



Ko te tūāpapa e tū pakari ai tātau, kia ngātahi
The foundation from which we stand strong, together

Smarter Land Use Action Plan for Risk Reduction

2021–2026

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Acronyms and abbreviations

CAA	Climate Adaptation Act
CPD	Continued professional development
DEVORA	Determining Volcanic Risk in Auckland
DIA	Department of Internal Affairs
DoC	Department of Conservation
EC Lab	East Coast Life At the Boundary (East Coast LAB)
ENZ	Engineering New Zealand
ICNZ	Insurance Council of New Zealand
IOF	It's Our Fault
LGNZ	Local Government New Zealand
MBIE	Ministry of Business, Innovation & Employment
MFE	Ministry for the Environment
NAP	National Adaptation Plan
NBA	Natural & Built Environment Act
NDRS	National Disaster Resilience Strategy
NEMA	National Emergency Management Agency
NZAS	New Zealand Association of Scientists
NZPI	New Zealand Planning Institute
NZSEE	New Zealand Society of Earthquake Engineering
RMA	Resource Management Act
RNC	Resilience to Nature's Challenges National Science Challenge
RSNZ	Royal Society of New Zealand
SIG	Special Interest Group
SPA	Spatial Planning Act

Key terminology

Adaptation

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2018¹).

Climate change

A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods (RMA).

Insurance retreat

Occurs when a private or public insurer declines an application for insurance coverage or stops offering renewal of existing coverage, based on the property's exposure and vulnerability to an escalating hazard (Storey et al, 2020²).

Managed retreat

An approach to reduce or eliminate exposure to intolerable risk. It includes strategically relocating assets, activities and sites of cultural significance (to Māori and non-Māori) away from at-risk areas within a planned period of time (MfE 2022³).

Multi and cascading hazards

Multiple hazards (often referred to as cumulative) are where two or more unrelated natural hazard events have the potential to affect human life and/or property. Cascading hazards are when two or more natural hazards, caused by the same 'trigger' event, affect human life and/or property (Auckland Council, 2014⁴).

1 Intergovernmental Panel on Climate Change, 2018 https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-AnnexII_FINAL.pdf

2 Storey, B., Owen, S., Noy, I. & Zammit, C. (2020). Insurance Retreat: Sea level rise and the withdrawal of residential insurance in Aotearoa New Zealand. Report for the Deep South National Science Challenge, December 2020. <https://deepsouthchallenge.co.nz/wp-content/uploads/2021/01/Insurance-Retreat-December-2020-Final-Report.pdf>

3 Ministry for the Environment, 2022 <https://environment.govt.nz/assets/publications/Adapt-and-Thrive-consultation-document.pdf>

4 Natural Hazard Risk Communication Toolbox, <https://www.civildefence.govt.nz/assets/Uploads/NHRCToolbox/NHRCToolbox-Auckland-Council.pdf>

Natural hazard

Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment (RMA).

Resilience

The ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving (NDRS, 2019).

Risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined as a function of hazard, exposure, vulnerability and capacity (NDRS, 2019).





Executive summary

Land use planning may be the most proactive and effective way to reduce the level of natural hazard risk.

But it is also a challenging policy area that must balance a range of (sometimes competing priorities), including managing natural hazard risk.

As an insurer for natural hazard damage, Toka Tū Ake EQC carries a financial liability for poor planning outcomes. This plan will promote and encourage better risk based land use planning outcomes.

Toka Tū Ake EQC cannot do this alone. We need to partner, collaborate with, encourage and support Māori resilience initiatives, research programmes, councils, consultants, professional institutes, universities, communities, and government to better manage risk. We all need to learn from past events (nationally and internationally), value Mātauranga Māori, and embrace new technological advances that provide us with greater certainty on future natural hazard risks.

This plan provides the starting place for this change. It outlines how we will support decision makers, communities and Māori to make evidence-based decisions that will sustain and enhance the wellbeing of current and future generations. Hard decisions will need to be made for both existing and future developments. We can start by making smarter land use decisions and building stronger homes on better land.

This action plan is based on three objectives, each with associated activities, milestones and outcomes. We have provided a snapshot of these on the next pages.

Objective 1: Provide leadership in land use planning for natural hazard risk reduction

ACTIVITIES	MILESTONES	OUTCOMES
Contribute to national policy development	Contribute to the development of national policy including the RMA reform process and NAP	Improved national policy for natural hazard and risk management
Develop an Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning	Year 1 Draft Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning Submissions on significant plan changes or district plan reviews Co-develop the framework for the Māori Resilience Fund Risk threshold literature review	Framework for the Māori Resilience Fund produced and piloted Framework for risk tolerance and thresholds developed
Provide sound, evidence-based feedback and submissions on nationally significant policies/plans and district plan changes or reviews that have broader implications for hazard and risk management	Year 2 Contributions to national policy development and guidance Submissions on significant plan changes or district plan reviews Finalise Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning Establish the Māori Resilience fund	The management of natural hazard risks is included in key legislative reform Improved local policies on the management and reduction of natural hazard risks and climate change adaptation Certainty of Toka Tū Ake EQC expectations on managing natural hazards through land use planning Māori are able to access the Māori Resilience Fund
Establish a Māori Resilience Fund	Implement the Toka Tū Ake EQC Policy Statement for Natural Hazards Planning	Land use planning decision making reflects Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning
Investigate a framework for risk thresholds and tolerances	Years 3-5 Contribute to national policy development and guidance Submissions on significant plan changes or district plan reviews Framework for risk tolerance/ thresholds developed	Coordinated national policies that reduce risks from natural hazards and climate change Improved local policies on the management and reduction of natural hazard risks and climate change adaptation A transferable risk threshold framework contributes to better decision making on risks Māori are able to increase their resilience

RISKS	EXISTING LINKAGES
Covid-19 restrictions and lockdowns results in delays on progress and engagement activities A large event occurs which re-prioritises activities Legislative changes occur at pace with little opportunity to contribute to the outcome The role of consultants is overlooked Partnership with Māori does not occur due to reasons in, or outside our control, resulting in Tiriti obligations not being fulfilled and actions not being relevant	Central govt: Treasury; DIA Community Resilience Group, MFE (NAP, NBA, SPA); NEMA (NDRS) Local govt: LGNZ; Regional Council Hazard SIG; existing contacts Research: RNC, Deep South, QuakeCoRE, It's Our Fault, DEVORA, ECLab, Transition Taranaki, Kaikoura Endeavour, Flood Hazard Endeavour Professional organisations: NZPI, NZSEE, ENZ, LGNZ Māori: Iwi and hapu management plans; RNC, Deep South

Objective 2: Promote and support risk-based planning solutions

ACTIVITIES	MILESTONES	OUTCOMES
Tailor and support the use of RiskScape in spatial planning	Year 1 Publish case study of Riskscape being used for planning Case studies of good and bad planning are collected Review risk-based planning approaches Participate in Portal workshops and development	Riskscape is used as a spatial planning tool by councils Land use planning examples from Aotearoa New Zealand informing national and international best practice
Collect case studies of good and bad planning outcomes for risk reduction		
Encourage and support adaptive risk-based land use planning	Year 2 Scope how Riskscape can be tailored for spatial planning Undertake a pilot of RiskScape with an iwi Analysis of case studies to determine what policies need to change to increased resilience Portal is established and further functionality is developed Contribute to journal articles, book chapter etc on good practice land use planning	Risk-based land use planning with good community engagement results in transparent and robust decision making Risk based planning solutions are contributing to building knowledge on risk reduction options
Support the development of Toka Tū Ake EQC's Risk & Resilience Portal		
Contribute to the natural hazard planning body of knowledge	Years 3-5 Riskscape is tailored for spatial planning Publication and distribution of case study findings Portal is fully operational Risk-based planning and engagement framework updated Publications are cited Publication in English and Te Reo of iwi case study of Riskscape	Additional outcomes: Riskscape is accepted and used as a planning tool; Maōri can access an example of Riskscape being used for their resilient goals

RISKS

Covid-19 restrictions and lockdowns results in delays on progress and engagement activities

A large event occurs which re-prioritises activities

Legislative changes occur at pace with little opportunity to contribute to the outcome

