



# Risk Reduction Strategy

2025-2029



Natural Hazards  
Commission  
Toka Tū Ake



Te Kāwanatanga  
o Aotearoa  
New Zealand Government

The cover image of this Strategy has been generated using AI to demonstrate how a risk reduction initiative can protect a given property in a flood event.

## **Risk Reduction Strategy**

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Natural Hazards Commission Toka Tū Ake

PO Box 790

Wellington 6140

New Zealand

Phone: **0800 DAMAGE**

Email: [resilience@naturalhazards.govt.nz](mailto:resilience@naturalhazards.govt.nz)

Website: [www.naturalhazards.govt.nz](http://www.naturalhazards.govt.nz)



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# About This Strategy

**This Risk Reduction Strategy sets out the Natural Hazard Commission’s (NHC’s) approach to reducing natural hazard risk in New Zealand. It demonstrates why we are motivated to influence, inform, and enable risk reduction to manage current and future natural hazard risks, and support insurance retention for natural hazards.**

**This Strategy will guide NHC’s risk reduction work programme that will deliver on our commitment to evidence-based decision-making and action on natural hazard risk.**





**The Risk Reduction Strategy supports delivery on NHC’s Resilience Strategy for Natural Hazard Risk Reduction 2025-2029** (‘the Resilience Strategy’) and is supported by NHC’s Research, Loss Modelling, and Public Education strategies.

The overarching Resilience Strategy sets out the Commission’s vision that *natural hazards resilience is embedded in all aspects of decision-making for our homes, communities, towns, and cities*. The Strategy has a goal to *inform, enable and influence the choices and decisions that reduce the exposure and vulnerability of New Zealand’s built environment to natural hazards*. It demonstrates the connections between the Commission’s various functions and how they work synergistically to meet this goal.

**The Risk Reduction Strategy delves deeper into how we achieve part of this** by detailing how we inform decisions and actions, influence for and champion change, and enable risk reduction, for improved natural hazards resilience. Specifically, this Strategy has been developed to align with the objectives of section 128 and section 129(e) of the Natural Hazards Insurance Act 2023, to: *contribute to the sharing of information, knowledge, and expertise (with the Crown, public and private entities, and the public generally) including in relation to natural hazards and their impacts; damage to residential buildings, residential land, and*

*other property as a result of natural hazards, including how that damage might be prevented or reduced; community resilience to natural hazards; and natural hazard risk management.*

**The Strategy is driven by the needs and priorities for managing natural hazard risk in New Zealand.** Following a review of local, regional, and national priorities<sup>1</sup>, we consider these to include:

- increased expectation for information, data, and knowledge that the government holds to be shared, translated, and used,
- enhancing policies and practice so they are evidence-based, and
- understanding risks, how they change, and our tolerances to them.

The Strategy will be reviewed on a five-yearly basis to ensure its validity and accuracy against NHC’s Statement of Intent 2024-2028<sup>2</sup>, the Resilience Strategy and other business goals and objectives, and the hazard risk management sector’s needs and priorities for risk reduction in New Zealand.

1 Refer to Appendix B

2 These documents can be found here <https://www.naturalhazards.govt.nz/our-publications/statement-of-intent-2024-28/> on the Natural Hazard Commission’s website

# Natural hazard risk and the importance of risk reduction

## How we define natural hazard risk

Natural hazard risk is created when the existence of a *hazard*, such as a volcano, has the potential to negatively affect or impact the things we value (e.g. our people and buildings) that are *exposed* to that hazard, and certain characteristics of the things we value make us more *vulnerable* (e.g. being uninsured, or having unsafe buildings). These components are described in detail as follows:

- **Hazard:** the magnitude, frequency, location, and likelihood of the hazard. Natural hazards in the context of this Strategy are earthquakes, volcanic activity, tsunami, flooding, liquefaction, landslides and fire resulting from these events occurring. We also consider stresses that contribute to the exacerbation of the impact of natural hazards, such as climate change,
- **Exposure:** the things we value that are present in the location where a natural hazard event may occur and therefore prone to potential impact or loss. The things we value include our people, our health and wellbeing, infrastructure and buildings, our economy, and the environment, and
- **Vulnerability:** the characteristics and/or inherent qualities that make the things we value susceptible to or protected from a natural hazard event. For example, the quality of our buildings.

Figure 1 summarises the principles of natural hazard risk - hazard, exposure, and vulnerability, and how they combine to create a risk.

This is an essential concept for this Strategy and the work that will be completed under it. Understanding how risk is created is critical for understanding how we can reduce and manage it; qualifying and/or quantifying risk enables risk-based decision-making, which allows us to plan, prepare, adapt and respond to the occurrence of a natural hazard event.

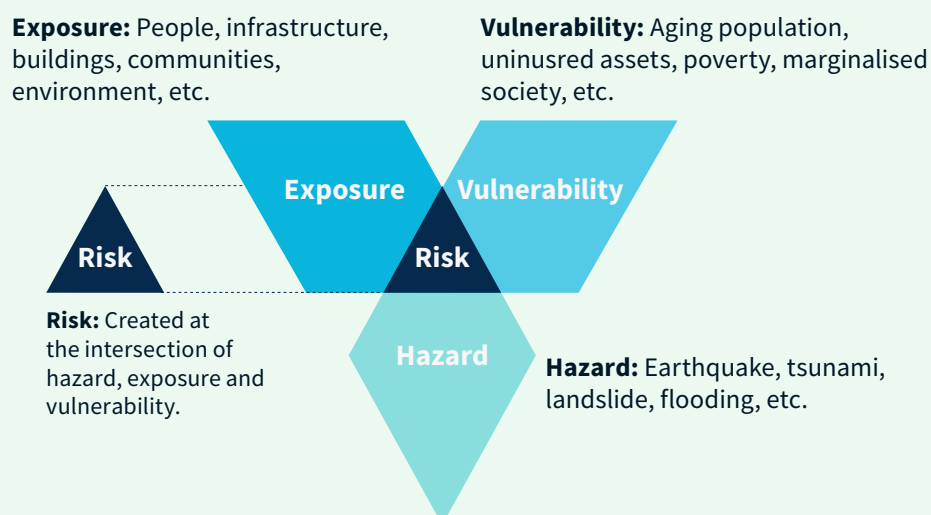


Figure 1: Principles of natural hazard risk, where risk is created at the intersection of hazard, exposure and vulnerability

## Natural hazard risk reduction

In New Zealand, we know from experience that the social, financial, and physical costs of natural hazard events can be devastating.

Natural hazard risk reduction is the concept and practice of reducing existing natural hazard risk, avoiding or minimising future risk, and managing residual risk. It can be achieved by reducing one or more of the key components of risk: **hazard**, **exposure**, and/or **vulnerability**.

Figure 2 illustrates this. It is rare that we can change the scale or characteristics of a hazard (effective river management is the exception). However, the scale of the *risk* from that hazard is determined by the size of our exposure and our vulnerability to it. If our exposure and/or vulnerability increases, the risk is increased, and the impact and consequences of a natural hazard event will be more significant.

If we *reduce* our exposure (e.g. by relocating things) and/or vulnerability (e.g. by strengthening buildings), the risk reduces, and the impact and consequences of the event, if it happens, are less.

