Spend to Save: Investigating the property acquisition process for risk reduction in Aotearoa New Zealand

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ABSTRACT

Limiting development in known high-hazard areas is among one of the most effective tools available to local governments to reduce future hazard risk and increase resilience, and yet, the widespread practice of acquiring hazard-prone properties and converting the land to open space in New Zealand remains highly varied. This report outlines Aotearoa New Zealand examples of hazard-prone housing acquisition (or buyout) processes, based on four legislative mechanisms: special legislation (Canterbury Earthquake Recovery Act 2011), the Resource Management Act 1991, the Building Act 2004 and the Public Works Act 1981. Four case studies are used to help describe the process and to provide preliminary lessons, policy recommendations and areas of future research: Christchurch, Kaikōura, Lower Hutt and Matatā.

In Aotearoa New Zealand, there is no standardised disaster-based hazard mitigation funding programme for property acquisition. This has the benefit of significant planning often being undertaken prior to enacting buyouts, which helps to identify unique local conditions. When funding is made available, it is often created as part of a one-off process rather than an institutionalised set of hazard mitigation programmes like those found in the United States. Having a formalised process in place can facilitate a greater understanding of what is expected of all participating parties, and yet, this formalisation has led to highly prescriptive programmes in the United States that can hinder the ability to craft flexible buyout strategies that reflect local needs. In Aotearoa New Zealand, the lack of land-use planning mechanisms to achieve risk reduction through property acquisition and, in some cases, a lack of pre-planning frameworks for the land once acquired (i.e. regeneration planning) remains problematic. More specific challenges include a lack of national guidance on levels of risk; securing of funding; keeping communities together; speed of process; and the demolition, deconstruction or relocation of buildings. Preliminary findings suggest the creation of a hybrid buyout programme drawing on the strengths of both United States and Aotearoa New Zealand approaches.

This report is part of a wider comparative study between the United States, New Zealand and Australia, and its preliminary results will unpack the characteristics that inform ‘success and failure’, the different policy mechanisms available and the gaps in our understanding of buyouts. This information will inform a future research agenda and improvements in policy.

KEYWORDS

Property acquisition, buyout, compensation, regeneration planning, natural hazards, risk reduction

1.0 INTRODUCTION

Following disasters, but ideally before the event occurs, the assessment of whether land-use policies should be amended in order to reduce future risks is often contemplated but less-often acted upon. There is widespread agreement among disaster scholars and practitioners that limiting development in known high-hazard areas is among one of the most effective tools available to local government to reduce future hazard risk and increase resilience. Yet, the widespread practice of acquiring hazard-prone properties and converting the land to open space or other low-consequence activity in New Zealand remains highly varied. Factors impacting such decisions include deep place attachment, the discounting of actual risk and the limited availability of funding to pay for such measures. However, there are important exceptions, as the Christchurch case highlights. An additional factor to consider in this discussion is that, in an era where the effects of climate change are receiving greater consideration than ever before, the acquisition of hazard-prone housing is likely to become more ubiquitous, and planning for this eventuality is vitally important.

Recent examples of hazard-prone housing acquisition programmes in New Zealand include the purchase of over 7700 homes in Christchurch as a result of the 2010–11 Canterbury Earthquake Sequence using special legislation (Canterbury Earthquake Recovery Act 2011 [CER Act]); the compensation option for residents of the small coastal community of Matatā, who are at risk from debris flows, and the use of the Resource Management Act 1991 (RMA); the application of the Building Act 2004 (Building Act) after the 2016 Kaikōura earthquake; and the use of the Public Works Act 1981 (Public Works Act) to acquire land for flood management purposes. These buyouts can be costly, and very upsetting for those involved, particularly for Māori, who have strong connections to the land and community and a strong sense of place. Appropriate payment, policy incentives, planning and understanding of local needs and conditions are just some of the factors that need to be taken into account.

The wording around property acquisition is contested. For example, in one case, a voluntary managed retreat programme was never described as compensation, as this was thought to infer a concept of blame and could influence expectations of those affected. Alternate terms such as ‘buyout’, ‘incentivised relocation’ or simply ‘managed retreat’ are often used to describe property acquisition programmes. This report uses the term ‘property acquisition’ but acknowledges that different terms are used to describe the same process.

This report outlines New Zealand examples of hazard-prone housing acquisition (or buyout) processes, based on four legislative mechanisms: special legislation (CER Act), the RMA, the Building Act, and the Public Works Act. Four case studies are used to help describe the process and provide preliminary lessons, policy recommendations and areas of future research.

This report is part of a wider comparative study between the United States, New Zealand and Australia, and its preliminary results will identify the characteristics that inform ‘success and failure’, the different policy mechanisms available, the gaps in our understanding of buyouts and how this information should inform a future research agenda and improvements in policy. The timing of this study is promising, as each country is facing a dramatic increase in disaster-related losses, relocation is increasingly cited as a key strategy tied to climate-change adaptation and a number of national programmes are emerging to address natural hazards risk reduction.

1.1 Property Acquisition as a Risk Reduction Management Tool

A combination of actions is required for effective risk management and enhancing the resilience of at-risk communities. These include land-use planning, emergency management (e.g. evacuation planning), insurance, catchment management, monitoring and warning systems, structural engineering, infrastructure provision, effective engagement and building codes. Figure 1.1 shows an example of this system for flood risk, including the retreat/ resumption (buyback) programmes with strong linkages to land-use planning.