Partnership with Māori does not occur due to reasons in, or outside our control, resulting in Tiriti obligations not being fulfilled and actions not being relevant

EXISTING LINKAGES

Central govt: Treasury; DIA, MFE (NAP, NBA, SPA); NEMA (NDRS)

Local govt: LGNZ; Regional Council Hazard SIG; existing contacts

Research: RNC, Deep South, QuakeCoRE, It's Our Fault, DEVORA, ECLab, Transition Taranaki, Kaikoura Endeavour, Flood Hazard Endeavour

Professional organisations: NZPI, NZSEE, ENZ

Māori: Iwi and hapu management plans

Objective 3: Build capability and capacity to reduce risks over time

ACTIVITIES	MILESTONES	OUTCOMES
Support and encourage the planning profession to better manage natural hazards and the impacts of climate change	<p>Year 1</p> <ul style="list-style-type: none"> Deliver 'Planning for Non-Planners' and 'Being an expert witness' courses for scientists with the NZPI & RNC Development of CPD programme with NZPI Guest lecture at two universities in non-planning specific courses 	<ul style="list-style-type: none"> Scientists understand the planning system and feel more confident in defending their science in hearings and Environment Court Planners understand and use all the tools available under the RMA and other mechanisms to manage natural hazards and climate change impacts
Support/deliver training and other capability development for spatial planning, including Riskscape	<p>Year 2</p> <ul style="list-style-type: none"> CPD training programme implemented Develop a Riskscape training programme specific to planners University strategy developed 	<ul style="list-style-type: none"> Improved local policies on the management and reduction of natural hazard risks and climate change adaptation
Encourage and support universities to include more natural hazard risk reduction content into their programmes	<p>Years 3-5</p> <ul style="list-style-type: none"> Universities courses are including more natural hazard risk reduction content Undertake RiskScape training programme Deliver second round of 'Planning for Non-Planners' and 'Being an expert witness' courses for scientists with the NZPI 	<ul style="list-style-type: none"> Scientists understand the planning system and feel more confident in defending their science in hearings and Environment Court University graduates understand natural hazards and risks Riskscape is being used by councils, consultants and iwi to inform spatial planning
Conduct training for scientists to support decision making		<ul style="list-style-type: none"> Smarter land use avoids or reduces the worst risks University graduates are familiar with the role of land use planning in natural hazard management

RISKS

- Covid-19 restrictions and lockdowns results in delays on progress and engagement activities
- A large event occurs which re-prioritises activities
- Councils are not willing to use Riskscape modelling due to risk vs development pressures
- Partnership with Māori does not occur due to reasons in, or outside our control, resulting in Tiriti obligations not being fulfilled and actions not being relevant

EXISTING LINKAGES

- Local govt:** LGNZ; Regional Council Hazard SIG; existing contacts
- Research:** RNC, Deep South, QuakeCoRE, It's Our Fault, DEVORA, ECLab, Transition Taranaki, Kaikoura Endeavour, Flood Hazard Endeavour, Riskscape
- Professional organisations:** NZPI, NZAS, RSNZ
- Universities:** Auckland, Waikato, Victoria, Canterbury, Lincoln, Otago

Introduction

Aotearoa New Zealand straddles the boundary of two active tectonic plates. It is highly exposed to catastrophic geological hazards such as earthquakes, landslides, volcanic activity, and tsunamis.

Climate change is increasing Aotearoa New Zealand's exposure through more frequent and severe extreme weather events, and through sea level rise around its 15,000 km of coastline. This is worsening many natural hazards, such as landslides, flooding, coastal erosion and storm surge, tsunami inundation, and liquefaction. All but one of our major cities are located on the coast, and are subject to natural hazards other than just rising seas. Although we can receive warnings for some hazards (e.g. severe weather, flooding), for others such as earthquake (and associated hazards), warnings cannot be issued in a timely way.

The best way to reduce the damage and social disruption natural hazard events cause, is to plan and build more resilient buildings on suitable land (supported by resilient infrastructure services) at the time of development. Existing building developments need other options such as

strengthening or retrofitting buildings, or limiting subdivision or further development.

To avoid and reduce damage, we will need to put existing data and knowledge to better use. We will need to create new knowledge to fill gaps in our understanding of Aotearoa New Zealand's hazard risk profile. We must incorporate and interpret knowledge to create new insights and solutions. We also need to use the right tools to help with often complex decision-making. Smarter land use that avoids the worst risks is part of the EQC Resilience Goal (EQC, 2019,⁶ p9).

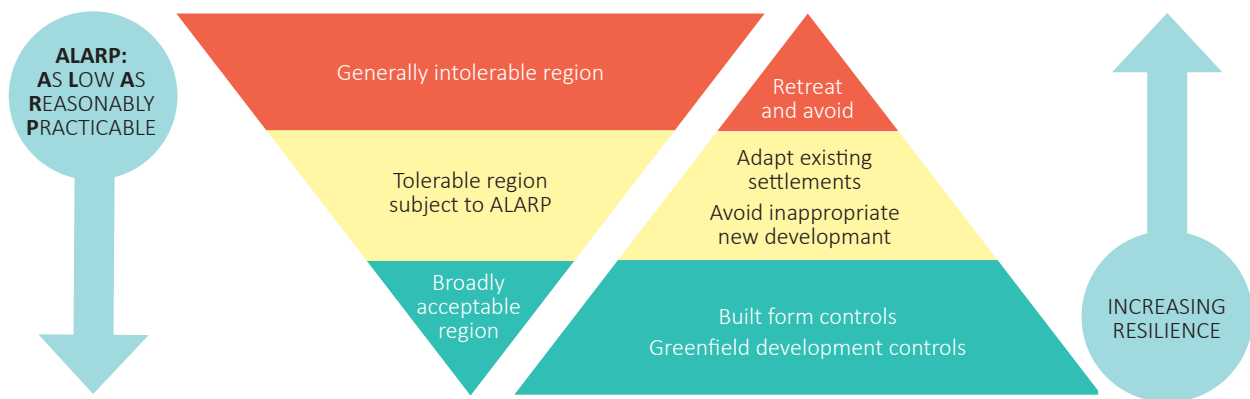
Planners and other experts are responsible for planning for the future of our cities, rural and coastal communities. They must make sure present and future communities are not at increased risk from natural hazards and urban growth, development and renewal. Land use planning plays a key role in reducing, avoiding or even eliminating risks related to natural hazards. To help planners, decision makers, communities and Māori, this action plan outlines the objectives, activities, and milestones to achieve smarter land use planning for natural hazard risk reduction.

⁶ EQC 2019, Resilience Strategy for Natural Hazard Risk Reduction 2019-2029, Wellington. <https://www.eqc.govt.nz/assets/Publications-Resources/Resilience-and-Research-Publications-/EQC-Resilience-Strategy-2019-2029.pdf>



The role of land use planning in natural hazard risk management

Figure 1: Planning responses become more restrictive as risk increases (PIA n.d., p.32)



Land use planning is one tool for managing natural hazards.

Others including building design and performance, engineering works, warning systems, evacuation planning, catchment management, insurance, and infrastructure resilience contribute together to reducing and managing risks. Out of all the tools, land use planning may be the most effective way to determine the level of natural hazard risk. But it is also a challenging policy area that must balance a range of (sometimes competing) priorities, including managing natural hazard risk. We are already seeing many recently approved housing and urban developments that may need a managed retreat programme in place in the future, some even before building works begin.

Planning land use to manage natural hazard risk does not mean we should never build in high-risk areas. It means we should plan smarter for sustainable land uses, but sometimes it will be best to avoid certain areas or retreat where existing activities are no longer sustainable.

Planners have three key roles in creating and maintaining resilient and sustainable communities (PIA n.d.⁷):

- » **‘Mainstreaming’ resilience into planning:** including resilience in land use and development considerations as part of the planning and implementation process.

⁷ Planning Institute of Australia, National Land Use Planning Guidelines for Disaster Resilient Communities, <https://www.planning.org.au/documents/item/7804>

- » **Enhance risk management processes:** ensuring land use planning issues and opportunities are built into natural hazard management processes.
- » **Build back better:** driving pre- and post-event recovery planning as it relates to land use and the built environment.

