what we said we'd achieve?
- ✓ How do we know our actions led to the outcome observed?
- ✓ Have we achieved that outcome at reasonable cost (could we have achieved it more cheaply)? (Enfocus, 2008)

## 2. Scope

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### 2.1 District Plan Provisions Reviewed

This report reviews the efficiency and effectiveness of the natural hazards provisions in the TRMP. The natural hazards objectives and policies are primarily located in Chapter 13 Natural Hazards. However, there are also a number of policies within other chapters of the plan which address natural hazards considerations and contribute to wider plan objectives. This report should be read in conjunction with the assessments for:

- Chapter 5: Site Amenity Effects
- Chapter 6: Urban Environment Effects
- Chapter 7: Rural Environment Effects
- Chapter 8: Margins of Rivers, Lakes, Wetlands and the Coast
- Chapter 11: Land Transport Effects
- Chapter 12: Land Disturbance Effects

The Resource Management Act 1991 defines natural hazards as “*any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.*” The TRMP policy framework largely addresses these hazards, with two exceptions. Volcanic and geothermal activity is not relevant to the district. The Council does not address tsunami hazard in the TRMP given the very low probability of occurrence of a significant tsunami event in the district. Instead, the Council focuses on providing education and information for evacuation through civil defence functions.

The TRMP’s natural hazards policies fall into four categories, namely:

- general natural hazards policies
- policies addressing specific natural hazard topics e.g. inundation, river or coastal erosion, fault rupture, slope instability
- settlement-based policies addressing specific natural hazard issues
- policies that address a number of planning issues with natural hazards being one criteria

Table 2 summarises the natural hazards policies which contribute to the TRMP’s objectives.

The efficiency and effectiveness of more recent plan changes are not included within the scope of this assessment. This includes Plan Change 60 which in relation to natural hazards resulted in the rural subdivision and land use rules being strengthened to give better consideration of this as an assessment matter. Plan Change 69 (operative June 2020) is also acknowledged, as it included amendments to the TRMP to update references to, and relationships with, the Nelson Tasman Land Development Manual (engineering development standards for land development). In relation to Chapter 13 Natural Hazards, PC69 included an objective and policies that introduces network infrastructure resilience against natural hazards.

**Table 2: Scope of Evaluation**

Hazard Topic	Chapter	Section	Objective(s)	Policies
<b>Inundation and Coastal Hazards</b>	6. Urban Environment Effects	6.2 Land effects from urban growth	6.2.2.1	6.2.3.9, 6.2.3.10
		6.4 Coastal Urban Development	6.4.2	6.4.3.4
		6.9 Motueka	n/a	6.9.3.2, 6.9.3.5, 6.9.3.12
		6.10 Takaka	n/a	6.10.3.1
		6.15 Mapua/Ruby Bay	n/a	6.15.3.6, 6.15.3.7
		6.16 Brightwater	n/a	6.16.3.3
		6.17 Wakefield	n/a	6.17.3.2
	6.18 Murchison	n/a	6.18.3.1	
	8. Margins of Rivers, Lakes, Wetlands and the Coast	8.2 Natural character	8.2.2	8.2.3.20
	12. Land Disturbance Effects	12.1 Land disturbance effects	12.1.2	12.1.3.2
13. Natural Hazards	13.1 Natural Hazards	13.1.2.1	13.1.3.2, 13.1.3.3, 13.1.3.5, 13.1.3.6, 13.1.3.7, 13.1.3.8, 13.1.3.9, 13.1.3.11, 13.1.3.14	
<b>Slope Instability</b>	13. Natural Hazards	13.1 Natural Hazards	13.1.2.1	13.1.3.13
<b>Wild Fire</b>	5. Site Amenity Effects	5.5 Health and safety	5.5.2	5.5.3.1
	8. Margins of Rivers, Lakes, Wetlands and the Coast	8.2 Natural character	8.2.2	8.2.3.15
<b>Fault Rupture</b>	6. Urban Environment Effects	6.13 Settlements in and adjoining National Parks	n/a	6.13.3.10
<b>General</b>	5. Site Amenity Effects	5.1 Adverse off-site effects	5.1.2	5.1.3.1
	6. Urban Environment Effects	6.2 Land Effects from Urban Growth	6.2.2.1	6.2.3.4
		6.12 Collingwood	n/a	6.12.3.4
	7. Rural Environment Effects	7.2 Provision for activities other than plant and animal production	7.2.2.1 – 7.2.2.3	7.2.3.4, 7.2.3.5, 7.2.3.9
	11. Land Transport Effects	11.1 Effects on transport safety and efficiency effects	11.1.2	11.1.3.10
	13. Natural Hazards	13.1 Natural Hazards	13.1.2.1	13.1.3.1, 13.1.3.4, 13.1.3.10, 13.1.3.12, 13.1.3.15, 13.1.3.16
13.1.2.2			13.1.3.17, 13.1.3.18	

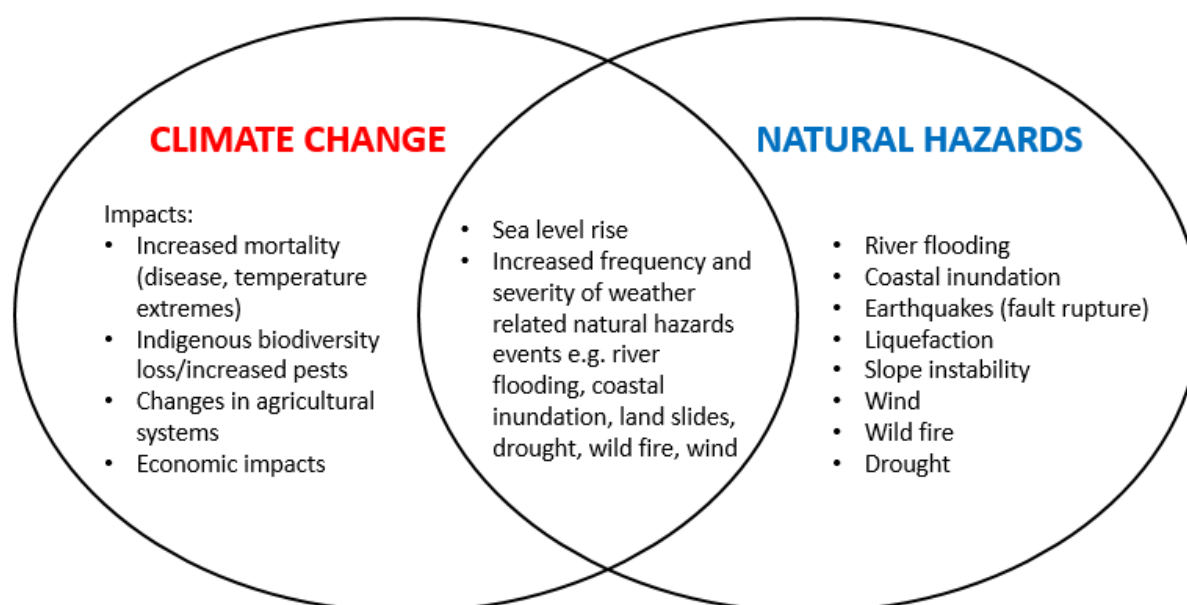
## 2.2 Natural Hazards and Climate Change

Like most parts of New Zealand, the Tasman District is subject to a range of natural hazards. As a result of climate change, it is likely that we will see global temperatures and sea levels rise, increased frequency of floods, droughts, cyclones, storms, landslides and weather such as rain, snow and wind will become more intense.

Climate change is associated with other events in addition to global 'warming'. Human activities such as driving, flying, manufacturing, farming and so on release greenhouse gases in the atmosphere. These gases trap heat and are causing the world's climate to change. Climate change will affect different parts of the world in different ways. These changes will affect our lives, our health, economies, natural ecosystems and more.

Natural hazards and climate change are interrelated topics, however the issues and impacts of climate change are broader than simply natural hazards management, as shown in Figure 1 below.

**Figure 1: The interface between climate change and natural hazards**



Since the TRMP was first developed in 1996, the issues and risks associated with climate change are now better understood at a local, national and global level. This is the result of up to date scientific understanding, political drivers (see Section 3.1.1 Legislative Changes) and the discussion around climate change being 'normalised' by mainstream media.

Climate change is only addressed to a limited extent within TRMP. This report reviews the efficiency and effectiveness of the natural hazards provisions in the TRMP, including those provisions which considers sea level rise and climate change in the context of natural hazards risk management. Other chapter assessments consider climate change matters relative to the topic covered (e.g. transport, coastal biodiversity, coastal management, freshwater).

It is recognized that the development of the Tasman Environment Plan will need to provide clear provisions for mitigation and adaption to the impacts of climate change including implementing Council's Climate Action Plan (see Section 3.1.4 Other Factors).



## 2.3 Timeframe of Evaluation

May 2019 – May 2020

## 2.4 Summary of Methodology

Broadly, the methodology of this evaluation follows the Plan Outcomes Evaluation process. Plan Outcome Evaluation involves:

1. An examination of the outcomes being sought – what are the objectives trying to achieve?
2. Tracking how the plan has been designed to affect the outcomes – do the intentions in the objectives get carried through to the rules and methods? Are the provisions efficient?
3. Assessing if the provisions have been implemented – what evidence is there that the provisions are being applied to relevant activities?
4. Assessing relevant environmental trends and ‘on the ground’ data to conclude if the Plan has been successful in achieving its intentions. This includes consideration of the external factor influences such as legislative changes, national policy statements, case law, significant economic changes, demographics etc.

Throughout the evaluation, there is an emphasis on attributing the activities enabled or controlled by the TRMP on observed outcomes. However, attributing outcomes to the TRMP must always be viewed in the wider context of changes. These are noted where known, but it is beyond the scope of this evaluation to capture all of the changes and influences that affect outcomes in our communities and environment.

Limitations with the Plan outcome evaluation approach also arise where environmental outcome data is poor, or where there a multiple factors driving outcomes. Time, resourcing and quality of data also affects the comprehensiveness of the evaluation.

To address some of these limitations, the evaluation process has included a ‘rapid assessment’ technique. The technique draws on the combined knowledge and expertise of local TDC staff, residents, community leaders, and topic experts to create an understanding of plan implementation, efficiency and outcomes. The rapid assessment outputs are supplemented with:

- Environmental data or expert reports where available.
- Council data (e.g. property and asset information, consenting and compliance database information, models)
- Mapping and imagery (e.g. GIS, aerial imagery, LiDAR)
- Information or reports prepared during plan change processes (e.g. s.32 Reports, Issues and Options papers, technical reports, submissions, community meetings)

For this topic the following data sources have been used:

**Table 3: Data Sources**

Data source/s:	Details and Notes
Tasman GIS	<ul style="list-style-type: none"><li>• TRMP zones</li><li>• Resource consents</li><li>• Natural hazards layers (where available)</li><li>• Aerial photography</li></ul>

Rapid Assessment	Primary rapid assessment held on 29 October 2019, with bespoke follow up meetings as necessary. Staff present covered expertise from the following teams: Environmental Policy, Environmental Information, Resource Consents, Compliance, and Engineering.
Councillor input	Workshop held on 18 March 2020
External reports	See Appendix 1
Council reports	<ul style="list-style-type: none"> <li>• Activity Management Plans (2018) <ul style="list-style-type: none"> <li>- Stormwater</li> <li>- Rivers</li> <li>- Coastal Assets</li> <li>- Reserves and Facilities</li> <li>- Transportation</li> </ul> </li> <li>• Long Term Plan 2018 – 2028</li> <li>• Nelson Tasman Future Development Strategy (2019)</li> <li>• Richmond Catchment Management Plan (2019)</li> </ul>
Council records (MagiQ-BI/NCS/databases)	<ul style="list-style-type: none"> <li>• Resource consents</li> <li>• Building consents</li> <li>• Land Information Memoranda</li> <li>• Project Information Memoranda</li> </ul>

## 2.5 Summary of Consultation

The following consultation has been undertaken during the preparation of this evaluation.

### 2.5.1 Tasman District Councillors

A workshop with elected Councillors was held on 18 March 2020 discussing key issues and recommendations identified as part of this natural hazards assessment. No additional issues were raised by Councillors at this workshop.

Councillors discussed and provided feedback on the identified issues as summarised below:

- The assessment identifies that in some instances the TRMP relies on outdated or incomplete spatial representation of known hazards, which are either mapped as overlays in the plan and/or inform zone or specific rule provisions. Councillors commented that it is likely there will be high public interest in any proposed zoning changes as a result of more up to date natural hazards information, including the effects of sea level rise.
- Given the current limitations regarding public access to district-wide hazard information, Councillors were interested to understand the pros and cons of mapping natural hazards. The options include the information is mapped in the plan with a specific rule framework, or the information sits outside the plan as information only (e.g. a webmap) and relies on a generic rule framework to manage risks. Staff advised there were a number of factors to consider including providing plan certainty (through a specific rule framework) and visibility of natural hazards information to plan users, costs, and the ability to efficiently update the plan when new information becomes available. The move towards an E-plan format for resource management plans will also be a consideration.
- The assessment also highlighted that there is inconsistent requirements for the management of similar hazard risks, including secondary overland flow paths. The importance of mapping these flow path locations was acknowledged, noting the work that was undertaken as part of Plan Change 66 Richmond Housing Choice to identify flow paths in Richmond and ensure an

appropriate risk based approach to development near these locations (refer to Section 3.1.2 Relevant Plan Changes).