If invested in prudently (e.g. via long-term fiscal plans) and implemented in a timely manner, the reduction of risk can limit the impact and cost of natural hazard events when they inevitably occur. Whatever risk remains needs to be managed by a system that is ready to respond and recover, and by ensuring communities are prepared for the event to occur.

Everyone has a role to play in risk reduction: individuals, communities, the private sector, and government. However, there are limits on our ability to reduce risk. These include: the cost to implement mitigation, governance and political objectives and policies, public appetite, risk tolerances, and cultural/social differences.

Despite its difficulty, risk reduction is an integral part of hazard risk management and the best and most cost-effective way to ensure we build a resilient future.

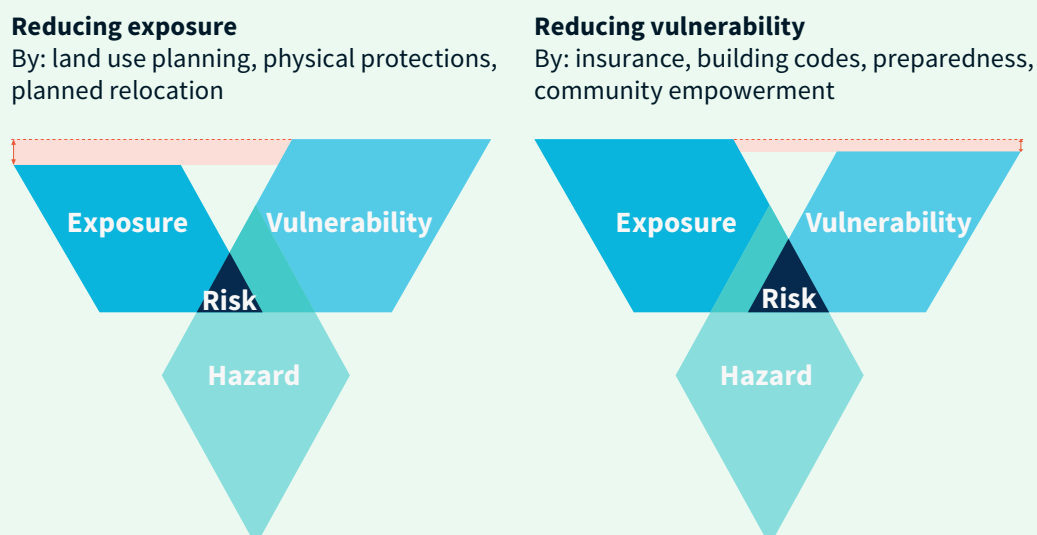


Figure 2: The amount of risk changes when exposure and/or vulnerability is changed or reduced



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There are disasters that are entirely manmade (sic), but none that are entirely natural.

Rebecca Solnit

Writer, historian and environmental activist





## Challenges to natural hazard risk reduction

Natural hazard risk reduction isn't easy: it can generate uncertainty, can be politically risky, and is often costly. However, we know that the social and economic costs of risk reduction are generally low compared to the cost of response and recovery. Moreover, actions to reduce vulnerability, like including risk reducing mitigations into new buildings, are becoming more affordable. We need to think of ways to make risk reduction even more achievable, and to encourage action. Evidence-based risk management actions, developed from our best possible understanding of risk, is the goal.

In New Zealand, natural hazard risk management sits across multiple pieces of legislation and places a strong emphasis on risk reduction at the local, community and personal level. This varied legislation is underpinned by numerous risk reduction strategies, programmes, guidance, and different agencies to deliver on them. These agencies have differing responsibilities and as a result, gaps exist, and policies don't align. The devolved accountability to local and regional authorities for natural hazard risk management can further blur lines of responsibility and powers to act. This can lead to confusion, inaction and ultimately impacts New Zealand's ability to reduce risk.

Our already high exposure to natural hazard risks continues to increase as we try to find ways to address some complex additional challenges. These challenges include climate change, legacy planning issues (meaning development has sometimes occurred in high-risk locations), the need to expand our housing supply and infrastructure, and changing policy, or gaps in policy, for managing natural hazard risk. Finding ways to address the problems and challenges that hinder risk reduction should be a priority for New Zealand.

With so many challenges – and the inherent complexity and unpredictability of natural hazard risk – it can be hard to articulate the ways, let alone decide on transparent and effective means, to lower the impact of natural hazard events. Our priority must be on reducing our exposure and vulnerability, so we can lower the short-, medium- and long-term consequences we may face. Not only will we save lives, and protect our homes and wellbeing, but we will protect our financial exposure – of individuals, households, communities, businesses, and local and central government.

As one of the many agencies with a role in managing natural hazard risk, NHC intend to lead by example, by building the evidence for, and sharing, innovating and proactively demonstrating how reducing risk, now and into the future is not only financially important, but can make a positive difference to all New Zealanders.

## Natural hazards insurance and reinsurance

One of NHC's core roles is to secure reinsurance for our residential buildings<sup>3</sup>. New Zealand achieves very high levels of insurance coverage, despite being exposed to catastrophic natural hazard risk. This is important because for many New Zealanders, having cover for natural hazard damage to their home, provides financial resilience when an event occurs. While insurance is an important part of our resilience toolbox, it does not reduce or remove the physical and social impacts of natural hazard events; its role is to support financial recovery.

Our risk is directly related to our financial exposure. How much we pay for reinsurance is influenced by reinsurers' risk appetite and estimates of our financial exposure. The greater the risk, the more we pay to insure against that risk. Reinsurers' confidence in how we understand and manage our risk is therefore important, as it translates directly to the premium NHC and private insurers are charged for reinsurance. Consequently, if we reduce natural hazard risk, we are also making contributions to maintaining affordable natural hazard insurance for New Zealanders.

Our main drivers for informing, influencing, and enabling risk reduction are our responsibility for helping homeowners maintain access to insurance from private insurers (thus qualifying for the NHI scheme); and maintaining natural hazard insurance and keeping it affordable. Key issues that impact this include:

- Poor management of natural hazard risk including:
  - Not using data and information for decision-making,
  - Lack of/poor quality data and information,
  - Limited/no risk reduction/risk mitigation measures or climate change adaptation,
  - Poor risk/loss modelling to determine current and future projected losses, and
  - Problems resolving earthquake prone building issues.
- Increased frequency of weather events – this may cause impacts on the affordability and/or availability of insurance.

We can combat these challenges by working together across the hazard risk management sector to better manage natural hazard risks by using and translating our research, investments, knowledge and understanding in hazard risk to ensure evidence-based policy and planning.

<sup>3</sup> Reinsurance can be viewed as insurance for insurers - an insurer transfers all or part of a risk to another insurer to provide protection against the risk of the first insurance. You can find out more about natural hazard insurance and how it works by visiting: <https://www.naturalhazards.govt.nz/insurance-and-claims/>



## The Natural Hazards Commission and risk reduction

NHC takes a broad approach to risk reduction, from how policy is developed and used (Nationally, regionally, and locally), to how individuals are informed and feel empowered to understand risk and the choices they can take to reduce risk. We do this because we have a mandated<sup>4</sup> and moral responsibility to New Zealanders to reduce the impacts of natural hazards on people, property, and the community. We inform, influence, and enable risk reduction to help:

- protect people and their property from the impact of natural hazard events,
- protect the wellbeing of communities, now and into the future,

- improve natural hazard risk management,
- keep insurance premiums affordable for continued financial resilience against natural hazard events,
- ensure New Zealand can continue to obtain high levels of reinsurance and insurance, and
- minimise financial losses and protect the Natural Hazard Fund<sup>5</sup>.