Land use planning needs to be practical when managing both existing and future risks. Aotearoa New Zealand is a geologically active country with extreme weather systems, and no place is immune from one or more natural hazard. As the level of risk increases, so does the level of planning restrictions. Figure 1 (left) presents the broad land use planning responses for different levels of risk.

Together, land use planning and building standards and controls provide a proactive response to managing the risks to life and property. As such, this plan has been developed alongside the complementary Resilient Homes and Buildings Action Plan. Not all hazards can be effectively managed through land use planning alone. Good building design and construction is required with good planning outcomes. How land use planning and building responses are applied to manage specific natural hazard risks will vary from case to case. The specific response will depend on location, information availability, community viewpoints, broader development plans for a location, and the effect of complementary methods for managing risk. Land use planning and building design and performance need to complement each other to make sure the risks from natural hazards are adequately managed.

The actions within this plan aim to make land use planning more effective at reducing risk. They also acknowledge and support the role of building design and structural performance through the companion Resilient Homes and Buildings Action Plan.

Why is Toka Tū Ake EQC interested in smarter land use planning?

Toka Tū Ake EQC is a Crown Entity that invests in natural hazards research and education, and provides residential property insurance for the effects of natural hazards.

One of the key functions under the EQC Act is to collect premiums and administer insurance against natural disaster damage (s5(1)(a-d)). Another is to facilitate research and education about matters relevant to natural disaster damage, methods of reducing or preventing natural disaster damage, and the insurance provided under the Act (s5(1)(e)). Land use planning is a key method for reducing and preventing damage from natural hazards.

As an insurer of natural hazard damage, Toka Tū Ake EQC covers residential property damage caused by a natural landslip, earthquake, volcanic eruption, hydrothermal activity, tsunami, or natural disaster fire; and damage to land caused by a storm or flood. We provide two types of cover. The first is building cover, where we can repair, replace, relocate, or otherwise compensate for damage to a residential building. The second is land cover, where we can repair damage to land so it remains suitable for residential purposes, or pay out to cover the cost of relocating the building.

The potential loss associated with natural hazard risk in Aotearoa New Zealand is high and is carried by Toka Tū Ake EQC on behalf of the Crown. We therefore have a strong interest in reducing risk from, and building resilience to, natural hazards in Aotearoa New Zealand. In addition, possible future insurance retreat in high-risk areas has significant implications for homeowners, mortgage holders, and communities.

To help communities to reduce their risks, Toka Tū Ake EQC are focused on improving Aotearoa New Zealand’s resilience. We use the best data and knowledge available, to consider and quantify the potential consequences of social and economic disruption from natural hazards to reduce losses.

Toka Tū Ake EQC invests in creating, integrating and translating information and knowledge. We use this knowledge to guide actions that reduce risk, build readiness, and improve resilience. Our role is to:

- » help translate and integrate information and knowledge,
- » create the tools to understand and estimate the effects of natural hazard events, and
- » quantify the benefits of being more resilient.

This investment supports our goal of reducing Aotearoa New Zealand’s vulnerability to natural hazards.

For this investment to be worthwhile, we need to make sure the tools and results are used to assess and prioritise actions that reduce risk. This will require working closely with existing partners and creating new partnerships with policy-makers, planners, engineers, asset managers and homeowners. The goal will be to make sure the right knowledge in the right form reaches the right people at the right time. This action plan provides one planning tool for realising this goal.

Development of this Action Plan

This action plan has been developed to put the key intentions in the *Resilience Strategy for Natural Hazard Risk Reduction and recommendations within the EQC Public Inquiry report (2020)*⁸ into practice.

Appendices 1 and 2 show how this action plan aligns with these two documents. In addition, the results of a survey in January 2021 to all NZPI members on their natural hazard learning requirements, has been used to make sure this action plan is meeting planners’ needs. That survey identified seven topics as ‘very useful’:

1. Good practice planning for hazards
2. Risk-based and adaptive pathway planning
3. Implementing guidance on climate change adaptation
4. Understanding risk
5. Risk modelling in land use planning
6. Interaction of multiple hazards
7. Engaging with communities about levels of natural hazard risk

These topics have been included in activities under Objective 2 and 3 of this Action Plan and they underpin the CPD strategy that will be developed with the NZPI.

Toka Tū Ake EQC undertook targeted and more general consultation while developing this plan to make sure it will be useful and useable, and that people will use it.

⁸ <https://www.eqc.govt.nz/about-eqc/the-public-inquiry-into-eqc/>

Guiding principles of this Action Plan

As we pursue our vision of a Aotearoa New Zealand, that is resilient to natural hazards, seven principles guide our actions, behaviour, and the development and implementation of this action plan.

Each of these principles is underpinned by Te Ao Māori values, including whakawhanaungatanga (trusting and enduring relationships), rangatiratanga (sharing and gathering information to support informed decisions), tika (to do what is right, just, fair), pono (to be authentic, genuine,

sincere), and aroha (considerate and caring, compassionate).

- » Partner for greater impact
- » Open and transparent
- » Stewardship of national capabilities
- » Foster innovation
- » Targeted high quality research;
- » Focus on greatest national benefit, and
- » System integration and adaptation

These are graphically presented in Figure 2.

Figure 2: Principles that guided the development and implementation of this Action Plan (based on EQC Resilience Strategy 2019, p13)



Vision Mātauranga and Mātauranga Māori

Toka Tū Ake EQC is committed to the policy themes and outcomes of Vision Mātauranga.

This is the Aotearoa New Zealand government science policy framework that seeks to unlock the innovation potential of Māori knowledge, people and resources (EQC, 2019, p13). Vision Mātauranga themes relevant to risk reduction and resilience are:

- » **Indigenous innovation:** Contributing to natural hazard resilience and risk reduction through distinctive research and development.
- » **Taiao/environment:** Achieving natural hazard resilience through iwi and hapū relationships with land and sea.
- » **Hauora/health:** Improving health and social wellbeing aspects linked to natural hazard resilience.
- » **Mātauranga:** Exploring indigenous knowledge and science and innovation, regarding hazard risk management.

Vision Mātauranga is focused on research (topics, methods, outputs, outcomes) relevant to Māori, which is important for our research portfolio. In addition to Vision Mātauranga, the use of Mātauranga Māori – Māori knowledge – is also supported and encouraged through this action plan. Activities that put Vision Mātauranga and Mātauranga Māori into practice include promoting iwi/hapū management plans, cultural impact assessments, and including Mātauranga Māori in land use planning for managing natural hazard risks. Other activities will support the use of the use of Mātauranga Māori to shape policy (for example, through iwi/hapū management plans), and the inclusion of Māori in policy development and CPD. Examples of these activities include CPD development and delivery, national planning

framework support, and submissions where appropriate. Iwi planning representatives will be invited to attend trainings through the NZPI CPD programme, and the training opportunities will also be highlighted through Papa Pounamu (the Māori special interest group of the NZPI).

Risk modelling tools such as RiskScape could be a valuable tool for Māori authorities. We will continue to partner with iwi groups to support the use of RiskScape within their rohe if appropriate and where possible, include at least one Māori RiskScape Champion position.

Toka Tū Ake EQC will provide funding for provisions in iwi or hapū management plans to be actioned, through a Māori Resilience Fund. In addition, it is widely acknowledged that more Māori planners are required in the profession. We will support and encourage Māori into planning whenever the opportunity arises, either through existing or new initiatives with different organisations.

Strategic overview of plan

Goal

To take a proactive approach to reduce our current and future risks through smarter, risk-based, land use planning.

This contributes to the Tokā Tū Ake EQC resilience objective “Smarter land use avoids the worst risks” with the aim of “Reducing Aotearoa New Zealand’s vulnerability and exposure to natural hazard events” (EQC Resilience Strategy 2019, p9).

Objectives

Three objectives underpin this action plan, each with their own activities, milestones and intended outcomes:

1. Provide leadership in land use planning for natural hazard risk reduction.
2. Encourage and support risk-based planning solutions based on knowledges and understandings.
3. Build capability and capacity to reduce risks over time.

These objectives are not independent of each other. Some activities apply in more than one objective, and each objective also has the intent of being relevant and empowering for Māori resilience.