### 2.5.2 Tasman Environmental Policy Iwi Working Group

The iwi of Te Tau Ihu, as tāngata whenua, have a unique relationship with Tasman District Council. There are a number of legislative requirements which oblige us to engage more collaboratively with iwi and Māori - including provisions in the Resource Management Act, Local Government Act and Treaty of Waitangi settlement legislation. To support this a separate section 35 report with a focus on iwi/Māori provisions has been prepared. Please refer to that report for a record of consultation undertaken.

## 3. Effectiveness and Efficiency Evaluation

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### 3.1 Context

Since the plan was first proposed, there has been a number of changes in respect of the relevant legislation, national guidance, and council work programmes focusing on natural hazards. The Council's historical approach to a rolling review of plan changes (see Section 3.1.2) has addressed a number of these changes and issues. However, through the TRMP plan review there are a number of more recent changes which will need to be considered and implemented as detailed in the following sections.

There are four key pieces of legislation in relation to natural hazards management, being:

- **Resource Management Act 1991**  
The management of significant risks from natural hazards must be recognized and provided for (s6(h)) and all decisions must have particular regard, amongst other things, to the effect of climate change (s7(i)).
- **Building Act 2004**  
Sets out the rules for the construction, alteration, demolition and maintenance of new and existing buildings, including consideration of building on land subject to natural hazards (s71-74).
- **Civil Defence and Emergency Management Act 2002**  
Sets out the framework within which New Zealand can prepare for, deal with, and recover from local, regional and national emergencies – including natural hazard events.
- **Local Government Act 2002**  
Councils are required to prepare long-term plans (which set out councils' activities and how they are funded over a 10 year period) and 30 year infrastructure strategies (strategic planning and management of council asset infrastructure). Both documents set out the Council's approach to funding and/or resilience to natural hazard risks.

It is also noted that there is more recent and emerging legislative changes which seek to address climate change mitigation and adaption within the planning framework (as outlined in Section 3.1.1).

#### 3.1.1 Legislation Changes

Key legislative changes relevant to the TRMP's natural hazards and climate change provisions are outlined below:

##### **Resource Management Act Amendment Bill 2020**

In June 2020, some significant changes were made to the RMA that now allows councils to fully consider both the effects of climate change on development (adaption), and the effects of development on climate change (mitigation). These changes were made to bring the RMA in line with the new requirements under the Climate Change Response (Zero Carbon) Amendment Act 2019 (see below). The amendments, focussed on climate change mitigation, provides councils with the powers to regulate activities which may cause greenhouse gas emissions. This means that consents for projects such as coal mines and fossil fuel power stations can be declined if they will have significant climate change implications. This will come into effect from 31 December 2021, and the

current Government is proposing to have prepared a national directive on climate change by that time.

### **Climate Change Response (Zero Carbon) Amendment Act 2019**

This Act amended the Climate Change Response Act 2002 to provide a framework for New Zealand to develop and implement climate change policies that contribute to global efforts under the Paris Agreement to limit the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels. New Zealand ratified the Paris Agreement in October 2015. Furthermore, and of relevance to planning, the Act allows New Zealand to prepare for, and adapt to, the effects of climate change. Amongst a number of new requirements, the amendment established a new, independent Climate Change Commission to provide expert advice and monitoring to keep successive governments on track; and it establishes a range of climate change adaptation measures to make sure New Zealand understands the risks we face, and has a plan to address them.

### **Resource Legislation Amendment Act 2017**

This Act enabled a number of amendments to the RMA (and other legislation) with two aims, amongst others, to create a stronger national planning direction and a more responsive planning process. In relation to natural hazards, the Act strengthened the requirements for local authorities to manage natural hazard risks, including making 'the management of significant risks from natural hazards' a s.6 matter of national importance and requiring *all* risks from natural hazards to be considered in determining subdivision applications. The RMA does not however, define the threshold for 'significant' risks. The second generation TRMP will need to give effect to these amendments.

### **New Zealand Coastal Policy Statement (NZCPS) 2010**

The NZCPS guides councils' management of the coastal environment. Regional policy statements, regional plans and district plans are required to give effect to national policy statements including the NZCPS. The 2010 NZCPS represented a significant change in direction for coastal hazard risk management in comparison to the 1994 NZCPS<sup>1</sup> (which was used to inform the drafting of the proposed TRMP). Objective 5 and Policies 24-27 outlines requirements for councils to identify hazard areas, undertake coastal hazard risk assessments for a timeframe of 'at least the next 100 years' and consider the effects of climate change. The TRMP currently gives effect in part to the NZCPS and through the Council's coastal management project (including review of the coastal hazards planning framework) this will strengthen the relationship between the TRMP and NZCPS.

### **Building Act 2004 and New Zealand Building Code**

The council is required to take into account certain natural hazards when determining whether to grant building consents on land subject to specified natural hazards, with certain exceptions under sections 71-74. The emphasis in the management of natural hazards under the Building Act is to encourage people to avoid situations in which they or their property could be at risk.

E1 of the Building Code requires buildings and site work to be constructed to protect people and other property from the adverse effects of surface water. Performance E1.3.2 requires that surface water, resulting from an event having a 2% AEP, shall not enter housing, communal residential and

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<sup>1</sup> <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/review-of-effect-of-nzcps-2010-on-rma-part-one.pdf>

communal non-residential buildings. Effects of projected climate change also need to be taken into account when assessing what a 2% AEP event is in 50 or more years' time.

Historically, the Building Code has required that building foundations are built on “good ground” which results in many new buildings requiring geotechnical assessments – this assessment can address issues such as liquefaction-prone land which may otherwise not be picked up through a resource consenting process. However, recent changes to the Building Code have been made to support safer and more resilient housing foundations for buildings on liquefaction-prone ground. These changes require councils to complete liquefaction mapping by November 2021 and through the building consent process require specifically designed foundations for buildings on ground that has been identified as prone to liquefaction. In light of this, development of the TEP will need to consider what role the plan plays in managing liquefaction versus this building legislation.

### **Resource Management (Energy and Climate Change) Amendment Act 2004**

The Resource Management (Energy and Climate Change) Amendment Act 2004, inserted the requirement for councils to have particular regard to “the effects of climate change” under Part II section 7 of the RMA 1991 (in addition to other matters relating to energy and renewable energy use). Prior to this 2004 amendment, there was already an implicit requirement to account for climate change effects in relation to natural hazards management (sections 30(1) and 31(1)). This insertion provided a clear mandate for councils to consider climate change effects in resource management decision making processes. For example, land use decisions should integrate consideration of a future climate (e.g. more severe and frequent weather events), the risk from weather-related natural hazards, and over a longer term planning horizon<sup>2</sup>.

### **Civil Defence and Emergency Management (CDEM) Act 2002**

CDEM Act created a framework within which New Zealand can prepare for, deal with, and recover from local, regional and national emergencies – including those from natural hazard events. A key concept of the Act is applying the ‘4 Rs’ (reduction, readiness, response, recovery) to hazard management. The ‘reduction’ function aims to mitigate or avoid the risks of hazards and this can be achieved largely through implementation of councils’ resource management plans. Through development of the second generation TRMP there provides an opportunity to strengthen alignment between the Council’s RMA and CDEM functions.

#### **3.1.2 Relevant Plan Changes**

The TRMP has had a constant programme of rolling reviews (variations and plan changes) since it was first notified. The changes have been introduced to address unintended outcomes, new issues, new priorities and legislative requirements. The plan changes relevant to this topic are outlined in the table below.

Where a plan change has been recently introduced (i.e. <3 years) its impact will be difficult to determine with any accuracy as:

- there may have been limited uptake of the plan provisions (i.e. not many activities undertaken that trigger the new rule set) and/or
- the impact of existing use rights and previously consented activities continue

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<sup>2</sup> <https://www.qualityplanning.org.nz/sites/default/files/RMA%20EnergyandClimateChange.pdf>

- the impacts may not be highly visible until there is a cumulative uptake of the provision.

For those reasons, the implementation of plan changes less than 3 years old (from operative date) have not been fully assessed for effectiveness or efficiency. In relation to natural hazards, this is relevant to PC60 and PC69.

Overall, the extent of plan changes which address specific natural hazard issues (as a result of new hazards information) or strengthens general rules which includes natural hazards as a consideration, demonstrates that the plan has been positively responding to natural hazard issues in the district.

**Table 4: Plan Changes Relevant to this Topic**

Hazard Topic	Plan Change or Variation	Description of change and key matters
Flooding	V1/C1 Deletion of Cultural Heritage Area, Landscape Priority Area, Natural Heritage Areas, Flood Hazard Area	V1/C1 sought to address areas of opposition to aspects of the Proposed TRMP since public notification. In relation to natural hazards, V1/PC1 deleted 'Flood Hazard Area' notations on the Planning Maps as the identification of many historically flooded areas on flood plains was considered not appropriate. Rather, this information is made publically available outside the plan. V1/PC1 also relocated the Flood Hazard Area rules as general rules under Section 16.10 (e.g. land uses in relation to stopbanks and berm lands, plantings in flood flow paths).
	C43 Motueka West Development	C43 introduced an opportunity for significant residential and business development in west Motueka (between Pah Street and King Edward Street). However because services are not yet fully upgraded in this area, there is deferred zoning until the services are able to be provided. Given the low-lying nature of Motueka, the rule framework recognises the need to mitigate downstream stormwater effects such as flooding.
	C57 Brightwater Strategic Review	C57 strategically reviewed zonings in Brightwater based on the outputs of the 2013 Brightwater-Wakefield Flood Modelling Study, including future residential and existing light industry zonings.
	C58 Wakefield Strategic Review	C58 strategically reviewed zonings in Wakefield based on the outputs of the 2013 Brightwater-Wakefield Flood Modelling Study, including future growth options and managing existing areas at risk (particularly the two Heavy Industrial zones).
	C66 Richmond Housing Choice	The plan change enabled an increase in the choices of living opportunities in Richmond by allowing residential intensification in central Richmond in the Richmond Intensive Development Area (RIDA), and a change to the compact density provisions for Richmond South and West. In relation to natural hazards, the plan change sought to manage development so that stormwater from additional development does not cause flooding or contribute to any damage caused by flooding, including specified flood flowpath protection. A new planning map titled 'Specified Stormwater Flood Flowpaths—Richmond Intensive Development Area' shows the major flowpaths within the RIDA.
Slope instability	V21	Variation 21 addressed the need to regulate earthworks in the Slope Instability Hazard Area, a key source of slope failure risk in addition to inherent slope instability. The variation also

Hazard Topic	Plan Change or Variation	Description of change and key matters
	Slope Instability Hazard Area & Land Disturbance Area 2	clarified the application of the Slope Instability Hazard Area and Land Disturbance Area 2 rules concerning earthworks.
	V71/C31 Slope Instability Risk Area review Richmond	Following a geotechnical review of slope instability and the location of the Waimea fault system along the Richmond foothills, V71/PC31 reviewed the rules in Section 18.12 Slope Instability Risk Area and the extent of the SIRA on the associated planning maps.
<b>Wild fire</b>	C34 Fire Protection for Rural Dwellings	C34 reviewed the rules for managing fire risk for new dwellings in unreticulated areas in the rural and rural residential zones. New dwellings are required to provide a water supply for firefighting purposes including water storage options such as water tanks, nearby pond, dam or river, or alternatively a home fire sprinkler system that has a reliable year-round water supply.
<b>Fault rupture</b>	C21 Active Fault Rupture Risk Management	Following a geological review of the District's two active fault systems (the Wairau Segment of the Alpine Fault, and the Waimea-Flaxmore Fault system), it was recommended to revise the planning corridors comprising of a new special area, the Fault Rupture Risk Area (FRRA). Through PC21, the FRRA regulated subdivision, habitable buildings, and network utilities, in both developed and undeveloped areas, including the requirements for geotechnical report.
	C40 Review of FRRA & SIRA Provisions	C40 responded to a request to remove the fault lines from the planning maps (although the information remains publically available), in accordance with the geological consultant's advice provided at the time of PC21. PC40 also corrected some inconsistencies with the FRRA rules, in addition to include a two year limit on the validity of geotechnical reports required under the FRRA and SIRA rules.
<b>Inundation/coastal hazards</b>	V57 (C8) Takaka-Eastern Golden Bay Settlement Policies	This variation provided a broad, overarching vision for settlement growth for the Takaka-Eastern Golden Bay Area, encompassing the Takaka Valley lowland area from Tata Beach in the east to Rangihaeata in the west and south to Upper Takaka at the base of the Takaka Hill. The variation focussed on a "policy overview" and did not go as far as making any changes to zones, rules or standards within rules. This included a policy clause to avoid new residential settlement in low-lying coastal areas at risk from coastal hazards.
	V48 Motueka East Rezoning	The Variation provided for residential development on a 7-hectare area of land originally zoned Rural 1, located between Courtney Street, Old Wharf Road and the Moutere Inlet. In relation to natural hazards, an additional policy was included to enable extension of residential development east of Woodlands Avenue, south of Fearon Street, south of Parker Street on either side of Wilkie Street and north of Courtney Street East, subject to minimum floor height requirements and adequate stormwater disposal.



