

SECTION 32 REPORT

Natural Hazards

May 2022

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1 Executive Summary

Far North District Council (**Council**) has responsibilities under section 31 of the Resource Management Act 1991 (**RMA**) to the control the potential effects of the use, development, or protection of land, including for the purpose of avoiding or mitigating of natural hazards.

Natural hazards include those that more common with potentially significant consequences such as flooding, coastal erosion and inundation, land instability and wild fire; and those natural hazards that occur less frequently (or with less consequences) including, tsunamis, high winds and droughts. Flooding, both from rivers and overland flow, is the most common natural hazard faced by the Far North District (**District**), while many of the District's settlements are also adjacent to the coast which exposes them to coastal hazard risks. Storm events have also given rise to significant land instability and erosion problems in the District. In March 2007, a large storm caused significant damage in Opuia and Haruru Falls. In 2015, residents of several houses in Paihia were required to abandon their houses due to a slow-moving landslide. In late 2021 and early 2022 residents of several communities were evacuated due to wild fires. Given the nature of the District and its development, Climate Change, Natural Hazards and Resilience was identified as one of nine Significant Resource Management Issues (**SRMI**) identified by Council for the District Plan Review.

The risk of natural hazards is currently managed by the Operative District Plan (**ODP**). However, the issues associated with natural hazards, and the need to manage risks more effectively, have gained greater recognition and prominence since that plan was made fully operative in 2009. The statutory context, including the New Zealand Coastal Policy Statement 2010 (**NZCPS**) and the Northland Regional Policy Statement (**RPS**), and best planning practice has also changed significantly. Accordingly, a substantial review of the natural hazard provisions was undertaken through the District Plan Review.

The natural hazard provisions in the Proposed District Plan (**PDP**) have resulted from an assessment of current best practice (as reflected in recent district plan changes), the primary hazard issues and risks and to reflect the policy direction of the NZCPS and the RPS. In summary, the PDP extends the approach of the Operative District Plan. This includes broadening the scope of controls on land use and/or subdivision within mapped hazard areas and to manage other hazards such as land that is susceptible to land instability and to manage wild fire risks. A precautionary approach, both within and outside of known areas subject to natural hazards, has been adopted to reflect the potential consequences of natural hazard events. This includes a more stringent regulatory approach (than the Operative District Plan) to manage hazard risks and protect vulnerable activities in natural hazard areas.

This approach has been adopted as it is consistent with best practice (noting that the approach to managing natural hazard risks varies nationwide), responds to the specific circumstances of the district and gives effect to the NZCPS and the directive provisions of the RPS. While the provisions in the PDP will increase the number of land use consents required for development in hazard areas, and may increase the cost of hazard assessments for land use and subdivision, such processes and costs are warranted to manage the long term issues and risks that result from development in hazard areas or which may be affected by natural hazards.

The provisions manage a matter of national importance and are consistent with the purpose and principles of the RMA. They manage use and development, and protect natural and physical resources, to enable people and communities to provide for their social, economic, and cultural well-being while avoiding or mitigating natural hazard risks to people, property and infrastructure.

2 Introduction and Purpose

2.1 Purpose of report

This report provides an evaluation undertaken by the Far North District Council (**Council**) in preparation of district plan provisions for Natural Hazards in the Proposed Far North District Plan (**PDP**). This assessment is required under section 32 of the Resource Management Act 1991 (**RMA**).

Section 32 of the RMA requires Councils to examine whether the proposed objectives are the most appropriate to achieve the purpose of the RMA and whether the provisions (i.e. policies, rules and standards) are the most appropriate way to achieve the objectives. This assessment must identify and assess environmental, economic, social, and cultural effects, benefits and costs anticipated from the implementation of the provisions. Section 32 evaluations represent an on-going process in RMA plan development and a further evaluation under section 32AA of the RMA is expected throughout the review process in response to submissions received following notification of the PDP.

2.2 Overview of topic

Council has responsibilities under the RMA (section 31) to manage the effects of the use and development, or protection of land and associated natural and physical resources of the district, including for the purpose of the avoidance or mitigation of natural hazards. The management of the risks posed by natural hazards contributes to achieving the purpose and principles of the RMA, including to provide for the social, economic, and cultural well-being of people and communities and for their health and safety. The New Zealand Coastal Policy Statement (**NZCPS**) and the Northland Regional Policy Statement (**RPS**), to which a district plan must give effect, also provide specific direction on the management of natural hazard risks.

Natural hazards include those that are more common with potentially significant consequences such as flooding, coastal erosion and inundation, land instability and wild fire; and those natural hazards that occur less frequently (or with less consequences) including, tsunamis, high winds and droughts. Flooding is the most common natural hazard faced by the District, while many of the District's settlements are also adjacent to the coast which exposes them to coastal hazard risks. Natural hazards are often driven by climatic conditions, for example extreme rainfall events (flooding/land instability) or severe drought (wild fire). Coastal erosion, inundation and land instability (slips and slope failure) are also most likely to occur during (or as a result of) large storm events.

The risk of natural hazards is likely to increase in the future as a result of climate change. Rainfall in Northland is predicted to reduce overall and droughts are likely to increase in intensity and duration. However, tropical cyclones will likely be stronger and cause more damage as a result of heavy rain and strong winds. Sea level rise will increase the risk and extent of coastal erosion and inundation affecting properties, roads and other infrastructure¹.

The effects of natural hazard events range from general nuisance to creating significant damage to, or loss of, property and infrastructure such as roads, bridges and pipelines. In extreme cases, natural hazards can result in loss of life.

The risks that natural hazards pose are made up of a number of factors including:

- The nature, magnitude and extent of the hazard;
- The anticipated frequency or probability of the hazard event occurring; and
- The exposure and vulnerability of the environment to the hazard, including the ability to recover from an event.

¹ <https://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/northland>

District plan provisions are required to manage natural hazard risk. The changes in provisions for managing natural hazards are part of a consolidated review of the Operative Far North District Plan (ODP). The provisions proposed in this assessment have modified the existing provisions in the District Plan and reflect the RPS, which has provided a clear directive to actively manage natural hazard risk, in particular coastal hazard (inundation and erosion) and flood risk, at the District Plan level.

3 Statutory and Policy Context

3.1 Resource Management Act 1991

The **Section 32 Overview Report for the PDP** provides a summary of the relevant statutory requirements in the RMA relevant to the PDP. This section provides a summary of the matters in Part 2 of the RMA (purpose and principles) of direct relevance to Natural Hazards.

Section 74(1) of the RMA states that district plans must be prepared in accordance with the provisions of Part 2. The purpose of the RMA is the sustainable management of natural and physical resources which is defined in section 5(2) of the RMA as:

“...sustainable management means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing, and for their health and safety while –

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.”*

To achieve the purpose of the RMA, all those exercising functions and powers under the RMA are required to:

- Recognise and provide for the matters of national importance identified in section 6;
- Have particular regard to a range of other matters in section 7; and
- Take into account the principles of the Treaty of Waitangi in section 8 of the RMA.

The following section 6 matters are directly relevant to Natural Hazards:

- (h) the management of significant risks from natural hazards.

Section 6(h) was introduced as part of the Resource Legislation Amendment Act 2017, following the Canterbury Earthquakes, and introduces the concept of risk management to the RMA.

Section 7 sets out the specific matters that those exercising functions and powers under the RMA shall have particular regard to. The following subsections are considered most relevant for the development of provisions that relate to natural hazards:

- (b) the efficient use and development of natural and physical resources:
- (f) maintenance and enhancement of the quality of the environment:
- (i) the effects of climate change:

Section 8 of the RMA requires that all persons exercising functions and powers under it take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

3.1.1 Key RMA Definitions

Two definitions are relevant to this topic: the definition of natural hazards and the meaning of effect.

Natural Hazards

“Any atmospheric, 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”.

Meaning of Effect

*“Unless the context otherwise requires, the term **effect** includes*

- (a) any positive or adverse effect; and*
- (b) any temporary or permanent effect; and*
- (c) any past, present or future effect; and*
- (d) any cumulative effect which arises over time or in combination with other effects - regardless of the scale, intensity, duration or frequency of the effect and also includes -*
- (e) any potential effect of high probability; and*
- (f) any potential effect of low probability which has a high potential impact.”.*

3.1.2 Subdivision

In addition to land use controls, the RMA includes provisions that assist in the management of natural hazard risk at the subdivision stage, including:

- Section 106 – a consent authority may refuse a subdivision consent application, or may grant consent subject to conditions, if the land is at significant risk from natural hazards. An assessment of the risk from natural hazards requires a combined assessment of the likelihood of the natural hazards occurring; the material damage that would result from natural hazards to the land where the consent is sought, other land, or structures; and any likely subsequent use of the land that would accelerate or worsen the damage predicted from a natural hazard (s106(1A)).
- Section 220 – the conditions of which a subdivision consent may be granted include: a condition that provision be made to the satisfaction of the territorial authority for the protection of the land or any part thereof, or of any land not forming part of the subdivision, against natural hazards from any source (being, in the case of land not forming part of the subdivision, natural hazards arising or likely to arise as a result of the subdividing of the land the subject of the subdivision consent) (s220(1)(d)).

3.2 Higher order planning instruments

Section 75(3) of the RMA requires district plans to give effect to higher order planning instruments – National Policy Statement (**NPS**), the New Zealand Coastal Policy Statement (**NZCPS**), National Planning Standards (**Planning Standards**), and the relevant Regional Policy Statement (**RPS**). The **Section 32 Overview Report** provides a more detailed summary of the relevant RMA higher order planning instruments relevant to the PDP. The sections below provide an overview of provisions in higher order planning instruments directly relevant to Natural Hazards.

3.2.1 National Planning Standards

Section 75(3)(ba) of the RMA requires that district plans give effect to Planning Standards. The Planning Standards were gazetted in April 2019 and the purpose is to assist in achieving the purpose of the RMA and improve consistency in the structure, format and content of RMA plans.

Where relevant, provisions, terms and definitions are aligned to the standards. The structure standard (Chapter 7. District-wide Matters Standard) for district plans specifies that provisions pertaining to natural hazards in the coastal environment must be located in the Coastal Environment chapter rather than being in the Natural Hazards chapter.

3.2.2 National Policy Statements

Section 75(3)(a) of the RMA requires that district plans give effect to any NPS and the NZCPS must be given effect to under section 75(3)(b).

The NZCPS includes a number of objectives and policies of relevance to natural hazards and climate change as they relate to the coastal environment. The table below outlines the provisions in the NZCPS that are directly relevant to the management of natural hazards.

NZCPS – Relevant Policies – Natural Hazards	
Policy 24	Identification of coastal hazards
Policy 25	Subdivision, use, and development in areas of coastal hazard risk
Policy 26	Natural defences against coastal hazards
Policy 27	Strategies for protecting significant existing development from coastal hazard risk

The NZCPS recognises that activities in the coastal environment are susceptible to the effects of natural hazards such as coastal erosion, flooding and tsunamis and that some natural hazards will be exacerbated by climate change and will increasingly threaten existing infrastructure, public access and other coastal values as well as private property.

However, in summary, the NZCPS seeks to ensure that coastal hazard risks, taking account of climate change, are managed by locating new development away from areas prone to such risks and considering responses, including managed retreat, for existing development in this situation; and protecting or restoring natural defences to coastal hazards. Policies 24 to 27 direct a range of actions to identify and manage natural hazard risk in the coastal environment.

3.2.3 National Environmental Standards

Under section 74(1)(f) of the RMA, a district plan must be prepared in accordance with any regulations, which includes NES. Section 44A of the RMA requires local authorities to recognise NES by ensuring plan rules do not conflict or duplicate with provisions in a NES.

The NES have been considered as part of the District Plan Review. There is no NES that is of direct relevance to the management of natural hazards.

3.2.4 Regional Policy Statement for Northland

Section 75(3)(c) of the RMA requires district plans to 'give effect' to any RPS. The RPS was made operative on 14 June 2018.

The RPS requires subdivision and land use (including development) to minimise the risk of natural hazards, with a particular focus on activities within flood plains and areas affected by coastal hazards.

The RPS includes a range of directive and guiding objectives, policies and methods that require the assessment of subdivision, land use activities (including infrastructure) that may be affected by natural hazards, associated design requirements and that the risks of natural hazards are assessed before new areas are zoned to enable intensification.

In accordance with the RMA, these provisions have significantly influenced the natural hazards provisions in the PDP. As a component of this, flood and coastal hazard maps that have been prepared by the Northland Regional Council² (NRC) are adopted into the PDP to assist in giving effect to the

² <https://www.nrc.govt.nz/floodmaps/#View%20the%20maps%20online>

flooding and coastal hazard provisions. Consultant reports associated with these maps, prepared for the NRC, are also available³.

The table below outlines the provisions in the RPS are directly relevant to natural hazards.

RPS Provisions – Natural Hazards	
Objective 3.13	Natural hazard risk
Policy 7.1.1	General risk management approach
Policy 7.1.2	New subdivision and land use within 10-year and 100-year flood hazard areas
Policy 7.1.3	New subdivision, use and development within areas potentially affected by coastal hazards (including high risk coastal hazard areas)
Policy 7.1.4	Existing development in known hazard-prone areas
Policy 7.1.5	Regionally significant infrastructure and critical infrastructure
Policy 7.1.6	Climate change and development
Method 7.1.7	Statutory plans and strategies
Method 7.1.8	Monitoring and information gathering
Method 7.1.9	Advocacy and education
Policy 7.2.1	Role of natural features
Policy 7.2.2	Establishing the need for hard protection structures
Policy 7.2.3	Protection and maintenance of structural mitigation assets
Method 7.2.4	Statutory plans and strategies

3.3 Regional Plan for Northland

Section 75(4)(b) of the RMA states that any district must not be inconsistent with a regional plan for any matter stated in section 30(1) of the RMA. Section 74(2)(a) of the RMA states that when preparing or changing a district plan, a territorial authority shall have regard to any proposed regional plan of its region in regard to any matter of regional significance or for which the regional council has primary responsibility under Part 4 of the RMA. The operative Northland Regional Plans and proposed Northland Regional Plan (**PNRP**) are summarised in the **Section 32 Overview Report**.

In respect of natural hazards, the relevant provisions of the PNRP are not identified as being subject to appeal and hence are 'past challenge' and can be considered operative. Accordingly, only the provisions of the PNRP have been considered in this evaluation.

In summary, the PNRP requires that the risks and impacts of natural hazard events (including the influence of climate change) on people, communities, property, natural systems, infrastructure and the regional economy are minimised, and includes a range of mechanisms to do so.

The PNRP includes the following definitions:

Flood hazard area: Land that has a one percent chance in any year of being inundated due to high river flows.

³ <https://www.nrc.govt.nz/environment/flood-protection-and-natural-hazards/flood-and-coastal-hazard-maps/consultant-reports/>

High-risk flood hazard area: Land where there is at least a 10 percent chance of river flooding occurring annually.