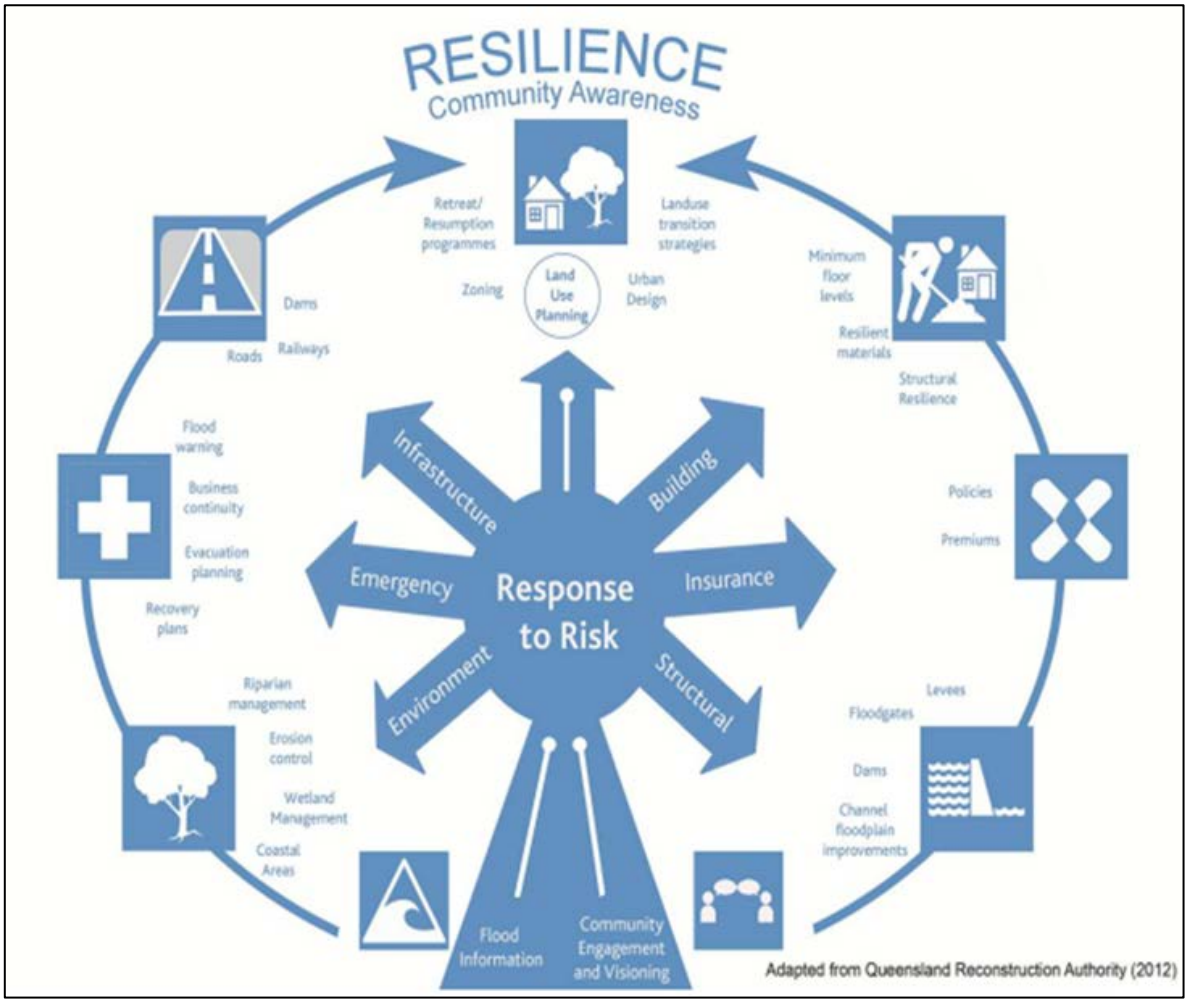

Figure 1.1 An example of the combined actions required for comprehensive flood management.

Property acquisition, which is one of many tools that should be considered when managing risk, should be considered after other alternatives are explored (Boston and Lawrence 2017; Dudley Tombs and France-Hudson 2018; Grace et al. 2019). Ideally, good land-use planning should proactively locate activities out of significant hazard areas or serve to identify other mitigation measures to reduce the consequences of events, thereby managing future risk. When undertaking a risk assessment to determine management options for existing activities, the one-off cost of a managed retreat situation may come through as a preferred option when compared to multiple repairs/rebuilds and retreat at some future date. Legacy planning issues of the past, along with improved knowledge of the hazardscape and the impacts of climate change, will lead to property acquisition becoming an increasingly relied upon technique to reduce risks and adapt.

There is little information on property acquisition for risk reduction in Aotearoa New Zealand, and this research seeks to contribute to this topic.

1.2 The Property Acquisition Process

The acquisition process for risk reduction involves a series of steps, including the financial transaction between a homeowner and a governmental entity. Following the purchase, structures are relocated or demolished, and the land is converted to open space or repurposed for other uses (Figure 1.2). The process shown in Figure 1.2 highlights a simplified and idealised set of steps, including planning for acquisition, determining hazard mitigation options and associated eligibility, securing funding, soliciting participation and undertaking empowerment activities, valuating and negotiating to purchase the property, transferring possession of the property, clearing the land and deciding how the resulting open space will be used and maintained over time. This process is influenced by several important factors, including deep place attachment, highly complex programmes and funding arrangements, varied levels of pre-event planning and community engagement, and questions surrounding fairness and equity (Smith and Saunders, submitted). Figure 1.2 does not explicitly address the issues around indigenous land rights or equitable treatment of indigenous land, which should be considered at every stage of this process.

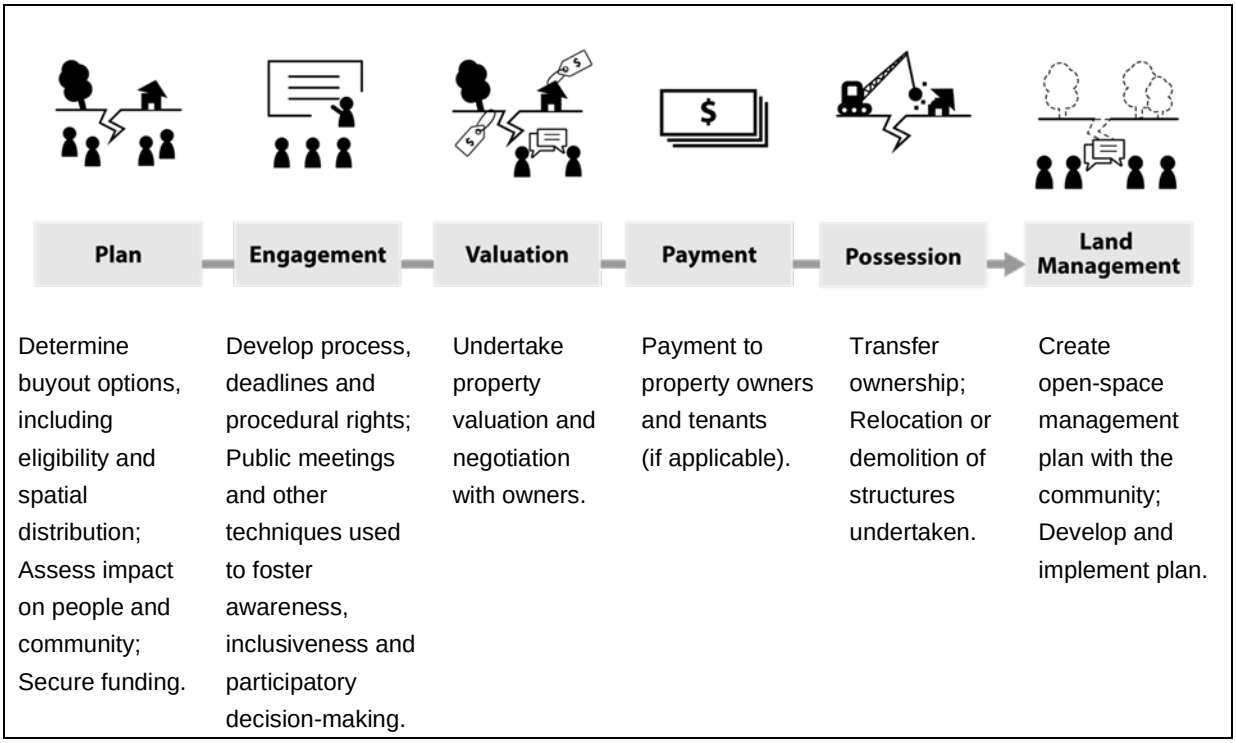

Figure 1.2 The Hazard-Prone Housing Acquisition Process (Smith and Saunders, submitted).