Hazard Topic	Plan Change or Variation	Description of change and key matters
	C10 (formerly PV61, 62, 63) Richmond West Development Area and Sustainable Urban Development Provisions	C10 introduced objectives, policies and rules to accommodate the Richmond West Development Area and proposed new zones. Specific natural hazards mitigation policies were included to ensure that long-term growth in the area is resilient to rising sea levels and flooding from Borck Creek.
	C22 Mapua/Ruby Bay Development	The plan change identified a “Coastal Risk Area” which restricts development and provides future expansion in the area away from low-lying land and the inundation and erosion prone coastline.
<b>General</b>	C60 Rural Land Use and Subdivision Policy Review	C60 sought to improve Council’s objectives for rural subdivision and land use - and the policies, methods and rules that are used to achieve them, and the links between these. In relation to natural hazards, the rural subdivision and land use rules were strengthened to give better consideration for natural hazards as an assessment matter.
	C69 Nelson Tasman Land Development Manual	C69 sought amendments to the TRMP to update references to, and relationships with, the Nelson Tasman Land Development Manual (engineering development standards for land development). In relation to Chapter 13 Natural Hazards, C69 included an objective and policies that introduces network infrastructure resilience against natural hazards.

### 3.1.3 Relevant Case law

Relevant Council case law has focused on managing risks from coastal hazards and application of Objective 5 and Policies 24 and 25 of the NZCPS. Generally, the Council’s approach has been endorsed by the Environment Court. Two notable cases are:

#### **Carter Holt Harvey HBU Limited [2013] NZEnvC 25 v Tasman District Council (Dwyer J presiding):**

Coastal erosion and inundation of both the site and the access road to it (along Kina Peninsula) were significant in the Court’s upholding of the Council decision declining consent for subdivision of the site. The applicant proposed that the risks could be adequately mitigated by identifying minimum heights above sea level for the platforms, together with setbacks from present MHWS and ability to relocate buildings. However, the Court found that erosion and inundation would cause material damage to the subdivided lots well within the 100 year time period which the NZCPS is required to take into account, and that the material damage was of such significance that consent to the subdivision ought to be declined on that ground alone.

#### **Gallagher v Tasman District Council [2014] NZEnvC 245 (Dwyer J presiding):**

The Court considered the approach taken by the Council to coastal hazards with Plan Change 22. The Court dismissed the Gallagher’s appeal seeking site specific rules under Plan Change 22 for their property (allowing elevated building platforms and relocatable housing), finding it was contrary to Objective 5 and Policy 25 and therefore did not give effect to the NZCPS 2010. (Tasman Law, 2019).

### 3.1.4 Other Factors

#### Iwi Management Plans

Iwi management plans are lodged with Council by iwi authorities under the RMA 1991. They can be wide reaching in scope, for example an iwi management plan may document iwi world view and aspirations for the management of resources, or a plan may focus on a single issue or resource. To date, three iwi management plans have been lodged with the Council, being:

- Ngati Koata No Rangitoto Ki Te Tonga Trust Iwi Management Plan (2002)
- Te Runanga o Ngati Kuia Pakohe Management Plan (2015)
- Ngāti Tama ki Te Waipounamu Trust Environmental Management Plan (2018)

As required under the RMA 1991, the plan review will take into account these iwi management plans in relation to any identified resource management issues. In relation to natural hazards, it is recognized that hazard events have the potential to impact on sacred places and sites of importance to iwi, in addition to everyday life activities such as the ability to collect mahinga kai, access, bathing, etc. Climate change and sea level rise will in particular present new challenges (as well as new opportunities) for iwi, hapū, whānau and Māori enterprise.

#### Coastal Hazards and Climate Change: Guidance for Local Government (2017)

This MfE guidance provides a step-by-step approach to assessing, planning and managing the increasing risks facing coastal communities and supports the implementation of the relevant objectives and policies in the NZCPS. It is a major revision to MfE guidance produced in 2008 and includes the findings and projections of the latest Fifth Assessment report produced by the intergovernmental Panel on Climate Change (IPCC). Councils have previously applied sea level rise projections in the order of 1m by the year 2100, however the guidance directs councils to apply a dynamic adaptive planning pathway approach and consider sea level rise of upwards of 1.9m by the year 2150 (RCP8.5 H+ scenario). Council has started to follow the framework set out in the guidance, as discussed below.

#### Tasman Coastal Management Project - Responding to Climate Change

In July 2019, the Council launched its coastal management project which aims to enable our Tasman Bay/Te Tai o Aorere and Golden Bay/Mohua communities to work towards long-term adaptive planning for sea level rise and coastal hazards. This project implements MfE's Coastal Hazards and Climate Change Guidance and will be used to inform the review of the coastal hazards provisions of the TRMP, giving effect to the NZCPS. The first round of community engagement which concluded at the end of September 2019 focused on publishing a coastal hazards map viewer which shows scenarios of sea level rise up to 2m and coastal hazards, and raising awareness on these hazards. This project only recently commenced and therefore its impact cannot yet be evaluated. This project will address inconsistent requirements for the management of similar hazard risks at the coastal margin (e.g. coastal risk areas, sea walls) which has been identified through the assessment below (refer to Section 3.3.1 Table 5: Analysis – inundation (freshwater and/or seawater) and coastal hazards).

#### Nelson Tasman Inundation Practice Note (2019)

This practice note is non-statutory guidance which sets out how to calculate minimum ground and/or floor levels for subdivision, new buildings and major alterations in areas at risk from seawater and/or freshwater inundation. The guidance sits alongside the Nelson Tasman Land Development

Manual (2019) (see below), and each council's respective resource management plans. The practice note outlines the Council's standard practices to determine levels which has assisted in resource and building consent processes (previously this guidance was to some extent detailed in the Council's Engineering Standards and Policies (2013)). As new information regarding sea level rise has become known, this has been used to inform the practice note, with the current practice drawing on the most up to date information contained in MfE's Coastal Hazards and Climate Change Guidance (refer to Section 3.3 for more information). In calculating minimum ground or floor levels, the minimum freeboard requirements (the height above the design inundation level) rely on those levels specified in New Zealand Standard 4404: 2010 Land Development and Subdivision Infrastructure. The plan review will need to consider if the Practice Note forms part of the plan (as an externally referenced document), or remains as non-statutory guidance.

### **Tasman Land Disturbance Review**

Council has initiated a review of Chapter 12 Land Disturbance Effects which includes a technical assessment of the erosion-prone land/slope instability in the district. Outputs of this technical assessment will be used to review the mapped areas and rule framework including the Slope Instability Risk Areas. To complement this work, Council recently released an Erosion and Sediment Control Guideline (2019) which sets out good practices for erosion and sediment management in relation to new development. For more information, refer to the Chapter 12 Land Disturbance Effects assessment and it is noted that the impact of this review cannot yet be evaluated.

### **Nelson Tasman Future Development Strategy (2019)**

The Nelson-Tasman Future Development Strategy, or the FDS, is a high-level plan to determine how the Nelson City and Tasman District will accommodate the next 30 years of housing and business growth. The information contained in the strategy will be used to inform future resource management plan reviews to ensure growth is strategically planned and catered for through the district. In preparing the strategy, natural hazards constraints were included as part of the site assessment process, to ensure that potential future growth areas are not at risk. The outputs of the FDS does not form part of this assessment but it is noted that it will be of significance for the plan review.

### **Nelson Tasman Land Development Manual 2019 (NTLDM)**

The NTLDM is a document that combines network asset design and construction requirements for both Nelson and Tasman regions. It is intended to provide consistent minimum standards and guidance for network assets that the Council will accept as part of its network, and activities affecting them including maintenance and operations. A performance outcome that the Council seeks to achieve through the NTLDM is that network assets and infrastructure are designed to avoid or minimise risks associated with natural hazards and climate change effects, with particular regard for lifeline networks. PC69 addresses the policy links between the NTLDM and the TRMP, and it is too early to evaluate the manual or the plan change (which was operative in June 2020). The NTLDM replaces Council's Engineering Standards.

### **Tasman Climate Action Plan 2019**

The Action Plan is Council's initial response to the urgent need to take action on climate change, to build climate resilience and reduce greenhouse gas emissions. The Action Plan sets out a series of actions covering the short, medium and long term, and these will be reviewed and updated regularly. The aim of the Action Plan is to address three key themes, being:

- mitigation – how we can reduce greenhouse gas emissions from Council’s activities;
- adaptation – ways we can respond to our changing environment, including positive opportunities; and
- leadership – how we can lead by example, advocate and encourage others to take action.

The focus is on the things that Council can influence or control now. Initially these include:

1. Direct control over our own assets, activities and functions (e.g. heating in Council buildings, Council vehicles etc.).
2. Ability to directly influence the behaviour and actions of others via:
  - a. regulatory methods (e.g. rules in District and Regional Plans, building regulations).
  - b. non-regulatory tools such as education and partnership programmes (e.g. campaigns to encourage people to compost green waste).
3. Indirect influence via advocacy for actions at national and local levels (e.g. to reduce net greenhouse gas emissions).

The Coastal Management Project is identified in the Action Plan as contributing to the target “New coastal development and infrastructure accounts for climate change risks, including sea level rise”. Additionally, resource management planning contributes to the target of “Council decisions for planning and infrastructure design supports private individuals and businesses to reduce their emissions by 80% by 2050” through actions including Council providing incentives for enhanced urban/subdivision design; implementation of the Future Development Strategy (including the housing intensification component, and to reduce the need for car travel); and renewable energy provisions. The plan review will need to incorporate these actions to ensure that Council makes progress with the implementation of the Action Plan.

### **Planning and Engineering Guidance for Potentially Liquefaction-prone Land (2017)**

In 2017, MfE and Ministry for Business, Innovation and Employment, and the Earthquake Commission published liquefaction guidance to enable national consistency for councils preparing resource management plans, and the processing of resource and building consent applications. The guidance was developed to assist all parties associated with the use and development of land in potentially liquefaction-prone areas. It was developed as a result of earthquakes (Christchurch and Kaikoura) in recent years which caused significant liquefaction events and the need to reduce the consequences of future liquefaction events through appropriate land use planning, resilient building and infrastructure design. The TRMP currently does not include a specific framework to manage liquefaction hazard, rather it has been managed through building consents on a site by site basis (Building Code requirements). The plan review will need to consider and implement this guidance in conjunction with recent changes to the Building Code regarding the need to map liquefaction prone land (see Section 3.1.1. Legislation Changes).

### **Population Change**

Tasman District has experienced significant population and demographic changes since the TRMP was first notified in 1996. The continued growth has put pressure on settlements to expand, including in locations adjacent to the coast.

The figure below illustrates the estimated population from 2006-2018, indicating steady growth.

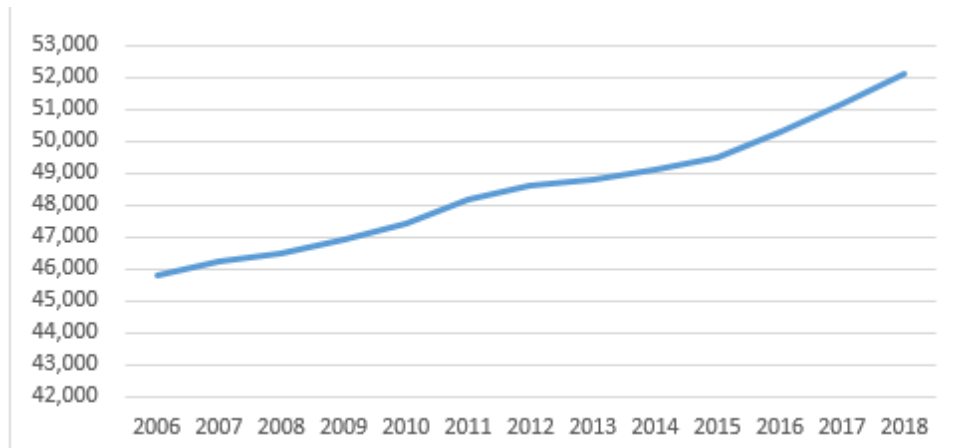


Figure 1: Population Estimates, Tasman District

Hazard management will need to consider how changing demographics affect people’s appetite and exposure to risk. The district has high numbers of older people with 17.9% of the population was over 65 years old (2013 Census). This is project to reach over 30% of the population by 2048.

### Social Drivers and Land ownership

The district benefits from high sunshine hours and has a diverse landscape from beaches to alpine environments. The district is undoubtedly a desirable place to live, and growth in dwellings reflects this trend. Many of our settlements are located on flat coastal low lands, where inundation and coastal hazards are present, or located further inland and are exposed to other hazards such as river flooding, fault lines or slope instability. By choosing to live or work in these areas, the community accepts some level of risk however an individual’s tolerance to risk may depend on a number of factors (e.g. age, finances, employment, health).

## 3.2 Internal Consistency of Provisions

A high level assessment was undertaken to determine internal consistency of overall Plan provisions. This involved considering the strength of relationship between Plan objectives, policies and related rules, from which general conclusions are drawn. This section provides a summary of that assessment.

### 3.2.1 Internal Consistency of Provisions

The overall framework for management of natural hazards, primarily located in Chapter 13 Natural Hazards, is fairly well represented in the rules providing a moderate-strong internal consistency of provisions. However, it is noted that the strength of this connection hangs on spatial representation of known hazards, which are either mapped as overlays in the plan and/or inform zone or specific rule provisions (e.g. slope instability risk, fault rupture risk, inundation), or sit outside the plan but inform general rules and consenting decisions (e.g. inundation hazards).

The natural hazards framework falls short where there is new hazards information that is either not shown on the planning maps, or not taken into account in zoning decisions (e.g. outdated zonings signal development potential on hazard prone land), and which rely on process and general rules for implementation. For example, a house built in a known risk area that is not mapped in the plan and otherwise does not trigger the need for a resource consent. There is a lack of public access to

district-wide natural hazard information (for example a webmap) which would aid the resource consenting process (and building consenting process), as well as assist landowners in making personal choices for development aspirations or natural hazards resilience and personal safety.