High-risk coastal hazard area: Land that has been assessed (and mapped) as being at a high-risk from the effects of coastal hazards (erosion and inundation) over a planning horizon of 50 years. For coastal erosion, this likelihood corresponds to a 66 percent chance that coastal erosion will reach the landward extent of the setback line by 2065. For coastal inundation, the high-risk coastal hazard area is based on a two percent annual exceedance probability event for the year 2065.

The PNRP includes provisions relating to the appropriateness of hard protection structures, design and location of hard protection structures, re-building of materially damaged or destroyed buildings in high-risk hazard areas, flood defences, and development within flood plains and requires resource consent for some activities. It is noted that a number of the provisions are subject to appeal, and while they have immediate effect, are yet to be operative and may be subject to change.

Notwithstanding this, the requirement for resource consents for activities potentially affected by natural hazards under the PNRP has been considered in the PDP provisions for natural hazards to minimise any unnecessary overlap with regional consent requirements – although some overlap is inevitable due to the overlapping functions of regional and district plans⁴.

The table below provides an overview of regional plan provisions directly relevant to natural hazards.

Northland Regional Plan Provisions – Natural Hazards	
Policy D.6.1	Appropriateness of hard protection structures
Policy D.6.2	Design and location of hard protection structures
Policy D.6.3	Re-building of materially damaged or destroyed buildings in high-risk hazard areas
Policy D.6.4	Flood hazard management – flood defences
Policy D.6.5	Flood hazard management – development within floodplains
Policy 7.2.3	Re-building of materially damaged or destroyed buildings – restricted discretionary activity
Rule C.8.6.2	Re-building of materially damaged or destroyed buildings – non-complying activity

3.4 Iwi and Hapū Environmental Management Plans

When preparing and changing district plans, Section 74(2A) of the RMA requires Council to take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district. At present there are ten iwi planning documents accepted by Council which are set out and summarised in the **Section 32 Overview Report**.

Each plan is comprehensive and covers a range of issues of importance to the respective iwi or hapū. The plans contain statements of identity and whakapapa and identify the rohe over which mana whenua are held. The cultural and spiritual values associated with the role of kaitiaki over resources within their rohe are articulated.

Many of the identified issues within the various management plans relate to concerns over genetically modified organisms, cultural landscapes, sites of cultural significance, indigenous flora and fauna, public access, climate change, minerals, soil, air quality and water quality, particularly with regards to

⁴ RMA sections 30(1)(c)(iv) and 31(1)(b)(i)

subdivision and development activities. The plans also identify the wellbeing of the environment and its inhabitants as being an important consideration. The objectives and policies refer to the amenity values of the environment, landscapes and features as being important and requiring management.

In summary, these plans acknowledge natural hazard risk and climate change (including sea level rise) as key issues. However, they predominantly focus on the role of civil defence strategies and plans which promote adaptation and preparedness.

3.5 Other Legislation and Policy Documents

When preparing or changing a district plan, section 74(2)(b)(i) of the RMA requires council to have regard to management plans and strategies prepared under other Acts to the extent that it has a bearing on resource management issues of the district. The **Section 32 Overview Report** provides a more detailed overview of strategies and plans prepared under legislation that are relevant to PDP. This section provides an overview of other strategies and plans directly relevant to natural hazards.

3.5.1 Building Act 2004

The Building Act 2004 (**Building Act**) provides for the regulation of building work, the licensing regime for building practitioners, and the setting of performance standards for buildings. It manages natural hazards in relation to the construction and modification of buildings. The Building Act definition of natural hazard is narrower than the RMA definition and includes erosion (including coastal erosion, bank erosion and sheet erosion), falling debris (including soil, rock, snow and ice), subsidence, inundation (including flooding, overland flow, storm surge, tidal effects and ponding), and slippage.

Section 71(1) of the Building Act requires District Councils to refuse a building consent for building work if the land is subject to one or more natural hazards, or if the building work will accelerate or worsen the adverse effects because of the natural hazard on that land or other property. However, section 71(2) need not apply if an applicant can satisfy the District Council that the land and building will be protected from the hazard. In these cases, under Section 72 of the Building Act, where the District Council issues a building consent for building work on land subject to a natural hazard, it must impose a condition on the building consent and notify the Director-General of Land, resulting in a notation being placed on the Certificate of Title that the hazards exist. This process ensures District Councils are protected against civil liability when granting consent to build on land subject to a natural hazard.

The Building Act also requires new buildings to meet the performance requirements of the Building Code (these requirements are designed to protect against certain hazards (ground shaking and flooding)). In addition, the Building Act also includes provisions in relation to earthquake-prone buildings (sections 122-132A). Importantly, the Building Act is limited to the 'building' itself and cannot look at wider hazard issues, for example the risks to people and property and also the transference of potential hazards to other properties.

3.5.2 Civil Defence Emergency Management Act 2002

The Civil Defence Emergency Management Act 2002 is based on the "four Rs", being 'reduction' (of risk), 'readiness' (for an event), 'response' (when an event occurs), and 'recovery' (post event). In brief, this Act puts in place the framework for action pre and post a natural hazard event. A key feature of implementing this Act is the establishment of Civil Defence Emergency Management (CDEM) groups in each region with representatives from the Regional Council, District Council, Police, Fire Serve and Health Services. In Northland, the Northland Emergency Management Group have prepared a Northland Civil Defence Emergency Management Plan (2016-2021). The Northland CDEM Group risk reduction principles are:

- To identify and coordinate reduction activities among key stakeholders and the community;

- To prioritise reduction activities taking into account the impact on human life and safety, the economy and the built and natural environment as well as the manageability of the risk and the likelihood of it occurring; and
- To develop practical, achievable objectives and methodologies to reduce risk in the region.

3.5.3 Local Government and Official Information and Meetings Act 1987

Under the Local Government and Official Information and Meetings Act 1987 (**LGOIMA**), District Councils are obligated to issue Land Information Memoranda (**LIM**) on request. A LIM must include information known to the District Council on (amongst other things) the potential erosion, avulsion, falling debris, subsidence, slippage, alluvion, or inundation related to the site.

3.5.4 Local Government Act 2002

Under the Local Government Act 2002 (**LGA**) District Councils must have particular regard to the contribution that the core service of “the avoidance or mitigation of natural hazards” make to their communities. In preparing its Long-Term Plan (**LTP**), the District Council plans its activities (expenditure) over a 10 year planning horizon. This includes financial strategies for asset management planning (i.e. what the expected capital expenditure for network infrastructure, flood protection and flood control works is to maintain existing levels of service). Through the LTP and asset management planning process, the Council decides what level of natural hazard protection their assets are to provide (in the case of flood protection works) or what level of event they are to withstand (in the case of network infrastructure).

3.5.5 Land Drainage Bylaw 2009

The Land Drainage Bylaw is for the purpose of “enabling the regulation of land drainage assets within the Far North District”. The bylaw includes regulations to avoid the obstruction of flow, including through restricting activities to, within, or adjacent to drainage channels. The bylaw also includes a provision that “Any permitted development affecting or likely to affect any drainage channel shall be designed and carried out so as to safely accommodate a 100 year storm flow, and without causing more than minor damage.” The bylaw also regulates alterations to drainage channels.

3.5.6 Community Development Plans

The Council, in conjunction with its communities, has developed 15 non-statutory Community Plans. These plans are designed to assist both the Council and the community to manage growth within their centres, whilst protecting those characteristics and features that the community values most.

The Community Plans are driven by values and aspirations, with the plans centred on the environmental, spiritual, social, cultural and economic wellbeing of that community. A number of the Community Plans reference natural hazards, including in relation to:

- Areas to avoid for future development/growth opportunities;
- The need for infrastructure servicing to take into account extreme flooding;
- Flood protection and river management works; and
- Identification of roads vulnerable to subsidence and flooding.

4 Current State and Resource Management Issues

This section provides an overview of the relevant context for natural hazards, the current approach under the ODP, and key issues raised through consultation. It concludes with a summary of the key resource management issues for natural hazards to be addressed through the PDP.

4.1 Operative District Plan Approach

4.1.1 Summary of current management approach

There are provisions in the ODP that manage natural hazards. Chapter 12 is the key chapter that manages natural hazards; however, Chapter 13 Subdivision is also of relevance. There are other chapters in the District Plan that manage natural hazards to a lesser extent (in relation to managing earthworks, indigenous vegetation clearance etc).

The ODP includes a range of provisions to address subdivision and land use activities in coastal hazard areas (inundation and erosion) and wild fire risk. It also includes provisions to manage flood risk at the subdivision stage; however, it does not include land use provisions to manage flood risk. Further, the ODP does not include specific provisions to manage land instability risk, despite this being a significant hazard issue in the District. The ODP current coastal hazards maps are not reflective of current modelling done by NRC, and only includes non-statutory flood maps.

4.1.2 Limitation with current approach

There have been significant changes in the hazard provisions in the overarching statutory instruments since the ODP was prepared including the RMA, the NZCPS, the RPS and new flood and coastal hazard maps. Accordingly, while the high-level intent of the ODP provisions remain valid, the provisions do not give effect to the RPS, particularly in relation to the management of flood hazards, or reflect current practice.

4.2 Key issues identified through consultation

The **Section 32 Overview Report** provide a detailed overview of the consultation and engagement Council has undertaken with tangata whenua, stakeholders and communities throughout the district to inform the development of the PDP and the key issues identified through this consultation and engagement. This section provides an overview of key issues raised through consultation in relation to natural hazards, including comments on the draft district plan.

4.2.1 Summary of issue raised through public/stakeholder consultation

There was a moderate level of interest in natural hazards from the community through consultation and engagement on the Draft District Plan released in 2018. Key issues identified through this process include:

- It is generally supported that a new approach is required to manage natural hazards within the District.
- It is accepted that a precautionary approach for managing risk is required; however, there is a divergence in opinion for how this should translate in policies and methods.
- The provision for the operation, maintenance, upgrading and construction of infrastructure that is considered nationally or regionally significant or critical is generally supported.
- It is difficult to comprehend the policy framework without a full set of definitions and rule tables.
- There were some gaps in the framework and better vertical integration with the RPS and the NZCPS is required.
- There needs to be greater consistency in language and terminology used throughout the provisions, including clarification of terminology such as 'significant hazards' and 'acceptable levels' was needed.
- The framework for managing natural hazards needs to be clear and directive in order to provide some certainty to landowners and developers. For example, matters of discretion should be clear and directive.

- Any new framework for the management of natural hazards needs to be supported by strong evidence.
- Comment was received suggesting the Council have more of a role in coastal protection measures, such as hard structures, to support existing development.
- It was suggested that the overview could be expanded to outline the implications of climate change on natural hazards.

4.2.2 Summary of advice from iwi authorities

Section 32(4A)(a) of the RMA requires that evaluation reports include a summary of advice on a proposed plan received from iwi authorities. The **Section 32 Overview Report** provides an overview of the process to engage with tangata whenua and iwi authorities in the development of the PDP and key issues raised through that process. In relation to natural hazards, iwi authorities have provided 9 pieces of advice. Section 3.4 above provided a summary of the key concerns and issues raised in hapū and iwi environmental management plans. In summary this feedback sought:

- Collective support to find solutions for marae and communities, affected by climate change
- Reduction of natural hazard impacts on their communities
- Appropriate controls to respond to sea level rise for coastal development
- Shared decision making on hazard resilience and climate change, especially in relation to managed retreat
- Reduction in the rules managing wildfire
- Changes to the management of land instability due to concern over costs, mapping and the definition
- Flexibility to determine when expert information is required.

Section 5 of this report outlines how the proposed management approach responds to this advice in accordance with section 32(4A)(b) of the RMA.

4.2.3 Other Consultation

Further consultation was undertaken with the following groups:

Who	When	Why
Internal consultation with Council resource consent engineers	16 May 2019	To discuss: <ul style="list-style-type: none"> ▫ Concerns with current provisions – scope (not focussing on flooding or instability), poor plan drafting, inconsistencies in assessment approaches. ▫ Technical information available to assess hazard risk. ▫ Recommendations for amended natural hazard provisions – clearer direction in the plan, including recognising risk outside of mapped areas.
Internal consultation with Council Infrastructure Consents Planner and Asset Manager	16 May 2019	To discuss: <ul style="list-style-type: none"> ▫ Technical information on flooding held by Council and applicability of NRC data for land use planning. ▫ The functional need for infrastructure to be located in natural hazard areas in certain circumstances.

		<ul style="list-style-type: none"> ▫ Amended provisions need to address operation, maintenance, upgrading and removal of infrastructure in natural hazard areas. ▫ Potential requirement for specific risk assessments to support consent applications.
Consultation with the Fire and Emergency New Zealand	December 2019	<p>Key outcomes:</p> <ul style="list-style-type: none"> ▫ Both commercial and residential activities should be regulated in terms of fire risk. ▫ Buildings whether habitable or used for commercial purposes introduce a potential fire risk and will need to provide some type of fire-fighting water supply.
Council Planners and development engineers	November 2021	<p>Key outcomes:</p> <ul style="list-style-type: none"> ▫ Focus management of land instability at the sub-division stage. ▫ Retain land use and subdivision controls for wildfire, but focus them on vulnerable activities.

4.2.4 Draft District Plan Feedback 2021

A draft of the PDP, incorporating the revised natural hazard provisions, was made available for public review and feedback in 2021. A range of issues were raised in respect of these draft provisions. These are summarised in Appendix 4.

The most significant was in relation to the management of land susceptible to instability and the broad criteria that have been adopted in the draft plan. Concerns were raised with proposed controls on land use activities as areas of instability were not mapped and the criteria were likely to incorporate large areas of the District – questioning the cost and practicality of applying such controls to land use development. However, other than this matter, no major issues were raised.

The issues that were raised in feedback were considered and the provisions revised accordingly in this January 2022 update.

4.3 Summary of resource management issues

Following the extensive consultation with Far North communities, iwi and stakeholders, **Climate Change, Natural Hazards and Resilience** was identified as one of nine SRMI identified by Council for the District Plan Review.

This SRMI is summarised as:

Our communities are vulnerable to a number of natural hazards. A history of settlement on flood plains and cultural associations to areas close to the coast has exacerbated our vulnerability to the risk of climate change and existing natural hazards. Inadequate identification and controls over the management of natural hazards and climate change has resulted in a greater exposure to risk. Existing infrastructure due to its location is at risk of hazard events, impacting on the health, safety and resilience of our communities.

Based on the analysis of relevant context, current management approach, and feedback from consultation, the key resource management issues for the natural hazard topic to be addressed through the PDP are:

- Giving effect to the NZCPS and RPS provisions in respect of natural hazards;
- The management of flood risk, particularly in high risk areas (10% AEP flood plain), and coastal hazards associated with sea level rise and erosion;
- Utilising natural processes and defences;
- Enabling a reasonable use and development of private properties and promoting practical solutions;
- Managing infrastructure to ensure they continue to operate in hazard events; and
- Managing risks posed by land instability and wild fire.