Risk reduction in New Zealand must be a multi-sector, collaborative effort, and our commitment to being part of this important endeavour drives this Strategy.

4 Natural Hazards Insurance Act 2023 No 1 (as at 23 December 2023), Section 129 Functions of the Natural Hazards Commission – New Zealand Legislation

5 <https://www.naturalhazards.govt.nz/about-nhc/how-we-work/natural-hazard-fund/>



# NHC Risk Reduction Strategy 2025-2029

## Goal of the Strategy

The Natural Hazards Commission's overarching risk reduction goal is to ***inform, enable, and influence evidence-based risk reduction decision-making and action***. This goal stems from our legislation, strategic objectives, and our intention to influence policy, planning, practice, and decisions, to reduce natural hazard risk in New Zealand.

We are committed to ensuring science, data and information are translated effectively so that they can be used to enhance decision-making and action. By using our mandate, subject matter, and technical expertise, we will work to ensure risk information is used in land use planning, in building standards, and in other risk reduction initiatives that can make a difference to New Zealanders.

We will set priorities for action to better understand how our risk profile will change over time and what our tolerances are in managing it. In addition, we will work to support progress on current system challenges outlined above and in Appendix B of this Strategy.

## Objectives of the Strategy

Reflecting on the current and future needs for natural hazard risk management in New Zealand and this Strategy's goal, we have developed four objectives.

They are:

1. Translate and share hazard risk data and information to reduce current and prevent future risk,
2. Contribute to stronger hazard risk management leadership, policy and governance,
3. Lead and support risk reduction decision-making and action, and
4. Encourage New Zealand's approach to risk reduction to be innovative and world class.

These objectives (described further on the following pages) have been designed by assessing New Zealand's natural hazard risk profile, considering the challenges and long-term needs of the natural hazard risk management sector, and by evaluating where the Natural Hazards Commission can make a difference.



## Objective 1. Translate and share hazard risk data and information to reduce current and prevent future risk

### Description

This objective focuses on using, translating, and sharing hazard risk data and information to inform, influence and enable risk reduction. Clear and transparent use and sharing of natural hazard risk data and information leads to early risk reduction interventions, enables better risk-based decision-making, and supports readiness, response, and recovery. Where there is a lack of accessible, well translated, and understood data and information, decisions often increase the risks we face, and/or create new risk. Data and models are the best way to inform how we can reduce our exposure and vulnerability, including evidence-based:

- Land use planning and planned relocation,
- Mitigation and adaptation plans for natural hazard and climate risks,
- Retrofitting, engineering mitigations, resilience measures for existing buildings, and
- Design methodologies that exceed code-minimum performance levels for new buildings.

New Zealand has a wealth of natural hazards science, data, models, experience, and knowledge. The natural hazard risk management sector is good at building the evidence base, but can fall short in translating and using it to make good risk-based decisions. Data and models are vital but will only take us so far: if they aren't translated for the right audiences, for their specific uses and used appropriately, we will continue to see communities built in known hazardous locations such as flood plains and highly liquefiable land.

We face some significant risks and the availability of the evidence base means decision on managing the risk can be made. Risk mitigating decisions can sometimes be deemed too hard to implement. Councils and communities need to be supported to make decisions that might be unpalatable, but will ultimately protect their homes, property, and wellbeing. We need to find different ways and approaches to meet the varying needs of communities and stakeholders and promote evidence-based reduction of natural hazard risk.

*Objective 1 description continues on the next page ...*

### Example Outputs

Tangible outputs under this objective may include:

- Natural hazard scenarios that draw on science, research, data, and modelling to illustrate what might occur, and the impacts that could result,
- Stories and articles that illustrate trends in data (and what this tells us),
- Use of maps and data in submissions on central and local government policy and planning,
- Data visualisation products, designed to enable understanding and action,
- Outputs from loss modelling, and
- Geographic Information Systems (GIS) outputs and other spatial data and maps.

## Objective 1. Translate and share hazard risk data and information to reduce current and prevent future risk

### Description (continued)

This objective will work to combat these issues and encourage science, data, research, and information to be used more transparently to design policies, regulations, and guidance, to support decision makers and the public. Decision makers need evidence to provide sound advice and make effective governance decisions. This will provide New Zealanders with the ability to make evidence-based, risk reduction initiatives. We will:

- use the data, science, and information we own or fund to support evidence-based decision-making,
- support risk assessments to be underpinned by evidence, to be translated and used, and be documented as the foundation for planning and building resiliently,
- encourage and contribute to the collective response to address the inequitable quality of availability and accessibility of data and information around the country,
- support other agencies to build capacity and capability to understand and use data and models,
- use our broad evidence base to drive how we respond to a known risk, understand how we can tolerate it, now and in the future, and how we monitor and review risk, and
- promote the uptake and use of loss modelling and conduct geospatial analysis to promote a more resilient approach to a range of activities, including decision-making on buildings and land use. Both can be used for policy interventions, to assess different land use planning directions, and for risk reduction and adaptation strategies.

### How we validate and ensure accurate data and information

At NHC, we work hard to ensure our work is informed by robust and validated evidence. The approach we take to monitor and review the data and information we use includes:

1. Understanding and defining the problem the data or information is being used for,
2. Completing literature reviews, developing case studies, think pieces or discussion documents before we use the data/information,
3. Checking the sources of the information we are using are credible,
4. Working with the relevant subject matter experts to seek guidance, and elicit technical opinions,
5. Commissioning peer reviews, and
6. Regularly reviewing and updating our work where new data and information exists.



## Objective 2. Contribute to stronger hazard risk management leadership, policy and governance

### Description

This objective focuses on strengthening natural hazard risk management policy and governance. This is important as it sets out the leadership and management requirements for reducing risk and building resilience.

For our policies and governance to be effective they must prioritise how we can effectively reduce risk – by reducing vulnerability and exposure. This can only be done with a natural hazard risk management system that is aligned, works in collaboration and by building a culture whereby risk reduction becomes the norm.

Managing, planning, and building for future risk and reducing existing risk, needs to be done proactively, using our collective knowledge, information, and experience. By delivering on Objective 1, NHC will be able to promote science and research to inform policy and risk management decisions.

As described on Page 7 of this strategy, our policies and governance of natural hazards needs attention. Hazard risk management sits across multiple pieces of legislation, there are multiple responsible agencies and activities are dispersed across numerous strategies, programmes, and guidance. As a result, gaps exist, policies don't align, there are duplication of efforts and risk reduction measures are often not clearly defined or funded. This issue has been known for some time and multiple agencies are working to address this so decision makers are armed with the appropriate tools, frameworks, and guidance to identify and address natural hazard risk in a consistent way. This is more critical than ever as we face several complex issues that require stronger governance.