### 3.2.2 Other Legislative Tools to Assist with Natural Hazards Management

Councils have other tools which they can rely on in the circumstances noted above. In relation to subdivision, RMA s106 can be applied however this section has generally not been used by many councils in New Zealand. In relation to new buildings, section 71-74 of the Building Act can apply and result in a s73 notice being applied to the property title. Between October 2018 and September 2019, an Environmental Information staff member assessing building consents in relation to natural hazard exposure recommended approximately 65 building consents should be subject to s73 notices. These have been for development in low lying areas mainly around Riwaka, Motueka, Ruby Bay, Pohara, and valley systems including Takaka. This issue is discussed further through the evidence of implementation and efficiency sections of this report.

Currently there is a tension between the Building Act/Building Code and the RMA 1991 in respect of design events, factoring in climate change (storm frequency and severity), and planning horizons which is challenging for natural hazard risk management. The Building Code focuses on a 2% AEP design event and requires that the intended life of a building is to be taken as indefinite but not less than 50 years; whereas under the RMA/NZCPS, councils consider a 1% AEP design event and for subdivision consider hazard risks over at least a 100 year timeframe. Through the plan review, the Council will need to consider what statutory instruments (e.g. RMA and/or Building Act/Building Code) are the most effective to achieve positive natural hazard risk management outcomes.

### 3.2.3 Natural Hazards Framework Scattered across the Plan

In assessing the internal consistency of the plan's natural hazards provisions, it is evident that the overarching natural hazards framework is 'scattered' across the plan. There is an element of integration of the policies, but in other cases the policies are repetitive and unclear.

The natural hazards objectives and policies are primarily located in Chapter 13 Natural Hazards, however there are also a number of natural hazards focused policies within other chapters that contribute to wider plan objectives (as listed below). Chapter 6 Urban Environment Effects includes a number of settlement-based policies that do not have an overarching objective within that chapter. This includes natural hazard policies for Motueka, St Arnaud, Takaka, Brightwater, Wakefield, Murchison, and Mapua/Ruby Bay. Some of the older policies do not have specific corresponding rules and instead rely on the general plan framework for implementation.

Alternatively, there are some rule sets (e.g. slope risk instability areas, fault risk rupture areas, the natural hazard aspect of the coastal environment area) that have overarching generic policies that do not match the level of detail found the rules.

While this scattered approach is likely the result of integration of resource management issues and the historical plan structure, there is benefit from consolidating natural hazard objectives and policies into one chapter to enable the issues to be comprehensively addressed and implemented through rules. The TRMP's natural hazard policies contribute to a number of plan objectives as shown in Appendix 4. Refer to those chapter assessments for further information on internal consistency of plan provisions.

The plan's current scattered approach also includes overlap with TRMP's Part III Chapter 23 Natural Hazards and Hazardous Substances that provides a planning framework for natural hazards within the coastal environment (refer to the s35 assessment for Chapter 23). In reviewing the plan, cognizance should be given to the RMA's provisions for natural hazard management under the Council's regional (s30) and territorial (s31) functions, and as a unitary authority, Council's ability to integrate natural hazard management through its regional and district plan provisions. This includes considering options for Council to utilize regional rules to reduce hazard risk for existing development (as highlighted in a recent GNS report<sup>3</sup>).

### 3.2.4 Plan Changes/Work Programmes Addressing Weaker Provisions

The TRMP's rolling review of plan changes has addressed deficiencies in plan provisions where new hazards information has become available, for example freshwater inundation risk at Brightwater and Wakefield, coastal hazards at Mapua/Ruby Bay, and fault rupture risk areas associated with the Waimea Flaxmore Fault System. These plan changes have provided clear framework for management of these natural hazards issues.

There are also a number of work programmes underway to address known gaps and/or issues. Examples include a review of Chapter 12 Land Disturbance Effects which has implications for slope instability hazard (refer to Chapter 12 assessment), and the Coastal Management Project – Responding to Climate Change (sea level rise and coastal hazards). Through the Coastal Management Project and subsequent rule review, the plan will give effect to the NZCPS (particularly Policies 24-27). The recently adopted Nelson Tasman Future Development Strategy (2019) strategically identifies future growth in the district which in turn will inform future plan reviews. In preparing the strategy, natural hazards constraints were included as part of the site assessment process, to ensure that potential future growth areas are not at risk.

### 3.2.5 Additional Objectives required to further strengthen Scope of Natural Hazards Framework

PC69 introduced one new objective and two policies in relation to the NTLDM asset infrastructure. The objective states that "*Land development, including supporting network infrastructure asset services, is resilient against natural hazards*". This issue is relevant to natural hazards management in the broader sense. That is 'resilience' and 'hazard exacerbation' are general risk management issues that apply more generally to communities as a whole, than just a network infrastructure issue.

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<sup>3</sup> Grace ES, France-Hudson BT, Kilvington MJ. (2019). Reducing risk through the management of existing uses: tensions under the RMA. Lower Hutt, New Zealand: GNS Science. 131p (GNS Science report; 2019/55). doi:10.21420/2755-E538.



### 3.3 Evidence of Implementation and Effectiveness

‘Evidence of implementation’ and ‘effectiveness’ are two methods of analysing the TRMP. Evidence of implementation analyses how the policies been implemented through Council activities (e.g. key plans, documents and projects); and effectiveness analyses the efficiency and effectiveness of the TRMP with focus on the achievement of natural hazard policies.

The analysis draws on the information in earlier chapters, as well as environmental data, council records, experienced plan users, as well as public and stakeholder opinion.

For the purpose of this natural hazards assessment these two sections have been grouped together and structured by natural hazard topic areas, namely:

1. Inundation (freshwater and/or seawater) and coastal hazards
2. Slope Instability
3. Wild Fire
4. Fault Rupture
5. General Natural Hazard Policies

The focus is largely at a policy level, which in turn contributes to meeting the plan’s objectives across a number of the plan’s chapters.

Through undertaking the assessment of evidence of implementation and effectiveness, some common themes arose across the natural hazard topics. These are summarized here rather than being repeated across each natural hazard topic:

#### (a) Evidence of implementation

- In addition to implementation via the TRMP, a number of policies are implemented through the Council’s Activity Management Plans (AMPs). AMPs describe the Council’s core activities (e.g. transportation, ‘3 waters’, reserves and facilities) and identify the assets needed to undertake each activity, including levels of service and funding. In managing asset infrastructure and Council activities, natural hazards and climate change risks have been considered for some time and resilience and adaptation work is ongoing.
- Site-specific natural hazards information is available through several mechanisms. Property owners/applicants can seek site-specific natural hazards information from the Council’s Environmental Information team directly. However, there is a more formal process via Land information memoranda (LIMs) and project information memoranda (PIMs) which contain property-specific natural hazards information. Under the Local Government Official Information and Meetings Act 1987, LIMs allow people to access information held by council about their property or any property they are interested in. Under the Building Act 2004, a PIM is a report relating to a specific project on a property, including consideration of natural hazards. These processes contribute to making site-specific natural hazards information available in the public domain, and enable better outcomes for building and resource consent processes. However, there is a lack of public access to district-wide natural hazard information (for example via a webmap).

#### (b) Effectiveness

- Resource and building consents are granted using the most up to date natural hazards information known to the Council at that time. As new information becomes available this will inform consenting decisions and may place additional requirements on new development, where previous development within in the same locality may not have benefited from. A key example of this is in relation to planning for the uncertainty of sea



level rise. Minimum ground and floor levels for new development in low lying coastal areas will have been set using the most up to date information at that time. Best practice was to allow for a 1m sea level rise by the year 2100, however MfE's Coastal Hazards and Climate Change Guidance (2017) now requires councils to consider sea level rise of up to 1.9m by the year 2150 (based on RCP8.5 H+).

- In reviewing resource consents where natural hazard considerations were assessed as part of the application, there were a number of examples where the planning officer's reason for decision did not refer back to Chapter 13 objective and policies, rather there was a general reliance on other chapters (e.g. Chapters 5, 6, 7 and 11).

### 3.3.1 Inundation (freshwater and/or seawater) and coastal hazards

#### (a) Evidence of Implementation

Inundation and coastal hazards (including sea level rise) have been grouped together given that some policies address these hazards in combination. This reflects the interrelationship between these natural hazard processes and in recognition that some of the district's settlements are located in low lying coastal areas where both river and coastal hazards are present. This policy set addresses several matters, namely:

- settlement specific inundation and/or coastal hazards issues (Richmond, Wakefield, Brightwater, Murchison, Mapua/Ruby Bay, Motueka, Takaka and Eastern Golden Bay)
- avoiding or managing subdivision, land uses and development in areas at risk of inundation and/or coastal hazards
- providing for new settlement expansion/growth that either avoids or mitigates inundation and/or coastal hazard risks
- preventing interference with major overland flood flow paths of rivers or natural coastal processes
- flood and erosion control structures

There are also a number of general natural hazard policies which lists inundation hazard risks as a consideration – refer to Section 3.3.5 for further details.

This policy set has largely been implemented through the TRMP's zonings and general rules (Chapters 16, 17 and 18). The plan also provides settlement specific rules to address inundation and/or coastal hazard issues as necessary.

The effects of coastal hazards on new buildings are considered both generally across the district and more specifically at Mapua and Ruby Bay. The Coastal Environment Area (CEA) is delineated on the planning maps for the purpose of guiding the management of the district's coastline and considers the planning matters of natural character and landscape, natural hazards, and disposal of refuse considerations. The CEA rules specify minimum setback distances from mean high water springs for new buildings and the effects of natural hazards is a resource consent assessment matter (Chapter 18.11). An observation by one staff member was that the CEA rules provide a key pathway to enable natural hazards considerations to be assessed as part of the consenting process for new buildings in the coastal area. However, it is noted that while there is a clear CEA rule framework, there is no specific objectives or policies to provide an overarching framework and clear line of sight from an objective to a policy/policies and rules. The merits of the CEA framework is also assessed under the s35 report for Chapter 9 Landscape.

Through Plan Change 22 a Coastal Risk Area was established for Mapua and Ruby Bay which provides clear rules and direction to implement settlement specific policies to address coastal hazards issues

in this area (Chapter 18.9). MfE's Coastal Hazards and Climate Change Guidance (2017) promotes Plan Change 22 as current good practice (MfE, 2017, pg 43).

In relation to freshwater inundation, more recent river flood modelling information for Brightwater and Wakefield and subsequent plan changes have provided a clear framework for supporting new development while managing inundation hazard risks in and around these settlements. New development is supported in Brightwater and Wakefield where flood risk can be mitigated or in regards to Wakefield, alternatively located on elevated land outside the flood risk area.

An observation from staff which was highlighted through the rapid assessment process is that the inundation and coastal hazards framework falls short where there is new hazards information that is either not shown on the planning maps, or not taken into account in zoning decisions (e.g. outdated zonings signal development potential on hazard prone land). For example, infill development of a new house which will be affected by sea level rise over the lifetime of the building. While mitigation can be provided for the house (e.g. raised floor levels), the development will incur a s73 hazard notice on the property title through Building Act 2004 requirements. In such circumstances, the principle of development is not desirable. This is because it places more development and people in areas which over the longer term is not sustainable and does not provide for community resilience against natural hazards. Staff implementing the plan currently cannot rely on the general land use rule framework in some circumstances to avoid these situations. This issue of ensuring that new development provides for community resilience against natural hazards will need to be addressed through plan review.

Another issue that was raised by staff was that the plan generally does not provide a framework to protect secondary overland flow paths or floodways in urban areas. Plan Change 66 Richmond Housing Choice has enabled housing intensification in the 'Richmond Intensive Development Area', balanced against protection of specified flood flow paths (based on new stormwater modelling) – however, this is unique to Richmond rather than having a consistent district-wide approach. Permitted activities such as fences, garden sheds, and minor garden landscaping and earthworks can all affect the functionality of flow paths where these are located on private properties. Secondary overland flow paths have an important role in controlling stormwater peak flows during high intensity rainfall events and therefore should be protected from all forms of development through the plan framework. The plan review should consider the need to apply consistent planning rules to stormwater flowpaths, particularly in urban areas. However, one of the challenges, as noted for natural hazards in general, is having access to current mapped information to provide guidance on the location of flowpaths.

A number of the Council's activity management plans (AMPs) also provide implementation pathways for the TRMP policies in relation to council managed assets and functions, for example:

- Rivers AMP: river management including stopbanks and riparian planting
- Stormwater AMP: management of stormwater, for example Borck Creek stormwater improvements associated with the Richmond West Development Area
- Coastal Assets AMP: sets out the Council's approach to coastal protection in relation to Council-owned assets
- Reserves and Facilities AMP: promotes the protection and enhancement of open space, coastal and riparian areas; and supports Coastcare projects

The implementation of policies through the Council's AMPs is considered further under the next section.

## **(b) Effectiveness**

This section provides an analysis of the effectiveness of the TRMP's inundation and coastal hazards policies. The analysis draws on the information in earlier chapters, council records (e.g. resource

consents, building consents, LIMs/PIMs), council reports, and through the rapid assessment process with council staff who are experienced plan users. Each policy is assessed and given a ‘rating of achievement’ depending on how effective its implementation has been. The inundation and coastal hazards policies are generally effective, with individual policies being on track to achieve, partially achieved or fully achieved in their policy intent. Where individual policies have not been effective in full, the general reasons are captured under Section 3.2 Internal Consistency of Provisions.