Scope

This action plan aims to encourage better land use planning and decision-making for existing and future developments, across central, regional and local government, and the private sector.

It targets both geological and weather-related hazards, including active faults, tsunamis, liquefaction, land instability, volcanic hazards, flooding, and coastal inundation. Climate change will increase the frequency and magnitude of many of these hazards, or increase their extent, e.g. coastal erosion may increase tsunami inundation extents. We therefore include the effects of climate change within the broad ‘natural hazard’ terminology, because many natural hazards are (or will be) worsened by climate change.

In this action plan, we interpret ‘risk reduction’ as it is defined in the National Disaster Resilience Strategy (2019, p6): preventing new and reducing existing natural hazard risk, including managing residual risk.

This action plan has been developed in a time of policy change, coinciding with the Resource Management Act (RMA) reform and development of the National Planning Framework. Because the details of the reforms are yet to be finalised, we anticipate this action plan will be reviewed and updated to reflect any new national planning policies and frameworks.

This action plan does not include activities directly related to public communication, insurers, or reinsurers, geotechnical or structural engineering, or the resilience of infrastructure (beyond that in our Act). These activities are included in other initiatives, either through Tokā Tū Ake EQC (e.g. via our public communication strategy, Stronger Homes Action Plan, Research Investment), other agencies (e.g. National Emergency Management Agency, Insurance Council of NZ, Society of Earthquake Engineers), or research programmes (e.g. QuakeCoRE, Resilience to Nature’s Challenges National Science Challenge).

This plan can be read in conjunction with the *EQC Resilience Strategy 2019-2029*, *EQC Public Inquiry 2020*, and *EQC Resilient Homes and Buildings Action Plan*.

Intended outcome

The intended outcome of this action plan is:

Smarter land use that reduces our exposure to natural hazard risks

Three intermediate outcomes support the overarching outcome:

- » **Councils** actively consider natural hazards and risks in their short-term and long-term planning and co-management arrangements. They also understand the trade-offs that need to be made between investment in natural hazard risk reduction (such as avoiding the worst land, retrofitting buildings and upgrading buried pipes), and other opportunities for community wellbeing investments.
- » **Land use planners** and other experts understand the need and value of incorporating resilience planning principles and options for avoiding the worst hazard risks in land use plans, while considering the relationship Māori have with the environment. This reduces exposure to risk over time.
- » **Central government** includes risk reduction and natural hazard management when developing the new national planning framework (e.g. Natural and Built Environment Act, Spatial Planning Act, Climate Adaptation Act), and putting Te Tiriti o Waitangi into practice.

Target audience and pathways

Resilience Strategy for Natural Hazard Risk Reduction 2019-2029 provides the ‘Partners and Pathways’ that the Strategy is aimed at.

This action plan targets three key partners with associated strategic pathways, provided in Table 1.

Table 1: Key strategic partners and pathways (adapted from EQC 2019, p20)

	Audience	Pathway examples
Māori interests are considered and enabled at every opportunity	Councils	Local policy and planning Best practice technical guidance for resilient land use planning Hazard mapping, analysis, and monitoring Determining acceptable and residual risk Spatial planning Regional, district and coastal plans Risk information sharing Consenting Appeals processes Continued Professional Development
	Central government	National policy and planning Technical guidance for resilient land use planning Hazard risk management policy advice- <ul style="list-style-type: none"> » Resource Management Act reform i.e. new National Planning Framework » National Direction i.e. National Policy Statements » National Adaptation Plan » CDEM Act, Strategy & Plan
	Professional organisations	New Zealand Planning Institute Natural hazard managers special interest group Local Government New Zealand

Objective 1: Provide leadership in land use planning for natural hazard risk reduction

One of our strategic intentions is to be a leader in Aotearoa New Zealand on natural hazard risk reduction, with the outcome to increase community resilience to natural hazards (EQC Resilience Strategy, 2019, p4). Objective 1 directly contributes to this intention.

To achieve this, Tokā Tū Ake EQC will demonstrate leadership by leading by example, leading the way, showing thought leadership and taking proactive action. Further, we are a supportive and valuable partner being constructive and solving problems, and, above all, making progress on key issues and challenges that will make a difference to New Zealanders.

Activities

There are five key activities associated with this objective:

1. Contribute to national policy development.
2. Develop a Tokā Tū Ake EQC Statement of Expectations for Natural Hazards Planning.
3. Provide sound, evidence-based feedback and submissions on nationally significant policies/plans and district plan changes or reviews that have broader implications for hazard and risk management, including the RMA reform process and NAP.
4. Establish a Māori Resilience Fund.

5. Investigate a framework for risk thresholds and tolerances.

Other opportunities, such as contributing to training planners for the new national planning framework, will also be explored.

National policy development and guidance

Tokā Tū Ake EQC will actively contribute to developing the National Adaptation Plan (NAP), the Natural and Built Environment Act (NBA), Spatial Planning Act (SPA), and the Climate Adaptation Act (CAA). We will also target other policies (e.g. Government Policy Statements, directions under the national planning framework), when there is an opportunity to include natural hazard risk reduction measures.

Tokā Tū Ake EQC will also support and (where appropriate) lead the review and/or development of regulatory (i.e. as part of the national planning framework) and non-regulatory guidance that supports and encourages better land use planning for natural hazard risk reduction.

Tokā Tū Ake EQC Statement of Expectations for Natural Hazards Planning

By developing this non-regulatory Statement of Expectations, we aim to send a clear message about what we expect as 'good planning' for natural hazards (including effects of climate change). National direction for natural hazards under the RMA is currently lacking, and the publication of this statement of expectations

will provide a Tokā Tū Ake EQC position on ‘good planning’ until national direction is developed. Primarily aimed at councils, it will also be of interest to developers, central government agencies, the private sector and professional organisations. When national direction is developed, we will revise the Tokā Tū Ake EQC Statement of Expectations to reflect the new policy direction.

Submissions

Tokā Tū Ake EQC will show leadership in land use planning decision-making by submitting on nationally significant policies/plans, or on those policies/plans that will set a local benchmark for risk reduction outcomes (e.g. regional spatial strategies). Taking a risk-based approach, we will encourage avoidance in those highest hazard locations. In addition, we will support other organisations to make submissions, or when advantageous, develop joint submissions.

Establish a Māori Resilience Fund

We will develop this fund with Māori, to help Māori entities (e.g. trusts, authorities) develop or implement natural hazard aspirations. They may outline their aspirations in their iwi or hapū management plans. This fund would be for Māori communities, not the commercial arm of their organisations.

It would fund Māori entities to either:

- » understand their hazard and risk profile to guide their land use planning actions and spatial planning, or
- » support them to meet their risk reduction outcomes identified in their management plans.

Risk thresholds and tolerance

Robust and transparent risk tolerance frameworks are important for effective risk management and implementing risk reduction initiatives. Understanding risk tolerance forms a critical part of the risk management process, yet Aotearoa New Zealand does not have an agreed local, regional, or national regulatory framework for risk tolerance and risk acceptability. This activity will involve reviewing the risk threshold and tolerance literature, to guide and contribute to developing a proposed framework for risk thresholds that could be used across Government.

Milestones and intended outcomes

The milestones have been developed across three timeframes as provided in Table 2.