A shift in policy is required, with onus placed on risk, not just hazard. Policies should be built on a foundation of good evidence, up-to-date data and information, and useful insights and analysis. This will enable rigorous decision-making about how and where to build and inform adaptation. Through this objective we will:

- ensure decision makers are armed with a wide range of evidence and knowledge necessary to prioritise the reduction of risk. Where uncertainty exists, we will ensure this is qualified to the best degree possible, so decisions can be made confidently,
- use our collective expertise to provide advice and make submissions on select committee inquiries, cabinet directives and ongoing advice to Ministers, and
- investigate ways to address complex policy problems such as managing high risk areas and adapting to climate hazards in an environment of changing policy direction.

### Example Outputs

Tangible outputs under this objective may include:

- Resources that help explain or illustrate natural hazard risk,
- Formal submissions on central or local government policy and plans,
- Briefings, papers, and other advice on natural hazard risk management,
- Draft policy or other suggestions, recommendations, and inputs to policy, and
- Frameworks that help decision-makers understand risk and risk management options.

## Objective 3. Lead and support risk reduction decision-making and action

### Description

This objective will focus on the actions NHC can take to lead and support decision makers' understanding of natural hazard risk, to make informed decisions, and act to directly manage these risks.

As a country, we have significant choices and actions ahead of us to become resilient to climate and natural hazard risks. We continue to see New Zealand's vast and well tested science, data, experience, and knowledge overlooked, resulting in poor risk-based planning and decision-making. This means we are generating more risk, not reducing it. Making evidence-based decisions now will allow us to transform how we manage and govern natural hazard risk.

Through this objective we will ensure natural hazard risk reduction becomes embedded in all aspects of decision-making (in policy, planning, practice, and by homeowners and communities) by sharing information, and building knowledge, trust and understanding of natural hazard risk. Leveraging the data and modelling NHC has access to, we will:

- Work with a range of stakeholders to support them to understand the potential consequences of natural hazards, and the actions and choices that can be included in everyday decisions,
- Support councils to have the data and information they need to actively consider natural hazards in their short and long-term planning, including land use planning,
- Support engineers, architects, developers, and builders to have the best possible understanding of risk so we can design and build appropriately for the hazards we might face in the future, and
- Work closely with internal stakeholders to translate science, data, information and modelling to inform NHC functions (e.g. public education programme and readiness activities). This supports the continued development of the Natural Hazards Portal (the Portal). The Portal is one of the many ways we successfully create multi-sector, equitable public access to information, data, and knowledge.

### Example Outputs

Tangible outputs under this objective may include:

- Data and information on natural hazard risk,
- Tools, guidance or methodologies that help assess and manage risk,
- Professional development material or courses, and
- Other information resources on natural hazard risk and risk management.

## Objective 4. Encourage New Zealand’s approach to risk reduction to be innovative and world class

### Description

This objective aims to support the New Zealand hazard risk management sector to be at the forefront of risk reduction best practice and innovation.

New Zealand is at high risk of natural hazard events occurring. It is therefore in our best interests to ensure our hazard risk management system is set up with the best available knowledge and evidence to reduce risk, build resilience and be prepared for the potential consequences of natural hazards.

We can do this by building and growing our current capability, being agile, able to adapt and evolve using new and alternative technologies and practices. This means looking to international case studies, what has worked and what hasn’t, and what New Zealand could learn. When it comes to considering our most complex issues and risks, we need to be open to novel and cost-effective ways to manage these and share our findings with others.

This objective seeks to shift the dial in how we, as a natural hazard community of practice, chooses, prioritises, curates and shares our science, policies and practices and be open to continually striving for the best possible outcomes for New Zealand communities. Through this objective we will:

- Develop a deep knowledge base on emerging trends, approaches, and principles of natural hazard risk management, with a specific focus on risk reduction and adaptation strategies,
- Carry out environmental scans to assess current and new concepts and understand the impacts and opportunities of global trends and emerging technologies such as AI,
- Undertake reviews and analysis on domestic and international case studies and best practice, strategies, guidance, and approaches that have proven valuable, successful and cost effective, for their applicability, and possible usefulness in the New Zealand context, and
- Share useful information to improve our collective expertise, forward-thinking and practices.

### Example Outputs

Innovation in the context of this objective means:

- being creative,
- thinking outside the box,
- continuously learning to produce high quality,
- useful information,
- find improved ways to reduce risk, and
- test old and new hazard risk management principles.

Tangible outputs under this objective may include documented, published, and free to access:

- Literature reviews,
- Think pieces, opinion pieces or blogs,
- Strategies and action plans,
- Guidance and methodologies,
- Plans or processes, and
- Information “hubs” for decision makers.



## Priorities for action

We have identified several priorities to deliver on our goal and objectives. Prioritising our effort is important to focus on immediate needs while still progressing toward our long-term goal. Priorities for action will be reviewed on a five-yearly basis to ensure they remain appropriate to deliver on the Strategy. Priorities traverse *all objectives* and guide NHC's risk reduction work programme. The priorities for action for 2025–2029 are:

1. Ensuring resilient and sustainable risk-based **land use planning**.
2. Promoting access and use of **engineering design and construction** best practices to reduce risk.
3. Using, curating, developing, and **translating data, modelling, and information** to create insights and knowledge, to inform and guide stakeholders about risk, the drivers of risk and how they influence or contribute to the generation of new risk.
4. Ensuring we contribute to the management of **legacy planning issues/ intergenerational risks**.
5. Innovating and influencing how **policy gaps** are addressed.
6. Encouraging **improved outcomes for key practices** in New Zealand e.g. engineering and planning.
7. Promoting and ensuring current and future use of **risk tolerance** assessments.
8. **Understanding and informing** the actions and incentives that motivate people to reduce risk.

## **How we will contribute to addressing some of New Zealand's risk reduction challenges**

NHC will develop targeted pieces of work to address the challenges in Appendix B of this Strategy. While we are not lead agency for managing these issues, it's important we contribute to their solutions, as they are whole of government/whole of society issues, that will impede/impact good natural hazard risk management. A summary of these challenges is provided below:

### **Climate change**

We will use our data and information, particularly on land stability, to influence decisions on land use planning and adaptation options. This may include partnering with relevant agencies to demonstrate ways in which hazard, risk and loss modelling can be used to produce evidence-based risk assessments that incorporate different climate mitigation strategies. Changes in the climate will affect the impacts of all natural hazards. We will advocate for natural hazards and climate change to be treated equally through policy, standards, codes, and guidance, to ensure adaptation funding and policy decisions are fair, and all risks accounted for. Finally, we will share success stories to promote similar natural hazard and climate risk reducing initiatives.

### **Planned relocation**

We will investigate pre-event land use planning and develop a literature review and guidance for councils and communities to use. This will be useful where known, severe to catastrophic damage, or repeated impact is likely to occur. For example, impacts following an Alpine Fault magnitude 8 (M8) earthquake, or continued flooding of populated flood zones. Guidance may involve having a criteria and plan ready, so relocation decisions post event can be made more efficiently, based on pre-assessed and agreed terms.

This will reduce the length of time communities are separated for, the time waiting on decisions about land and pay-outs after an event and limit post-event confusion and/or inconsistent decisions regarding relocation.

### **Exacerbation of natural hazard risk due to residential demand and avoiding high risk areas**

We will continue to advocate for the use of hazard, risk and loss modelling to underpin decision-making. This includes policy interventions, planning directions on buildings and land use, and promoting building above code and building back better. We have taken this approach in our commitment to making submissions to advocate for the inclusion of natural hazard risk reduction in both national and local levels of government. We will aim to offer clear, cohesive advice supported by robust natural hazard science and guidelines to encourage the reduction of natural hazard risk through legislation, building regulations, and land use planning.