Appendix 1 provides an assessment of the issues identified for natural hazards for the district plan review.

5 Proposed District Plan Provisions

The proposed provisions are set out in the natural hazards, coastal and subdivision sections of the PDP. These provisions should be referred to in conjunction with this evaluation report.

5.1 Strategic Objectives

The PDP includes a strategic direction section which provides high level direction on the strategic or significant matters for the District and objectives to guide strategic decision-making under the PDP. The strategic objectives of direct relevance to Natural Hazards are:

- **SD-CP-04** A district wide approach to the impacts of climate change and natural hazards, which includes a te ao māori decision making framework, developed with iwi and hapū.
- **SD-SP-04** Promotion of communities and places that will meet the needs for not only our present population but future generations which are adaptive to climate change.
- **SD-ECP-05** A district economy that is responsive, resilient and adaptive to the financial costs of a changing climate.
- **SD-UFD-04** Urban growth and development resilient and adaptive to the impacts from natural hazards or climate change.

5.2 Proposed Management Approach

This section provides a summary of the proposed management approach for natural hazards focusing on the key changes from the Operative District Plan. The **Section 32 Overview Report** outlines and evaluates general differences between the PDP provisions and ODP, includes moving from an effects-based plan to a 'hybrid plan' that includes effects and activities-based planning and an updated plan format and structure to align with the Planning Standards.

5.2.1 High level approach

Plan controls are focussed on areas of higher hazard risk, being those areas that are known to be, or are assessed as being highly likely to be, subject to flooding, coastal and land instability hazards. These are identified through mapping and/or physical criteria. The management of wild fire risk is through ensuring appropriate water supplies are available to combat fires and buffer distances between new development and areas of vegetation.

However, due to the widespread nature of natural hazards in our District, consideration of natural hazard risks may be required outside of these areas. As such, a precautionary approach is considered

necessary to manage natural hazard risks. This reflects the direction provided by the key statutory documents, the imperfect knowledge we have on natural hazards, the potentially significant costs and consequences that result from a major hazard event and that it is difficult to address hazard risk after subdivision or land use development has occurred.

The management of risk associated with natural hazards is both a significant national issue under the RMA (section 6 matter of national importance) as well as a significant resource management issue for the District. The RPS provides strong direction in respect of the management of natural hazards that must be given effect to in the District Plan (to the extent relevant to the functions of a territorial authority).

The fundamental ‘high level’ approach in the PDP is to manage natural hazard risk in identified areas that are susceptible to the effects of natural hazards to avoid or mitigate risks, and to reduce risk where it is practicable to do so. This is primarily achieved through rules on land use and subdivision activities to meet specific performance requirements or alternatively require assessment of a range of matters through a resource consent process to ensure that the risks posed by natural hazards are adequately mitigated. The latter reflects that natural hazard issues, risks and mitigation will generally be site- specific to subdivisions and land use activities.

Having examined the higher order resource management statutory documents, and analysing the feedback from the various planning exercises across the District where Council staff have consulted with our communities on the District Plan review, together with the knowledge of the issues and risks facing the District, the following four key Natural Hazards were identified and are the focus of the PDP:

- Flooding;
- Coastal erosion and inundation (including sea level rise);
- Land instability; and
- Wild fire.

The PDP provisions predominantly focus on managing activities (land use and/or subdivision) and risk associated with these natural hazards. They seek to enhance, strengthen and extend the provisions in the ODP, consistent with more recent higher-order statutory direction.

5.2.2 Key Changes from the Operative District Plan

In general, the approach used in the ODP is similar to that used in the PDP, in the way some natural hazards are identified and managed. In particular:

- Coastal hazard zones (mapped by NRC) continue to apply, but have been extended. These are:
 - Coastal Flood Zone 1 (50-year projection): areas susceptible to coastal flooding in a 1-in-50-year storm event, with a projected sea-level rise of 0.6m by 2080.
 - Coastal Flood Zone 2 (100-year projection): areas susceptible to coastal flooding in a 1-in-100-year storm event, with a projected sea-level rise of 1.2m by 2130.
 - Coastal Flood Zone 3 (100-year ‘rapid sea level rise’ projection): areas susceptible to coastal flooding in a 1-in-100-year storm event, with a sea-level rise scenario of 1.5m by 2130.
 - Coastal Erosion Zone 1 (50-year projection): an area potentially susceptible to coastal erosion (66% probability) by 2080 with 0.33 m sea level rise from 2019 – (RCP 8.5M).
 - Coastal Erosion Zone 2 (100-year projection): an area potentially susceptible to coastal erosion (5% probability) by 2130 with 0.85 m sea level rise from 2019 – (RCP 8.5M).
 - Coastal Erosion Zone 3 (100-year ‘rapid sea level rise’ projection): an area potentially susceptible to coastal erosion (5% probability) by 2130 with 1.17 m sea level rise from 2019 – (RCP 8.5H+).

The main changes in the management approach between the ODP and the PDP are:

- The policy framework has been broadened to reflect current practice and to give effect to the directive and guiding requirements specified by the RPS;
- Flood hazard areas (mapped by NRC) have been incorporated and both subdivision and land use provisions have been included to manage risk in the 1 in 100 year flood hazard area and in the 1 in 10 year flood hazard area. This reflects the significance of flood hazards in the District and the direction provided by the RPS;
- Updated mapping of coastal hazards areas, including the 50 year and 100 year coastal erosion and flood hazard zones and the recently mapped coastal flood and erosion hazards zone 3, which represents a scenario over a 100 year time frame with accelerated sea level rise. This reflects the direction of the NZCPS to manage hazard risks over a 100 year time frame in the coastal environment;
- Activities that are considered to be more vulnerable to some natural hazard risks have been identified and more stringent provisions have been applied to these activities. This is consistent with current best practice;
- Areas susceptible to land instability have been identified through criteria set out in the definition of 'land susceptible to land instability', and subdivision provisions have been included to manage instability risk in these areas. As indicated previously, land instability is a potentially significant issue for the District and the provisions represent a more detailed and consistent approach to managing sub-division (and hence future development) in areas that are identified as being susceptible to instability;
- Wild fire provisions have been amended to focus on the provision of access and adequate water supply, as well as buffer distances from vegetation at subdivision stage in addition to land use provisions for residential buildings including extensions or alterations increase the GFA of the residential building;
- The addition of specific provisions relating to infrastructure located in natural hazard areas; and
- The requirement for an assessment that addresses relevant hazard matters to support a resource consent application in identified hazard areas. This is essential to understand the nature of the risks, the mitigation proposed and the level of any residual risk following mitigation.

Key aspects of the provisions, and the rationale for them, are discussed in more detail below.

It is noted that the PDP has not adopted a numeric risk-based approach as found in some recent district plans. This is primarily on the basis that such an approach is relatively new and is challenging to apply without a comprehensive and quantified assessment of both the risk that specific activities/hazards pose and the level of risk that is deemed to be 'acceptable'.

5.2.3 Northland Regional Policy Statement Direction

As described above (Section 3.2.4), the RPS is directive in how activities in some areas subject to natural hazards should be managed at the District Plan level. The management approach of the PDP has been appropriately guided by the direction provided in the RPS, reflecting the RMA's mandatory requirement to give effect to this higher-order policy document (section 75(3)).

It is noted that the RPS, which became operative in 2016, was subject to the standard plan making process (public consultation, submissions, hearing etc) and supporting evaluation reports (s32 and s42A). Where the policy direction in the management approach is the same as that in the RPS, this is considered the most appropriate way of achieving the purpose of the Act and the most efficient and effective policy approach.

5.2.4 Managing a Spectrum of Hazard Risk

Hazard risk is usually defined as being a combination of the probability or likelihood of an event and the potential severity or consequence of that event. Accordingly, risk is not constant but varies

depending on the type of hazard, the likelihood it will occur, the nature of activities it will affect and the consequences on those (and other) activities.

It is not possible or practicable to entirely eliminate the risk of natural hazards as they are natural events that vary in nature, scale and location. Extreme rainfall events (for example a 1 in 500 year event), albeit very rare, will have effects that extend beyond those of a 1 in 100 year flood.

The PDP adopts an approach that reflects the risk continuum by:

- Allowing small scale/lower risk activities to be undertaken as permitted activities within identified natural hazard areas (provided performance standards are met) – with a larger scale of ancillary buildings allowed as a permitted activity in rural areas as the risks of natural hazards are more likely to be internalised on large rural properties;
- Controls on land use and subdivision within identified natural hazard areas or areas that may be subject to natural hazards including areas susceptible to land instability and vulnerable activities located within 20m of any contiguous scrub or shrubland, woodlot or forestry;
- Identifying high risk coastal hazard areas, being those areas at risk of coastal inundation or erosion within a 50 year timeframe, consistent with the rps and nrp;
- Requirements for resource consents, usually as a restricted activity where specified performance standards are met, to reflect that in areas affected by hazard the issues, risks and mitigation are best assessed at a site level. A restricted discretionary activity allows this assessment to be undertaken and relevant conditions imposed to ensure hazard risks are appropriately managed and mitigated;
- More stringent consent activity status (and hence assessment) within identified hazard areas where risks (likelihood, consequence or both) are greatest or specified performance standards are not met;
- More stringent consent activity status (and policies) for activities that are considered to be more vulnerable to the effects of natural hazards to ensure effect mitigation to protect these vulnerable activities; and
- Generally, more stringent activity status for subdivision in hazard areas, in recognition that a key measure to avoid increasing hazard risks is to minimise enabling new development (particularly residential activities) in areas where the activity or occupants are at risk of natural hazards. This is consistent with a precautionary approach and requires a demonstration that hazard risks have been appropriately assessed and mitigated in accordance with the objectives and policies of the PDP.

5.2.5 Coastal Inundation and Building Floor Levels

As described in Tonkin and Taylor (2021⁵), the Coastal Flood Zones (CFZ) 1, 2 and 3 represent:

- Coastal Flood Hazard Zone 1 (CFHZ1): Extent of 50-year ARI static water level at 2080 including 0.6 m SLR.
- Coastal Flood Hazard Zone 2 (CFHZ2): Extent of 100-year ARI static water level at 2130 including 1.2 m SLR.
- Coastal Flood Hazard Zone 3 (CFHZ3): Extent of 100-year ARI static water level at 2130 including 1.5 m SLR.

That is, the mapped CFHZs are a combination of several conservative factors.

The RPS requires floor levels to be set in respect of the One Tree Point datum. Method 7.1.7 (5) requires that regional and district councils ensure that within the coastal environment:

⁵ Coastal Flood Hazard Assessment for Northland Region 2019-2020. Prepared for Northland Regional Council by Tonkin & Taylor Ltd, March 2021.

- (a) Any new habitable dwelling has a minimum floor level of 3.3m above One Tree Point datum on the east coast and 4.3m above One Tree Point Datum on the west coast. New non-habitable buildings will have a minimum floor level of 3.1m above One Tree Point datum on the east coast and 4.1m on the west coast; and
- (b) An additional allowance for wave run-up shall be assessed over and above the requirements above for exposed east coast locations where ground elevation is less than 5m above One Tree Point datum, and for exposed west coast locations where ground elevation is less than 6m above One Tree Point datum

However, the PDP has adopted a floor level for vulnerable activities (including dwellings) of at least 500mm above the maximum water level in a 1 percent AEP flood event plus 1m sea level rise. This has been selected to be consistent with the updated coastal flood hazard zone levels prepared for NRC by Tonkin and Taylor and found in:

<https://www.nrc.govt.nz/media/9548/coastalfloodhazardzonelevels.pdf>

Accordingly, the approach in the PDP is based on updated information that has been developed after the RPS, and it is considered more relevant and appropriate to utilise this new information while still giving effect to the RPS.

5.2.6 Climate Change

As has been highlighted above, climate change is expected to increase hazard risks in Northland. Rainfall is predicted to reduce overall, and droughts are likely to increase in intensity and duration. However, tropical cyclones will likely be stronger and cause more damage as a result of heavy rain and strong winds. Sea level rise will increase the risk and extent of coastal erosion and inundation affecting properties, roads and other infrastructure⁶.

The overall policy approach seeks that the likely long-term effects of climate change are taken into account when managing risks from natural hazards to people, infrastructure and property, to ensure the health, safety and resilience of communities in the District.

Consistent with best practice, estimates of climate change have also been included in hazard mapping undertaken by the NRC including sea level rise, and associated inundation and erosion, and flooding. Climate change is also relevant for land instability, as slope instability most commonly occurs within the surficial regolith (the in situ soil and weak rock that develops through chemical weathering of exposed rock) and is most commonly triggered by high intensity or prolonged rainfall⁷. The PDP includes provisions to improve the management of subdivision and development in areas susceptible to land instability.

5.2.7 Management of Development in Flood Plains and Overland Flow Paths

The OPD does not include rules for the management of land use activities within identified flood plains (other than within coastal zones). New provisions have been added, consistent with the directives provided by the RPS.

Flood hazards, including overland flow, can give rise to a number of risks. These include risks to buildings and their occupants, structures, and infrastructure that are located within areas that are subject to flooding or significant overland flow. Additionally, development within a flood plain or overland flow path can also increase flood risk to other properties. This can be as a result of reducing the storage capacity of the flood plain on the development site causing an increase in flooding elsewhere or by diverting overland flows onto other properties. For example, filling within a flood

⁶<https://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/northland>

⁷ Far North District Council: Criteria to identify land which may be subject to instability in the Far North District. LDE, October 2019 (Appendix 4);

plain to enable a building to be above the height of a flood plain may reduce flood storage and increase flood heights elsewhere.

Assessing the effects of development, including buildings and other structures, in flood plains may require the use of flood models with associated costs. However, an assessment of the increase in the height of a flood plain is necessary for more significant development to ensure potential flood effects on other properties are appropriately identified and managed.

To manage risks while ensuring the cost of assessing changes in flood hazards are appropriate directed at develop that poses the greatest risk, the PDP provides the following rule framework:

- Minor alterations to existing buildings and structures, and small new buildings and structures are permitted activities in a flood hazard zone (and other zones), provided that they are not located in, or alter, an overland flow path. The basis for this is that small structures (as defined in the rules (NH-R2 and R3)) located in a flood plain are unlikely to materially increase flood plain height and affect other property. However, even small buildings and structures can divert overland flows onto other properties and hence resource consent is required if these are to be proposed to be located in an overland flow path. While overland flow paths are not mapped, these are usually easily distinguished on site by landowners and Council.
- A larger scale/footprint has been proposed for new ancillary buildings and structures to support farming activities as a permitted activity which are less than 100m² in footprint. The basis for this larger permitted footprint is that farming activities occur on larger properties in rural areas and hence any changes in natural hazard risk are more likely able to be internalised to the subject property and less likely to extend off site.
- Where resource consent is sought (for example as a restricted discretionary activity under Rule NH-F1 or NH-F2), a technical assessment is required to demonstrate that the proposal does not results in a diversion of flow onto, or an increase in flood hazard on, other properties.