**Table 5: Analysis - Inundation (freshwater and/or seawater) and coastal hazards**

Policy	Analysis	Rating of Achievement
<p><b>6.2.3.9</b></p> <p>To avoid inappropriate further expansion of the existing Takaka urban area, where this land is found to be affected by flood risk.</p>	<p>In 2011 Council commissioned flood modelling for Takaka. The results of the modelling and options for responding were consulted on with the community and presented to the Environment and Planning Committee in 2012. At the 28 June 2012 meeting the committee resolved, amongst other recommendations, not to continue any further planning work associated with the project. This meant that all land use and building controls would remain as is, and that the existing zoning pattern would not be changed in response to the hazard (EPC Report REP-18-11-11).</p> <p>Nonetheless, the policy has been effective. New development has been controlled through resource and building consent processes and new buildings have been subject to minimum floor level requirements to mitigate flood hazard risk. There has been no new zoning in areas that are flood prone, rather new residential development has been directed towards Park Avenue.</p>	<p>Fully achieved</p>
<p><b>6.2.3.10</b></p> <p>To avoid or mitigate the expansion of the urban area in Richmond West Development Area on land subject to sea level rise and flooding by:</p> <p>(a) providing an open space zone adjacent to the Waimea Inlet generally below the 3-metre contour above mean sea level (datum reference: NVD55);</p> <p>(b) managing the actual and potential risks of development between the 3- to 4.6-metre contour above mean sea level (datum reference: NVD55) through assessment as part of the subdivision and land use consent process, including a building platform level</p>	<p>The policy is provided for through the rule and zoning framework and Schedule 17.14A Deferred Zone Locations – Richmond West Development Area.</p> <p>An open space zone has been provided for adjacent to the Waimea Inlet.</p> <p>Part of the Development Area is adjacent to the Waimea Inlet and is located within the Coastal Environment Area (CEA). New buildings within the CEA are required to meet setbacks from the mean high water springs mark and natural hazards (e.g. sea level rise and coastal inundation) are included as an assessment matter.</p> <p>The rule framework and consenting decisions have given effect to the policy. Considerations have included implications for filling allotments/building platforms to ensure that stormwater flooding is not exacerbated and development is mitigated from Q100 flood events.</p> <p>Through council’s environmental information function, there has been ongoing monitoring and understanding of coastal processes such as sea level rise, which has been used to inform resource and building consent processes. Through the Coastal Management Project it has been identified that some coastal areas of the Richmond West Development Area will be affected by future rising sea levels, particularly</p>	<p>On track to achieve</p>

Policy	Analysis	Rating of Achievement
<p>and reserves for stormwater management, and monitoring changes in coastal patterns;</p> <p>(c) widening Borck Creek to 70 metres to accommodate future stormwater flows in the larger Borck Creek catchment, equivalent to a '1 in 100-year' flood.</p>	<p>the Light Industrial zone. Implications of this will need to be considered through the plan review.</p> <p>The widening of Borck Creek and stormwater improvements (Q100) are planned through the Stormwater Activity Plan. The Richmond Catchment Management Plan (Aug 2019) further identifies that the Council is widening the Borck Creek flood channel corridor between 50-70m.</p>	
<p><b>6.4.3.4</b></p> <p>In the Takaka-Eastern Golden Bay Area, to ensure that:... (d) new residential settlement in low-lying coastal areas at risk from coastal hazards are avoided;...</p>	<p>The Takaka-Eastern Golden Bay Area is defined as the Takaka Valley lowland area from Tata Beach in the east to Rangihaeata in the west and south to Upper Takaka at the base of the Takaka Hill. No further zoning of residential land in low-lying coastal land has taken place in this area, only uptake/development of existing zoning. Examples of subdivisions granted during the life of the plan includes Tata Heights/Abel Tasman Drive (Tata Beach) and Nyhane Drive and Matenga Road (Ligar Bay), and natural hazards were assessed and mitigated as necessary. The most extensive residential development has occurred on elevated land behind Pohara (e.g. Richmond Road, Bay Vista Drive).</p>	Fully achieved
<p><b>6.9.3.2 (Motueka)</b></p> <p>To provide for the extension of residential development east of Woodlands Avenue, south of Fearon Street, south of Parker Street on either side of Wilkie Street and north of Courtney Street East, subject to minimum floor height requirements and adequate stormwater disposal.</p>	<p>The areas described by the policy have largely been developed over the timeframe of the plan in the early 2000s to mid-2010s through residential zoning provisions (see Appendix 2, Map 1). Subdivision requirements have ensured adequate stormwater disposal via the council system.</p> <p>New development in Motueka has been subject to minimum ground and floor level requirements to mitigate the inundation hazard risk, where necessary. These levels have been set through resource and/or building consent processes, using the best available information held by Council at the time the application was determined.</p> <p>However, the policy is now outdated in respect to climate change and sea level rise as identified through the Council's Coastal Management Project - mapping has indicated that areas east of High Street will be affected by sea level rise over the longer term. The residential zoning north of Courtney Street East and a remaining area of Fearon St/Thorp St has not been developed, however, given updated information on sea level rise it is unlikely that new residential development would be supported.</p>	On track to achieve
<p><b>6.9.3.5 (Motueka)</b></p> <p>To provide for future residential zoning in parts of the Thorp Street rural-residential zone, subject to an overall stormwater and</p>	<p>The Thorp Street rural-residential zone still remains zoned rural-residential however subdivision has taken place which has enabled smaller lot sizes (refer to Appendix 2, Map 2). No overall stormwater and drainage plan has been developed for this area, rather stormwater has been dealt</p>	Partial achievement

Policy	Analysis	Rating of Achievement
drainage plan that takes account of potential sea-level rise.	with on a site by site basis through the consenting process, with disposal via discharge to ground.	
<p><b>6.9.3.12 (Motueka)</b> To control land use in areas subject to risk of flooding.</p>	<p>The Rivers AMP states that the Lower Motueka river control scheme was completed in 1956 and stopbanks were installed primarily to protect Motueka township and surrounding infrastructure. A study completed in the early 1990s identified that some areas of the stopbank do not meet the design capacity (Q50 flood event). The cost of upgrading the stopbank was discussed with the community in 2012 but the project was not progressed at that time. However, a Motueka Flood Mitigation Study is now underway to study and investigate flood hazard risks to Motueka and identification of potential mitigation measures. Through the Stormwater AMP, preparation of a Motueka catchment management plan has also commenced.</p> <p>The policy has been partially effective through implementation of general zonings and rule framework. The Coastal Environment Area rules have provided consideration of coastal hazards for new buildings proposed in those areas near the mean high water mark, including Old Wharf Road, Motueka Quay and Trewavas Street.</p> <p>Through the rapid assessment process, staff highlighted that issues have arisen where the plan framework does not respond to new hazards information (primarily coastal inundation/sea level rise). There have been situations where a new dwelling may not trigger the need for a resource consent and reliance has been through the building consent process to consider and mitigate inundation hazards. This has often resulted in a s73 notice being applied to the property title, and anecdotally there are a number of properties in the Motueka area that have s73 notices. Other issues have arisen where there has been a time lag between resource consent being granted and implemented, which has seen the need for revised changes in ground levels as more up to date information on sea level rise has become available. Overall, there has been some variation in the finished floor levels of houses within the same street or within the same area of Motueka as a result of an improved understanding of sea level rise or to address site specific issues.</p>	Partial achievement
<p><b>6.10.3.1 (Takaka)</b> To ensure that land that is made available for residential settlement is either not subject to flood risk, or the flood risk can be mitigated.</p>	<p>Refer to comments for Policy 6.2.3.9. This policy will be given effect through the FDS and future plan review.</p>	On track to achieve
<p><b>6.15.3.6</b></p>	<p>This policy is being implemented through a mix of land use zonings and the Coastal Risk Area, Coastal Environment Area</p>	Fully achieved

Policy	Analysis	Rating of Achievement
To avoid new buildings on those parts of the coastal margins, Mapua channel entrance, and Ruby Bay/Te Mamaku cliffs which are most at risk from erosion, slips and inundation.	<p>and Slope Instability Risk Area rules. A small number of resource consent applications for new habitable buildings in the Coastal Risk Area (some of which are also located in the Coastal Environment Area) have been received and were assessed as non-complying activities. Consents have been granted for buildings with requirements for finished ground/floor levels and in some cases are relocatable as required by the rules.</p> <p>The Slope Instability Risk Area lies along the Ruby Bay/Te Mamaku cliffs towards Kina peninsula. Construction or alterations to buildings within the SIRA require a geotech report to confirm suitability of a building location/appropriateness of development, as demonstrated through consents reviewed.</p>	
<p><b>6.15.3.7</b></p> <p>To identify a Coastal Risk Area between Mapua and Ruby Bay where all subdivision and development will be limited to avoid the long-term adverse effects of coastal erosion and inundation.</p>	This policy has been given effect through the Coastal Risk Area rules and planning map overlay. However, due to more recent understanding of sea level rise and coastal hazards through the Coastal Management Project, it is likely that the extent of the Coastal Risk Area will need to be reviewed to include a wider area, for example Grossi Point.	On track to achieve
<p><b>6.16.3.3</b></p> <p>To manage subdivision and development of industrial land in Brightwater to avoid significant flood hazard risks on the site or beyond the site.</p>	This policy was introduced through PC57 which strategically reviewed zonings in Brightwater based on the outputs of the 2013 Brightwater-Wakefield Flood Modelling Study, including future residential and existing light industry zonings. It has been operative since late 2018 and a small number of resource consents have been granted with finished floor level requirements, giving effect to the policy to date.	On track to achieve
<p><b>6.17.3.2 (Wakefield)</b></p> <p>To avoid flood hazard risk when enabling urban development of land.</p>	This policy was introduced through PC58 which strategically reviewed zonings in Wakefield based on the outputs of the 2013 Brightwater-Wakefield Flood Modelling Study, including future growth options and managing existing areas at risk (particularly the two Heavy Industrial zones). It has been operative since mid-2017.	On track to achieve
<p><b>6.18.3.1 (Murchison)</b></p> <p>To restrict land uses at the northern end of Fairfax and Grey streets to rural purposes to minimise possible loss of assets in an area at risk from riverbank erosion by the Buller River.</p>	The northern end of Fairfax and Grey streets is zoned Rural 2, consistent with the aims of the policy. There has been minimal development pressure in this area however the policy has been effective. LIMs/PIMs identify that a number of property boundaries extend beyond the edge of the river terrace and across what is now the Buller River. That is, since these properties were first surveyed the Buller River has eroded and migrated southwards. This information has been used to inform a small number of resource consent decisions and has assisted with general enquiries as noted by staff.	Fully achieved



Policy	Analysis	Rating of Achievement
<p><b>8.2.3.18</b></p> <p>To avoid, remedy or mitigate adverse effects on natural coastal processes of the subdivision, use or development of land, taking account of sea-level rise.</p>	<p>This is a very broad and general policy which deals with adverse effects on natural coastal processes through subdivision and development. The ‘principle reasons and explanations’ for the Natural Character policy set states that <i>“...the coastline is a finite and often highly sensitive resource that cannot be replicated, and development that is inappropriately located such as in erosion-prone areas, can cause costly problems that are difficult to remedy.”</i></p> <p>However, the use of ‘avoid, remedy, or mitigate’ does not give a clear direction of policy intent and what the policy is actually trying to achieve.</p> <p>This policy is partially given effect through general and specific rules (Chapters 16, 17 and 18), particularly the Coastal Environment Area and Coastal Risk Area rules as demonstrated through a review of relevant resource consents. It is noted that there have been a number of buildings approved near the coast over the life of the plan, which now based on an up to date understanding and mapping of sea level rise (through the Coastal Management Project), are potentially at risk from coastal inundation/sea level rise over the longer term.</p> <p>Refer to the assessment for Policy 13.1.3.3 regarding coastal protection structures.</p>	<p>Partial achievement</p>
<p><b>8.2.3.20</b></p> <p>To ensure that where erosion protection works are deemed to be necessary to protect existing settlements or structures that these are designed as much as possible to harmonise with the natural character of the coastline, river bank or lake shore.</p>	<p>This policy can be separated into freshwater and coastal erosion protection works. The policy has been effective in part through AMPs and the TRMP’s rule framework as detailed below.</p> <p>The Rivers AMP states that Council’s approach to river management places emphasis on channel management through gravel relocation/repositioning, and vegetation and land buffers on the river’s edge. The aim is to manage the river channel and catchment so that there is less need to use hard engineering methods to prevent erosion. However, there are a number of historical hard erosion protection structures which the Council continues to maintain as is, and there have been circumstances where these have been extended to mitigate end of wall effects. Council staff also manage a yearly programme of maintaining and creating new plantings to exclude weed species within the X and Y rated river network, which also contribute to preventing river channel erosion. However, willow (an exotic tree species) is often used as a live edge protection. Council’s global consent for river management works (including erosion protection works) include consent conditions to ensure that works are (where practicable) designed to take into account the river’s natural physical features and form and natural character and landscape values. However, an implementation issue highlighted by staff is that the primary focus is on ensuring an effective design for erosion mitigation purposes, rather than a sympathetic design which will harmonise with the natural character of the area.</p>	<p>Partial achievement</p>