# Implementation of this Strategy

NHC's Risk Reduction Team will be responsible for implementing this Strategy. As a team they will develop initiatives, projects, and programmes of work to ensure delivery on the objectives and priorities for action detailed in this Strategy. These will be outlined in a regularly updated and reviewed work programme, that clearly allocates roles and responsibilities across the team.

Working under the guiding principles, the team will have a targeted, results-focused approach that will support the objectives of this Strategy, the Resilience Strategy, and the Statement of Intent 2024-2028. The following section describes how we intend to achieve the eight priorities outlined on Page 16 of this Strategy by 2029.

## Guiding principles

The following principles inform and guide how we will work to implement this Strategy.

They demonstrate our culture, intentions and ambitions, and are in addition to the principles set out in the Natural Hazards Commission's Resilience Strategy.

To achieve our goal and objectives, we will be:

- **Innovative** by continuously enhancing existing practice and exploring new ideas and perspectives,
- **Ambitious and courageous** to drive positive change for New Zealanders where we have the skills and responsibility to do so,
- **Open, collaborative, and supportive** as we work across and within the hazard risk management system, at all levels and with a range of stakeholders,

- **Purposeful** in what we do and how we do it,
- **Supportive and empowering** so New Zealanders have accurate information to understand and manage natural hazard risks,
- **Enabling and supportive** so Māori can achieve their risk reduction aspirations and initiatives for their land and resources, and
- **Respectful** in our partnerships and work to understand individual and organisational goals and needs for reducing risk, especially where we can deliver results together.

The Natural Hazards Commission Resilience Strategy sets out our commitment to the policy themes and outcomes of Vision Mātauranga, and the recognition and respect of Mātauranga Māori. The work designed and delivered under this Strategy upholds these principles as summarised in the Resilience Strategy.



## How we will work

Thought leadership will be at the core of how we will work, while being driven by translating data, models, and information NHC owns or funds to support policy and practical risk-based decisions that underpin how New Zealand communities understand and respond to natural hazard risks. To be effective in this we will:

- Use the research, science information and data that NHC owns or funds to support existing or create new projects,
- Translate information to support policy, practice and how communities understand their risks,
- Improve the uptake of risk reduction activities and actions, including using our knowledge and expertise to underpin NHC’s Public Education programme, and
- Strengthen our existing partnerships, create new ones, and collaborate across all sectors.

## What we will develop

We will develop useful and useable collateral, insights and information that prioritise risk reduction action and ensure the right knowledge in the right form reaches the right people at the right time. This includes, but is not limited to:

- Action plans that promote, enable, and support cross-sector collaboration, identify gaps and opportunities for improvement,
- Guidance, methodologies, and reports where gaps exist, or improvements could be made,

- Literature reviews, think pieces, OpEds and presentations, and
- Platforms/hubs of information and insights that are accessible, demystify risk, and drive action.

## Who we will work with

A successful hazard risk management sector is one where risks are understood, translated, governed, and managed. This can only be achieved through partnership. It’s a community of practice – scientists through to policy makers to practitioners– requiring sharing of information, building trust, providing consistency, reducing duplication and being transparent. This enables us to build confidence, that as one, we are responsibly using our data, technology, information, and decision-making powers to make a real difference for our communities.

At NHC, we take our role to reduce the impact from natural hazards seriously and acknowledge we are part of a large, interconnected sector. Achieving our goal and priorities relies on working with partners and our stakeholders to support and influence decisions and actions. We sit in a unique position to be able to do this, where we pivot and operate between central government, local government, the private sector (including and especially the insurance sector), the research community, and the New Zealand public. Working within and across these sectors to build connections, break down silos and share information will enable the success of this Strategy.

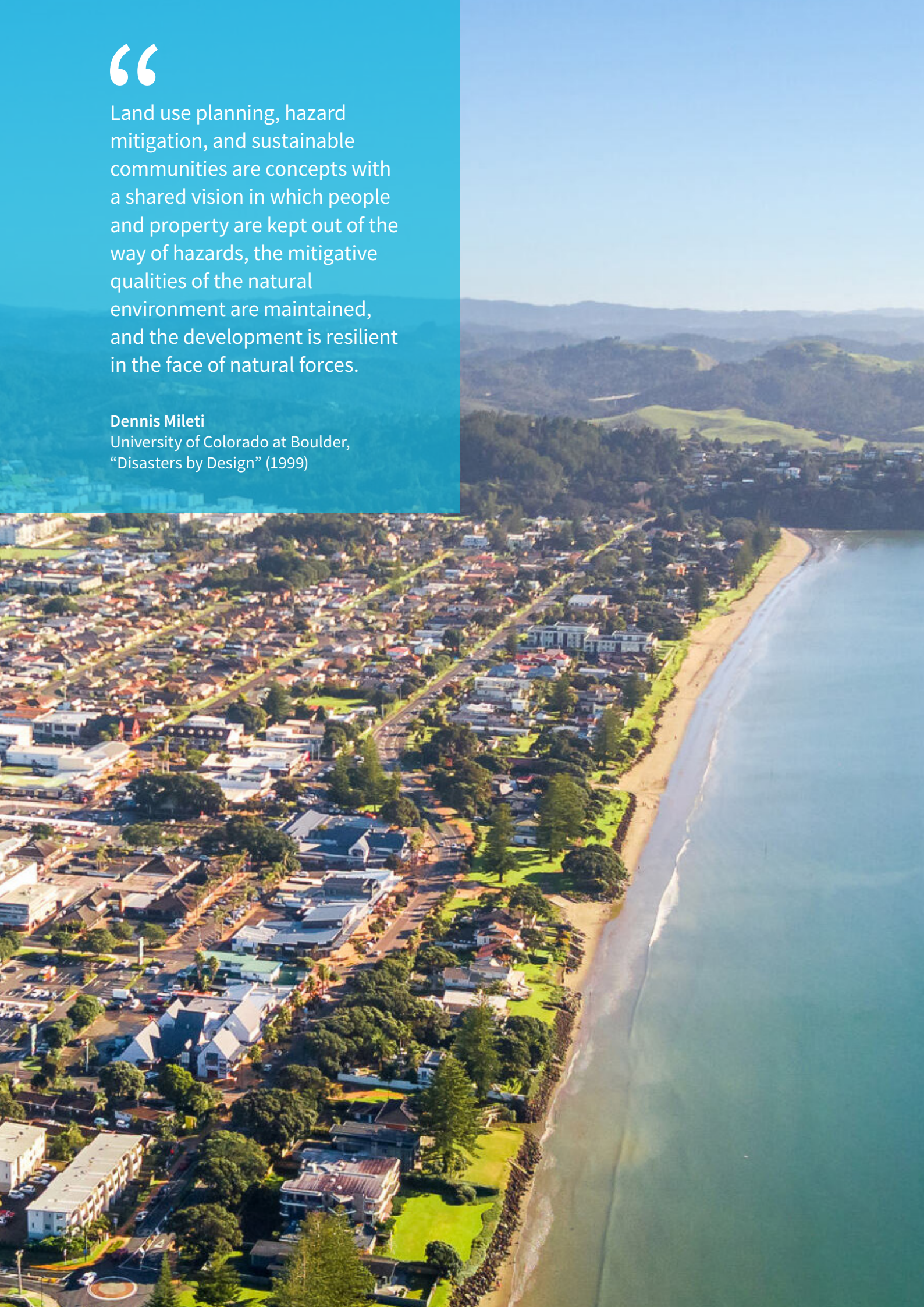


“

Land use planning, hazard mitigation, and sustainable communities are concepts with a shared vision in which people and property are kept out of the way of hazards, the mitigative qualities of the natural environment are maintained, and the development is resilient in the face of natural forces.