The PDP does not otherwise control the placing of ‘obstructions⁸’ in an overland flow path. This activity (the placement of obstructions in flood plains or overland flow paths) is managed through Rule C.3.1.8 of the PNRP, which is not subject to appeal and hence is operative. Under this rule, the placement of an obstruction (including a structure) in a flood hazard area (including a high-risk flood hazard area), an overland flow path, a river or an artificial watercourse that will, or is likely to, divert water onto other property, is a discretionary activity.

5.2.8 Vulnerable Activities

The concept of ‘vulnerable activities’ is used in a number of plans, notably the Auckland Unitary Plan, to reflect that some land use activities are more susceptible to the effects of natural hazards or are less able to respond to, or recover from, a natural hazard event. Vulnerable activities have been identified as being:

- Residential activities;
- Care facilities, including day care centres;
- Retirement villages;
- Visitor accommodation;
- Marae; and
- Medical facilities with overnight stay facilities.

This reflects that these land use activities may have occupants that are less able to evacuate during a hazard event (pre-school children, elderly, medically ill/incapacitated), people who are unfamiliar with the area and facilities (visitor accommodation/marae) and people who may be present at a location overnight where evacuation or other response will be more difficult during a hazard event. It is noted

⁸ PNRP definition: Obstruction: Includes trees, plants, earth, stone, timber, and material of all kinds

that the definition of a vulnerable has been adapted from that of the Auckland Unitary Plan, and includes marae as a vulnerable activity to reflect that a marae can include facilities and buildings that are used for purposes similar to residential activities and care facilities.

Land use and subdivision that are intended to accommodate vulnerable activities are subject to more stringent controls (rules and provisions), consistent with a precautionary approach, to ensure that natural hazard risks are appropriately managed and mitigated. Changes in land use to a more vulnerable activity is also controlled in recognition that this increases hazard risks.

5.2.9 Land Use and Subdivision

The PDP natural hazard rules control both land use and subdivision.

Land use rules seek to enable the reasonable use of a site, while ensuring natural hazard risk is not increased or is appropriately managed and mitigated. Land use rules for buildings utilise gross floor area (GFA) as a trigger for when risk may be increased. This recognises that it is not just an increase in building footprint within a hazard zone that increases hazard risk, but that an increase in size increases building value and potential occupancy and hence the potential consequences and impacts of a hazard event. It is noted that the rule structure does not prevent existing sites from being utilised. Rather, it seeks to ensure that the potential for natural hazard effects are recognised and managed to mitigate risks to future activities and occupants.

Subdivision involves the creation of new lots, which in turn are able to be used for future development. Accordingly, a focus of the subdivision provisions is to control the creation of new lots within areas that are subject to identified natural hazards (unless these can be effectively mitigated) as, put simply, this is creating a problem for the future. The approach is generally to avoid new subdivision that enables new vulnerable activities to be located in higher risk areas (1 in 10 year flood hazards and Coastal erosion and flood hazard 1 areas), while managing and mitigating risks in other hazard areas. This approach is consistent with Objective 5 of the NZCPS (in the coastal environment) which seeks to ensure that coastal hazard risks (including climate change) are managed by locating new development away from areas prone to such risks and Policy 25 which directs that increasing risk in coastal hazard areas is to be avoided, but it is applied more broadly to all mapped hazard areas.

While it is recognised that hazard risks can be mitigated to some extent in some circumstances, mitigation is required to be enduring or able to adapt to changing circumstances. Such an approach is important to ensure that hazard risks are not increased by future development.

5.2.10 Consent Activity Status and Thresholds

Consent activity status has been utilised to assist in managing hazard risk, by ensuring an appropriate level of assessment is undertaken, while at the same time providing for development to occur where effects have been adequately mitigated. In the main, the following activity status' have been utilised within identified hazard areas:

Permitted activities to enable:

- The maintenance and minor upgrade of existing infrastructure to ensure the ongoing delivery of essential services.
- Alterations and extensions to existing buildings and structures that are not likely to result in an increase in hazard risk. This allows for some redevelopment of existing buildings and structures that lie within hazard areas, without compromising the objective of not increasing hazard risk.
- New minor buildings and structures at a scale that is unlikely to exacerbate hazard risk. The scale (area) of permitted minor buildings and structures has been set accordingly, based on comparisons with other district plans (notably Tauranga City Council).

- New ancillary buildings and structures less than 100m² to support farming activities. As discussed above, a larger area (than for other minor buildings and structures) has been proposed to reflect that farming activities occur on larger properties in rural areas and hence any changes in natural hazard risk are more likely able to be internalised to the subject property and less likely to extend off site. The proposed 100m² footprint is consistent with that in the Auckland Unitary Plan.

Restricted discretionary activities:

- These are primarily utilised where development occurs within identified hazard areas, but where performance standards necessary to mitigate hazard risks are met. A restricted discretionary activity provides the ability to ensure that the performance standards are met, and that any necessary mitigation (for example access or servicing requirements) are implemented. A technical assessment will be required to demonstrate whether restricted discretionary performance targets have been met.

Discretionary activities:

- These are primarily utilised where restricted discretionary activity performance standards are not met or for new development in most hazard zones. They allow a full assessment of the plan provisions to be undertaken and allow development to occur in hazard areas, provided that the development is not contrary to the objectives and policies of the plan and appropriate management and mitigation is implemented.

Non-complying activities:

- Non-complying activities are utilised to control development in 1 in 10 year flood plain or for subdivision that involves the establishment of new lots within areas affected by natural hazards that do not meet restricted activity performance standards. The 1 in 10 year flood plain is the area most frequently affected by natural hazards in the District. Additional development in this area will significantly increase hazard risks, unless these risks are adequately mitigated.

Additionally, the control of subdivision in hazard areas ensures that hazard risks are appropriately managed and mitigated to avoid creating new lots (with expectation for future development) that may be subject to unmitigated hazard risks in the future.

5.2.11 Managed Retreat

The NZCPS and national guidance⁹ anticipate the consideration of responses to coastal hazards and climate change such as managed retreat. Managed retreat is the planned retreat of communities and infrastructure away from coastal areas before they are severely impacted by coastal hazards, including sea-level rise¹⁰.

The PDP as presented does not actively promote coordinated managed retreat – its current focus is primarily on not increasing risk by managing subdivision and development in coastal hazard areas. Opportunities to reduce risk, including through moving the location of buildings and infrastructure, will be considered on a case-by-case basis as redevelopment occurs.

Planned managed retreat may be required in some coastal areas in the future. It is anticipated that any requirement for managed retreat will be supported by detailed coastal management planning in conjunction with the NRC, the affected community and key stakeholders.

⁹ Coastal Hazards and Climate Change: Guidance for Local Government. ISBN: 978-1-98-852535-8 Publication number: ME 134. © Crown copyright New Zealand 2017

¹⁰ <https://resiliencechallenge.nz/edge-programme/3296/>

5.2.12 Defences against Coastal Hazards

A method of mitigating natural hazard risk in the coastal environment is to provide defences to natural hazards such as inundation, or more commonly coastal erosion. Defences can be natural, for example beaches, dune systems and coastal vegetation; or they can be constructed, for example sea walls or groynes.

Policy 26 of the NZCPS promotes the protection and enhancement of natural defences against coastal hazards, while Policy 25(e) discourages the use of hard protection structures. The RPS similarly discourages the use of hard protection structures and promotes the use of alternatives to them. It also seeks to protect and enhance natural defences (Policy 7.2.1). However, the RPS recognises that hard protection structures are required in some circumstances, and details a range of considerations as to the circumstances where they may be appropriate.

The hazard provisions in the PDP align with this approach. A key policy position is that while it may be appropriate to utilise hard protection structures to protect existing land use, particularly vulnerable activities, allowing new subdivision and development *where new hard protection structures are required to protect that development* is discouraged. An exception to this is where there is a functional need for new infrastructure to be located in hazard areas.

5.2.13 Land Instability

As has been presented previously, land instability risk is widespread across the District and the effective management of subdivision and development in areas that are likely to be susceptible to land instability is an important component of managing hazard risk in Far North District.

The slope instability hazard at any given site is affected by a large range of factors. To quantify the hazard to any reasonable level of accuracy requires detailed site investigation and engineering geological assessment.

For the purpose of establishing when such assessment is warranted, the underlying geology of the site is the single best indicator. Instability is commonly associated with certain geological units within the Far North. Within geological units, slope angles and landforms (geomorphology) are good indicators for areas of greater risk of instability. Beyond the natural condition of the site, significant site modifications such as uncontrolled cuts and fills are also risk factors for instability¹¹.

Criteria have been established that assist in identifying land that is likely to be subject to instability. This follows the approach of the Auckland Unitary Plan, while utilising criteria that has been customised to the District. These criteria will need to be assessed when undertaking subdivision.

The land instability provisions in the PDP seek to locate and design subdivision to avoid land susceptible to land instability, or if this is not practicable and its appropriate, mitigate risks and effects to people, buildings, structures, property and the environment. The PDP provisions recognise that there are often engineering solutions available to manage land instability risk and that if this risk has been adequately addressed at the subdivision stage it should not be required to be assessed at land use stage. The use of the criteria will help ensure that a consistent approach will be applied to identifying instability risk at the sub-division stage.

Should further controls be desirable, then it is recommended that the land instability be mapped in potential growth/development areas and land use controls applied to high risk zones by way of a mapped overlay.

5.2.14 Wild fire and Fire Risk

Recent major wild fires in California (August 2018 and December 2019) and Australia (2019/2020) have highlighted the significant risk and cost associated with this natural hazard. The 2018 California

¹¹ LDE 2019 (Appendix 4)

Fires alone have been estimated to have cost more than US\$3.5 billion in terms of damage and fire suppression costs¹² and the cost of the 2019/20 Australian bushfires is expected to exceed A\$4.4 billion. In addition to costs, these fires resulted in the loss of both human and animal life and significant areas of vegetation. While the scale of these fires is substantially larger than what could occur in the District, they highlight the potentially significant risks posed by this hazard and reinforce the need to manage wild fire risk.

- At a local level, the Far North District has also been subject to a number of bush fires, including at Karikari Peninsula in December 2019, where the fire (due to a car hitting a powerpole and dropping lines onto dry scrub) spread over 130ha. Climate change is also expected to increase wild fire risk in Northland due to an increase in intensity and duration of droughts¹³. Recently (2021/2022), the District has been subjected to several wild fires:
- A scrub and bush fire at Waiharara (starting in December, 2021) affected 2000 hectares of land and required 30 people being evacuated from the township and take shelter at a local school
- Six houses were evacuated from the outskirts of Ahipara in Northland in January 2022 as a result of a fire that was about five hectares in size.

The ODP includes provisions that require the setback of residential units from specified areas of vegetation and a setback of the planting of vegetation from specified zones. Following consultation with the Fire Service, who have re-iterated the importance of access to water for firefighting purposes, access to sites during a fire and setbacks from vegetation to reduce wild fire risk, the PDP provisions:

- Maintain the requirement for buildings used for residential activities to be set back from vegetation;
- Ensure that adequate water supply for firefighting is available for new buildings – either by way of a reticulated supply or one that is accessible to the site; and
- Require lots at the subdivision stage to identify building platforms which are set back from vegetation, appropriate access to the site and adequate water supply for firefighting purposes.

It is anticipated that these controls will be applied in conjunction with non-statutory approaches (for example education) to encourage buffers to be maintained and manage flammable vegetation around buildings.

5.2.15 Summary

In summary, the PDP extends the approach of the OPD, reflecting the more recent policy direction of the NZCPS and the RPS. This includes broadening the scope of controls to include land instability hazards, the management of land use activities within mapped flood hazard areas and the use of updated estimates of long term coastal inundation.

Permitted activities have been set at a scale, and subject to performance standards, that are unlikely to give rise to more than a minor adverse effect and increase in hazard risk. Applications for resource consent will require an assessment of relevant hazard risks to demonstrate compliance with restricted activity performance standards (where relevant) and how risks will be managed and mitigated.

5.3 Summary of proposed objectives and provisions

This section provides a summary of the proposed objectives and provisions which are the focus of the section 32 evaluation in section 7 and 8 of this report.

¹² https://en.wikipedia.org/wiki/2018_California_wild_fires

¹³ <https://www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/northland>

The objectives and policies set a framework which seeks to recognise, avoid, remedy and mitigate the effects of natural hazards consistent with the requirements of the RMA, the RPS and in light of the identification of natural hazards as a SRMI for the Far North District.

5.3.1 Summary of objectives

Four objectives are proposed. These seek:

- To ensure natural hazard risk is appropriately managed while recognising that long term climate change may affect the occurrence and risk posed by natural hazards.
- To guide how natural hazard risk is addressed; and ensuring that new subdivision and land use does not increase the risk from natural hazards or otherwise mitigates risk and that existing risks are reduced where there are practicable opportunities to do so.
- To appropriately manage the development of infrastructure in natural hazard areas, where it is necessary to be located in the hazard area.
- To recognise the importance of natural systems and features which act as natural defence to natural hazards; and that priority will be given to the use of non-structural and existing measures over the use / construction of new hard protection structures when managing hazard risk.

5.3.2 Summary of policies

For the purposes of section 32 evaluations, 'provisions' are the *"policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change"*.

Policies have been drafted to give effect to these objectives and provide specific guidance as to how the objectives are to be achieved. These have been grouped into:

- General policies:
 - The identification of natural hazards, including mapping and defining natural hazard areas;
 - Managing subdivision and landuse activities within natural hazard areas;
 - Taking a precautionary approach to manage natural hazard risk; and
 - Requiring assessment of natural hazard risks prior to subdivision and development.
- Hazard-specific policies:
 - Flood hazards;
 - Coastal hazards (erosion and inundation);
 - Land susceptible to instability;
 - Activities that may be subject to, or give rise to, wild fire risk.
- Specific policies on managing infrastructure in identified natural hazard areas and on defences (natural and hard protection structures) against natural hazards.

Some policies explicitly give effect to the directive policies of the RPS, including requirements for building platforms and freeboard etc.

In addition to giving effect to the directive provisions of the RPS, a key change from the ODP is greater direction on expectations and considerations for the management of natural hazards. As sought through feedback on the draft District Plan, this assists in providing greater clarity as to the matters that need to be considered and assessed to ensure effective management of natural hazard risks.