Figure 1.2 depicts planning as a process undertaken following a disaster. Ideally, good pre-event planning for hazard mitigation projects like buyouts would take place beforehand, which has been shown to dramatically increase the speed of hazard mitigation project implementation (Smith 2014).

1.3 Scope

The overall aim of this international comparative research project is to **undertake a comparative study of hazard-prone property in the United States, Australia and Aotearoa New Zealand to identify lessons, improve practice and reduce future risks.**

Three questions are explored in this comparative study (initiated in this report and expanded upon in further publications):

1. What are some recent government-led property acquisition practices in New Zealand to reduce risks from natural hazards?
2. How do these practices compare with those in the United States and Australia?
3. What international lessons can be identified to improve property acquisition programmes for natural hazard risk reduction?

This report seeks to document and inform the answer to Question 1. This is achieved by exploring the different mechanisms for property acquisition through special legislation (CER Act), the RMA, Building Act and Public Works Act (Section 3); discussing principles of property acquisition that could be further developed (Section 4); describing case studies of each of the mechanisms in practice (Section 5); identifying the main challenges experienced (Section 6); documenting lessons learned (Section 7); and providing recommendations and topics for further research (Section 8).

First, the methods used are described, including review of relevant documents associated with each case study, conducting site visits to Matatā and Christchurch and leading interviews with key informants (Section 2).

This report is part of a larger, international multi-year effort that will result in the publication of additional materials, including book chapters, journal articles and reports.

2.0 METHODOLOGY

Action research was the driving force for our work. Specific methods employed included a review of council documents, national legislation and guidance, case studies, interviews, site visits and participant observation. Each of the methods employed are outlined below, as well as the ethical considerations that guided the study approach.

2.1 Action Research

According to Kemmis and McTaggart (1988, p. 6), action research is about:

> *"trying out ideas in practice as a means of improvement and as a means of increasing knowledge. Action research provides a way of working which links theory and practice into the one whole: ideas-in-action".*

Action research questions are based upon the premise of 'we intend to do x with a view of improving y'; this level of inquiry suits this project in that there is a shared understanding of property acquisition procedures in differing countries, changes in acquisition policy and experiences over time can be monitored and, if findings are implemented, the practice of hazard-prone property acquisition can be improved.

At its most basic level, Kemmis and Wilkinson (1998) provide a spiral of action research that involves continual stages: plan, act and observe, reflect and then revise plan, as shown in Figure 2.1.

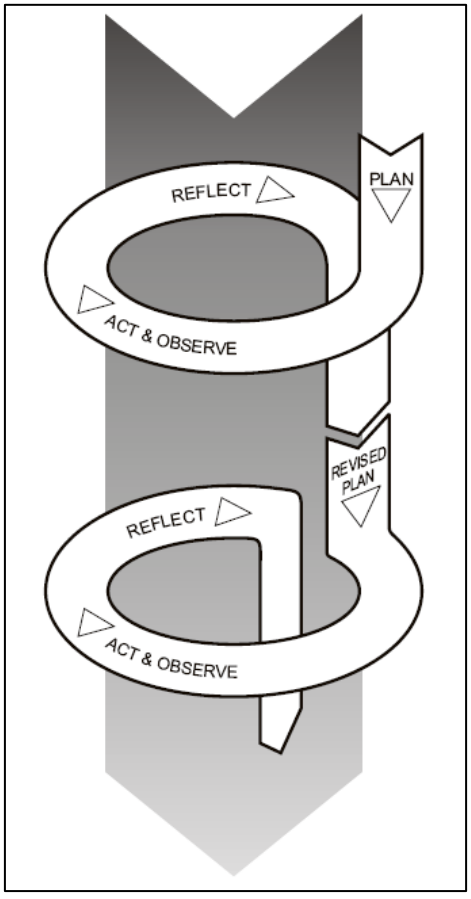

Figure 2.1 Spiral of Action Research (Kemmis and Wilkinson 1998).

This method was employed throughout the research project. Reflections were particularly important after key actions, such as literature review findings, interviews, site visits and general discussions, in order to confirm the direction that the project was travelling in and to incorporate any new research questions.

2.2 Literature Review

A number of various sources of literature and documents were sourced for the case studies and initial scoping of principles for property acquisition. For the case studies, this included publicly available council documents (e.g. council committee minutes, FAQs), plans, policies, strategies, business plans, etc; government agency reports (e.g. those from the Canterbury Earthquake Recovery Authority [CERA]); consultant reports; media articles; social media sites; and responses from key informants (i.e. through interviews and informal meetings).

An international literature search was undertaken to inform the section of principles for property acquisition. Sources included the United Nations, documented experiences and frameworks from Australia and the United States and journal articles.

2.3 Case Studies

The New Zealand case studies were selected according to the following criteria:

- Communities engaged in the acquisition of hazard-prone housing spanning differing national legislation, including special legislation (CER Act), the RMA, Building Act or Public Works Act.
- Communities were impacted by differing natural hazard events, including flood, earthquake and landslide.
- The data needed to conduct the assessment was readily available.
- The project team possessed knowledge and/or experience of the location, event and process.

In light of this criteria, the New Zealand case studies were selected as shown in Table 2.1.

Table 2.1 Case study selection based on criteria.

Location	Legislative Tool	Hazard	Information Availability	Team Knowledge
Christchurch	Special legislation (CER Act, Greater Christchurch Regeneration Act)	Earthquake (landslide, liquefaction)	Yes	Saunders involved in District Plan review
Matatā	Resource Management Act	Debris flow (rainfall-induced)	Yes	Saunders involved in RMA hearing
Kaikōura	Building Act	Landslide (earthquake)	Yes	Saunders involved in initial post-earthquake planning
Lower Hutt	Public Works Act	Flood	Yes	GNS Science located in Lower Hutt

2.3.1 Ethical Considerations

The research conducted followed the ethical requirements as practiced by GNS Science and as required by the North Carolina State University Institutional Review Board. Specific steps taken include the development of a research plan that was submitted and approved by the university's research review committee. The plan emphasises protecting the interview respondent's anonymity and the confidentiality of their comments. The plan also defines how the data collected will be securely stored.

2.3.2 Site Visits

In December 2019, site visits were undertaken by the research team in Matatā and Christchurch. The site visit to Matatā was conducted by car, due to the sensitive nature of ongoing negotiations with residents and the Whakatāne District Council regarding the voluntary acquisition process. In addition, some residents were still residing in the community, and the planning hearing to re-zone the land and extinguish their existing use rights (held in March 2020) had not been conducted at the time of the site visit. The photo in Figure 2.2 reflects the anger and frustration of some residents, and it was therefore considered inappropriate to walk around the community taking photos and having curb-side discussions. All photos were taken from the car to ensure a level of sensitivity.