Table 2: Objective 1 Milestones and intended outcomes

When	Milestone	Intended Outcomes
Year 1	Contribute to the development of national policy Draft Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning Provide submissions on significant plan changes or district plan reviews Co-develop the framework for the Māori Resilience Fund Review risk tolerance and thresholds	Improved policy for natural hazard and risk management within plan changes Framework for the Māori Resilience Fund produced and piloted Progress towards a framework for risk tolerance and thresholds
Year 2	Contribute to the development of national policy reform Provide submissions on significant plan changes or district plan reviews Finalise Toka Tū Ake EQC Statement of Expectations on Natural Hazards Establish the Māori Resilience Fund Investigate and risk tolerance/threshold framework	The management of natural hazard risks is included in key legislative reform Improved local policies on the management and reduction of natural hazard risks and climate change adaptation Certainty of Toka Tū Ake EQC expectations on managing natural hazards through land use planning Māori are able to access the fund An understanding of risk threshold between sectors
Years 3-5	Implement Toka Tū Ake EQC Statement of Expectations of Natural Hazards Contribute to national policy development and guidance Provide submissions on significant plan changes or district plan reviews Develop framework for risk tolerance/thresholds	Land use planning decision making reflects Toka Tū Ake EQC Statement of Expectations intent Coordinated national policies that reduce risks from natural hazards and climate change Improved local policies on the management and reduction of natural hazard risks and climate change adaptation Māori are able to improve their resilience A transferable risk threshold framework contributes to better decision making on risks

Contribution to Vision Mātauranga and Mātauranga Māori

The Māori Resilience Fund will provide additional resource for Māori to work with scientists to interpret scientific outcomes that are relevant for their communities. It will also contribute Mātauranga Māori into planning. Because some iwi and hapū have clear risk reduction policies in their management plans, being able to translate and transform science into a relevant outcome aligned with their aspirations will be important.

The Tokā Tū Ake EQC Statement of Expectations for Natural Hazards will include expectations about using iwi/hapū management plans, cultural impact assessments, and including Mātauranga Māori in land use planning for natural hazard risks. Other activities, such as the Champion role, CPD, national policy development and submissions will all support:

- » the use of iwi/hapū management plans,
- » cultural impact assessments, and
- » the inclusion of Māori in policy development and CPD activities. CPD opportunities will be equally available to Māori planners.



Objective 2: Promote and support risk-based planning solutions

Our vision is that “land use planners understand the value of incorporating resilience planning principles and options for avoiding the worst hazard risks in land use plans ...” (EQC Resilience Strategy, p6).

However, there are a number of challenges in moving towards a risk-based planning approach which are not unique to Aotearoa New Zealand.

Firstly, planning traditionally relies too heavily on assessing the probability of an event. At the same time, there is low capability to assess and quantify the possible consequences of events beyond damage or loss to property or risk to life (which is also difficult to assess). Where events were thought to be unlikely, this has led to decisions that placed developments and communities at risk despite the consequences.

Secondly, it is essential in risk-based planning to be able to define levels of risk (e.g. acceptable, tolerable or intolerable), and link these to suitable land use policies. An acceptable level of risk needs to be based on measurable indicators that allow risk levels to be monitored over time. This enables towns and cities to undertake sustainable development that does not exceed acceptable levels of risk, and may even mitigate existing risk. It also makes it possible to track how effective the efforts to reduce existing risk are.⁹

Risk-based planning provides an opportunity to move beyond planning for a natural hazard only to planning for the consequences of an event. It includes planning provisions that become more restrictive as the risk increases. This objective aims to support and encourage risk reduction planning solutions based on knowledge and understanding.

Activities

There are five activities associated with this objective:

1. Tailor and support the use of RiskScape in spatial planning.
2. Collect case studies of good and bad planning outcomes for risk reduction.
3. Encourage and support adaptive risk-based land use planning.
4. Support the development of the national Risk and Resilience Portal.
5. Contribute to the natural hazard planning body of knowledge.

Tailor and support the use of risk modelling in spatial planning

Tokā Tū Ake EQC will publish case studies highlighting how RiskScape can be used in planning. We will use these as the basis for training

⁹ Saunders, W.S.A., Kilvington, M. 2016: Innovative land use planning for natural hazard risk reduction: A consequence-driven approach from New Zealand. *International Journal of Disaster Risk Reduction*, 18, 244-255

and other translation activities. Planners will be invited to assess the value and requirements to develop a user-friendly graphical user interface (GUI) specifically for planning. This planning interface will allow planners to test land use planning policy options against financial, built and life safety losses; and cost-benefits of land use change. The evidence-based results can then guide the policy direction for decision makers. Guidance will include how RiskScape can model all multi- and cascading natural hazards, future urban forms, climate change, land use policy options and cost benefit analyses for policy-makers and planners.

RiskScape also has the potential to provide quantitative evidence to complement existing indigenous methods of managing natural hazard risks. This can be achieved through direct-loss based modelling or adapting conventional western-based methods to be more value-based where Māori agree it is appropriate. We will partner with an iwi to pilot how RiskScape can work with iwi systems of managing risks.

Collect case studies of good and bad planning outcomes for risk reduction

Case studies provide a useful example of how planning policies can result in good and bad outcomes for risk reduction. They also provide a useful test during the development of new policy, both nationally and more locally. Publishing case

studies with key lessons and changes that could result can help decision makers with their policy direction and approaches. They also highlight why policies may need to change, i.e. to stop bad outcomes that increase risks.

Encourage and support adaptive risk-based land use planning

In 2013, risk-based land use planning guidance was produced by Saunders, Beban & Kilvington.¹⁰ This approach was successfully adopted in the Bay of Plenty Regional Policy Statement in 2016. It has since been applied in other regional policy statements and district plans across the country. With the lessons from implementing the approach, and advances in risk-based planning options and engagement, the 2013 approach needs to be updated so it remains relevant in the changing policy environment. A review and update of the approach and website¹¹ will enable best practice risk-based planning guidance to continue.

Beyond the other activities in this objective (each of which contributes to risk-based planning), Toka Tū Ake EQC will pursue other opportunities to encourage and support risk-based land use planning. This could include supporting councils and/or iwi in their natural hazard policy development and implementation.

¹⁰ <http://tools.envirolink.govt.nz/assets/Uploads/RISK-R7-120Risk-based20land-use20planning20for20natural20hazard20risk20reduction.pdf>

¹¹ <https://www.gns.cri.nz/Home/RBP/Risk-based-planning/A-toolbox>

Support the development of the national Risk and Resilience Portal

One of our medium and long-term resilience goals is developing a Risk and Resilience Portal. The Portal's primary function is a public information and education tool. It will be public-facing, self-service source of natural hazard risk and risk management information. It will offer a comprehensive view of New Zealand's risk, at an individual, community, local, regional, and national level. We will complete this work by using the data, information, and risk modelling capability Tokā Tū Ake EQC owns or funds.

Overtime, it will be a cornerstone for addressing some of the issues New Zealand faces when translating, sharing, promoting, and using, hazard risk information. We know clear and transparent sharing of risk information leads to better understanding of risks and, more risk-based decision-making, including early risk reduction interventions.

Contribute to the natural hazard planning body of knowledge

We will publish and share the knowledge and experience we gain from the various activities in this plan, so improvements to policy can continue. By publishing our findings in easily accessible formats, councils, planners, central government, and consultants can continue to learn about risk reduction options and challenges, and change policies to improve resilience. International publications (i.e. peer reviewed journals and book chapters) are another pathway for having our research peer reviewed and accepted internationally.

Milestones and intended outcomes

The milestones have been developed across three timeframes as provided in Table 3.

Table 3: Objective 2 Milestones and intended outcomes

When	Milestone	Intended Outcomes
Year 1	<ul style="list-style-type: none"> Review risk-based planning approaches Publish case study of Riskscape being used for planning Collect case studies Participate in portal workshops and development 	<ul style="list-style-type: none"> Riskscape is used as a spatial planning tool by councils Land use planning examples from Aotearoa New Zealand are guiding international best practice
Year 2	<ul style="list-style-type: none"> Scope how Riskscape can be tailored for spatial planning Undertake a pilot of Riskscape with an iwi Analyse case studies to determine what policies need to change to increased resilience Establish and further develop the functionality of the portal Contribute to journal articles, book chapter etc on good practice land use planning 	<ul style="list-style-type: none"> Risk-based land use planning with good community engagement results in transparent and robust decision making Risk-based planning solutions are contributing to building knowledge on risk reduction options The portal is informing risk-based decision making decision making
Years 3-5	<ul style="list-style-type: none"> Tailor Riskscape for spatial planning Publish iwi pilot of Riskscape in English and te reo Publish and distribute case study findings Make portal fully operational Update risk-based planning and engagement framework Cite publications 	

Contribution to Vision Mātauranga and Mātauranga Māori

Partnering with an iwi to pilot how Riskscape can work with iwi systems of managing risks is a key activity which helps increase Māori resilience within a kaupapa Māori approach. Undertaking a pilot with an iwi will enable the Riskscape team to develop an increased understanding of how Māori could use the tool, through direct iwi leadership

of the pilot. We will publish the lessons from this pilot, including the further development of Riskscape for Māori resilience, in English and te reo, so that other iwi may learn from the pilot project what is possible.