5.3.3 Summary of rules

The Natural Hazard rules incorporate:

- General permitted activities in hazard areas;

- Hazard specific land use and subdivision rules that apply in the mapped hazard areas (flooding and coastal hazards), a rule for subdivision of sites that contain land that is susceptible to instability, and development and subdivision activities that may be at risk from (or risk creating) wild fire.

In general, the rules:

- Allow the continued use and minor upgrading of existing buildings/ structures/ infrastructure in hazard areas;
- Differentiate between buildings and other structures and infrastructure, reflecting the different nature and susceptibility of these activities to risks from natural hazards;
- Seek to not increase, or otherwise mitigate, hazard risks;
- Require resource consents for activities within identified hazard areas (above permitted activity thresholds);
- Have more stringent consent activity status in higher risk hazard areas (for example the 1 in 10 year flood hazard area and the 50 year coastal erosion and flood hazard area), reflecting the greater risk of hazards in these areas;
- Have more stringent consent activity status for more vulnerable activities, including changes in land use to more vulnerable activities, reflecting that such activities are more susceptible, and less resilient, to the effects of natural hazards;
- Have more stringent consent activity status for subdivision in hazard areas, to carefully manage the creation of new lots in areas affected by natural hazards;
- Provide for activities as restricted discretionary where the building/structure or new lots are located outside the hazard area and risks are adequately mitigated; and
- Adopt performance standards for development in flood and coastal hazard areas as directed by the RPS, utilising the most up to date information that is available.

In accordance with the policy framework, a precautionary approach has been adopted as the potential effects and implications of natural hazard events can be significant. Some of the points above are addressed further below.

5.3.4 Definitions

The Proposed District Plan contains a number of definitions. Those particularly relevant to natural hazards are as follows:

Accessory building: * means a detached building, the use of which is ancillary to the use of any building, buildings or activity that is or could be lawfully established on the same site, but does not include any minor residential unit.

Coastal Hazard Area means areas of coastal erosion and coastal inundation mapped by the Northland Regional Council and included in the District Plan maps as follows:

- Coastal Flood Zone 1 (CFHZ1) – extent of the 50-year ARI static water level at 2080 including 0.6 m sea level rise (RCP8.5M)).
- Coastal Flood Zone 2 (CFHZ2) – extent of the 100-year ARI static water level at 2080 including 1.2 m sea level rise (RCP8.5M).
- Coastal Flood Zone 3 (CFHZ3) – extent of the 100-year ARI static water level at 2080 including 1.5 m sea level rise (RCP8.5H+).
- Coastal Erosion Zone 1 (CEHZ1) – an area potentially susceptible to coastal erosion (66% probability) by 2080 with 0.33 m sea level rise from 2019 – (RCP 8.5M).

- Coastal Erosion Zone 2 (CEHZ2) – an area potentially susceptible to coastal erosion (5% probability) by 2130 with 0.85 m sea level rise from 2019 – (RCP 8.5M).
- Coastal Erosion Zone 3 (CEHZ2) – an area potentially susceptible to coastal erosion (5% probability) by 2130 with 1.17 m sea level rise from 2019 – (RCP 8.5H+).

High Risk Coastal Hazard Area means areas of coastal erosion and coastal inundation mapped by the Northland Regional Council and included in the District Plan maps as Coastal Flood Zone 1 (CFZ1) and Coastal Erosion Zone 1 (CEZ1).

Community facility: * means land and buildings used by members of the community for recreational, sporting, cultural, safety, health, welfare, or worship purposes. It includes provision for any ancillary activity that assists with the operation of the community facility.

Flood Hazard Area: means areas of river flooding mapped by the Northland Regional Council and included in the District Plan maps as follows:

- 1 in 10 Year River Flood Hazard Area – the area potentially susceptible to river flooding in a 10% Annual Exceedance Probability (AEP) / 10Yr Average Return Interval (ARI) storm event.
- 1 in 100 Year River Flood Hazard Area – the area potentially susceptible to river flooding in a 1% AEP / 100Yr ARI storm event plus climate change.

Functional need: * means the need for a proposal or activity to traverse, locate or operate in a particular environment because the activity can only occur in that environment.

Gross floor area (GFA): * means the sum of the total area of all floors of a building or buildings (including any void area in each of those floors, such as service shafts, liftwells or stairwells) measured:

- i. Where there are exterior walls, from the exterior faces of those exterior walls
- ii. Where there are walls separating two buildings, from the centre lines of the walls separating the two buildings;
- iii. Where a wall or walls are lacking (for example, a mezzanine floor) and the edge of the floor is discernible, from the edge of the floor.

Habitable room: * means any room used for the purposes of teaching or used as a living room, dining room, sitting room, bedroom, office or other room specified in the Plan to be a similarly occupied room.

Land susceptible to instability: means any of the following:

1. Land which is specifically known and documented to have been subject to instability, on the basis of past geotechnical reports, council records.
2. Land which is underlain by 'Low Hazard' geological units (as outlined in the attached Geology Summary Table, and listed below), and is sloping steeper than 1V:3H (18°).
3. Land which is underlain by 'Medium Hazard' geological units, and is sloping steeper than 1V:5H (11°).
4. Land which is underlain by 'High Hazard' geological units.

5. Land which is overlain by boulders and is any distance downslope of slopes steeper than 1V:1H (45°).
6. Land which is within 15m of a slope greater than 1V:3H (18°).
7. Land which has been subject to, or is within 20m of land that has been subject to past modification including un-documented (non-engineered) cuts and fill slopes exceeding 1.5m in vertical height.
8. Land which is horizontally within 2 times the cliff height from the crest of cliffs and/or within 1.5 times the cliff height from the base of cliffs, where a cliff is taken as a slope exceeding 1V:1H (45°).

The 'Low Hazard' geological units are:

- Waipapa Group,
- Caples Terrane,
- Te Kuiti Group (Kamo Coal Measures, Ruatangata Sandstone, Mangapapa Mudstone, Whangarei Limestone),
- Houhora Complex,
- Tangihua Complex,
- Waipoua Basalt,
- Kerikeri Volcanic Group (Rhyolite Domes, Basalt, Scoria).

The 'Medium Hazard' geological units are:

- Matatau Complex of Northland Allochthon (Taipa Mudstone, Mahurangi Limestone),
- Otaua Group (Waititi Formation, Omapere Conglomerate, Waiwhatawhata Conglomerate),
- Parengarenga Group (Paratoetoe Formation, Tom Bowling Formation, Kaurahoupo Conglomerate),
- Awhitu Group (dune sands, high terraces, alluvium),
- Tauranga Group Pleistocene and Holocene river lake and estuarine deposits,
- Kariotahi Group (dune sands, river lake and estuarine deposits).

The 'High Hazard' geological units are:

- Mangakahia Complex (Punakitere Sandstone, Whangai Formation, Hukerenui Mudstone, Melange of Northland Allochthon),
- Mangonui Formation,
- Tauranga Group Pleistocene and Holocene hill slope deposits.

These are listed generally according to their GNS Science 'Key Name' as displayed on the NZ Geology Web Map¹⁴ or the unit names shown on the GNS Science QMAP series 1:250,000 geology maps¹⁵:

Any units not listed above should be considered against the hazard designation of units in the same geological group if available, or should be considered as land which may be susceptible to instability (i.e. Meeting the criteria) where no matching geological unit can be determined.

¹⁴ <https://data.gns.cri.nz/geology/>

¹⁵ <https://www.gns.cri.nz/Home/Our-Science/Land-and-Marine-Geoscience/Regional-Geology/Geological-Maps/1-250-000-Geological-Map-of-New-Zealand-QMAP>

The land to be assessed under the criteria should be taken as the area to be developed under a consent application, rather than the subject property as a whole. In the case of a subdivision this would be a nominated building site within a vacant proposed lot.

When determining slope angles against the criteria, maximum angles through the assessed area and immediately above and below the area should be considered. The scope of assessment should be widened as necessary to satisfy the criteria (e.g. For Criteria 4, assessment must extend all the way upslope of the assessed land).

- Operational need: *** means the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical or operational characteristics or constraints.
- Residential activity: *** means the use of land and building(s) for people's living accommodation.
- Residential unit: *** means a building(s) or part of a building that is used for a residential activity exclusively by one household, and must include sleeping, cooking, bathing and toilet facilities.
- Retirement village: *** means a managed comprehensive residential complex or facilities used to provide residential accommodation for people who are retired and any spouses or partners of such people. It may also include any of the following for residents within the complex: recreation, leisure, supported residential care, welfare and medical facilities (inclusive of hospital care) and other non-residential activities.
- Structural mitigation assets:** mean structures that have been built to mitigate the effects of natural hazards and include flood management schemes (for example: stopbanks, spillways and flood gates) and hard protection structures (for example: seawalls, groynes or other erosion protection).
- Visitor accommodation: *** means land and/or buildings used for accommodating visitors, subject to a tariff being paid, and includes any ancillary activities.
- Vulnerable activities:** means residential activities, retirement villages, visitor accommodation and medical facilities with overnight stay facilities.

* Refers to National Planning Standards definition.

5.3.5 Information Requirements

The PDP includes an information requirement for applications for a resource consent in relation to a site that is potentially affected by natural hazards. Such applications must be accompanied by a report prepared by a suitably qualified and experienced engineer or technical expert that addresses the matters identified in the relevant objectives, policies, performance standards and matters of control/discretion. This is to support the assessment of consent activity status (for controlled and restricted discretionary activities) and allow appropriate assessment of the application.

5.3.6 Spatial Tools

A number of inputs have fed into the spatial analysis, identification and mapping of natural hazards. As is indicated below, all flood and coastal hazard mapping has been undertaken by the NRC and reference should be made to the technical reports that support that mapping.

Flood Mapping

The following NRC mapped flood hazards are utilised in the PDP:

- 10 and 100 Year River Flood Hazards

The flood data shows the likely extent of river flooding during a 10-year or 100-year ARI flood event. A 10-year flood area has a 10% chance of flooding annually, whilst the more extensive 100-year flood area has a 1% chance of flooding annually.

Implications for the Far North District¹⁶

This mapping is now region wide, where previously NRC had only identified flood hazard areas in certain priority river catchments. The estimated area of land and number of buildings affected by flood hazards is outlined in the table below.

Hazard	Land Area		Buildings		Properties
	Ha	%	No.	%	No.
Flood Hazard 10 years	44,875	6.7	2338	3.86	19006
Flood Hazard 100 years	71,782	10.72	7871	12.98	25680

The high number of properties affected by flood hazards reflects the lot sizes in urban areas where flood hazards were mapped, and that it is now district wide.

Flood damage in major storms can be significant. Niwa (2007) details the results of an assessment of the flooding in the District following the significant rainfall of 28-29 March 2007¹⁷.

Coastal Erosion and Coastal Inundation Mapping

The following coastal hazard areas have been mapped by the NRC and are utilised in the PDP:

- Coastal Flood Area 1, 2 and 3
- Coastal Erosion Area 1, 2 and 3

¹⁶ All data is from Far North District Council GIS Hazard Assessment, May 2020

¹⁷ The Northland Floods 28-29 March 2007, Hydrologic Hazards Investigation. NIWA Client Report: CHC2007-049, April 2007.

Implications for the Far North District¹⁸

The estimated area of land and number of buildings affected by coastal hazards (at May 2020) is outlined in the table below.

Hazard	Land Area		Buildings		Properties
	Ha	%	No.	%	No.
Coastal Flood Hazard Zone 1	9,641	1.44	1017	1.68	6417
Coastal Flood Hazard Zone 2	12,727	1.90	1891	3.12	8105
Coastal Flood Hazard Zone 3	15,199	2.27	2456	4.05	8870
Coastal Erosion Hazard Zone 1	189	0.03	189	0.31	659
Coastal Erosion Hazard Zone 2	354	0.05	833	1.37	1428
Coastal Erosion Hazard Zone 3	404	0.06	1078	1.78	1664

5.3.7 Land Instability

Landslides are an ongoing geological hazard in Northland and can be a threat to life and property in the region, with one fatality at Dargaville in 1998 and significant damage to property occurring on an annual basis¹⁹.

In New Zealand, most landslides are initiated either by earthquakes or by meteorological events (intense or prolonged rainfall). In Northland the dominant trigger is intense or prolonged rainfall which initiates many landslides annually. Reported significant landslides in the Far North District include²⁰:

- Northland, December 1996: Cyclone Fergus;
- Mangonui, July 1998: landslides;
- Pawarenga, January 1999: debris flows;
- Oruaiti, September, 2001: landslide;
- Taipa and Mangonui, March 2003: landslides;
- Opuā and Haruru Falls, March 2007, landslides (Figure 1 and 2)
- Paihia (Hihitahi Rise and Te Haumi Dr), slow moving landslide 2015.

Figure 3 shows sites of recorded landslides of various sizes from the GNS Science Landslide database: <http://data.gns.cri.nz/landslides/>.

¹⁸ Updated coastal hazard mapping was released in April 2021. This included an additional coastal hazard zone 3 that represented a rapid sea level rise scenario. This updating mapping post-dated the GIS assessment undertaken for this evaluation.

¹⁹ A review of natural hazards information for Northland region. Institute of Geological & Nuclear Sciences science report 2004/06.