Figure 2.2 A sign made by an aggrieved resident, expressing a dissenting opinion regarding the merits of the acquisition programme Matatā (Photo credit: G Smith).

The Christchurch site visit included the two red-zone areas: the flat land subjected to repeated liquefaction (Figure 2.3), which is now mostly vacant (48 privately owned properties remain across the Ōtākaro Avon River Corridor, Brooklands and Southshore); and the Port Hills, which was impacted by land instability issues. A key informant from the University of Christchurch acted as a walking tour guide around the flat land area, and the Port Hills site visit was led by the lead author (Saunders) of this report.

Figure 2.3 In the vacated red zone of the flat land in Christchurch (Photo credit: WSA Saunders).

2.3.3 Interviews

Semi-structured interviews were undertaken with a representative from Whakatāne District Council who was involved in the Matatā acquisition and land-use planning response; with staff from Land Information New Zealand (LINZ)[1] in Christchurch, many of whom were involved in the property acquisition process of the red zone in Christchurch through the now-defunct CERA; and Greater Wellington Regional Council. LINZ officials were responsible for the administration of the residential red zone flat land that was acquired following the earthquakes until the flat land was progressively transferred to the Christchurch City Council.

Semi-structured interviews allowed for the interviewers (Smith and Saunders) to be flexible with the wording depending on responses; prompts and probes were used to seek clarification or to gain more detail and additional questions were asked, and others not asked, depending on responses. Interview questions were circulated to participants ahead of time to allow them to prepare for the interview, and this provided the opportunity for additional material and resources to be gathered prior to the interviews. This approach also allowed the interview to stay focused, and, in the case of the LINZ interview, other staff were invited by the key LINZ interviewee to join the discussion and provide important input based on their own experience with the acquisition process, including those that served in previous roles at CERA and other organisations.

1 LINZ encourage the use of location information and run New Zealand's survey and title system, which guarantees people's property rights. They also manage some of the government's land and property and support government decision-making around foreign ownership. For more information, see https://www.linz.govt.nz/about-linz/our-organisation/linzs-responsibilities

Signed participant consent forms (as part of the ethical screening and process) were discussed and provided to the interviewers. The interview with the Whakatāne District Council representative was recorded and notes were taken. At the request of LINZ staff, the interview and discussion were not recorded. In this case, the interview was led by Dr Smith, with Dr Saunders taking substantive notes. The interviews took between 1–1½ hours.

The interview questions, which are provided in Appendix 1, focused on several key elements, including: 1) the housing acquisition process, including those responsible for the management of the programme, the funding sources and other resources used; 2) public involvement strategies, including how individual homeowners were engaged in the decision-making process and why some may have chosen to remain rather than take the offer; 3) the use of the land following the acquisition, including whether a plan was created to guide this process; 4) the length of time it took to complete the acquisition process and whether steps were taken to speed up the process; 5) key challenges faced by those tasked with the management of the programme; and 6) the identification of potential lessons, including whether there were procedures put in place to transfer these lessons to others that may be tasked with implementing future property acquisition efforts. Participants were also encouraged to ask questions at any time or to seek clarification if they were unsure of the intent of the question. In accordance with the ethical guidelines established, any respondent could choose not to answer a question or stop the interview at any time. Each respondent chose to answer all questions posed by the research team.

2.3.4 Reflective Participant Observation

Dr Wendy Saunders was involved in the natural hazards chapter of the Christchurch District Plan review during 2014–16. Her role was to lead the government response to the chapter, which included reconciling the views of 16 government organisations into one comprehensive submission, attending conferencing (a type of mediation), preparing evidence and attending the hearing as an expert witness. This experience provided an in-depth knowledge of the earthquake sequence and how the physical science was incorporated into the district plan through maps, policies and rules.

In addition, Dr Saunders was involved in the 2020 hearing to discuss extinguishing existing land-use rights in an area of Matatā, subject to the purchase and removal of homes as part of a larger risk reduction strategy intended to limit future losses associated with subsequent debris flows. This gave Dr Saunders insight into the plan change process, acquisition process and decision-making framework.

3.0 LEGISLATIVE OPTIONS FOR PROPERTY ACQUISITION TO REDUCE RISKS FROM NATURAL HAZARDS

Figure 3.1 shows the legislative options available for property acquisition, including four different approaches: the RMA, which enables existing use rights to be extinguished for land-use planning purposes (i.e. Matatā); the Building Act, where buildings can be removed/ purchased when they are deemed dangerous to the public (i.e. Kaikōura); the Public Works Act, which allows for the targeted purchase of property needed to site public works (such as flood protection measures in Lower Hutt); and central government intervention through special legislation (e.g. the CER Act), as used in Christchurch after the February 2011 earthquake.