Objective 3: Building capability and capacity to reduce risks over time

One of the resilience challenges highlighted in the Toka Tū Ake EQC Resilience Strategy is that communities require risk management solutions based on information, knowledge and understanding (EQC Resilience Strategy, 2-3).

This challenge is reflected in the focus areas for the Strategy, including the interpretation and translation of science and research; technical guidance and policy advice; decision support tools and products for risk reduction; and influence risk reduction action through training for key stakeholders (EQC Resilience Strategy, p11). This objective aims to build capability and capacity of council staff, consultants and university courses to help overcome the challenges associated with lack of information, knowledge and understanding.

Activities

There are four activities associated with this objective:

1. Support and encourage the planning profession to better manage the consequences from natural hazards and climate change.
2. Support/deliver training and other capability development for spatial planning, including Riskscape.
3. Encourage and support universities to include more natural hazard planning for risk reduction into their programmes.
4. Conduct training for scientists to support decision-making.

In August 2021 Toka Tū Ake EQC and the NZPI, the professional body of land use planning in Aotearoa New Zealand, signed a Memorandum of Understanding (MoU). Toka Tū Ake EQC and NZPI intend to work closely to build the capability of planning students and practising planners in natural hazard planning. We will do this through continued professional development courses focused on different aspects of hazards planning, improving natural hazard content in university planning courses, and NZPI conference support. The MoU will provide the framework for NZPI support for the activities detailed below.

Support and encourage the planning profession

Partnering with the NZPI, Toka Tū Ake EQC will support and increase engagement of the planning profession (i.e. for Māori planners and those within consultants, councils, elected members and sectors), to better manage natural hazards and climate change adaptation through CPD. Our vision is for all planners and elected members to have access to quality natural hazard and climate change CPD opportunities. This will result in better planning outcomes that reduce and/or manage risks from natural hazards and climate change. We will develop three capability strategies:

1. With universities which will outline opportunities, expectations, and engagement with university staff and students on matters of natural hazards planning

2. With the NZPI based on the findings of a council capability and capacity survey
3. With Local Government New Zealand for elected members.

Working with the NZPI and Ministry for the Environment, we will assess planners' needs to inform future CPD activities, with the anticipated outcome of better planning decisions for natural hazards, including the effects of climate change.

Encourage and support universities to include more natural hazard risk reduction content into their programmes

We will work with and support universities to include more risk-based natural hazard planning into their planning courses, and in other relevant courses e.g., geology, geography, natural hazard risk and resilience. A review of specific natural hazard-based courses for each university will be undertaken. This will assess the breadth of courses available (across planning and non-planning courses), and the existing opportunities to guide and support these courses. Discussions with the planning departments will determine the support, scope and opportunities to work with the staff to guide their course development. This will result in a university strategy for including risk reduction into their courses.

Training of planners in risk modelling for spatial planning

The Tokā Tū Ake EQC vision includes that councils actively consider natural hazards and understand the trade-offs that need to be made between investment in DRR and other opportunities (EQC Resilience Strategy, p6). The recommendations of the Tokā Tū Ake EQC Public Inquiry included that planning must involve greater use of modelling (EQC Public Inquiry, 2020, p23). This activity aligns with this vision and recommendation. One risk modelling tool that Tokā Tū Ake EQC invests in is RiskScape. To improve the awareness of the RiskScape modelling software, and to encourage its use in planning, we will provide targeted training of planners. This training will target both council and consultant planners. We will support 'EQC RiskScape Planning Champion' positions to help train, support and encourage the planning profession to take up RiskScape as a planning tool. These Champion positions will be applied for, and could be sourced from councils, consultants, or iwi.

Training for scientists to support decision-making

Scientists often do not have the understanding or confidence to use their expertise and research to positively change the planning system. Often this involves being called to appear as an expert witness at hearings and/or the Environment Court. This can be unnerving for scientists and researchers, who need to be able to communicate their science and uncertainties clearly, within a policy context.

This activity will aim to address this by working with the NZPI to offer science-targeted training on planning for non-planners,¹² and providing useful skills to be an expert witness.¹³ These existing courses will be modified for the science profession to make sure they are relevant and useful, so scientists can feel confident to attend hearings.

Milestones and intended outcomes

The milestones have been developed across three time frames as provided in Table 4 below.

Table 4: Objective 3 Milestones and intended outcomes

When	Milestone	Intended Outcomes
Year 1	Deliver 'Planning for non-planners' and 'Being an expert witness' courses for scientists with the NZPI & RNC Develop a CPD programme with NZPI Deliver a guest lecture at two universities in non-planning specific courses	Scientists understand the planning system and feel more confident in defending their science in hearings and Environment Court Local authorities understand and use all the tools available under the RMA and other mechanisms to manage natural hazards and climate change impacts University graduates understand natural hazards and risks
Year 2	Implement a CPD training programme Develop a RiskScape training programme specific to planners Develop a university strategy	Evidence-based decision-making reduces risks over time
Years 3-5	Undertake RiskScape training programme Deliver second round of 'Planning for Non-Planners' and 'Being an expert witness' courses for scientists with the NZPI	RiskScape is being used by councils, consultants and iwi to guide spatial planning Emerging planners are knowledgeable about natural hazard planning Smarter land use avoids or reduces the worst risks

12 https://www.planning.org.nz/Category?Action=View&Category_id=2133, accessed 1 February 2021

13 https://www.planning.org.nz/Category?Action=View&Category_id=2109, accessed 1 February 2021

Contribution to Vision Mātauranga and Mātauranga Māori

Iwi planning representatives will be invited to attend trainings through the NZPI CPD programme. The training opportunities will also be highlighted through Papa Pounamu (the Māori special interest group of the NZPI). The role of iwi management plans and other avenues for Mātauranga Māori to be incorporated into natural hazard planning will be included where possible in university programmes. Risk models, such as RiskScape, have the potential to be a valuable tool for Māori authorities. We will continue to partner with iwi groups to support the use of RiskScape within their rohe if appropriate and where possible, include at least one Māori RiskScape Champion position.

RiskScape allows for indigenous knowledge, science and innovation to be brought together in one tool. By working with an interested Māori organisation or representative, they will have the opportunity to tailor RiskScape for their needs, values and knowledge.

It is widely acknowledged that more Māori planners are required in the profession. We will support and encourage Māori into planning whenever the opportunity arises, either through existing or new initiatives with different organisations.





Delivery of action plan activities

Table 5 summarises the milestones for each objective for each year.

Some activities will be achieved in partnership with, or through collaboration with, organisations external to Toka Tū Ake EQC. Progress of the action plan will be monitored against the delivery of these milestones.

Both external and internal evaluation of some activities will be undertaken, e.g. CPD programmes, contribution to national policy development, development of RiskScape for planners. The results of any evaluation will directly guide the activity going forward, to make sure the activity is useful and usable, and that people use it.