²⁰ A review of natural hazards information for Northland region. Institute of Geological & Nuclear Sciences science report 2004/06 – selected Far North District ‘newsworthy’ landslides only



Figure 1: Landslide damage to the back of Haruru Falls Resort - 2007 (Photo FNDC)

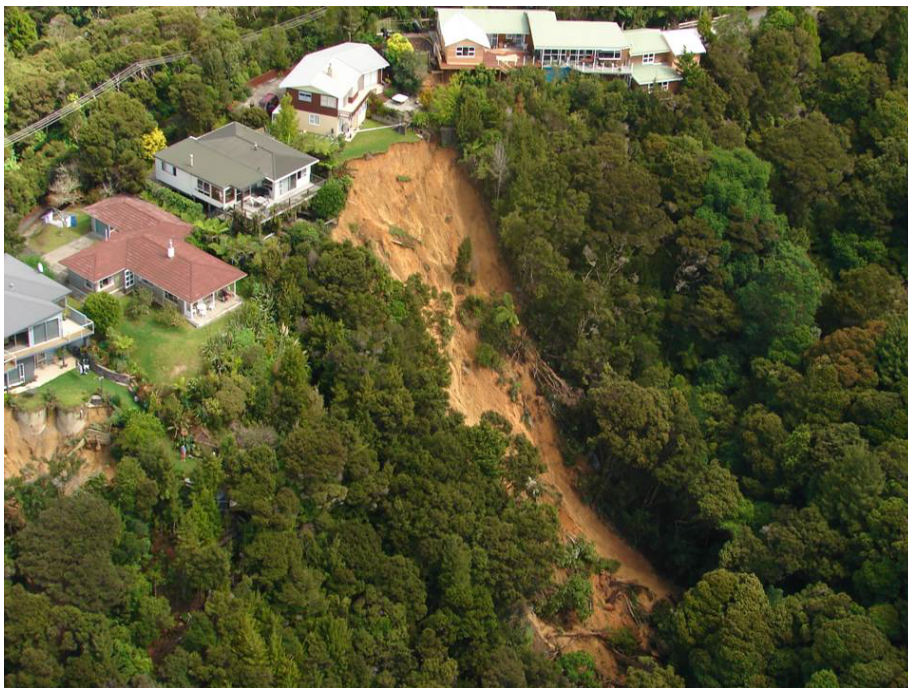


Figure 2: Slope failure at Opua on 29 March 2007 (Photo FNDC)

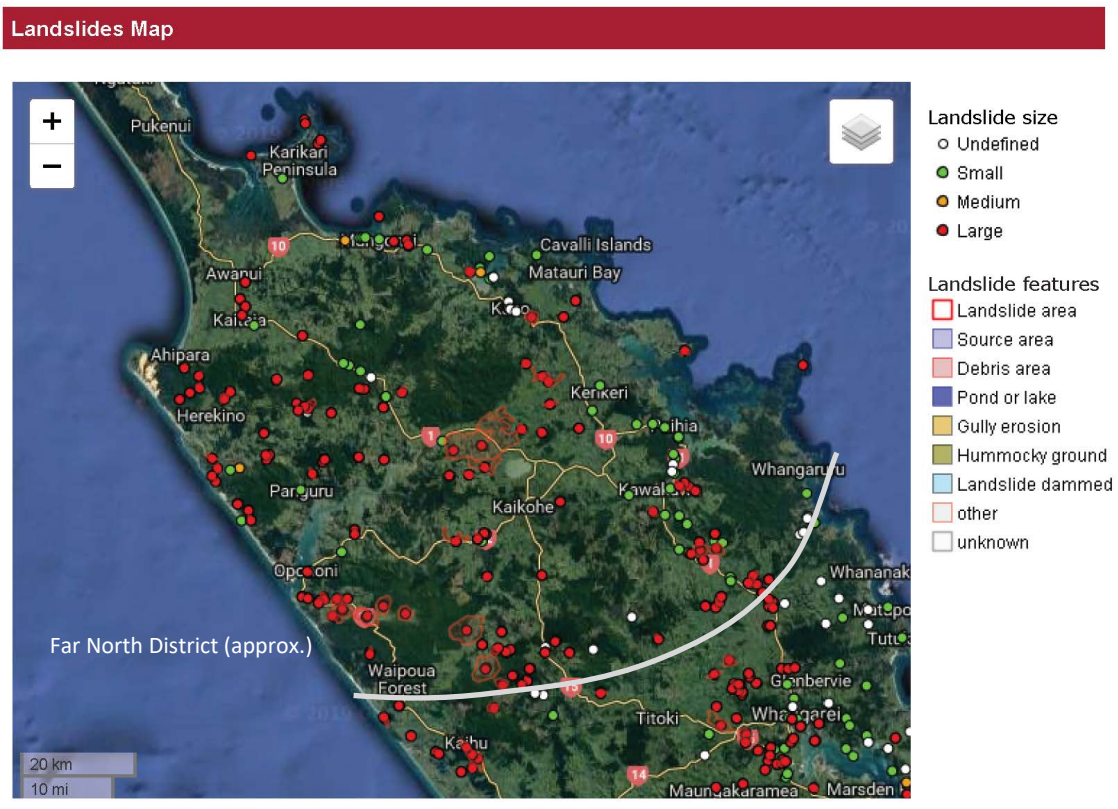


Figure 3: Recorded Landslides, Far North District

(source GNS Science Landslides Database)

In order to identify those areas that are at most risk from instability, Land Development and Exploration Limited (LDE) were commissioned to develop a set of criteria to define land which may be susceptible to instability in the Far North District²¹. This assessment considered a range of topographic, geomorphic, and geological conditions that may result in land being unstable.

The criteria are defined above. Due to the range of factors that contribute to potential instability, potential areas of instability have not been mapped. However, the factors have been applied as 'criteria' that will be assessed and applied to subdivision. This approach is similar to that of the Auckland Unitary Plan, although the specific criteria are different and reflect the geology and other factors relevant to the Far North District. The widespread potential for landslides across the District supports the use of criteria to identify where instability risks are greatest and ensure a consistent assessment approach.

5.3.8 Responding to advice from iwi authorities

Section 32(4A) of the RMA requires evaluation reports to summarise advice received from iwi authorities on a proposed plan and the response to that advice, including any provisions that are intended to give effect to the advice. Section 4.3.2 of this report provides a summary of advice received from iwi authorities on earthworks. The proposed management approach responds to this advice as follows:

- Te Runanga O Ngāti Rēhia

²¹ Far North District Council - Criteria to identify land which may be subject to instability in the Far North District. LDE, October 2019.

- *Climate change and sea level rise will impact heavily on our marae and communities. More collective support to find solutions are critical.* This issue sits outside a district plan, as the role of a district plan is to control development to avoid, remedy or mitigate adverse effects. It cannot directly respond to the issue of natural hazards affecting existing development. This issue will over time be addressed by adaptive management projects for affected communities, which will require partnership between communities, council, and other stakeholder and tangata whenua as appropriate. Council as part of its programme for responding to climate change, is looking at starting these types of programmes.
- *The reduction of natural hazards impacts on our communities is a priority and there is overall support for the policies recommended.* There has been some further refinement of policies but the overall precautionary approach to natural hazards has not changed.
- *The floor heights required under policy NH-P7 is too low for sea level raise, and it is requested at least 1m for vulnerable activities and 500m for other buildings associated with other activities.* The floor level for all buildings affected by sea level rising is 1m.
- Kahukuraariki, Matauri X, Ngati Kuri, Ngai Takoto, Whaingaroa, Ngati Kuta, Te Aupori
 - *Considered and shared decision making on hazard resilience and climate change due to tangata whenua having mana whenua and mana moana in coastal areas. Decisions associated managed retreat must include tangata whenua.* The development of a district plan allows for input into how hazards and climate change will be managed in terms of the RMA. The PDP does not require or direct “managed retreat”, that needs to be determined by working with communities in a process set outside of the PDP.
 - *If a proposed development has water supply that meets fire fighting code of practice then setback from vegetation should not be an issue. Concern over the 20m setback rule creating unnecessary consenting requirements.* This rule has been further refined and now relates only to vulnerable activities (excluding accessory buildings) vs any building. This will reduce the type of development which will have to comply with this rule. Having a water supply is a form of mitigation, but it does not avoid creating a risk, hence why setbacks are considered required. Additionally, the rule is also about protecting vegetation and associated biodiversity values.
- Ngati Kuta
 - *Land instability rule NH-R10 are mapped at 1:250,000 and are too coarse a tool to base rules on. Tangata whenua have had little involvement with this mapping.* Land instability rules are linked to a definition, which has a range of factors that would determine that whether a site contains land that is captured by instability rules. Further consideration was given to the land instability framework after reviewing feedback on the draft and a decision was made to remove land use rules, due to the impact this would have on the overall community, due to a lack of mapping done for the district. The framework will now look at this issue at the time of subdivision and rely on the Building Act 2004 to manage lots already created that may be affected by land instability not identified during the subdivision process, eg older titles.
 - *Support for expert information required under NH-S1 is on a case-by-case basis.* If a rule is breached then expert information is required in the first instance. This is considered appropriated due to having to ensure appropriate management of the identified natural hazard.

6 Approach to Evaluation

6.1 Introduction

The overarching purpose of section 32 of the RMA is to ensure all proposed statements, standards, regulations, plans or changes are robust, evidence-based and are the most appropriate, efficient and effective means to achieve the purpose of the RMA. At a broad level, section 32 requires evaluation reports to:

- Examine whether the objectives in the proposal are the most appropriate to achieve the purpose of the RMA
- Examine whether the provisions are the most appropriate way to achieve the objectives through identifying reasonably practicable options and assessing the efficiency and effectiveness of the provisions, including an assessment of environmental, economic, social and cultural benefits and costs.

These steps are important to ensure transparent and robust decision-making and to ensure stakeholders and decision-makers can understand the rationale for the proposal. There are also requirements in section 32(4A) of the RMA to summarise advice received from iwi authorities on the proposal and the response to that advice through the provisions.

6.2 Evaluation of scale and significance

Section 32(1)(c) of the RMA requires that evaluation reports contain a level of detail that corresponds with the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of this proposal. This step is important as it determines the level of detail required in the evaluation of objectives and provisions so that it is focused on key changes from the status quo.

The scale and significance of the environmental, economic, social and cultural effects of the provisions for natural hazards are evaluated in the table below. It is noted that natural hazards and climate change are a SRMI for the district which was confirmed through consultation.

Criteria	Comment	Assessment
Raises any principles of the Treaty of Waitangi	No Treaty of Waitangi principles are specifically raised in relation to the natural hazard provisions.	Low
Degree of change from the Operative Plan	The ODP includes provisions to manage natural hazard risk. However, these do not reflect the direction of higher order documents (RMA s6(h), NZCPS and Northland RPS) that have come into force since that plan. The Proposed Plan now controls landuse activities in flooding hazard areas and enhances controls on subdivision in relation to land instability risk.	Low to medium
Effects on matters of national importance	The provisions specifically seek to address a matter of national importance – section 6(h) the management of significant risks from natural hazards.	Medium
Scale of effects – geographically (local, district wide, regional, national).	The scale of effects across the Far North District will be significant, however this is also the case under the ODP.	Medium

Criteria	Comment	Assessment
Scale of people affected – current and future generations (how many will be affected – single landowners, multiple landowners, neighbourhoods, the public generally, future generations?).	The natural hazard provisions will affect a significant number of properties and buildings in the district. However, the rules only apply to new subdivision and development, and hence will only apply where additional or new development is proposed. Sections 7.7.1 and 7.7.2 provide an estimate of the area of land and existing buildings contained within the mapped flood hazard and coastal erosion and inundation zones (at May 2020).	Medium
Scale of effects on those with specific interests, e.g., Tangata Whenua	The proposed natural hazard provisions do not specifically affect most groups with specific interests. Māori are a large land owner in the District. An assessment of the potential impacts on Māori Land is provided below.	Medium
Degree of policy risk – does it involve effects that have been considered implicitly or explicitly by higher order documents? Does it involve effects addressed by other standards/commonly accepted best practice?	There is a clear direction in the RMA, NZCPS and RPS to manage natural hazard risk. A risk-based approach (qualitative) and precautionary approach is proposed which is consistent with best practice through New Zealand. The approach takes into account adopted estimates for Sea Level Rise, also consistent with best practice.	Low

6.2.1 Potential Impacts on Māori

As indicated above, Māori make up approximately 40% of the district's population, with 17% of the land in the district being held in Māori land tenure – the majority of which is located in the Rural Environment in the ODP but which will have a Maori purpose zoning in the PDP. Given this large land holding, and that Tangata Whenua Partnerships was identified as one of the district's significant resource management issues, an assessment of the potential extent of impact of the provisions on Māori Land has been undertaken.

The following tables show a break down by numbers of Māori Land impacted by mapped natural hazards (at May 2020):

Total area of land in the Far North		Total area of Māori Land in Far North ²²
669,887 ha		103,661 ha
Natural Hazard Type	Area of all Land impacted by hazard type	Total area of Māori Land impacted by hazard type
Flood Hazard 1 in 10	44,875 ha	6,273 ha
Flood Hazard 1 in 100	71,782 ha	9,496 ha
Coastal Flood Hazard Zone 1	9,641 ha	1,162 ha

²² All Māori land blocks from the 2017 Māori Land Court (MLC) database for the Far North

Coastal Flood Hazard Zone 2	12,727 ha	2,313 ha
Coastal Flood Hazard Zone 3	15,199	2,618.24
Coastal Erosion Hazard Zone 1	189 ha	29 ha
Coastal Erosion Hazard Zone 2	354 ha	50 ha
Coastal Erosion Hazard Zone 3	404 ha	57 ha

Accordingly, Māori land is affected by flood hazards – being some 14% and 13% of the land affected by the 1 in 10 and 1 in 100 year flood zones respectively. It should be noted that Maori land makes up approximately 17% of the district.

In considering the above table, several points are relevant:

- Every river has a flood plain and hence a proportion of land will always lie within a flood plain; however, this does not necessarily equate to a flood hazard; and

While more stringent controls regarding development in flood plains than under the OPD may affect Māori Land, it is noted that controls primarily relate to development in flood plains and are not controls on primary production activities. Importantly the controls seek to ensure that new development is mitigated against the effects of hazards, which in turn provides greater long term safety to Māori (and other) communities.

6.3 Summary of scale and significance assessment

The assessment of the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of the proposed provisions indicates that the natural hazard provisions are of low to medium scale and significance. The management of natural hazards in the District involves a matter of national importance (RMA s6(h)) and relates to the efficient use and development of natural and physical resources and the effects of climate change (both RMA s7 matters). The NZCPS and the RPS also direct outcomes that must be given effect to.

Although the ODP includes provisions to manage natural hazards, it is considered that these need to be updated, broadened and enhanced to reflect the direction of more recently introduced higher order documents and best practice in the management of natural hazard risk provided in recent plan changes nationally.

Accordingly, the new plan provisions are considered to be a moderate change to the ODP in that they impose greater requirements to assess and address natural hazards for new development in particular. The natural hazard provisions will affect subdivision and development in the District, but will not necessarily limit development provided natural hazard risks can be adequately managed and mitigated. Although there will be potential constraints and mitigation costs on development opportunities and land use options in some scenarios, and this may impact on Māori Land / other landowners / developers / businesses, this is balanced against the community and property benefits of more effectively managing the risks of natural hazards, in line with higher order statutory direction and current best practice.

7 Evaluation of Objectives

Section 32(1)(a) of the RMA requires that the evaluation report examine the extent to which the objectives of the proposal are the most appropriate way to achieve the purpose of the RMA. The assessment of the appropriateness of the objectives for natural hazards is against four criteria to test different aspects of ‘appropriateness’ as outlined below.

Criteria	Assessment
Relevance	<ul style="list-style-type: none"> Is the objective directly related to a resource management issue? Is the objective focused on achieving the purpose of the RMA?
Usefulness	<ul style="list-style-type: none"> Will the objective help Council carry out its RMA functions? Does the objective provide clear direction to decision-makers?
Reasonableness	<ul style="list-style-type: none"> Can the objective be achieved without imposing unjustified high costs on Council, tangata whenua, stakeholders and the wider community?
Achievability	<ul style="list-style-type: none"> Can the objective be achieved by those responsible for implementation?

7.1 Evaluation of Objectives

7.1.1 Existing Objectives

An evaluation of the existing objectives (as set out in the Operative District Plan) is provided in the table below.