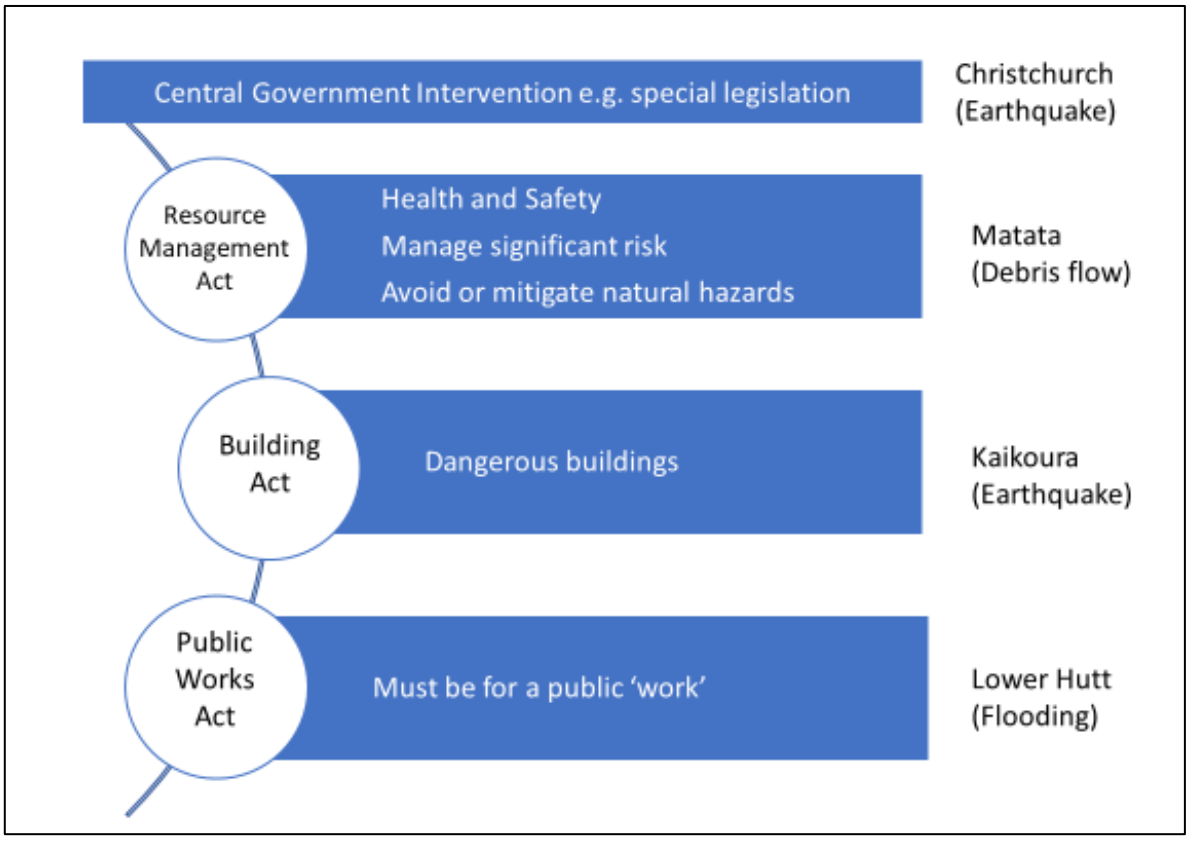

Figure 3.1 Legislation options for buybacks in New Zealand.

3.1 Special Legislation – Canterbury Earthquake Recovery Act 2011

In response to the February 2011 earthquake and subsequent disaster, in which 185 people lost their lives, a national state of emergency was declared. In April 2011, the New Zealand Government established CERA by an Order in Council under the State Sector Act of 1988. In addition, the Canterbury Earthquake Recovery Act of 2011 (CER Act) was passed, with the purpose of enabling a focused, timely and expedited recovery of Greater Christchurch (MacDonald and Carlton 2016).

CERA, which functioned as a government department, reported to the Minister for Canterbury Earthquake Recovery (in 2015, it became a departmental agency within the Department of the Prime Minister and Cabinet). The CER Act granted extraordinary powers to the Minister to expedite decision-making and acquire land as part of the city's recovery plan. It also provided for rights of appeal in certain situations, requiring independent legal scrutiny (MacDonald and Carlton 2016). CERA was dis-established on 19 April 2016 by repeal of the CER Act and was superseded by the Greater Christchurch Regeneration Act 2016.

Decisions were made by Government regarding the viability of retaining, repairing or demolishing damaged properties via a zoning process in the worst-affected areas. A policy of land zoning was initiated by CERA, whereby all geospatially defined areas across Greater Christchurch were designated green, orange, white or red. The zoning process was intended to foster greater certainty for people who sought to understand the future status of their property[2] (MacDonald and Carlton 2016).

A green categorisation was applied to areas deemed generally suitable for construction, where earthquake repairs could proceed on a property by property basis. Green areas were further divided into technical categories (TC) 1, 2 or 3, depending on their potential level of vulnerability to liquefaction (see Figure 3.2). This categorisation of green-zoned land meant that repair and rebuild work could begin on the less-vulnerable TC1 or TC2 land without the need for detailed engineering studies.

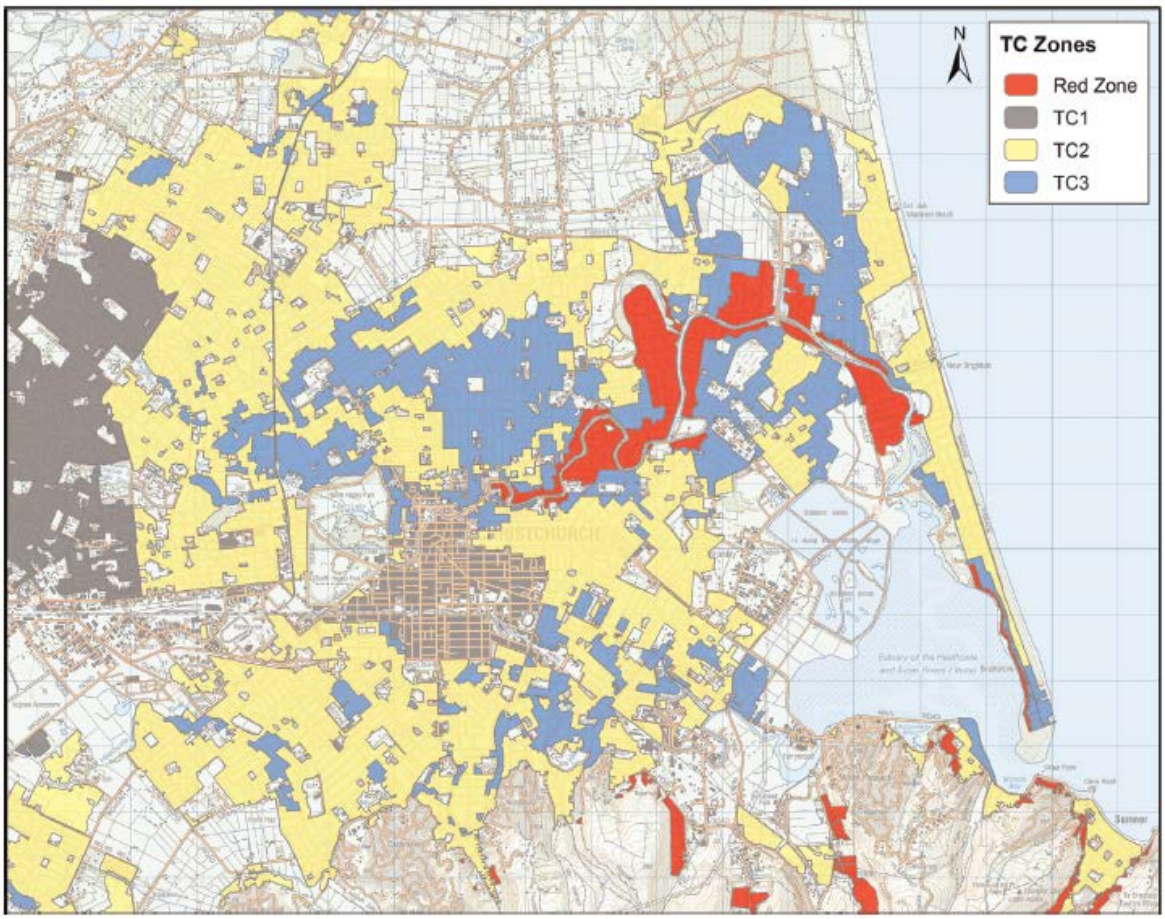

Figure 3.2 Technical categories for land in Christchurch (Saunders and Becker 2015).

As of 2016, a total of 7535 properties across Greater Christchurch were zoned red (MacDonald and Carlton 2016). The distribution of red-zoned properties (not including 'other types') spanning the three geographic regions are shown in Figure 3.3:

2 Certainty was one of Government's four recovery objectives, along with confidence, best information and simple process.