Table 5: Annual delivery of milestones

Actions		Key Partners
Objective 1: Provide leadership in land use planning for natural hazard risk reduction		
Contribute to national policy development		
Y1-5	Actively contribute to developing the National Adaptation Plan (NAP), the Natural and Built Environment Act (NBA), Spatial Planning Act (SPA), and the Climate Adaptation Act (CAA)	MFE
Y1-5	Support and (where appropriate) lead the review and/or development of regulatory (i.e., as part of the national planning framework) and non-regulatory guidance that supports and encourages better land use planning for natural hazard risk reduction	MFE
Develop a Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning		
Y2	Draft and finalise a Statement of Expectations	NZPI, MFE, LGNZ
Y3	Promote the Statement of Expectations to planners	NZPI

Table 5: Annual delivery of milestones (cont)

Actions		Key Partners
Provide sound, evidence-based feedback and submissions on nationally significant policies/plans and district plan changes or reviews that have broader implications for hazard and risk management		
Y1-5	Provide submissions on significant plan changes or district plan reviews	
Establish a Māori Resilience Fund		
Y1	Co-develop the framework for the Māori Resilience Fund	RNC
Y2	Establish the Māori Resilience Fund	
Investigate a framework for risk thresholds and tolerances		
Y1	Review risk tolerance and thresholds	
Y2	Investigate risk tolerance/threshold framework	
Y3	Develop framework for risk tolerance/thresholds	
Objective 2: Promote and support risk-based planning solutions		
Tailor and support the use of RiskScape in spatial planning		
Y1	Publish case study of Riskscape being used for planning	Councils, iwi
Y3	Update risk-based planning and engagement framework updated	Councils, MfE
Collect case studies of good and bad planning outcomes for risk reduction		
Y1	Case studies are collected	Councils, MfE
Y2	Analysis of case studies to determine what policies need to change to increased resilience	Councils, MfE
Y3	Publication and distribution of case study findings	Councils, MfE
Encourage and support adaptive risk-based land use planning		
Y1	Review risk-based planning approaches	Councils
Y3	Risk-based planning and engagement framework updated	
Support the development of the national Risk & Resilience Portal		
Y1	Participate in portal workshops and development	MfE, NEMA, DIA, GNS
Y2	Establish and further develop the functionality of the portal	Science, NIWA, local govt
Y3	Make portal fully operational	
Contribute to the natural hazard planning body of knowledge		
Y2	Contribute to journal articles, book chapter etc on good practice land use planning	
Y3	Cite publications	

Table 5: Annual delivery of milestones (cont)

Actions		Key Partners
Objective 3: Building capability and capacity to reduce risks over time		
Support and encourage the planning profession to better manage the consequences from natural hazards and climate change		
Y1	Establish a Memorandum of Understanding with the NZPI to support natural hazards planning across the profession	NZPI
Develop three capability strategies:		
Y2	1. with universities which will outline opportunities, expectations, and engagement with university staff and students on matters of natural hazards planning	NZPI
Y1	2. with the NZPI based on the findings of a council capability and capacity survey	NZPI
Y3	3. with Local Government New Zealand for elected members	LGNZ
Y2	Implement CPD training programme	
Support/deliver training and other capability development for spatial planning, including Riskscape		
Y2	Develop a RiskScape training programme specific to planners	
Y3-5	Undertake RiskScape training programme	
Encourage and support universities to include more natural hazard planning for risk reduction into their programmes		
Y1	Deliver a guest lecture at two universities in non-planning specific courses	Universities, NZPI
Y2	Develop a university strategy	
Conduct training for scientists to support decision making		
Y1	Deliver 'Planning for Non-Planners' and 'Being an expert witness' courses for scientists with the NZPI & RNC	NZPI, RNC
Y3-5	Deliver second round of 'Planning for Non-Planners' and 'Being an expert witness' courses for scientists with the NZPI	





Stakeholders

There are a range of stakeholders for each objective.

We have identified these as primary (those who will have a primary interest) and secondary (those with a secondary interest (Table 6)). Those with a primary interest will be directly involved in the activities, while those secondary stakeholders may be kept informed of progress towards milestones.

Table 6: Primary and secondary stakeholders

Category	Primary Stakeholders	Secondary Stakeholders	
Māori interests are considered and enabled at every opportunity	Iwi	Iwi authorities, trusts, hapū	Central government agencies
	Local government	District, Regional and Unitary Councils Local Government NZ	Consultants
	Central government	Ministry for the Environment Department of Internal Affairs National Emergency Management Agency Departments with property portfolios	Ministry of Business, Innovation and Employment Universities Consultants
	Universities	Planning departments Geology departments Hazard targeted programmes	New Zealand Planning Institute
	Scientists	Scientists at CRI's or universities	
	Professional organisations	New Zealand Planning Institute	Engineering New Zealand New Zealand Society of Earthquake Engineers New Zealand Association of Scientists Royal Society of New Zealand



There are a number of existing stakeholder linkages that will contribute to the stakeholder involvement in each Objective. These include:

- » **Central govt:** Treasury, DIA, Community Resilience Group, flood risk work programme, and MfE (NAP, NBA, SPA, CAA); NEMA (National Disaster Resilience Strategy).
- » **Local govt:** LGNZ, Regional Council Hazard SIG, existing contacts.
- » **Research:** RNC, Deep South, QuakeCoRE, It's Our Fault, DEVORA, East Coast Life at the Boundary (ECLab), Transition Taranaki, Kaikoura Endeavour, Flood Hazard Endeavour.
- » **Professional organisations:** NZPI, New Zealand Society for Earthquake Engineering (NZSEE), ENZ, New Zealand Geotechnical Society.
- » **Universities:** Auckland University Engineering Dept, Waikato University Planning Dept, Massey University Planning Dept; Victoria University Geology Dept, Canterbury University MDRR programme, Lincoln University Planning Dept; Otago University Planning Dept.
- » **Māori:** Iwi and hapū management plans, Resilience to Natures Challenges (RNC), Deep South.

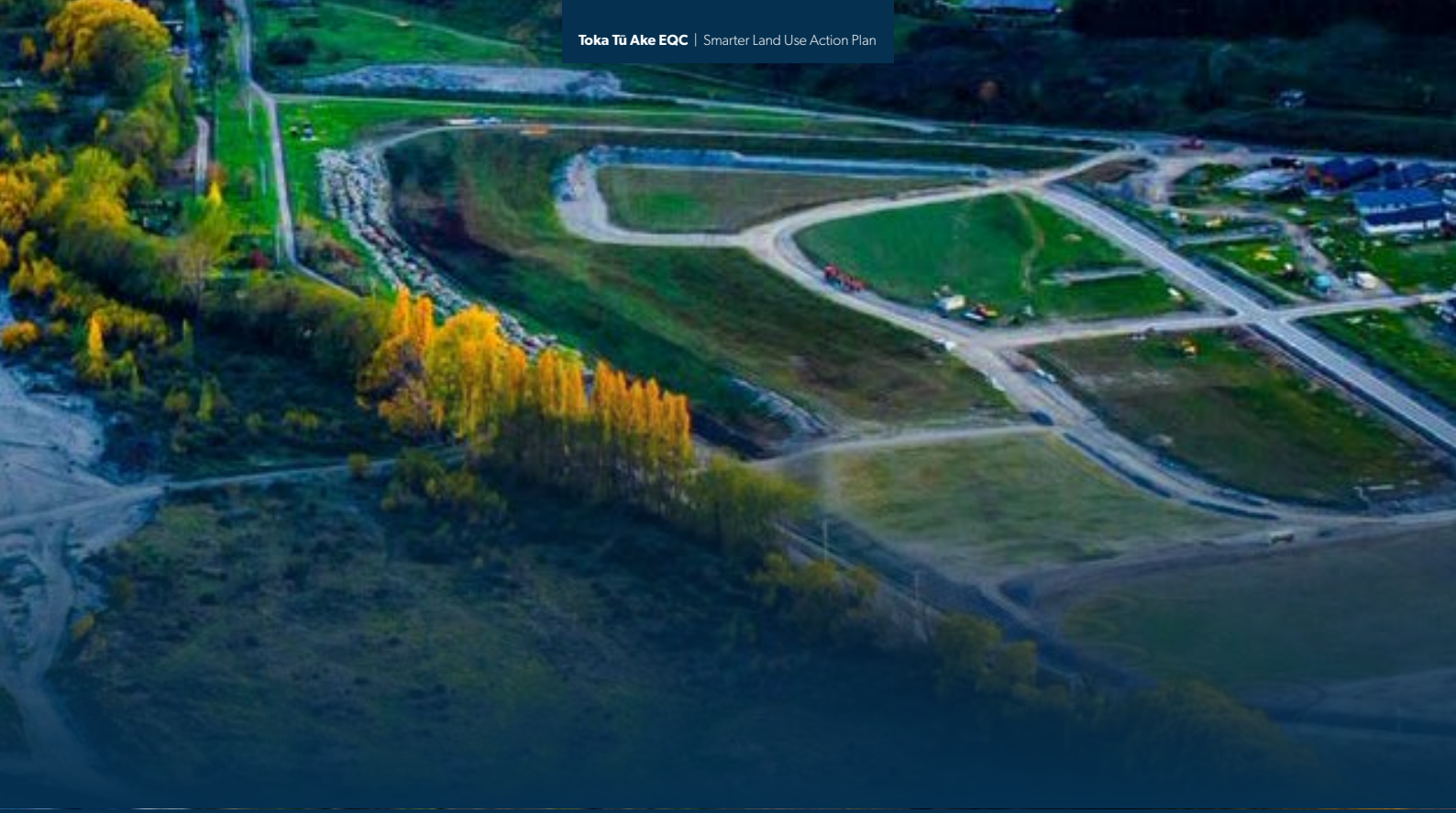
Risks to successful Action Plan implementation

The following risks have been identified to successful implementation of this Action Plan (Table 7).