Existing Objectives	Appropriateness to achieve the purpose of the Act
12.4.3.1 To reduce the threat of natural hazards to life, property and the environment, thereby to promote the well being of the community.	The reduction of natural hazard risk is still of relevance. The intent of this objective is still appropriate and has been integrated into the revised objectives.
12.4.3.2 To ensure that development does not induce natural hazards or exacerbate the effects of natural hazards.	Development not increasing or exacerbating the risk of natural hazards is still of relevance. The intent of this objective is still appropriate and has been integrated into the revised objectives.
12.4.3.3 To ensure that natural hazard protection works do not have adverse effects on the environment.	Managing the adverse effects of hard protection structures is still of relevance. The intent of this objective is still appropriate and has been integrated into the revised objectives.
12.4.3.4 To ensure that the role in hazard mitigation played by natural features is recognised and protected.	The role and protection of natural features is an aspect of sustainably managing natural hazard risk. The intent of this objective is still appropriate and has been integrated into the revised objectives.
12.4.3.5 To improve public awareness of natural hazards as a means of helping people to avoid them.	This is considered important but not necessarily needed in the Plan as an objective. It is considered that this is better addressed through non-statutory methods (if any), or other natural hazard management tools such as Civil Defence and Emergency Management.
12.4.3.6 To take into account reasonably foreseeable changes in the nature and location of natural hazards.	Mapping of natural hazards has taken into account reasonably foreseeable changes in the nature and location of natural hazards. The intent of this objective is still appropriate and has been integrated into the revised objectives.
12.4.3.7 To avoid fire risk arising from the location of residential units in close	In light of King Salmon, "avoidance" of fire risk in areas not near firefighting services is considered inappropriate and

proximity to trees, or in areas not near fire fighting services.	unachievable. The management of wild fire risk is still of relevance.
<p>Summary:</p> <p>While the intent of most of the objectives remain relevant, some refinement and updating is required to reflect the changes in natural hazard management and the more recent direction provided by higher order statutory documents.</p>	

7.1.2 Proposed Objectives

<p>Objective(s): NH-01 The risks from natural hazards to people, infrastructure and property are managed, including taking into account the likely long-term effects of climate change, to ensure the health, safety and resilience of our communities.</p>	
Relevance	This objective addresses a key resource management issue and is directly linked to a territorial authority function. The objective gives effect to higher order statutory documents (RMA, NZCPS and Northland RPS) – in particular a matter of national importance (6h) and other matter (7(i)) under the RMA – and aligns with the key purpose of the RMA.
Usefulness	
Reasonableness	It is considered reasonable as it focuses on managing natural hazard risk to ensure the health, safety and resilience of communities.
Achievability	The objective is also considered achievable, taking into account Council’s functions, powers and resources.
<p>Overall evaluation</p> <p>This objective seeks to ensure natural hazard risk is appropriately managed while recognising that long term climate change may affect the occurrence and risk posed by natural hazards. For the reason above, the objective is considered to be the most appropriate way of achieving the purpose of the Act.</p>	

<p>Objective(s): NH-02 Land use and subdivision does not increase the risk from natural hazards or risks are mitigated, and existing risks are reduced where there are practicable opportunities to do so.</p>	
Relevance	This objective is directly linked to a territorial authority function and appropriately gives effect to higher level documents (RMA, NZCPS and Northland RPS).
Usefulness	This objective is required to give effect to high order statutory direction.
Reasonableness	It is specific, clear in what it seeks to achieve, and a reasonable response to an identified resource management issue.
Achievability	The objective is also considered achievable, taking into account Council’s functions, powers and resources.
<p>Overall evaluation</p> <p>This objective provides a clear directive that subdivision, use and development does not increase the risk from natural hazards or risks are mitigated, and existing risks are reduced where there are practicable opportunities to do so. As such, this objective is considered to be the most appropriate way of achieving the purpose of the Act.</p>	

<p>Objective(s): NH-03 New infrastructure is located outside of identified natural hazard areas unless:</p> <ol style="list-style-type: none"> a. it has a functional or operational need to be located in that area; b. it is designed to maintain its integrity and function, as far as practicable, during a natural hazard 	
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event; and c. adverse effects resulting from that location on other people, property and the environment are mitigated.	
Relevance	This objective addresses a key resource management issue – the management and development of infrastructure in natural hazard areas - and is directly linked to a territorial authority function.
Usefulness	This objective is required to give effect to high order statutory direction.
Reasonableness	The objective provides a clear overarching directive to manage infrastructure and hazard risk. It is considered reasonable and achievable, taking into account Council’s functions, powers and resources.
Achievability	
<p><u>Overall evaluation</u></p> <p>This objective seeks to manage infrastructure locating in identified natural hazard areas.</p> <p>The objective appropriately gives effect to higher level documents (RMA, NZCPS and Northland RPS). It recognises the importance of infrastructure and accepts that while it is not preferable for infrastructure to be located in hazard areas, there may be a functional need to do so to provide necessary services for the community. At the same time, it is also recognises that it is not feasible to maintain functionality across all hazard events – for example some roads may be only temporarily inundated and out of action for a short period of time.</p> <p>As such, this objective is considered to be the most appropriate way of achieving the purpose of the Act.</p>	

Objective(s): NH-04 Natural defences, such as natural systems and features, and existing structural mitigation assets, are protected to maintain their functionality and integrity and used in preference to new structural mitigation assets to manage natural hazard risk.	
Relevance	This objective is directly linked to a territorial authority function and appropriately gives effect to higher level documents (RMA, NZCPS and Northland RPS).
Usefulness	
Reasonableness	It is specific, clear in what it seeks to achieve, and a reasonable response to an identified resource management issue.
Achievability	The objective is also considered achievable, taking into account Council’s functions, powers and resources.
<p><u>Overall evaluation</u></p> <p>This objective recognises the importance of natural systems and features which act as natural defence to natural hazards, and that priority will be given to the use of non-structural measures over the use / construction of hard protection structures when managing hazard risk.</p> <p>It addresses a key resource management issue and is directly linked to a territorial authority function. The objective appropriately gives effect to higher level documents (RMA, NZCPS and Northland RPS) – the latter two in particular.</p> <p>The objective provides a clear directive and will not result in unjustifiably high cost on the community / parts of the community, as alternative methods are not precluded.</p> <p>It is also considered that this objective is able to be achieved within the Council’s functions, powers, and resources. As such, this objective is considered to be the most appropriate way of achieving the purpose of the Act</p>	

7.2 Overall Evaluation

In combination, these objectives seek to effectively manage the risk of natural hazards consistent with national direction and the Northland RPS. This includes managing land use and subdivision so that

risks are not increased or are appropriately mitigated, and that existing risks are reduced where there are opportunities to do so.

The objectives recognise that while it is not desirable to locate infrastructure in identified natural hazard areas, such infrastructure plays an essential role in providing for the social and economic wellbeing of communities. Hence, it enables infrastructure to be located in hazard areas where it is functionally required to be there, it is designed and constructed (to the extent practicable) to be resilient to hazards and adverse effects are managed.

The objectives do not preclude development in natural hazard areas, although such development is discouraged unless natural hazard risks can be appropriately managed. Rather, they anticipate that proposed development will be assessed such that potential effects on the subject site/development and other sites will be identified and mitigated.

7.2.1 Section 6 of the RMA

The proposed objectives recognise and provide for the matters of national importance set out in Section 6(h) of the RMA as they seek to manage natural hazard risk.

As there is a spectrum of risk associated with natural hazards, the objectives are not just focussed on managing the significant risks from natural hazards. Instead the objectives seek to manage risk that may affect the health, safety and economic well-being of the community, without seeking to quantify at what point risks are deemed to be 'significant'.

7.2.2 Section 7 of the RMA

The proposed objectives give particular regard to Sections 7(b) and (i) of the RMA for the following reasons:

- The objectives seek the efficient use and development of natural and physical resources, through managing natural hazard risk to ensure the health, safety and resilience and economic well-being of communities. This includes by ensuring that existing risk is not increased and is reduced where possible; that infrastructure is located and managed appropriately; and that of natural defence are recognised and used in preference to structural mitigation assets.
- Objective one explicitly requires that when natural hazard risk is managed, this should take into account the likely long-term effects of climate change. This is particularly important when managing flooding and coastal inundation (and erosion), which may be affected by changing rainfall patterns and sea level rise.

7.2.3 Section 8 of the RMA

The proposed objectives take into account the principles of the Treaty of Waitangi and provide for land use and subdivision where natural hazard risk is managed and mitigated.

8 Evaluation of Provisions to Achieve the Objectives

8.1 Introduction

Section 32(1)(b) of the RMA requires the evaluation report to examine whether the provisions are the most appropriate way to achieve the objectives by:

- (i) *identifying other reasonably practicable options for achieving the objectives; and*
- (ii) *assessing the efficiency and effectiveness of the provisions in achieving the objectives; and*
- (iii) *summarising the reasons for deciding on the provisions.*

When assessing the efficiency and effectiveness of the provisions in achieving the objectives, section 32(2) of the RMA requires that the assessment:

(a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—

(i) economic growth that are anticipated to be provided or reduced; and

(ii) employment that are anticipated to be provided or reduced; and

(b) if practicable, quantify the benefits and costs referred to in paragraph (a); and

(c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

This section provides an assessment of reasonably options and associated provisions (policies, rules and standards) for achieving the objectives in accordance with these requirements. This assessment of options is focused on the key changes from the status quo as outlined in the 'proposed management approach' in section 5.2 of this report.

Each option is assessed in terms of the benefits, costs, and effectiveness and efficiency of the provisions, along with the risks of not acting or acting when information is uncertain or insufficient. For the purposes of this assessment:

- **effectiveness** assesses how successful the provisions are likely to be in achieving the objectives and addressing the identified issues
- **efficiency** measures whether the provisions will be likely to achieve the objectives at the least cost or highest net benefit to society.

The sections below provide an assessment of options (and associated provisions) for achieving the objectives in accordance with sections 32(1)(b) and 32(2) of the RMA.

8.2 Quantification of benefits and costs

Section 32(2)(b) of the RMA requires that, where practicable, the benefits and costs (environmental, economic, social and cultural) of a proposal are quantified. The requirement to quantify benefits and costs if practicable recognises it is often difficult and, in some cases, inappropriate to quantify certain costs and benefits through section 32 evaluations, particularly those relating to non-market values.

As discussed in section 6.2, the scale and significance of the effects of proposed changes for natural hazards are assessed as being low to medium. Therefore, exact quantification of the benefits and costs of the different options to achieve the objectives is not considered to be necessary or practicable. Rather this evaluation focuses on providing a qualitative assessment of the environmental, economic, social and cultural benefits and costs anticipated from the provisions with some indicative quantitative benefits and costs provided where practicable.

8.3 Options

It is recognised that there are a range of options and combinations to achieve the PDP objectives for natural hazards.

An assessment of three overarching options to achieve the objectives is provided in the tables below. These options are:

- Option 1 – Status Quo – management of subdivision and some land use activities across flooding and coastal hazards;
- Option 2 – Enhanced regulatory management of both subdivision and land use across a broader range of natural hazards; and
- Option 3 – A Quantitative Risk-Based Approach.

Option 2 is the preferred option to achieve the natural hazard objectives and is considered necessary to give effect to the NZCPS and RPS.

Significant background research and optioneering has been undertaken to both develop and assess these options, including assessment of:

- Identification of natural hazards – mapping vs non-mapping, mapping included in District Plan vs stand-alone portal, mapping of hazard areas vs criteria describing hazards.
- Quantitative vs qualitative assessment of natural hazard risk.
- Reliance on options outside the District plan, e.g. Building Act/Code, CDEM, coastal strategies, physical hard protection works.
- Management of natural hazard risk at both subdivision and land use stage.
- Specific provisions for managing natural hazard risk and infrastructure to strike a balance between providing for necessary infrastructure while not encouraging infrastructure to be located where it may be affected in the future or encourage/enable future development in hazard areas.
- Criteria and thresholds that are appropriate for identifying where risk become greater, for example:
 - Building envelope versus GFA;
 - Activities that are more vulnerable to hazards;
 - Scale of activities.
- Expert technical research into the factors that provide the most significant contribution to land instability to enable more effective long term management of this issue in the District.

8.4 Evaluation of options

8.4.1 Option 1: Status quo

Option 1 – Status Quo – management of subdivision and some land use activities across flooding and coastal hazards <i>Largely roll-over existing natural hazard provisions (and mapping) in the Operative District Plan into the Proposed District Plan.</i>		
Benefits	Costs	Risk of acting / not acting
<ul style="list-style-type: none"> Familiar plan provisions for plan users/implementers. Management of some natural hazard effects. <p><u>Economic growth and employment opportunities</u></p> <ul style="list-style-type: none"> This option would likely allow greater development in hazard areas. This may provide a short-term gain in economic growth and development over more restrictive options. However, this needs to be balanced against long term climate change and hazard effects on development and infrastructure. 	<ul style="list-style-type: none"> Low cost of plan preparation and familiarisation with requirements. Lower assessment and consenting costs. Likely continued development in hazard areas, leading to future impacts and significant costs on communities and land owners. Likely greater costs associated with necessary structural solutions (ie flood management, erosion protection etc). Potential for greater hearing costs as RPS not given effect to. Greater risk of future development being affected by natural hazards – with associated social and community costs and impacts. Greater risk to public safety due to lower level of hazard risk management than other options. Greater requirement for infrastructure solutions to address hazard effects in future. 	<ul style="list-style-type: none"> Risk of legal challenge as current provisions do not give effect to higher order policy documents. Potential for significant adverse effects through not appropriately managing natural hazard risk, including not managing flood risk (at landuse stage) or risk from land susceptible to land instability. This could include possible loss of life, injury and damage to property and infrastructure if natural hazard risk is not reduced. Effective natural hazard management is also imperative for Council to undertake as Council may be liable for damages otherwise i.e. if correct information is not provided or natural hazards are not taken into consideration.
<p><u>Effectiveness</u></p> <ul style="list-style-type: none"> Current plan provisions do not address all relevant activities and hazards and hence are less effective in managing hazard risks than more comprehensive requirements. Land use development not controlled in respect of some hazards, leading to potential exacerbation of existing problems – particularly flooding and less 	<p><u>Efficiency</u></p> <ul style="list-style-type: none"> Lack of specific criteria and lack of clarity regarding issues and requirements leads to inefficient and more inconsistent processes. 	