**Dennis Mileti**

University of Colorado at Boulder,  
“Disasters by Design” (1999)





# Measuring our success and monitoring progress

Each year, we will assess and evaluate our progress toward delivery of this Strategy by various means. Principally this will be achieved via NHC's Statement of Performance Expectations (SoPE) and delivery on the priorities for action via completion of targeted projects and programmes of work. Relevant to this Strategy, the SoPE targets aim to ensure progress is made in:

- Growing our loss modelling capabilities, including that we have more data and models necessary to move towards a New Zealand-wide view of (multi-hazard) risk,
- Informing, enabling, and influencing risk-informed policy, planning, and practice through quality outputs (including the uptake of our formal submissions and guidance material), and
- Supporting the awareness and preparedness of homeowners and communities of natural hazard risk, including through action on property risk reduction.

Specific risk reduction measures of success seek to assess our impact on policy, planning and practice by tracking the uptake of our published guidance, methodologies or other information products and resources; evaluating our contribution to, or influence on, policy and decision-making; and tracking the effectiveness of our formal submissions.

Included in our work programme (under this Strategy) are several Action Plans, including the Resilient Homes and Buildings and Smarter Land Use Action Plans. Each Action Plan has implementation actions with intended outcomes and delivery timeframes. Completion of actions will contribute to measuring our success. Progress will be monitored through bi-annual implementation plans and progress reviews.

As part of the wider NHC function, annual and quarterly surveys of key stakeholders and homeowners are completed to qualitatively understand how our funding of research and education is being used for resilience building, risk reduction policy and action, event readiness, public preparedness, and our ability to access reinsurance.



Specific to this Strategy stakeholders are asked if they perceive that NHC funded research and education has been used as *an evidence base for risk reduction decisions, and if natural hazard awareness factors into their risk-based decision-making*. Results from the surveys are considered carefully and consciously. They allow us to not only gauge stakeholder and public perception but also provide insights into current understanding on natural hazard risk, enabling us to target actions and updates in how we work.

Finally, we will also undertake regular internal reporting which will monitor our progress against our objectives and priorities for action.

### **The ‘Benefit Test’**

The Natural Hazards Insurance Act 2023 requires NHC to assess and demonstrate the benefit of any risk reduction and resilience-focused activities we undertake. Appendix C of this Strategy addresses how this Strategy, and any activities under it, meet the benefit test.



# Appendix A: Overview of NHC Risk Reduction Strategy 2025-2029

## Goal

To inform, enable, and influence evidence-based, risk reduction decision-making and action

## Objectives

Translate and share hazard risk data and information to reduce current and prevent future risk

Contribute to stronger hazard risk management leadership, policy and governance

Lead and support risk reduction decision-making and action

Encourage New Zealand's approaches to risk reduction to be innovative and world class

## Priorities (2025-2029)

1. Ensuring resilient and sustainable risk-based land use planning,
2. Promoting access and use of engineering design and construction best practices to reduce risk,
3. Using, curating, developing, and translating data, modelling, and information to create insights and knowledge, to inform and guide stakeholders about risk, the drivers of risk and how they influence or contribute to the generation of new risk,
4. Ensuring we contribute to the management of legacy planning issues/intergenerational risks,
5. Innovating and influencing how policy gaps are addressed,
6. Encouraging improved outcomes for key practices in New Zealand e.g. engineering and planning,
7. Promoting and ensuring current and future use of risk tolerance assessments, and
8. Understanding and informing the actions and incentives that motivate people to reduce risk.

## Principles

To achieve our Goal, we will be:

- Innovative by continuously enhancing existing practice and exploring new ideas and perspectives,
- Ambitious and courageous to drive positive change for New Zealanders where we have the skills and responsibility to do so,
- Open, collaborative, and supportive as we work across and within the hazard risk management system, at all levels and with a range of stakeholders,
- Purposeful in what we do and how we do it,
- Supportive and empowering so New Zealanders have accurate information to understand and manage natural hazard risks,
- Enabling and supportive so Māori can achieve their risk reduction aspirations and initiatives for their land and resources, and
- Respectful in our partnerships and work to understand individual and organisational goals and needs for reducing risk, especially where we can deliver results together.

**Note:** These are in addition to the principals set out in NHC Resilience Strategy for Natural Hazard Risk Reduction 2024-2029 which we will also follow.



# Appendix B: Current challenges to natural hazard risk reduction in New Zealand

The natural hazard risk management sector has several challenges that can stress the system, and impacts our collective ability to reduce natural hazard risk. These often are based on political drivers, gaps in policy, natural hazard events or changes in science, research and understanding. This section of the Strategy explores the challenges we consider to be limiting our current approaches to, and successes in, reducing natural hazard risk. As national, regional, and local priorities change and develop, or the impacts and challenges facing New Zealand communities change, we will reflect and update this Strategy's current challenges. This will be completed in alignment with updating this Strategy's Priorities for Action.

## Climate Change

Climate change is already impacting New Zealand. In 2020, New Zealand declared a climate emergency and by 2023, the Ministry for the Environment (MfE) confirmed<sup>6</sup> there is between “75% - 85% chance of climate change impacts becoming a certainty”, meaning it is certain New Zealand is going to experience more frequent, extreme weather events. As a result, the impact from natural hazards will be exacerbated.

Climate change will likely change the shape of insurance in the future, including changes to insurance availability and greater use of risk-based pricing (potentially impacting insurance affordability).

Climate-related hazards will continue to have a devastating impact on the wellbeing of New Zealanders. Recent severe weather events have shown us that we have a narrowing opportunity to ensure natural hazard resilient and sustainable development. Informed, risk-based decisions that consider natural hazards risk and climate risk equally, must be made now so our communities are more resilient to the current and future effects of climate change. An all-of-natural-hazards approach (including climate-related natural hazards) will ensure that all risks are accounted for, managed, and governed equally and fairly.

Increasingly, it is becoming easier and more achievable to build medium, and high-density housing in ways that mitigate, or reduce the impacts of flooding. Many Auckland homes proved this in the 2023 severe weather events. While stormwater systems in many suburbs were overwhelmed, and thousands of homes were flooded, some homes in the hardest hit areas were unscathed due to investment in appropriate risk mitigations, designed and installed based on analysis of available data and information.

<sup>6</sup> <https://environment.govt.nz/assets/publications/Environmental-Reporting/Our-atmosphere-and-climate-2023.pdf>



Impacts from repeated, severe weather events are likely to have a lasting impact on our financial system, including changes to the availability and affordability of insurance. Demonstrating hazard risk management mitigations and best practice is becoming imperative to have a positive effect on climate-related risk-based pricing of insurers.