Mitigation measures have been proposed to reduce the impacts of any of these risks on the plan.

Table 7: Risks to SLAPRR implementation and mitigation measures

Risk	Mitigation
Covid-19 restrictions and lockdowns result in delays on progress and engagement activities	Allow for Covid-19 related delays if required in projects. Plan for different formats of engagement
A large event occurs which re-prioritises activities, internally and in external organisations	Re-prioritise as necessary, considering the needs and status of stakeholders. Communicate with stakeholders; make sure activities do not solely rely on Toka Tū Ake EQC staff/resourcing
Legislative changes occur quickly with little opportunity to contribute to the outcome	Ensure good relationships with a range of agencies to make sure Toka Tū Ake EQC knows what is happening and when. Keep the Minister’s Office informed of key work and conversations so they can help promote our position and point of view
Partnership with Māori does not occur due to reasons in, or outside our control, resulting in Tiriti obligations not being fulfilled and actions not being relevant	Employ or contract a Māori advisor to assist and provide support in cultural protocols, tikanga, and engagement activities; engage early and through different channels and approaches, as necessary
Funded activities are not supported	Have a good communication plan around the Resilience Partnership Fund and Māori Resilience Fund
Unable to co-develop the Māori Resilience Fund with Māori representatives	Employ or contract a Māori advisor to assist and provide support in cultural protocols, tikanga, and engagement activities



Appendix 1: Alignment of Action Plan with EQC Resilience Strategy 2019-2029

EQC Resilience Strategy for Natural Hazard Risk Reduction 2019-2029

Action Plan Contribution

Vision:

Councils actively consider natural hazards and understand the trade-offs that need to be made between investment in DRR and other opportunities; land use planners understand the value of incorporating resilience planning principles and options for avoiding the worst hazard risks in land use plans, so risk exposure is managed down over time (p6)

Goal:

Smarter land use avoids the worst risks (p9)

VM:

Toka Tū Ake EQC is committed to the policy themes and outcomes of VM (p13)

Objective 1 Leadership:

Toka Tū Ake EQC Statement of Expectations for Natural Hazards Planning. This will set out the clear expectations of what we expect 'good' land use planning to be from councils. Submissions on plan changes/new policies where natural hazard risk reduction policies can be improved. CPD programme developed with the NZPI will target improved planning outcomes for natural hazard management

Objective 3 Building capability and capacity:

Training in risk modelling i.e. RiskScape will be offered to planners, so that trade-offs can be modelled to guide decision-making. RiskScape will also have a tailored GUI for planners

Entire Action Plan supports this goal

Māori interests are considered and enabled at every opportunity. Specific actions include:

Objective 1 Leadership:

Establish a Māori Resilience Fund for Māori to enable them to fulfil their risk reduction aspirations

Objective 2 Risk-based planning solutions:

Partner with iwi to pilot the use of Riskscape can work with iwi systems of managing risks

EQC Resilience Strategy for Natural Hazard Risk Reduction 2019-2029

Action Plan Contribution

Focus areas:

Build data and knowledge:

Support innovative and resilient land use solutions

Translate and transform:

Lead and support interpretation and translation of science and research; technical guidance and policy advice

Uptake and implement:

Influence risk reduction action through enhanced analysis and policy coordination with regulatory agencies and accelerated education and training for key stakeholders;

Advocate for natural hazard resilience with improved coordination and unified leadership across the system

Support/deliver training and other capability development for spatial planning, including Riskscape

Objective 1 Leadership:

Deliver “Planning for non-planners” and “Being an expert witness” courses for scientists. Establish a CPD programme with the NZPI for planners

Objective 3 Deliver Capability and Capacity Conduct:

Training for scientists to support decision making

Develop a national scale risk framework for policy development

Partners and Pathways: (p20)

Local government technical guidance for resilient design and land use planning; training and professional development

Central government technical guidance for resilient design and land use planning, hazard risk management policy advice

Professional organisations technical solutions guidance, training and professional development

Objective 1 Leadership:

Programme with the NZPI for planners

Contribute to the development of national policy including the RMA reform process and NAP

Appendix 2: Alignment of Action Plan with EQC Public Inquiry Recommendations

Public Inquiry	Action Plan Contribution
<p>Recommendation 1.1.2</p> <p>Clarify expectations with EQC about its responsibility in land-use planning before, and for the coordination of land remediation after, a major natural disaster</p>	<p>Objective 1 Leadership:</p> <p>Toka Tū Ake EQC Statement of Expectations on Land Use Planning. This would set out the clear expectations of what we expect 'good' land use planning to be from councils (bridging the gap to any national direction), and outline our role for councils</p>
<p>Recommendation 6.4</p> <p>Land Information. EQC has gained extensive knowledge on land stability from research and its past work. Thought should be given to how this might be shared widely</p>	<p>Objective 2 Risk-based planning solutions:</p> <p>Support the development of the national Risk and Resilience Portal</p>
<p>Recommendation 6.4.3</p> <p>EQC should proactively share up to date local area information about land and hazards with relevant authorities (p37)</p>	<p>Objective 2 Risk-based planning solutions:</p> <p>Support the development of the national Risk & Resilience Portal</p>
<p>Consider granting EQC standing to appear in formal land use planning hearings (6.4.2)</p>	<p>Objective 1 Leadership Objective 2 Risk-based planning:</p> <p>Actively submit on proposed plans, plan changes, notified consent applications, and national policy when we consider they have broader risk reduction implications</p>
<p>EQC... has no voice in decisions about planning for residential land use, for which it will assume some degree of insurance risk (p18)</p>	<p>Objective 1 Leadership Objective 2 Risk-based planning solutions:</p> <p>Toka Tū Ake EQC Statement of Expectations on Land Use Planning. This would set out the clear expectations of what we expect 'good' land use planning to be from councils (similar to an NPS), and outlines our role for councils. Actively submit on proposed plans or regional spatial strategies, plan changes, notified consent applications and national policy when we consider them significant</p>

Public Inquiry

Planning must involve greater use of modelling. Future planning will be important to encompass the likely outcomes of events other than earthquakes, as will the differing needs of rural and urban communities (p23)

[Legislative change] ... providing EQC a more formal role in land use planning might be worthwhile (p24)

EQC must establish meaningful and enduring relationships with tangata whenua that it can build on following a natural disaster. There is considerable room for EQC to do more to build relationships with iwi and to better recognise Māori world views and tikanga in its operational practices

If there is a managed retreat of whole communities, who will pay? There is an open question about EQC's part in responding to some of these questions – as an insurer and as an organisation supporting research and educating the public (p59)

Enhanced role in land use planning (p75)

Action Plan Contribution

Objective 2: Risk-based planning:

Tailor and support the use of RiskScape in spatial planning

Objective 3: Building capability and capacity:

Training in risk modelling i.e. we will offer RiskScape to planners, so they can model multiple events and land uses to guide decision-making

Objective 1 Leadership

Objective 2 Risk-based planning :

Be involved in RMA reform process and National Adaptation Plan via sprints, workshops, and submission process

With this plan, we aim to consider and enable Māori interests at every opportunity. In addition, **Objective 1 Leadership** provides a specific funding mechanism for Māori to put the natural hazard provisions in their iwi or hapū management plans into practice, and Objective 2 will pilot the use of Riskscape with an iwi group for their hazard management aspirations

Objective 1 Leadership

Objective 2 Risk-based planning:

Be involved and influential on RMA reform process and National Adaptation Plan, including working with MfE on developing the Climate Adaptation Act

The entire SLAPRR aims to achieve this