Policy	Analysis	Rating of Achievement
	<p>In coastal areas, the Coastal AMP applies. This plan states that Council's approach is to maintain existing Council-owned coastal protection works, but will not provide any increased levels of protection to properties. Historically, a number of factors were considered when determining the use of soft or hard erosion protection, including physical practicalities of the site/location and the likely need for ongoing maintenance and costs. At some coastal locations the Council undertakes soft protection such as dune replenishment/sand push ups and plantings/Coastcare projects which harmonise with the natural character of the coastline. The use of hard protection such as rock revetments is often not in keeping with the character of sandy beaches and inlets but have been a necessary solution to mitigate erosion processes in relation to Council assets such as roads. The rock revetment wall at Marahau is an example where local rock was used to provide some harmony within the local environment. Refer to the assessment for Policy 13.1.3.3 in relation to use of coastal protection structures.</p>	
<p><b>12.1.3.2</b> To avoid, remedy, or mitigate the actual or potential soil erosion or damage, sedimentation, and other adverse effects of land disturbance activities consistent with their risks on different terrains in the District, including consideration of: ...<i>(d)</i> Coastal Risk Area.</p>	<p>Chapter 18 Land Disturbance – Zone 1 rules include specific provisions in relation to land disturbance and recontouring within particular Mapua/Ruby Bay zones, including the Coastal Risk Area (as a result of PC22). The policy is effective given that the small number of resource consents granted have considered land disturbance activities (e.g. building platforms) in association with new buildings in the Coastal Risk Area and consideration of inundation/flood flows. This policy has overlap with Policy 13.1.3.13 (<i>To regulate land disturbance so that slope instability and other erosion processes and inundation are not initiated or accelerated.</i>)</p>	Fully achieved
<p><b>13.1.3.2</b> When determining appropriate subdivision, use or development in the coastal environment to assess the likely need for coastal protection works and, where practicable, avoid those sites for which coastal protection works are likely to be required.</p>	<p>The general rule framework gives effect to this policy, including specific rules for new buildings in the Coastal Environment Area and Coastal Risk Area. However, it is noted that there are some locations on the coast where the current zoning enables residential development despite the land being subject to hazard risks, as a result of newer hazards information becoming available. This will need to be addressed through the TRMP plan review.</p>	Fully achieved
<p><b>13.1.3.3</b> To avoid developments or other activities that are likely to interfere with natural coastal processes including erosion, accretion, inundation,</p>	<p>Policy 13.1.3.10 supports maintenance or the need for protection works to mitigate natural hazard risk under particular circumstances. This Policy 13.1.3.3 provides clear direction that in all other circumstances, developments or other activities should be avoided.</p> <p>As a result of the overall natural hazards rule framework, this policy has not been tested very often through the rule cascade and therefore could be considered effective in that</p>	Partially achieved



Policy	Analysis	Rating of Achievement
<p>except as provided for in Policy 13.1.3.10.</p>	<p>regard. However, as noted by staff, it is a necessary policy in the overall policy framework.</p> <p>This policy aligns with the intent of the NZCPS, which has played a key role as a material consideration in consenting decisions (particularly Policies 25-27). A recent example was that the NZCPS was cited by an independent hearing commissioner in refusing a resource consent for a seawall at Pakawau, Golden Bay, in April 2019.</p> <p>Where the policy falls short is in relation to coastal protection structures which are deemed permitted activities. An unintended consequence of PC22 was that coastal protection structures, outside the Coastal Risk Area, are not included in the definition of a 'building' and therefore can be constructed without consent provided it is above MHWS, on private land and the associated land disturbance does not exceed 1,000m<sup>2</sup> in any 12-month period. A number of these have been constructed along the district's coastline and the Council has no control over these structures which ultimately through their inherent purpose and design, interfere with natural coastal processes. For example, Council has no control over the overall design of the structure (e.g harmonising with the natural character as per Policy 8.2.3.20) and the ability to control longer term issues such as the potential for end of wall effects, require repair or removal, or if necessary reduced hazard risk by extinguishing existing use rights (where they are district rules).</p>	
<p><b>13.1.3.5</b> To avoid the construction of new habitable buildings in the Residential Closed Zone at Ruby Bay, other than on specified sites.</p>	<p>The Residential Closed zone at Ruby Bay includes the coastal side of Stafford Drive (No. 68 – 206), Broadsea Avenue and Tait Street (refer to Appendix 2, Map 3). The policy is not clear in regards to the interpretation of 'specified sites' as there are no sites identified on the planning maps. Environmental Information staff suggest that it should be interpreted as being appropriate building locations within individual sites (a specified location within a site), rather than identifiable properties within the zone (specified sites).</p> <p>This zone is within the Coastal Risk Area and Coastal Environment Area which provides a clear rule framework for new habitable buildings. For example, Rule 18.9.2.2(a) enables new dwellings in the Coastal Risk Area provided that they are relocatable and if there is no other dwelling on the site. Two resource consents have been approved in this area, one for a new dwelling (undeveloped allotment and designed to be relocatable) and one replacement dwelling (also relocatable).</p> <p>One issue that has been raised by staff is what constitutes a 'relocatable building' (e.g. on piles, are there particular building materials more suited to enable relocation?) and that supplementary planning guidance would be useful. Additionally, the rules require the buildings to be relocatable however there is currently no mechanism in the plan to provide a trigger point for when these buildings should be</p>	<p>Partially achieved</p>

Policy	Analysis	Rating of Achievement
	removed over the longer term as the inundation hazard risk increases.	
<p><b>13.1.3.6</b></p> <p>To limit the reconstruction or replacement of an existing habitable building to a position that is no further seaward than the original habitable building in the Residential Closed Zone at Ruby Bay.</p>	<p>This policy is effective through the rule framework, with one consent being granted for a replacement dwelling that meets the policy intent. This is a necessary policy in relation to future sea level rise.</p>	<p>Fully achieved</p>
<p><b>13.1.3.7</b></p> <p>On the coastal plain from Ruby Bay to Mapua, to limit further subdivision and habitable buildings in order to avoid their exposure to long term coastal inundation, flooding and erosion risks.</p>	<p>This policy considers development on the wider coastal plain of Ruby Bay/Mapua. The Coastal Risk Area and Coastal Environment Area rules provides a strong rule framework. However, in the wider area some development continues – Mapua Coastal Village development on Aranui Road being one notable development (however subdivision was first granted prior to PC22). Ground and/or floor levels have been set through consenting process. More recently, some new buildings in Mapua (e.g. Grossi Point) have been subject to s73 notices under the Building Act. New inundation hazard information identified through the Coastal Management Project will need to be incorporated into the rule framework to help further strengthen the implementation and effectiveness of this policy.</p>	<p>On track to achieve</p>
<p><b>13.1.3.8</b></p> <p>To avoid, unless there is effective mitigation, the expansion of flood-prone settlements onto those parts of the surrounding flood plains where they might be subject to flood hazard.</p>	<p>This policy has been implemented via subdivisions from the early 2000s onwards, including locations in Brightwater, Motueka, and Takaka. The policy relies on having accurate inundation information/mapping to understand the location of the inundation hazard. Mitigation has included minimum ground and/or floor levels set through the consenting process and for some settlements, an additional reliance on flood control schemes (e.g. stopbanks) via the Rivers AMP. Plan changes in Brightwater, Wakefield, and Richmond have also enabled settlement expansion in areas that are less flood prone and where mitigation can be achieved. Additionally, some settlements have also expanded onto the hills to avoid flood prone areas (e.g. Brightwater, Wakefield, Mapua, Pohara).</p>	<p>Fully achieved</p>
<p><b>13.1.3.9</b></p> <p>To prevent damage or interference with the functioning of the major overland flood flow paths of rivers in the District, except as provided for in Policy 13.1.3.10.</p>	<p>The major overland flood flow paths of rivers include Brightwater/Wakefield/Waimea Plains; Motueka; Takaka and Aorere. Through the Rivers AMP, Council has established flood control schemes in many of these catchments in addition to private interventions. There are a number of existing flood models available for settlement areas, and an ongoing programme of work for new/additional modelling for settlements. However, the major overland flood flow paths of rivers in the District as a whole are not mapped. For consent processing, this has made the implementation of the policy more difficult for consenting staff if they have not had knowledge of the area</p>	<p>On track to achieve</p>

Policy	Analysis	Rating of Achievement
	or hazard risk. The rule framework includes rules (setbacks) regarding stopbanks and berm lands and zone restrictions.	
<p><b>13.1.3.11</b></p> <p>To promote the maintenance and enhancement of coastal vegetation in areas at risk from coastal erosion.</p>	<p>This policy is partly given effect through the Reserves and Facilities AMP which promotes the protection and enhancement of open space, coastal and riparian areas. The AMP supports Coastcare projects including at Collingwood, Pakawau, Little Kaiteriteri and Stephens Bay; and restoration of coastal margins at Moturoa/Rabbit Island through the reserve management plan (2016).</p> <p>Resource consents for sand push ups have been granted in areas such as Pakawau, Torrent Bay, Little Kaiteriteri in recent years as a result of coastal erosion and have been undertaken in conjunction with the planting of coastal vegetation.</p> <p>General subdivision rules and esplanade creation provides opportunities through the rule framework. However, as identified in the assessment of Policy 13.1.3.3, permitted activity coastal protection structures have ultimately undermined the intention of this policy to promote and use 'soft' and natural defences against coastal hazards.</p>	Partial achievement
<p><b>13.1.3.14</b></p> <p>To avoid damage by land use activities to flood control structures or works for flood or erosion control.</p>	<p>There is a clear rule framework through Chapter 16.10 which focuses on land uses in relation to stopbanks and berm lands. Chapter 18.5 Land Disturbance Areas also considers earthworks activities near stopbanks. Implementation of these rules have been evidenced through a small number of resource consent decisions, primarily in relation to gravel extraction in the berm lands/river bed.</p> <p>Where the policy lacks effectiveness is in relation to compliance with permitted activities. Implementation issues highlighted by staff include grazing stock causing damage (e.g. young dairy cows, horses), establishment of fences, and location of structures (historical issue). Such activities can affect the integrity of stopbanks and cause them to fail during high rainfall and flooding events. These compliance matters are further complicated by issues with underlying land ownership. For example, the Waimea stop banks are on Council owned land which ultimately provides a buffer from other land use activities, whereas the Motueka and Riwaka stop banks are located on private land where land owners wish to maximize and use their landholdings. Given these observed issues, the policy effectiveness is only partially achieved.</p>	Partial achievement
<p><b>13.1.3.16</b></p> <p>To avoid new subdivision, use or development that would hinder the ability of natural systems and features (such as beaches, dunes, wetlands or barrier islands) to protect existing subdivision, use or</p>	<p>The general rule framework largely gives effect to this policy, including specific rules for new buildings in the Coastal Environment Area and Coastal Risk Area. The intent of this policy is in keeping with NZCPS Policy 26 which promotes the use of natural defences against coastal hazards.</p> <p>It is noted that there are some locations on the coast where the current zoning enables residential development despite the land being subject to hazard risks, as a result of newer</p>	Partial achievement

Policy	Analysis	Rating of Achievement
development from natural hazards (such as erosion, inundation, storm surge, or sea level rise).	hazards information becoming available. This will need to be addressed through the TRMP plan review.  It is noted that there is overlap with Policy 13.1.3.3 and Policy 8.2.3.18 which consider the effects of development and land uses on coastal processes. The assessments for those policies are relevant to this assessment.	

### 3.3.2 Slope Instability

#### (a) Evidence of Implementation

Chapter 13 states that *“slope instability is a general hazard affecting a wide area of the Tasman District, especially on slopes greater than 20 degrees, with soil or rock subject to shear failure. Particularly unstable rock types include the Separation Point Granites and Marsden Coal Measures along the Waimea Fault system.”*

There is one specific policy in Chapter 13 Natural Hazards which addresses slope instability in terms of natural hazard risk. This policy seeks to regulate land disturbance so that it does not initiate or accelerate (a) slope instability and other erosion processes and (b) inundation. This policy is implemented through Chapter 18.12 Slope Instability Risk Area (specific rules and mapped areas identified on the planning maps), in addition to broader land disturbance areas in Chapter 18.5 (two land disturbance areas with corresponding rules). There are also a small number of general natural hazard policies which lists ‘geotechnical’ hazard risks as a consideration – refer to Section 3.3.5 for further details.

As noted previously, Chapter 12 Land Disturbance Effects is currently being reviewed which includes a technical assessment of the erosion-prone land/slope instability in the district. Outputs of this technical assessment will be used to review the mapped areas and rule framework.

#### (b) Effectiveness

This section provides an analysis of the effectiveness of the TRMP’s Chapter 13 slope instability policy. The analysis draws on the information in earlier chapters, council records (e.g. resource consents), and through the rapid assessment process with council staff who are experienced plan users. Policy 13.1.3.13 has been assessed as having an overall partial achievement regarding effectiveness.

**Table 6: Analysis – Slope Instability**

Policy	Analysis	Rating of Achievement
<b>13.1.3.13</b> To regulate land disturbance so that slope instability and other erosion processes and inundation are not initiated or accelerated. General policies – refer to Section 3.3.5	Within the Slope Instability Risk Area (SIRA) as identified on the planning maps, Policy 13.1.3.13 is implemented as land disturbance (and subdivision) is regulated through the clear rule framework, with rules seeking to avoid damage to buildings and downslope properties.  The framework is strong where these areas are mapped, however, outside SIRA there is a reliance on the general land disturbance rules (within two land disturbance zone areas) to ensure that slope instability/erosion and inundation are not initiated or accelerated.	Partial achievement

	<p>The rationale for the existing SIRA targeted areas subject to development pressure at that time. There are areas in the district which are currently not included in the SIRA that have similar characteristics to the existing SIRA. The current review of Chapter 12 Land Disturbance Effects is seeking to address known gaps in the mapped extent of the SIRA (in addition to the overall land disturbance rule framework).</p> <p>One known issue that was raised by staff through the rapid assessment process was the relationship between the Land Disturbance 2 area (Chapter 18.5) and where this overlies with the SIRA (Chapter 18.12). In these locations, only the SIRA rules apply which are considered the 'weaker' rule framework of the two. Additionally, the SIRA rules are very prescriptive, yet there are no specific objectives or policies to provide an overarching framework and clear line of sight from an objective to a policy/policies and rules.</p> <p>Raising ground levels/creation of raised building platforms (land disturbance activities) and exacerbation of flooding/off-site effects are considered in known/mapped inundation areas as part of subdivision/land use consents. However, it is not known the effectiveness of the inundation aspect of Policy 13.1.3.13 in relation to permitted activity earthworks and if these effect flood flows/flow paths.</p> <p>Refer to the Chapter 12 Land Disturbance assessment for further information.</p>	
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### 3.3.3 Wild Fire

#### (a) Evidence of Implementation

There are two policies which specifically consider wild fire (located in Chapters 5.5 (health and safety) and 8.2 (natural character). This policy set addresses:

- the adverse effects of fire on land uses (from location of buildings or flammable vegetation)
- the spread of fire in areas of natural character.