## Planned relocation

Planned relocation (often referred to as ‘managed retreat’) involves the relocation of properties and/or whole communities from high-risk locations to areas of lower risk. This need often relates to legacy planning issues where communities have been built (often before any knowledge of natural hazards was available), in areas prone to repeated natural hazard events, or are at high-risk of events occurring in the future.

Planned relocation is politically, socially, and economically hard. It requires the robust assessment of risk, assessment of varying sectors risk tolerances, community engagement, multi-level and multi-sector decision-making and significant funding. Sometimes, it is seen as the ‘last resort’ option when other risk reducing measures (such as engineering) do not remove or reduce risk to an acceptable or tolerable level.

Ad hoc or ‘reactive relocation’ is often detrimental and has occurred more than once in New Zealand.

Notably, we have seen reactive relocation in New Zealand after the Canterbury Earthquake Sequence via a concept termed “*red zoning*”. Other areas such as the planned relocation of Franz Josef has been discussed and attempted multiple times after, costly, and harmful flood events.

Planned relocation is much more effective if it is completed *before* an event has occurred, using a risk based, evidence-based approach. If relocating from a high-risk area is done pre-emptively and not responsively, communities can often be kept together, peoples’ wellbeing can be supported and addressed, and it can be much more affordable.

One of the main gaps in the governance of hazard risk in New Zealand is having no policy, regulation, or guidance for planned relocation. As climate change exacerbates the impact of natural hazards, we are being forced to think beyond traditional planning responses and be creative in how our communities adapt to the increased risk. Data based creative solutions could contribute to the development of a policy framework to address this.

New Zealand holds a wealth of data, information and knowledge that can be used to inform good, evidence-based decision making for planned relocation for areas at high-risk and in need of creative decisions to protect communities from the future impact of a natural hazard event.

## **Demand for housing and managing public expectations of property**

For some time, New Zealand has been facing a housing crisis. Demand for housing across New Zealand is growing, due to our increasing population and a shortage of affordable housing inflating house prices and rents. Given many of our towns and cities are already located in hazardous areas, expanding housing and infrastructure in these locations exacerbates current risk, creates new risk, and further compounds the problem of managing our exposure.

Balancing the demand for housing with managing the risk of building in high hazard areas needs an approach that prioritises people's safety, considers sustainability as well as reducing existing risk and building resilience.

This is one of many complex problems we face as a country, that requires evidence-based policies to manage risk effectively and sustainably. Policy needs to be underpinned by data, modelling, and science as it provides crucial information for decision-making on where and how to build. If the modelling and evidence bases unequivocally demonstrates somewhere is high risk, we must move to prioritise, restricting and/or preventing development there.



We have many examples across the country where, even with known high exposure and vulnerability to natural hazards, and after repeated impacts from moderate to severe events, land continues to be approved for further development. Over the past 15 years, some of these areas have gone from construction to being damaged in less than three years. Overlooking foreseeable impact, risks the lives of our communities, results in untenable costs for response and recovery, reduces our ability to obtain insurance, and extends the impacts on people's wellbeing. We must work together to improve the decision-making process and find ways to meet the need for housing without exacerbating our risk.

How we build is just as important as where we build. Strong building regulation and governance is one of the most effective ways to manage natural hazard risks. While the New Zealand Building Code provides a reliable baseline for buildings to achieve a minimum safety standard, recent events have demonstrated that our homes and buildings are not meeting what society expects of them. Code-minimum level buildings can experience excessive levels of damage in a natural hazard event, leading to extended periods of disruption to their use, or even displacing people from their homes.

The resilience of our built environment has never been more important and designing and building above code (for/against multiple types of natural hazards) is becoming easier and cheaper. Recent research domestically, and internationally suggests the cost implications of having more resilient buildings that can be readily occupied after a natural hazard event are negligible when compared to the losses from repairing damage or disrupted business, and it takes a minimal amount more to build back better after an event – and the New Zealand public expect this too.

The New Zealand public increasingly expect more from the built environment. A shift in societal expectations and tolerances of how our homes and buildings perform during and after a natural hazard event were recently assessed via research carried out by the New Zealand Society for Earthquake Engineering<sup>7</sup> (NZSEE). New Zealanders don't just want the ability to evacuate from buildings, they want to be back living and working in those buildings soon after an event. A resilient housing stock contributes to our wellbeing and allows people to shelter in place while keeping a significant portion of the nation's economy moving after an event.

7 <https://www.nzsee.org.nz/news-activities/technical-activities/resilient-buildings-project/>



Given the growth in working from home, people want more than just to shelter in place, they want to be in a functioning home, with businesses, community hubs and critical infrastructure back to working condition quickly after an event.

The case has never been clearer to design and build above code; the public expects it, the building sector has the technical capability to do it, and the marginal cost to achieve better outcomes is drastically outweighed by the benefits of lower damage and less disruption.

This has been demonstrated in recent research<sup>8</sup> results completed by NZSEE, funded by NHC. Opportunities to improve our buildings should be seized in whatever form they come. Every natural hazard event is a chance to rebuild, but we should be actively working to rebuild to a higher level or quality than existed before. Older buildings that were built before modern standards are expected to perform worse than newer buildings but using natural hazard events as opportunities to “build back better” can help gradually elevate older buildings to meet our needs and extend their lifetime.

8 Policy briefs are available at:

- <https://www.naturalhazards.govt.nz/resilience-and-research/research/search-all-research-reports/httpswww-eqc-govt-nzresilience-and-researchresearchsearch-all-research-reportspolicy-brief-for-nzsee-project-on-resilient-buildings/>
- <https://www.naturalhazards.govt.nz/resilience-and-research/research/search-all-research-reports/policy-brief-no-2-the-resilient-buildings-project-april-2024/>



# Appendix C: Benefit Test

The Natural Hazards Insurance Act 2023 requires the Natural Hazards Commission to assess and demonstrate the benefit of any risk reduction and resilience-focused activities we undertake. This includes whether the activity has the potential to a) provide a benefit to insured persons, and/or b) reduce the future cost of providing natural hazard cover.

This requirement is to ensure the funds that the Natural Hazards Commission receives through levy contributions are used in a way that achieves benefit for the scheme and for levy payers. The requirement supports the financial governance elements of the Act. This strategy is designed to align with the objectives of the Natural Hazards Commission as outlined in section 128 and the functions of the Natural Hazards Commission as outlined in section 129(e).

Any new risk reduction activities or expenditures we will be assessed by documenting answers to the following questions:

1. Does the activity align with the Commission's objectives. (section 128) and functions (section 129) of the Natural Hazards Insurance Act?
2. Does the Natural Hazards Commission believe, on reasonable grounds, there is potential that insured persons will benefit from funding the activity?
3. Does the Natural Hazards Commission believe, on reasonable grounds, that there is the potential to reduce the future cost of natural hazard cover?
4. What is the evidence of the potential benefit or reduced cost to the Scheme?

If the activity or expenditure cannot adequately answer or address the above, it will not be completed. This assessment along with the outcomes will be recorded for monitoring purposes.

## This Strategy under the benefit test

The following assessment has been completed on this Strategy to answer the above questions and demonstrate its relevancy, adequacy, and purpose under the Natural Hazards Insurance Act 2023.

## Does the activity align with the objectives (section 128) and functions (section 129) of the Natural Hazards Insurance Act?