Area	Suburb/s	Residential properties	Vacant land	Commercial properties
1	Kaiapoi	843	5	0
2	Brooklands	451	43	0
3	Pines Beach, Kairaki	149	1	0
4	Avon Loop, Richmond, Linwood	412	3	1
5	Dallington, Burwood, Avonside	2,653	16	6
6	Avondale, Aranui, Bexley, New Brighton, Wainoni	2,059	8	13
7	Southshore	190	2	0
8	Port Hills	457	79	144
	Total	**7,214**	**157**	**164**

Source: Based on information provided by CERA in April 2016 following the final settlement date of 26 February 2016.

Key

RRZ properties in Waimakariri District Council

Flat land RRZ properties in Christchurch

Port Hills RRZ properties in Christchurch

Figure 3.3 Number of red-zoned properties in 2016 (MacDonald and Carlton 2016).

LINZ has advised that, since the 2016 publication of the numbers shown in Figure 3.3, the total number of properties within the red zone is now 7709 (LINZ 2020).

3.2 Resource Management Act 1991

The RMA is the primary land-use legislation in New Zealand. Its purpose is to promote the sustainable management of natural and physical resources, where sustainable management means:

> *"… managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:*
>
> *(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment."*

The RMA requires planning to provide for people's health and safety. Land-use and resource management plans developed under the RMA are required to recognise and provide for the management of significant risks from natural hazards, while accounting for the effects of climate change. These matters are also required to be considered upon application for a resource consent for a specific activity or land use under a Regional or District Plan.

District Plans primarily manage land uses and are the regulatory tool for ensuing urban design, amenity and cohesion in built and rural environments. District councils apply planning tools to control the use and development (or protection of land) for the purpose of the avoidance or mitigation of natural hazards. However, as discussed below, s10 limits the ability to alter or influence existing uses where no re-development or new development is to occur.

3.2.1 District Plans – Certain Existing Uses in Relation to Land Protected (Batchelar 2018)

Section 10(1) of the RMA provides that land may be used in a manner that contravenes a rule in a district plan or proposed district plan if both:

- the use was lawfully established before the rule became operative or the proposed plan was notified; and
- the effects of the use are the same or similar in character, intensity and scale.

This provision is often referred to as 'existing use rights'.

Under s10, existing use rights do not apply to:

a. Activities that have been discontinued for a continuous period of more than 12 months after the new rule became operative or the proposed plan was notified; or

b. Reconstruction, alteration of, or extension to, any building that increases the degree to which the building fails to comply with any rule in a plan or proposed plan; or

c. Use of land is subject to control through a 'Regional' land-use provision for the purposes of managing land (soils), water (including quality and ecology of both waterbodies and coastal water), or avoidance or mitigation of natural hazards.

Because of existing use rights, changes to a district plan are only effective in managing new development or re-development, unless a regional plan includes a provision for it (as below). This scenario then enables a district plan to change zoning where existing uses are no longer allowed (i.e. resource consent will not be granted or may not be sought for particular activities; Batchelar 2018).

3.2.2 Regional Plans – Certain Existing Lawful Activities Allowed

Regional plans are the primary 'resource' management tool applicable to soils, water, air and the coastal marine environment. As identified above, regional plans may include 'land-use rules' to support this resource management objective. As identified in point (c) above, they may also apply to land for the avoidance or mitigation of natural hazards. A regional plan rule is not subject to 'existing use rights'. Section 20A of the RMA provides that certain existing lawful activities are allowed until a rule in a regional plan becomes operative that requires those activities to obtain resource consent. An activity may continue from the time that the rule takes effect, in accordance with s86B, if it was lawfully established and the effects of the activity are the same or similar in character, intensity and scale to those before the rule took legal effect [s20A(1)]. This includes rights that have been confirmed through the issuance of an Existing Use Certificate pursuant to s139A (Batchelar 2018).

Once the rule becomes operative, the activity can only continue if the person carrying on the activity has applied for the necessary resource consent within six months after the date that the rule became operative and if the application has not been decided or any appeals

have not been determined [s20A(2)]. If regional plan rules prohibit residential activities on identified residential sites, there is no ability to apply for resource consent, as consent cannot be sought for a prohibited activity.

3.2.3 Compensation

In addition to a regional council's power to extinguish existing uses, they must also adhere to provisions in s85 of the RMA, which provides for compensation due to a 'regulatory taking'. This section may be applicable where a provision in a plan renders land incapable of reasonable use and places an unfair or unreasonable burden on a person who has interest in that land. In such a case, a regional council may have to pay compensation under the Public Works Act if it wishes to force a change on a landowner; however, the landowner must consent to the acquisition (Grace et al. 2019). In the case of Matatā, a key issue for Council was whether continued occupied properties constituted a reasonable use. The Whakatāne District Council position was that, taking into account Part 1 of the RMA and due to the high loss-of-life risk that had been identified, continued occupancy was not considered a reasonable use and therefore s85 was not appropriate (Farrell 2020).

3.3 Building Act 2004

The Building Act 2004 aims to improve control of, and encourage better practices in, building design and construction. One aspect of the Act is to reduce the danger to the population posed by dangerous and insanitary buildings. This provides consistency with one of the key purposes of the Building Act, which is to ensure that "people who use buildings can do so safely and without endangering their health" (s3).

Properties can be classed as dangerous due to structural damage resulting from earthquakes or very high life-risk from hazards, such as rockfalls or other land-instability issues (Kaikōura District Council 2017). Structures can be repaired (s125) or demolished (s127), which, in the case of the latter option, becomes a vehicle to voluntarily acquire property so that dangerous structures and properties can be retired from residential use in order to reduce future damages to housing stock, while limiting potential injuries or loss of life (Department of Building and Housing 2005).

Sections 71–74 of the Building Act are concerned with land that is subject to a natural hazard. These sections set out a standard for the territorial authority to apply when dealing with building consents for land subject to natural hazards. If the territorial authority is not satisfied that these standards are met, then it must refuse to grant a building consent. However, the territorial authority does have the ability to consider various factors relating to the land and the natural hazard and may grant a building consent in some instances, where those factors support the granting of a building consent (Cooper Rapley Lawyers 2016).

Subpart 6 of the Building Act provides special provisions for dangerous, affected and insanitary buildings. The meaning of a dangerous building is given as (s121):

> *(1) A building is dangerous for the purposes of this Act if,*
>
> > *(a) in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause –*
> >
> > > *(i) injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property; or*

(ii) damage to other property; or

(b) in the event of fire, injury or death to any persons in the building or to persons on other property is likely.

(2) For the purpose of determining whether a building is dangerous in terms of subsection (1)(b), a territorial authority –

(a) may seek advice from employees, volunteers, and contractors of Fire and Emergency New Zealand who have been notified to the territorial authority by the board of Fire and Emergency New Zealand as being competent to give advice; and

(b) if the advice is sought, must have due regard to the advice.