There are also a small number of general natural hazard policies which list wild fire as a consideration – refer to Section 3.3.5 for further details.

As part of review of the TRMP, a wider issue will need to be addressed in terms of what role does a resource management plan play in the management of wild fire hazard and if there is other legislation/regulation such as the Building Act 2004 or Fire and Emergency New Zealand (FENZ) Act 2017 which are more suited to addressing particular aspects of this topic regarding personal safety and building fire safety.

#### (b) Effectiveness

This section provides an analysis of the effectiveness of the TRMP's policies that consider wild fire. The analysis draws on the information in earlier chapters, council records (e.g. resource consents), and through the rapid assessment process with council staff who are experienced plan users. The policies are overall assessed as being fully achieved regarding effectiveness.

**Table 7: Analysis – Wild Fire**

Policy	Analysis	Rating of Achievement
<p><b>5.5.3.1</b> To avoid, remedy or mitigate the likely adverse effects on land uses from fire, arising from the location of buildings or flammable vegetation.</p> <p><b>8.2.3.15</b> To limit the potential for the spread of fire in or to areas of natural character in the coastal environment and on the margins of lakes, rivers and wetlands.</p> <p>General policies – refer to Section 3.3.5</p>	<p>The wild fire policies are given effect through a number of rules across the plan (Chapters 16 and 17) as outlined below.</p> <p><b>Setbacks and flammable vegetation</b></p> <p>Rules specify setbacks between dwellings and plantation forestry (30m for rural/rural residential; 50m for residential zone). From the resource consents reviewed, it appeared that the specified building location areas for new dwellings took these setbacks into consideration.</p> <p>Within the St Arnaud Landscape Priority Area a permitted activity rule allows the removal of indigenous forest if required for a building site and access, creating a fire management zone (defensible space). From the resource consents reviewed, where consent was required for a new dwelling an advice note was attached highlighting fire risk management advice for the area (FireSmart Programme information).</p> <p>There are some areas of the district where development has taken place in or near native vegetation (e.g. Kaiteriteri and Tokongawa) and the risk of wild fire has been considered in terms of provision of water supplies, as discussed below.</p> <p><b>Fire-fighting water supplies</b></p> <p>New dwellings not connected to a reticulated water supply in rural/rural residential zones are required to provide a water supply for firefighting purposes (water tank, dam/pond or river supply), or a home fire sprinkler system, as evidenced in resource consents reviewed.</p> <p>However, it is not clear from the rule framework if the focus is on protecting houses from internal house fires (e.g. option for the use of sprinklers) or protecting houses from wild fire. The Pigeon Valley Fire (February 2019) near Wakefield provided a sense check of the rule framework – FENZ advised that while some landowners used their water tanks to dampen down houses/gardens, generally fire fighters did not use these tanks in favour of other methods (e.g. monsoon buckets and improvised dip dams (swimming pools, grape harvest bins trucks and trailers, ponds, etc)). If the focus is to protect houses from internal fires, perhaps this is better regulated through other legislation such as the Building Act 2004. Staff have also identified that there are issues with the creation and taking of water from dams, ponds and reservoirs for firefighting water supplies due to inconsistencies in the rule framework within Parts IV and V (regional plan) of the TRMP.</p> <p>Additionally, there is an inconsistency in the framework in respect of pockets of residential zoned areas that are not on reticulated water supply but have no requirement to provide water for fire-fighting purposes (e.g. Tasman village).</p> <p><b>Public Safety</b></p> <p>The planning maps identify a High Fire-Risk Area which covers most of the district’s rural area. Within this area, a permitted activity rule requires all temporary activities that are advertised for public</p>	<p>Fully achieved</p>

	admission to submit a fire preparedness plan to FENZ. FENZ confirmed that they have received a number of fire preparedness plans since the rule had legal effect (2016), however there have been instances where event organisers have not provided them and has caused concern for FENZ once the event has been brought to their attention. Through the TRMP review, further consideration should be given to this rule and if it is an RMA matter or better addressed through other legislation such as the FENZ Act 2017.	
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### 3.3.4 Fault Rupture

#### (a) Evidence of Implementation

Chapter 13 notes that surface fault rupture may be a significant hazard in the St Arnaud area (Alpine Fault), the Richmond foothills (Waimea Flaxmore Fault system), and the Murchison area (Buller Catchment Faults).

There is one policy which specifically addresses fault rupture in relation to properties crossing the Alpine Fault at St Arnaud. There are also a small number of general natural hazard policies which list fault rupture as a consideration – refer to Section 3.3.5 for further details.

Policies addressing fault rupture hazards have been implemented through the Fault Rupture Risk Area (FRRRA). This framework identifies the active earthquake faults (namely the Waimea Flaxmore Fault System along the Richmond foothills, the Wairau Fault through St Arnaud and the White Creek and Lyell faults in the southwest of the district) and maps a corridor (the FRRRA) with corresponding rules (Chapter 18.13). There are other known faults within the district that are not currently included in the FRRRA (such as Ruby Bay-Moutere Fault and the Eighty-eight Fault) however these faults either display no surface expression or have sufficiently long recurrence intervals to be considered inactive. This approach should be reassessed through the plan review, namely consider the need to apply consistent planning rules for all known faults in the district, or if it would be unreasonable to require specific planning controls for some faults (e.g. Ruby Bay-Moutere Fault, Eighty-eight Fault).

The FRRRA rules focus on regulating subdivision and building construction in locations which may straddle fault lines, to mitigate the risk to people and buildings from the horizontal or vertical movement of a fault line during an earthquake. General ground shaking experienced in the wider area during an earthquake is not a planning issue. However, how buildings generally perform under seismic activity (earthquakes) is addressed under the Building Act 2004 (in relation to building materials and strength).

#### (b) Effectiveness

This section provides an analysis of the effectiveness of the TRMP’s fault rupture policies. The analysis draws on the information in earlier chapters, council records (e.g. resource consents), and through the rapid assessment process with council staff who are experienced plan users. The policies have been assessed as being fully achieved.

**Table 8: Analysis – Fault Rupture**

Policy	Analysis	Rating of Achievement
<b>6.13.3.10</b> Re-subdivision of existing residentially-zoned allotments	Policy 6.13.3.10 and the general natural hazards policies that consider fault rupture are implemented through the Fault Rupture Risk Area (FRRRA) rules. The suite of rules are effective in terms of regulating subdivision and building construction or alteration near mapped fault lines. Generally, the Council does not have fault line	Fully achieved



<p>crossed by the Alpine Fault in Robert Street, Holland Street and Borlase Avenue at St Arnaud will not be permitted.</p> <p>General policies – refer to Section 3.3.5</p>	<p>data at sufficient accuracy to assist in the location of a building on a particular site. Therefore the rules require both subdivision and habitable buildings within the Fault Rupture Risk Area to have the surface location of the active fault surveyed and mapped more accurately in order to position any allotment or habitable building in relation to the relevant fault.</p> <p>There is disconnect between Policy 6.13.3.10 and the corresponding rules. The policy is not clear while these rules have specific subdivision provisions for the St Arnaud area. Some non-complying subdivisions have been granted, subject to geotechnical reports which have identified the extent of the Alpine Fault and building location areas have been specified outside the area of risk.</p> <p>The framework for building construction or alteration in the FRRRA is an enabling rule with a permitted activity status subject to a favourable geotechnical report prepared by an ‘appropriately competent person’. Through the plan review, consideration should be given to the appropriateness of a third party approval for a permitted activity or if this is <i>ultra vires</i>. Additionally, criteria (d) of Rule 18.13.3.1 should be reviewed as currently it enables where the location of the surface position of the plane of the Waimea-Flaxmore Fault system cannot be identified, there is no further restriction on the location of the building or alteration in relation to the fault, which is of concern.</p>	
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### 3.3.5 General Natural Hazards Objectives and Policies

#### (a) Evidence of Implementation

Across the TRMP there are also a suite of general natural hazards policies, or policies that consider a number of planning issues with natural hazards being one criteria. This policy set considers several matters, namely:

- avoiding, remedying or mitigating the adverse effects of subdivision, land uses or development in areas subject to natural hazards;
- avoiding the effects of natural hazards on land use activities;
- resilience and future-proofing asset infrastructure in areas subject to natural hazards.

This policy set has largely been implemented through the TRMP’s zonings and general rules (Chapters 16, 17 and 18).

A number of the Council’s Activity Management Plans (AMPs) also provide implementation pathways for these policies in relation to council managed assets and functions, for example:

- Rivers AMP: river management including stopbanks and riparian planting, which contributes to mitigation of freshwater inundation and erosion hazards.
- Stormwater AMP: management of stormwater, which contributes to mitigation of freshwater inundation hazard.
- Coastal Assets AMP: sets out the Council’s approach to coastal protection in relation to Council-owned assets, which contributes to mitigation of coastal erosion and/or seawater inundation hazards.



- Reserves and Facilities AMP: promotes the protection and enhancement of open space, coastal and riparian areas and supports Coastcare projects, which contributes to mitigation of coastal erosions and/or seawater inundation hazards.
- Transportation AMP: recognizes the risk of natural hazards on the transportation network and seeks to provide a resilient network.

Included in this assessment is also the Chapter 13 Natural Hazards objectives. Objective 13.1.2.1 aims to manage areas subject to natural hazards and to ensure that development is avoided or mitigated depending on the degree of risk. Implementation is through the plan’s overall natural hazards framework, in addition to other council functions such as AMPs, engineering standards (superseded by the NTLDM), and building consent process. Objective 13.1.2.2 has been included through PC69 and introduces the concept of natural hazard resilience.

## (b) Effectiveness

This section provides an analysis of the effectiveness of the TRMP’s general natural hazards objective and policies. The analysis draws on the information in earlier chapters, council records (e.g. resource consents), and through the rapid assessment process with council staff who are experienced plan users. The objective and policies have largely been assessed as having partial achievement regarding effectiveness.

**Table 9: Analysis – General Natural Hazards Objectives and Policies**

Policy	Analysis	Rating of Achievement
<p><b>5.1.3.1</b></p> <p>To ensure that any adverse effects of subdivision and development on site amenity, natural and built heritage and landscape values, and contamination and <u>natural hazard risks</u> are avoided, remedied, or mitigated.</p>	<p>This is a very broad and general policy which deals with adverse off-site effects of subdivision and development. In relation to natural hazard risks, this is given effect through general and specific rules (Chapters 16, 17 and 18). The use of ‘avoid, remedy, or mitigate’ does not give a clear direction of policy intent. Refer to previous effectiveness assessments by natural hazard topic as detailed above which results in a rating of partial achievement.</p>	<p>Partial achievement</p>
<p><b>6.2.3.4</b></p> <p>To avoid extending urban development onto natural flood plains with a moderate to high risk of flooding or areas that have a moderate to high risk of river or coastal erosion or inundation or land instability.</p>	<p>This policy largely been given effect through the plan’s zoning, Coastal Risk Area and Slope Instability Risk Area – where these risks are mapped. Where not mapped, it relies on the general rule framework.</p> <p>Refer to previous effectiveness assessments by natural hazard topic (inundation and coastal hazards, slope instability) which results in a rating of partial achievement.</p>	<p>Partial achievement</p>
<p><b>6.12.3.4 (Collingwood)</b></p> <p>To avoid, remedy or mitigate the adverse effects of locating development on natural hazard areas.</p>	<p>This is a very broad and general policy which deals with adverse effects of locating development in Collingwood in natural hazard areas. The settlement is vulnerable to a range of natural hazards such as flooding around the Aorere estuary and elsewhere in the town, coastal inundation from sea level rise, coastal erosion and slope instability in some locations.</p>	<p>Partial achievement</p>