This Strategy has been developed to align with the objectives in section 128 and the functions in section 129 of the Natural Hazards Insurance Act 2023.



The Goal, Objects and Priorities for Action have been specifically designed to deliver on section 129(e), to contribute to the sharing of information, knowledge, and expertise (with the Crown, public and private entities, and the public generally) including in relation to natural hazards and their impacts; damage to residential buildings, residential land, and other property as a result of natural hazards, including how that damage might be prevented or reduced; community resilience to natural hazards; natural hazard risk management and planning for, and recovering from, natural hazards.

**Does the Natural Hazards Commission believe, on reasonable grounds, there is potential that insured persons will benefit from funding the activity?**

Work delivered under the direction of this Strategy will contribute to reducing the risk of natural hazards on insured persons under the scheme. Reducing risk by understanding and reducing our vulnerability and/or exposure, will reduce impact and losses when a natural hazard event occurs. Exposure and vulnerability can be reduced in many ways. This has been demonstrated in in this Strategy in how we will inform, enable, and influence matters such as land use planning, built environment resilience and building knowledge of risk mitigations, all of which contributes to the retention of insurance.

Insurance is a balance of taking on risk, knowing that the likelihood of payouts is low and/or controlled. This means insurers care about the way we manage and adapt to risk. Not increasing our exposure or vulnerability i.e. building smartly, resiliently, and safely and reducing our risk by improving how we hard engineer (e.g. flood defences) and adapting to risk by moving communities in high-risk areas (e.g. planned relocation) will support the retention of natural hazards insurance.

We will use data, information, knowledge, and expertise to reduce natural hazard risk and thereby support insured persons. An example can be seen in how we are working to build stronger homes, promoting building above code for new builds and building back better when a natural hazard event occurs. Figure 4 on the next page shows designing and building above minimum code is becoming cheaper. This is because our technical capabilities are becoming better and recourses easier to access and more cost effective. The Natural Hazards Mitigation Saves 2019 Report<sup>9</sup> investigates the cost-benefit of natural hazard mitigation, when designing and building to improved codes/exceeding building codes. The report suggests building above code can save \$4 for \$1 invested. By providing this information to hazard risk management professionals and working with subject matter experts we can actively influence and enable changes within the built environment.

9 National Institute of Building Science - [https://www.nibs.org/files/pdfs/NIBS\\_MMC\\_MitigationSaves\\_2019.pdf](https://www.nibs.org/files/pdfs/NIBS_MMC_MitigationSaves_2019.pdf)



### Building Better is getting more affordable over time

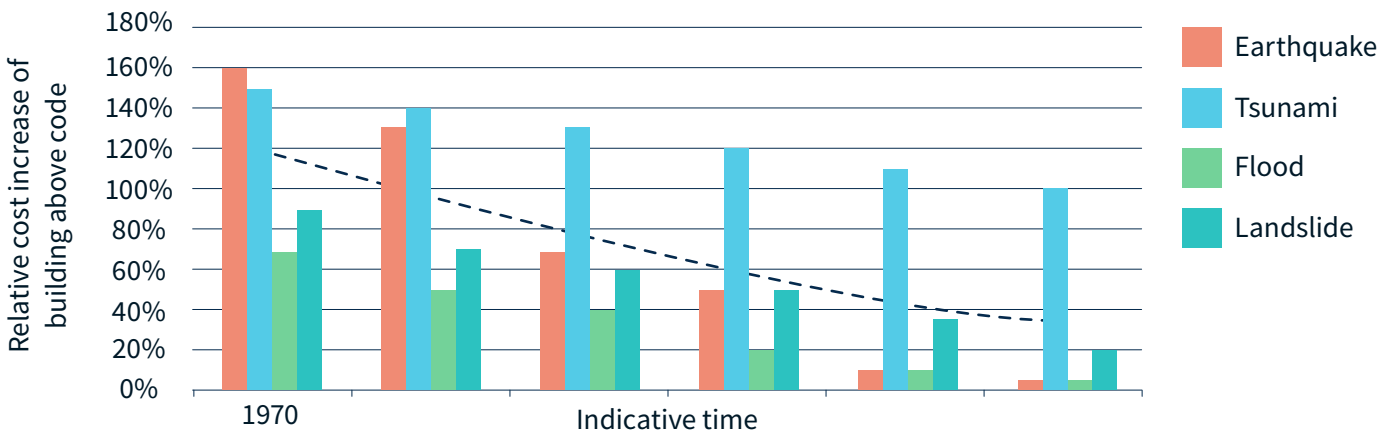


Figure 4: Affordability of building above code over time (for illustration purposes)

#### Does the Natural Hazards Commission believe, on reasonable grounds, that there is the potential to reduce the future cost of natural hazard cover?

Reducing natural hazard risk will help us to maintain or reduce the cost of natural hazard insurance cover. This has also been summarised on Page 8 of this Strategy.

New Zealand’s contingent liability for natural hazards damage, based on loss modelling is approximately \$1.2 Billion per year. Reducing risk will not only save lives, property, and wellbeing, it will reduce our liability and protect insurance for the future.

As described in this strategy, we can reduce risk by understanding and reducing our vulnerability and/or exposure. These concepts are the premise of this Strategy and the work that will be completed under it via the objectives and priorities for action.

#### What is the evidence of the potential benefit or reduced cost to the Scheme?

There have been success stories domestically, and internationally, that demonstrate that early intervention to reduce natural hazard risk has resulted in decreased costs and impacts on people, property, and the economy. Evidence suggests that reducing natural hazard risk is more cost effective than response and recovery. This type of information provides the cost-benefit analysis for advocating for change and improving our approaches to investing in risk reduction and natural hazards risk management.

While reducing risk is financially and socially hard, especially through engineering and planned relocation, the benefit of investment is becoming clearer. Through Objective 4 of this strategy, we will build on the existing international knowledge base and analysed for its applicability, and possible effectiveness/ usefulness in the New Zealand context.

Using the goal of this strategy and existing evidence to influence and enable similar results in New Zealand, we will address this aspect of the benefit test. Useful examples include, but are not limited to:

- Natural Hazard Mitigation Saves (2019), The National Institute of Building Science,
- Sendai Framework for Disaster Risk Reduction 2015-2030 (United Nations) – a global framework for how nations should prevent new and reduce existing disaster risks. It has four priorities: 1) Understanding disaster risk, 2) Strengthening disaster risk governance to manage disaster risk, 3) Investing in disaster risk reduction for resilience, 4) Enhancing disaster preparedness for effective response, and to ‘Build Back Better’ in recovery,
- Unlocking the Triple Dividend of Resilience: Why investing in disaster risk management pays off (Global Facility for Disaster Reduction and Recovery, 2015) – provides evidence for how investing in resilience can yield a ‘triple dividend’ by 1) avoiding losses when disasters strike, 2) unlocking development potential by stimulating innovation and economic activity, 3) the social, environment and economic co-benefits of disaster risk management investments even if a disaster does not happen for many years, and

- Being Prepared for the Next Disaster Pays Off. A new economic study finds every \$1 spent on climate resilience and preparedness saves communities \$13 in damages, cleanup costs, and economic impact<sup>10</sup>.

<sup>10</sup> <https://www.uschamber.com/security/being-prepared-for-the-next-disaster-pays-off-new-study-shows>