Section 131 of the Act requires each territorial authority to adopt a policy on dangerous and insanitary buildings. The way in which individual territorial authorities approach this requirement may vary according to local circumstances; however, the policy must state:

1. the approach that a territorial authority will take in performing its functions under Part 2 of the Act
2. the territorial authority's priorities in performing those functions, and
3. how the policy will apply to heritage buildings.

3.4 Public Works Act 1981

Public works, such as roads or flood engineering measures, often cannot be built without affecting private landowners and their land. Under the Public Works Act 1981, the Crown has the power to acquire land to ensure that these works can proceed. Compensation is paid to the landowners for the land acquired.

If land is required for a public work, the owner can agree to sell it to the Crown. In this case, the Crown, territorial authorities and other requiring authorities will negotiate and agree with the owner appropriate terms and conditions, including the amount of compensation, on behalf of the Crown agency acquiring the land. First, a valuation from a registered valuer is obtained. If the amount is disputed by the owner, they can seek their own independent valuation. If independent advice is sought from a valuer, solicitor, accountant or other professional adviser, the reasonable cost incurred for this advice may be reimbursed. If agreement is reached for the Crown to acquire the land, but an agreement cannot be reached on the compensation payable, this will be determined by the Land Valuation Tribunal. Once an agreement in principle has been reached, an agreement is prepared to sign for the sale and purchase of the land (LINZ c2020a).

If an agreement cannot be reached to purchase the land, the Public Works Act allows the Minister for Land Information to acquire the land compulsorily. This power is only exercised after all reasonable endeavours to negotiate the sale and purchase of the land has been made in good faith. If an agreement cannot be reached for the amount of compensation to be paid, the owner can request that the compensation be determined by the Land Valuation Tribunal (LINZ c2020b).

The amount of compensation will vary from case to case. Entitlement to compensation is set out in Part V of the Act. Section 60(1) provides that affected landowners are entitled to 'full compensation' so that they are left in no better or worse position than they were before the public work commenced. This means that landowners will not be deprived of their land without fair compensation but will not be compensated so as to make a profit from the public work. If the land to be acquired contains a home that one lives in, and the Crown takes the initiative to purchase it and requires vacant possession to be given on an agreed date, or (if none) within one month of vacant possession being required by written notice, additional compensation up to $50,000 is payable under s72 of the Public Works Act (LINZ 2017).

Section 72A provides the amount to be determined as $35,000 if vacant possession is given on the agreed date, plus $10,000 if a sale and purchase agreement that includes a date for vacant possession is executed within six months of the negotiation start date. An additional $5000 may also be paid at the Minister's discretion, if personal circumstances or the circumstances of the acquisition warrant such a payment (LINZ 2017).

4.0 PRINCIPLES OF PROPERTY AQCUISITION

There is limited internationally or nationally accepted principles of property acquisition to reduce risks from natural hazards. A literature review has been undertaken to investigate key principles of acquisition, informed by the experience in Christchurch and Matatā. The result provides a starting point for further research and development based on three principles, summarised in Figure 4.1. The three tiers include overarching legal principles, acquiring agency-based principles and principles focused on the property owner.

Figure 4.1 Proposed principles of property acquisition for risk reduction.

What was common amongst the principles in the literature (e.g. CERA 2016; Dudley Tombs and France-Hudson 2018; Keith et al. 2008; LINZ c2020b; New South Wales Government c2020) is that they are predominantly people-centric, with a focus on the outcomes for the property owner rather than focused on the outcomes that the acquiring agency may be seeking. Each of the tiers are discussed in further detail below and have been developed through integrating those principles and learnings outlined in the literature.

4.1 Legal Principles

Principles for legislation on compulsory acquisition should include (Keith et al. 2008):

Protection of Due Process and Fair Procedure

Rules that place reasonable constraints on the power of the government to compulsorily acquire land strengthen the confidence of people in the justice system, empower people to protect their land rights and increase the perception of tenure security. Rules should provide for appropriate advance consultation, participatory planning and accessible mechanisms for appeals, and policies and processes should limit the discretion of officials.

Good Governance

Agencies that compulsorily acquire land should be accountable for the good faith implementation of the legislation. Laws that are not observed by local officials undermine the legitimacy of compulsory acquisition. Good governance reduces the abuse of power and limits opportunities for corruption.

Equivalent Compensation

Claimants should be paid compensation that is no less than the loss resulting from the compulsory acquisition of their land. Laws should ensure that affected owners and occupants receive equivalent compensation, whether in money or alternative land that is located outside of known hazard areas. Regulations should set out clear and consistent valuation bases for achieving this.

4.2 Agency Principles

While these principles are agency-based, they are also people-focused:

Participation

Participatory planning processes should involve all affected parties, including owners and occupants, government and non-governmental organisations, and be adequately resourced.

Timeliness

Due process should be defined with adaptable time limits so that people can understand and meet important deadlines. There is a danger that acquisition processes can last for many years, creating long-term insecurity and uncertainty for owners and occupants. In some cases, the process may provide that the acquisition will be regarded as abandoned if the process is not completed within a specified period as a result of delays by the acquiring agency or property owners (Keith et al. 2008).

Property owners should be informed personally, promptly and repeatedly throughout the process. Property owners should be provided with all relevant information in a timely, easy to understand and transparent manner at all steps in the process. The process should allow the property owner adequate time for consideration, negotiation, decision-making and relocation, without unduly delaying the project. The timelines and deadlines should be clearly explained.

Monitoring

The process should be supervised and monitored to ensure that the acquiring agency is accountable for its actions, that personal discretion is limited and that actions are transparent.

4.3 People-Focused

Fairness and Respect

The property owner should be treated with respect and sensitivity at all times; their needs, and those of their family, should be listened to and given consideration. The valuation and acquisition process should be fair, consistent and transparent, based on a pre-event ‘market value’ rather than re-instatement.

4.3.1 Information and Support

Notices or other written and oral communications should be clear, translated into appropriate languages with procedures clearly explained and include advice about where to get help. Assistance should be provided so that owners and occupants can participate effectively in negotiations on valuation and compensation and include legal, financial, psychosocial or other forms of support.

4.3.2 Indigenous Landowners

Indigenous landowners have specific cultural ties to their land, which cannot be ‘extinguished’. These cultural and environmental ties must be respected, acknowledging that a change in land use may be more appropriate in order to retain cultural ties to the land. Cultural protocols should be understood and followed.

5.0 CASE STUDY EXAMPLES OF PROPERTY ACQUISITION IN ORDER TO REDUCE RISKS

Next, four case studies are discussed, including the event that initiated the property acquisitions and the process that was followed, as well as the property acquisition response and the planning policy response. A comparative summary of the case studies is provided in Table 5.1.

Table 5.1 Comparative summary of case studies.