Policy	Analysis	Rating of Achievement
	<p>The policy is implemented through the plan's zones, general rules and the Slope Risk Instability Area. The use of 'avoid, remedy, or mitigate' does not give a clear direction of policy intent. Refer to previous effectiveness assessments by natural hazard topic as detailed above which results in a rating of partial achievement.</p>	
<p><b>7.2.3.4</b> To enable further subdivision and residential development within any existing Rural Residential Zone location where the land: (a) is not affected by natural hazards, within and beyond the boundaries of the site, including wildfire risk, and coastal, flood, stormwater, geotechnical or earthquake hazards; and...</p>	<p>Through PC60 these three policies were amended, as part of the overall aim of improving the TRMP's objectives for rural subdivision and land use. In relation to natural hazards, these policies were broadened and the supporting rural subdivision and land use rules were strengthened to give better consideration for natural hazards as an assessment matter. PC60 was made operative in June 2019 and it is too early to determine the effect of these amendments.</p> <p>Through the review of the plan, consideration should be given to the need for such zone-specific natural hazard provisions as these could be included as part of an overarching and consolidated suite natural hazard policies.</p>	<p>Unable to determine progress</p>
<p><b>7.2.3.5</b> To enable further subdivision and residential development to urban densities within any existing Rural Residential Zone location where the land:... (b) is not affected by natural hazards, within and beyond the boundaries of the site, including wildfire risk, and coastal, flood, stormwater or geotechnical hazards; and...</p>		
<p><b>7.2.3.9</b> To enable sites in specific locations to be used primarily for rural industrial, tourist services and papakainga purposes, having regard to:.. (b) natural hazards;...</p>		
<p><b>11.1.3.10</b> To avoid or mitigate likely adverse effects on the integrity of the road network arising from sea-level rise, climatic change and natural hazards.</p>	<p>This is a very broad and general policy which addresses adverse effects of natural hazards on the integrity of the road network. The policy intention is not clear in regards to if the outcome being sought is 'avoidance' or 'mitigation'.</p> <p>New local roads are developed in relation to new subdivisions and provide (infill) connections to the existing wider road network. The general subdivision rules provide requirements (e.g. allotment access and road network provisions) which enables consideration of the adverse</p>	<p>Partial achievement</p>

Policy	Analysis	Rating of Achievement
	<p>effects of natural hazards on proposed new roads. There has been one notable example where a subdivision application was declined as it was determined that over time road access would cease to be available to the subdivided land as a result of sea level rise and coastal hazards (in addition to other matters) (<i>refer ENV-2011-WLG-00059 Carter Holt Harvey HBU Limited versus Tasman District Council</i>). The 2019 Land Development Manual clearly promotes transportation resilience however given that it is newly implemented its effectiveness is yet to be determined. The previous 2013 manual (engineering standards) did not clearly include this concept of resilience as its focus was more on technical standards.</p> <p>Some parts of the existing council road network are located near or on mean high water springs and have required hard protection structures to mitigate coastal erosion processes and/or inundation – consents granted have been for coastal disturbance under Part II of the TRMP.</p> <p>The policy is outdated in respect that transportation activity management does not focus on the ‘integrity of the road network’ as a whole, rather the focus is on preserving connections between roads. For example, in the longer term it may be more cost effective and practical to create new link roads providing alternative connections to existing roads, rather than maintaining existing coastal roads under threat from sea level rise and coastal hazards.</p> <p>It is acknowledge that this policy has overlap with the intent of the two policies (13.1.3.17 and 13.1.3.18) introduced under PC69 – see below.</p>	
<p><b>13.1.2.1</b> Management of areas subject to natural hazard, particularly flooding, instability, coastal and river erosion, inundation and earthquake hazard, to ensure that development is avoided or mitigated, depending on the degree of risk.</p>	<p>This objective has been effective in part through the implementation of the overall natural hazards framework of policies and rules as discuss throughout this assessment.</p>	<p>Partial achievement</p>
<p><b>13.1.2.2</b> Land development, including supporting network infrastructure asset services, is resilient against natural hazards.</p>	<p>PC69 introduced this objective which seeks network infrastructure resilience against natural hazards. It was made operative in June 2020 and is included for information only.</p>	<p>N/A</p>
<p><b>13.1.3.1</b> To avoid the effects of natural hazards on land use</p>	<p>This is a very broad and general policy. The policy intent is to ‘avoid’ land use activities in locations where there are ‘significant’ risks from specified natural hazards. Where</p>	<p>Partial achievement</p>

Policy	Analysis	Rating of Achievement
<p>activities in areas or on sites that have a significant risk of instability, earthquake shaking, fault rupture, flooding, erosion or inundation, or in areas with high groundwater levels.</p>	<p>the natural hazards are mapped, the policy is given effect through the rules e.g. the Coastal Risk Area, Fault Risk Rupture Area and the Slope Instability Risk Area. Where hazards are not mapped, the policy intent may not be delivered upon, or reliance on other controls such as through the Building Act 2004 in relation to new buildings. Refer to previous effectiveness assessments by natural hazard topic (slope instability, fault rupture/earthquake shaking, inundation and coastal hazards). The plan does not define what the threshold is for 'significant risks'.</p> <p>There are some locations in the district that may have periodic high groundwater levels as a result of incident rainfall, however it has not been such a risk to warrant specific mention in the policy.</p>	
<p><b>13.1.3.4</b> To avoid or mitigate adverse effects of the interactions between natural hazards and the subdivision, use and development of land.</p>	<p>Like other policies in this grouping, this is a general policy which is given effect through the plan's subdivision and land use rules. The subdivision process can give effect to this policy provided that the zones reflect known hazard issues. Refer to previous effectiveness assessments by natural hazard topic which results in a partial achievement.</p>	<p>Partial achievement</p>
<p><b>13.1.3.10</b> To maintain or consider the need for protection works to mitigate natural hazard risk where: (a) there are substantial capital works or infrastructure at risk; or (b) it is impracticable to relocate assets; or (c) it is an inefficient use of resources to allow natural processes to take their course; or (d) protection works will be effective and economic; or (e) protection works will not generate further adverse effects on the environment, or transfer effects to another location.</p>	<p>Through a number of AMPs, the Council sets out its current approach to protection works to mitigate natural hazard risks in relation to asset infrastructure and the wider community (e.g. settlements). Protection works generally relate to inundation hazards and include a range of options from soft measures (e.g. coast care plantings/sand push ups; revegetation of river banks) to hard protection measures (e.g. rock revetments).</p> <p>The Council provides a number of flood control schemes (via the Rivers AMP) and maintains this network of stopbanks and river erosion protection schemes through a global rivers management consent; and maintains a number of coastal protection structures including the Ruby Bay and Marahau seawalls (via the Coastal AMP). These provide protection measures to a number of communities on river flood plains and in coastal locations.</p> <p>The Coastal AMP states that Council's approach is to maintain existing Council-owned coastal protection works, but will not provide any increased levels of protection to properties. Historically, a number of factors were considered when determining the use of soft or hard erosion protection, including physical practicalities of the site/location and the likely need for ongoing maintenance and costs.</p> <p>Some of the clauses in this policy align with similar policies of the NZCPS (noting that the policy pre-dates the current NZCPS). Although the policy has not been tested often, a recent example is the decision by an independent hearing commissioner in refusing a resource consent for a seawall at Pakawau, Golden Bay, in April 2019.</p>	<p>Full achievement</p>

Policy	Analysis	Rating of Achievement
	Through the plan review, consideration should be given to if there is a need to focus the policy intent to give a preference to public infrastructure protection and not private interests.	
<p><b>13.1.3.12</b></p> <p>To provide warnings and emergency response systems for areas at risk from or affected by natural hazards.</p>	<p>This policy is effective through a number of non-plan methods as detailed below.</p> <p>The Council’s civil defence functions contribute to this policy in relation to emergency response. The Nelson Tasman Civil Defence Emergency Management Group Plan provides for an ‘all hazards’ approach to emergency management planning and activity within Nelson City and Tasman District. The Group Plan includes the structure and systems necessary to manage hazard events, including the arrangements for declaring a state of emergency in the Group’s area.</p> <p>Through the Rivers Activity Management Plan, the Council is preparing Flood Response Plans for heavy rainfall events in the Motueka and Takaka areas by June 2021. These plans will detail the responses by Council to elevated water levels in the river systems in these areas.</p> <p>Council’s hydrology team maintain a flood warning system for both Tasman and Nelson regions.</p>	Full achievement
<p><b>13.1.3.15</b></p> <p>To prepare a hazard management strategy identifying hazards and hazardous areas, and management options for these areas.</p>	<p>This policy has been effective in part. While there is no ‘hazard management strategy’, a number of council work programmes have the intent of contributing, for example:</p> <ul style="list-style-type: none"> <li>• The Environmental Information team have an ongoing programme of work to improve knowledge and understanding of the district’s hazards through research and mapping;</li> <li>• AMPs seek to address natural hazard issues in relation to council assets;</li> <li>• TRMP plan changes have been undertaken as a result of new hazard information and strengthened plan provisions (e.g. Brightwater, Wakefield, fault rupture risk area);</li> <li>• TRMP provides and overall planning framework for the management of natural hazards.</li> </ul>	Partial achievement
<p><b>13.1.3.17</b></p> <p>To mitigate natural hazard risks through the design and construction of network asset infrastructure.</p>	<p>PC69 introduced these two policies that seeks network infrastructure resilience against natural hazards. These policies were made operative in June 2020 and are included for information only.</p>	N/A
<p><b>13.1.3.18</b></p> <p>To design and construct resilient network asset infrastructure.</p>	<p>It is noted that any measures to address hazard risk/resilience at the design and construction phases of network asset infrastructure should also ensure that the design is in keeping (where possible) with the natural character/harmonise with the existing environment – refer to the intent of Policy 8.2.3.20.</p>	N/A



## Appendix 1: References

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Ministry for the Environment. (2016). *Risk Based Approach to Natural Hazards under the RMA*. Wellington, New Zealand: Tonkin & Taylor Limited (Job Number 31463.001)

## Appendix 2: Maps

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**MAP 1:** Indicative areas shaded in purple where Policy 6.9.3.2 applies in Motueka (*“To provide for the extension of residential development east of Woodlands Avenue, south of Fearon Street, south of Parker Street on either side of Wilkie Street and north of Courtney Street East, subject to minimum floor height requirements and adequate stormwater disposal”*).



**MAP 2:** Indicative area shaded in purple where Policy 6.9.3.5 applies in Motueka (*“To provide for future residential zoning in parts of the Thorp Street rural-residential zone, subject to an overall stormwater and drainage plan that takes account of potential sea-level rise”*).



**MAP 3:** Indicative area circled in purple where Policy 13.1.3.5 applies in Ruby Bay (*“To avoid the construction of new habitable buildings in the Residential Closed Zone at Ruby Bay, other than on specified sites”*).



## Appendix 3: Key Data

Data saved in:

P:/Policy/TRPS&TRMP Plan Review/TRMP Review 1/s35 Assessment and Data/Chapter Evaluations/Chapter 13 Natural Hazards/Data

## Appendix 4: Plan objectives that the natural hazards policies contribute to

The TRMP's natural hazard policies contribute to a number of plan objectives. Refer to those chapter assessments for further information on internal consistency of plan provisions.

Chapter/section	Objective	Internal consistency of provisions
5.1 Adverse off-site effects	5.1.2 Avoidance, remedying or mitigation of adverse effects from the use of land on the use and enjoyment of other land and on the qualities of natural and physical resources.	Refer to Chapter 5 assessment
5.5 Health and safety	5.5.2 Reduction of risks to public health and safety, property and the environment, arising from fire and hazardous substances.	Refer to Chapter 5 assessment
6.2 Land Effects from Urban Growth	6.2.2.1 Urban growth that avoids or mitigates the loss of land of high productive value and the risks of extending onto land subject to natural hazards.	Refer to Chapter 6 assessment
6.4 Coastal Urban Development	6.4.2 Containment of urban subdivision, use and development so that it avoids cumulative adverse effects on the natural character of the coastal environment.	Refer to Chapter 6 assessment
7.2 <i>Provision for activities other than plant and animal production*</i>	<p>7.2.2.1 <i>Retention of opportunities to use rural land for activities other than plant and animal production, including rural living, rural residential, rural industrial, tourist services and papakainga activities in restricted locations, while avoiding the loss of land of high productive value.*</i></p> <p>7.2.2.2 <i>Retention of opportunities for a range of residential living options within rural locations, including coastal and peri-urban areas, in the form of the Rural Residential and Rural 3 zones.*</i></p> <p>7.2.2.3 <i>Retention of opportunities for rural industrial development that is appropriately located in rural areas for production-related industries, in the form of the Rural Industrial Zone.*</i></p>	Refer to Chapter 7 assessment, however note that these newer provisions are out of scope (PC60)
8.2 Natural character	8.2.2 Maintenance and enhancement of the natural character of the margins of lakes, rivers, wetland and the coast, and the protection of that character from adverse effects of the subdivision, use, development or maintenance of land or other resources, including effects	Refer to Chapter 8 assessment



	on landform, vegetation, habitats, ecosystems and natural processes.	
11.1 Effects on transport safety and efficiency effects	11.1.2 A safe and efficient transport system, where any adverse effects of the subdivision, use or development of land on the transport system are avoided, remedied or mitigated.	Refer to Chapter 11 assessment
12.1 Land disturbance effects	12.1.2 The avoidance, remedying, or mitigation of adverse effects of land disturbance, including: (a) damage to soil; (b) acceleration of the loss of soil; (c) sediment contamination of water and deposition of debris into rivers, streams, lakes, wetlands, karst systems, and the coast; (d) damage to river beds, karst features, land, fisheries or wildlife habitats, or structures through deposition, erosion or inundation; (e) adverse visual effects; (f) damage or destruction of indigenous animal, plant, and trout and salmon habitats, including cave habitats, or of sites or areas of cultural heritage significance; (g) adverse effects on indigenous biodiversity or other intrinsic values of ecosystems.	Refer to Chapter 11 assessment
13.1 Natural Hazards	13.1.2.1 Management of areas subject to natural hazard, particularly flooding, instability, coastal and river erosion, inundation and earthquake hazard, to ensure that development is avoided or mitigated, depending on the degree of risk.  <i>13.1.2.2 Land development, including supporting network infrastructure asset services, is resilient against natural hazards.*</i>	Objective 13.1.2.2 is out of scope (PC69)

\* Out of scope of assessment