<p>effective management of hazard risks.</p> <ul style="list-style-type: none"> Does not consider or give effect to the changes in national and regional direction through the NZCPS and RPS and hence does not give effect to RMA. 	
<p>Quantification:</p> <p>The effects of natural hazards in the Far North District have not be quantified; however, some quantification of costs for Northland and the Far North District have been identified – noting that these have arisen under the Operative District Plan provisions:</p> <ul style="list-style-type: none"> From 2006 - 2010, wild fires have swept through more than 500 hectares of Northland forest and bush at a cost of close to \$3 million and hundreds of man hours²³. Floods are the most commonly occurring major natural hazard in Northland. They occur across the entire region and have caused the most damage among the hazards identified. The March 2007 floods resulted in more than \$12 million of insurance claims²⁴. Taipa and Mangonui landslides, March 2003: >\$550,000 damage²⁵. The effects of landslides in 2007 have been shown in Figures 1 and 2 above and the extent of existing documented slips shown in Figure 3. Some 25,680 properties in the Far North District have land in the 100 year ARI flood plain and some 7,871 buildings – the number of buildings potentially affected by flood waters could be substantially increased under the current provisions²⁶. <p>It is however noted that as this option is the status quo, implementation costs for this option will be the lowest of all of the options.</p>	
<p>Overall evaluation</p> <p>On balance this option is not considered to be the most appropriate option to achieve the objectives because:</p> <ul style="list-style-type: none"> It does not give effect to recent higher order direction, including changes to the RMA (inclusion of s6(h)), the NZCPS, or the directives set out in the RPS – particularly as the Operative District Plan does not include land-use provisions for managing flood risk; It provides limited ability to effectively manage instability hazard risks, which is a key natural hazard given the extent of land instability in the District. 	

8.4.2 Option 2: Proposed approach

Option 2 – More extensive and stringent regulatory approach

More extensive policies and rules that manage both land use and subdivision in areas affected by natural hazards, consistent with the direction provided by the Northland RPS.

²³ Northland RPS – s32 Assessment: Natural Hazards

²⁴ Northland RPS – s32 Assessment: Natural Hazards

²⁵ A review of natural hazards information for Northland region. Institute of Geological & Nuclear Sciences science report 2004/06 – selected Far North District ‘newsworthy’ landslides only

²⁶ Far North District Council GIS Hazard Assessment, September 2019

Benefits	Costs	Risk of acting / not acting
<ul style="list-style-type: none"> • Consistent with best practice and gives effect to RMA, NZCPS and Northland RPS, particularly in relation to high risk hazard areas. • A more detailed approach and identification of key natural hazards (in District Plan maps for coastal hazards and flooding, and through criteria for land instability) will provide a higher level of clarity and certainty for landowners and Council about the areas where natural hazards occur and their management. • More comprehensive hazard management leading to safer and more resilient communities, buildings and infrastructure. • Development is managed to ensure that effects are avoided to the extent practicable and appropriate mitigation is provided. • Increased protection and enhancement of natural defence systems and less reliance on hard protection structures to mitigate natural hazard risk. • More stringent management at sub-division stage ensures that effects are avoided as far as possible to avoid unnecessary creation of hazard risks. • Specific provisions focus on identified natural hazard areas and a precautionary approach is promoted outside of these areas, focussing assessment and costs where risks are highest. • Adopting accepted levels of predicted sea-level rise is consistent with international and national best practice for managing natural hazard risk. <p><u>Economic growth and employment opportunities</u></p> <ul style="list-style-type: none"> • The provisions provide a clear signal to the market of the risks associated with inappropriate subdivision and development in known natural hazards areas and that 	<ul style="list-style-type: none"> • Increased assessment and consenting costs within hazard areas and requirement for more resource consents for land use than under the status quo. • Increased cost of plan implementation – becoming familiar with requirements, training etc. • Increased building costs to mitigate against the effects of natural hazards. • Increased cost of consent administration and compliance. • Anticipated reduced cost of responding to/recovering from hazard-events (in respect of new development) in future. • Potential reduction of development rights and capacity through more restriction on development in identified hazard areas. • Mapping of natural hazards in the District Plan maps will require further plan changes to alter. <p><u>Economic growth and employment opportunities</u></p> <ul style="list-style-type: none"> • The policy approach may result in greater controls on subdivision and development, which may have a short term impact on growth and employment. However, the long term benefits of reduced hazard risk (than would occur under the status quo) may provide more certainty for investment and better long-term security for communities. 	<ul style="list-style-type: none"> • It is considered that there is sufficient information on which to base the proposed policies and methods – this has been assessed through a review of many new plans and guidance. • The risks of not acting are significant and include possible loss of life, injury and damage to property and infrastructure if natural hazard risk is not effectively managed – noting that it is impossible to eliminate risk entirely. • Effective natural hazard management reduces liability for damages. • Possible resistance from the community regarding the use of a precautionary regulatory approach – make be viewed as too conservative and costly. • Potential for significant impacts if climate change and sea-level risk projections are not taken into consideration.

<p>investment is better directed to other areas unless hazard risks can be appropriately managed and mitigated.</p> <ul style="list-style-type: none"> • The policy approach will support economic growth and employment opportunities outside of known natural hazard areas or where risks can be adequately mitigated. 		
<p><u>Effectiveness</u></p> <ul style="list-style-type: none"> • Updated approach is more efficient and effective method of managing natural hazards and associated risks - consistent with current practice and gives effect to RMA, NZCPS and Northland RPS. • Clear criteria and requirements increase efficiency and effectiveness of managing hazard risks. • This option minimises the increase in natural hazard risk particularly in relation to new development and promotes a reduction in existing risk. • Primary focus of requirements on identified areas enables effort to be prioritised to where risks are greatest. 	<p><u>Efficiency</u></p> <ul style="list-style-type: none"> • Efficient to put assessment costs ‘up-front’ to avoid more expensive investigations and response after an event. • Centralised mapping of hazards (by NRC) is more efficient for land owners. 	
<p><u>Quantification:</u></p> <p>As indicated in Option 1 above, there have been a range of costs associated with natural hazards in Northland and the Far North District.</p> <p>Potential impacts and costs associated with natural hazard effects on existing development (for example existing development in floodplains) will likely remain, similar to that of the status quo. While the proposed provisions incorporate an element of risk reduction, it is not anticipated that redevelopment will be sufficiently significant and widespread to substantially reduce existing risks over the term of the plan.</p> <p>The primary benefit will be less increase in risk over time due to better management of risks at subdivision and development stage. In terms of quantifying this potential increase, the Far North District currently has an estimated:</p> <ul style="list-style-type: none"> • 19,006 and 25,680 properties with land, and 2,338 and 7,871 buildings, in the mapped 10 year and 100 year ARI flood plains respectively; • 6,417, 8,105 and 8,870 properties with land, and 1,017, 1,891 and 2,456 buildings, in the mapped Coastal Flood Hazard Zone 1 (50 year), 2 (100 year) and 3(100 year) respectively; and • 659, 1,428 and 1664 properties with land, and 189, 833 and 1,078 buildings, in the mapped Coastal Erosion Hazard Zone 1 (50 year), 2 (100 year) and 3 (100 year) respectively. <p>Unless otherwise managed, there is significant potential for the number of buildings to be increased within identified hazard zones, thereby significantly increasing risk to buildings and their occupants.</p> <p>The proposed provisions will not affect the number of resource consents sought for subdivision, as consent is already required under the Operative District Plan.</p>		

However, the cost of hazard assessment is expected to increase due to greater information and design requirements to support subdivision applications. Once subdivision consent has been gained, future development should be enabled, provided natural hazards have been adequately assessed and managed at subdivision stage.

The increased requirements for land use consents under this proposal will likely result in:

- More resource consent applications;
- More complex and extensive requirements in respect of assessing and mitigating natural hazards.

This will result in greater costs for applicants and greater resource (processing and technical) requirements for Council. However, this cost will be offset by long term savings in the social and economic costs associated with hazard events including damage, recovery and mitigation.

Overall evaluation

Overall, it is considered that this option is the most appropriate way of achieving the objectives. Plan provisions are primarily focussed on areas subject to natural hazards (spatially identified or through criteria), however a precautionary approach is adopted outside of these areas, recognising the imperfect information on natural hazards and the range of factors that contribute to hazard risks. More permissive rules are provided for lower risk activities, in lower risk areas, and additional controls are placed on more vulnerable activities – reflecting the sensitivity of these activities to some hazards.

As required by section 75(3) of the Act, this option gives effect to the specific directives the NZCPS and Northland RPS, in particular:

- To recognise and provide for climate change.
- The requirement to avoid inappropriate new development in 10 and 100 year flood hazard areas and coastal hazard areas.
- To control effects of flooding at the landuse stage, including standards requiring minimum floor levels for residential buildings (as set in the RPS) as well as requirements to avoid material damage.
- The requirement to encourage mitigation measures to reduce natural hazard risk to existing development and to recognise the role of natural features in reducing the impacts of natural hazard event on the built environment.
- To incorporate flooding and coastal hazard maps into the district plan maps.
- Requiring engineering assessment for new subdivision within 10-year and 100-year flood and coastal hazard areas and for new land use or built development within 10-year flood hazard areas and high risk coastal hazard areas.
- That the latest national guidance and the best available information on the effects of climate change on natural hazards for sea-level rise, drought and storm rainfall intensity is taken into account.

In addition, this option gives effect to the Planning Standards, where these apply

8.4.1 Option 3: Quantitative approach

Option 3 – Quantitative risk-based approach to identifying and managing natural hazard risk		
Quantitative risk assessment for example use of Annual Individual Fatality Risk (such as that used in the Christchurch District Plan) and other metrics for significant and acceptable risk		
Benefits	Costs	Risk of acting / not acting
<ul style="list-style-type: none"> Objective approach. Quantifying risk could remove the blanket approach to the management of development in flood hazard areas by being more responsive to the assessed level of risk. Community buy-in to set the threshold for “acceptable” levels of risk – specific to the Far North District. <p><u>Economic growth and employment opportunities</u></p> <ul style="list-style-type: none"> In the absence of a defined approach, it cannot be determined whether a more quantified risk based approach would be more enabling or restrictive for economic growth and employment. This would largely depend on the nature of the hazard and the determination of what is a numerically acceptable risk. However, even a quantified risk approach would need to be developed in a way that gave effect to the NRPS. Therefore, it is anticipated that in most respects, the potential impacts on growth and employment will be similar to that of Option 2. 	<ul style="list-style-type: none"> Predicated on risks being able to be accurately quantified – difficult given the wide range of relevant factors. Provides a perceived precision where risk estimates are based on limited information and estimates of acceptable risk. Difficult to understand and equate calculated risk with real-world consequences. Significant upskilling required – large learning curve. Requires significant input from experienced professionals – from very limited pool – both for applicants and council. 	<ul style="list-style-type: none"> No different to above options - dependent on specific plan controls for subdivision and landuse activities, rather than approach to identifying natural hazard risk.
<p><u>Effectiveness</u></p> <ul style="list-style-type: none"> Not required to give effect to RPS as this does not direct the quantification of natural hazard risk. 		<p><u>Efficiency</u></p> <ul style="list-style-type: none"> Technical and complex numerical approach is unlikely to be efficient. Would need to be aligned with specific requirements of the Northland RPS.
<p><u>Quantification:</u> The costs of initiating a quantified risk assessment approach would be large. However, in the absence of a defined approach it cannot be determined whether a more quantified risk-based approach will increase costs and substantially reduce future risks when compared to other options.</p>		

Overall evaluation

Although there is some emerging practice seems to be promoting a quantitative risk-management approach, it is still relatively new and it is considered there is insufficient information and technical guidance to currently support this approach in the District. It is also noted that the RPS does not provide a directive to quantify risk and such an approach would be a major change from the Operative District Plan.

This approach is not considered appropriate at this time.

9 Summary

An evaluation of the proposed objectives and provisions for natural hazards has been carried out in accordance with section 32 of the RMA. This evaluation has concluded that the objectives are the most appropriate way to achieve the purpose of the RMA and the provisions are the most appropriate way to achieve the objectives as it:

- Manages hazard risks in identified natural hazard areas, including the identification of areas susceptible to land instability;
- Adopts a precautionary approach, including outside of known areas subject to natural hazards;
- Utilises landuse and subdivision controls to manage natural hazard risk in relation to coastal hazards (coastal inundation and erosion), flooding, land susceptible to instability and wild fire;
- Discourages new infrastructure in natural hazard areas, but provides for new infrastructure where there is a functional need for it to be within the hazard area and effects are mitigated;
- Adopts a more stringent approach for managing vulnerable activities in natural hazard areas, in recognition that these activities are more susceptible to the effects of natural hazards and/or less able to respond to and recover from natural hazard events;
- Utilises mapping undertaken by the NRC for coastal hazards and flooding and identifies land susceptible to instability through appropriate geological and geomorphological criteria;
- Requires resource consents for activities within identified hazard areas (above permitted activity thresholds);
- Adopts a more stringent activity status for development in higher risk hazard areas, reflecting the greater risk of hazards in these areas;
- Adopts non-complying activity status for subdivision within hazard areas where performance standards are unable to be met, to minimise more land being provided for development where adequate hazard management and mitigation has not been provided.
- Adopts performance standards for development in flood and coastal hazard areas as directed by the RPS.

This approach has been adopted for the following reasons:

- It is generally consistent with best practice, determined through an extensive assessment of recent (2nd generation) district plans nationwide;
- It has considered and been refined in response to feedback on the draft District Plan discussion, as well as feedback received from internal workshops with plan implementers;
- The approach responds to the specific circumstances of the Far North District, particularly in relation to coastal and flood hazards and land instability associated with Northland's geology;
- The provisions give effect to the NZCPS and the directive provisions of the RPS, in accordance with the requirements of RMA s75(3);
- The provisions have utilised a structure, and relevant definitions, consistent with the Planning Standards as required by RMA s75(3)(ba);
- The provisions are not inconsistent with the requirements of the Northland Regional Plan, in accordance with RMA s75(4);
- While the PDP will increase the number of land use consents required for development in hazard areas, and increase the assessments (and associated costs) required to support land use and subdivision consent applications, such costs are warranted given the amount of land and number of properties/buildings located within mapped hazard areas in the District and the increase in risk that would result from uncontrolled development of this land;
- The use of clear and specific rules, thresholds and matters for consideration (including policies and matters of discretion) provide clarity and certainty for landowners, developers and council;

- The provisions manage a matter of national importance and are consistent with the purpose and principles of the RMA in that they manage the use, development, and protection of natural and physical resources in a way that enables people and communities to provide for their social, economic, and cultural well-being while assisting in the protection of public health and safety from the risks associated with the effects of natural hazards.

10 Appendices

The following reports/documents are appended to, and form part of, this S32 evaluation:

10.1 Appendix 1: Draft Issues Identification for Natural Hazards

10.2 Appendix 2: Far North District Council - District Plan Review - Natural Hazards Options Assessment. 4Sight Consulting, June 2019

10.3 Appendix 3: Far North District Council: Criteria to identify land which may be subject to instability in the Far North District. LDE, 18 November 2019

10.4 Appendix 4: Review of Draft District Plan Feedback – Natural hazards. 4Sight Consulting, 26 August 2021