	Christchurch	Kaikōura	Matatā	Hutt City
Hazard	Earthquake-induced land instability and liquefaction	Earthquake-induced land instability	Extreme-weather-induced debris flow	Riverine flooding
Lead Agency	CERA	Kaikōura District Council	Whakatāne District Council	Wellington Regional Council
Funding	Central Government	Central Government	District and Regional Council, Central Government	Regional
Legislative Mechanism	Special legislation*	Building Act*	Resource Management Act*	Public Works Act*
Number of Properties Acquired*	7709	3	45	75
Implementation Timeframe Post-Event	4 years	23 months	15 years	Not in response to an event
Post-Acquisition Plan	For some areas of the flat land	In development	In development	Yes
Post-Acquisition Purpose	Recreational	-	Reserve	Flood management

* In each of these cases, voluntary acceptance of the offer was the first and preferred option of the acquisition process.

5.1 Christchurch – Special Legislation

5.1.1 The 2010–11 Canterbury Earthquake Sequence

Christchurch City is located midway down the east coast of Aotearoa New Zealand's South Island and is the South Island's largest city, with a population of ~360,000 [3].

The magnitude 7.1 Darfield earthquake occurred on 4 September 2010 at 4.35 am, causing damage to Darfield, the nearby city of Christchurch and Kaiapoi township. Significant building damage occurred from ground shaking, liquefaction and fault rupture. Un-reinforced masonry buildings suffered damage, as well as houses located in areas of liquefaction and lateral spread. Transport, electricity, water and sewerage systems were disrupted, with the most notable damage to sewerage systems (Saunders and Becker 2015). No lives were lost, only two major injuries occurred and the majority of injuries (over 2250) were minor (Johnston et al. 2014). Figure 5.1 shows the seismicity from September 2010 to March 2012.

3 https://www.tourism.net.nz/new-zealand/about-new-zealand/regions/christchurch/regional-information.html

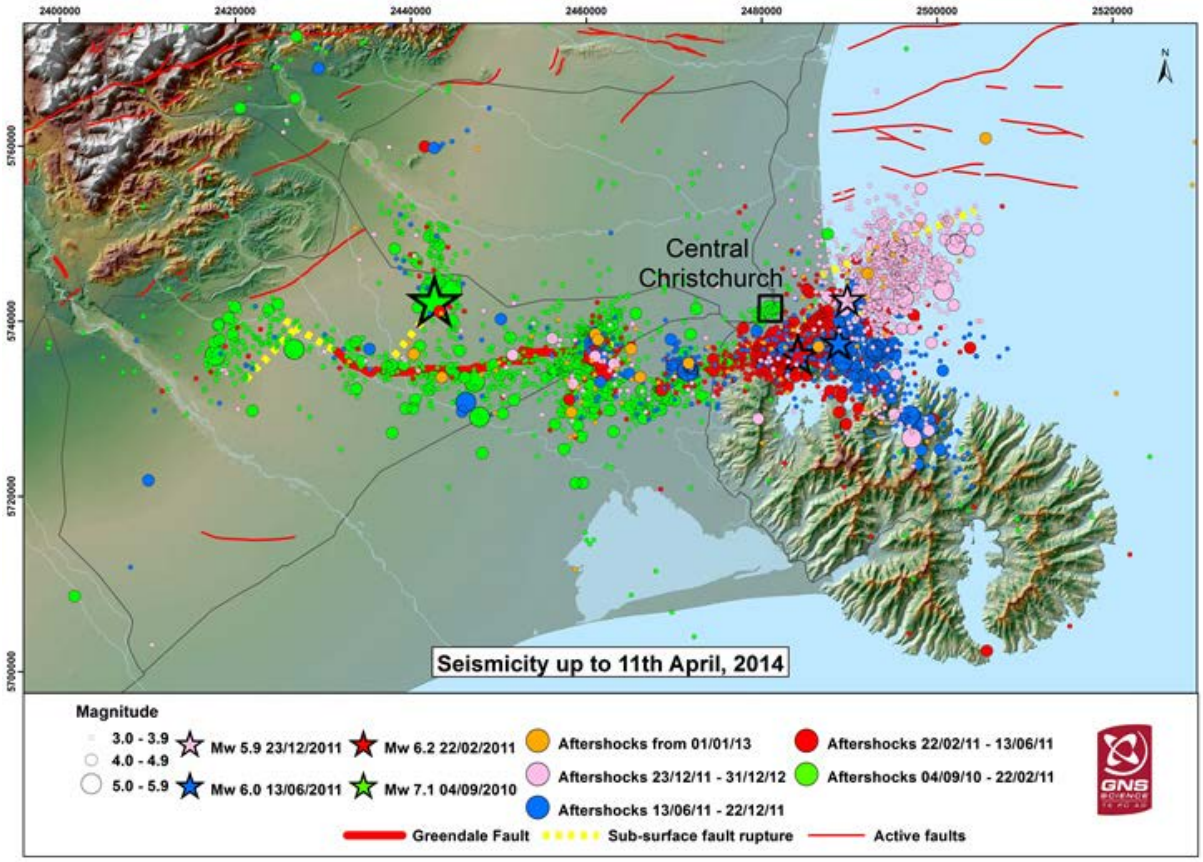

Figure 5.1 Seismicity from the Canterbury Earthquake Sequence, September 2010 to April 2014 (GNS Science 2014).

The Darfield earthquake was followed by a series of aftershocks, many of which occurred close to Christchurch. On 22 February 2011 at 12.51 pm, a shallow aftershock of magnitude 6.3 occurred near Lyttleton and Christchurch (known as 'the Christchurch Earthquake'). The nature of this aftershock was such that it caused severe ground shaking that resulted in the collapse of numerous un-reinforced masonry buildings and two multi-storey office buildings and caused structural and non-structural damage to other buildings. This severe midday aftershock resulted in 185 people losing their lives (New Zealand Police 2012) and many serious injuries. Much of the central business district (CBD) was severely damaged and was cordoned off for years afterwards. Infrastructure was heavily impacted, with transport, electricity, water and sewerage systems disrupted. Rock falls occurred in the Port Hills. Liquefaction and lateral spreading were more widespread than in the 2010 Darfield earthquake, which proved problematic in both residential and commercial areas, with properties and streets affected by thick layers of water and silt. Severe damage occurred to people's homes from liquefaction and ground shaking, and many residents were displaced (Saunders and Becker 2015).

Aftershocks continued to occur after 22 February, including those that struck on 13 June and 23 December 2011, again causing severe liquefaction and bringing home the realisation that the earthquake impacts experienced in Canterbury were long-lasting. In addition, there was a marked increase in flood events due to the changed ground levels from ground tilting and subsidence associated with liquefaction of land in the surrounding area (Saunders and Becker 2015).

5.1.2 The Property Acquisition Response

Due to the amount of liquefaction and land instability (i.e. rockfall and cliff collapse) that occurred in parts of Christchurch as a result of the earthquakes – and the likelihood of continuing susceptibility to future events – red and green zones were developed for residential properties. These zones also provided certainty to property owners who were otherwise facing protracted negotiations with insurers. Red zones were developed for the flat land subject to liquefaction and for areas in the Port Hills susceptible to cliff collapse and boulder roll. Green zones were developed for areas generally considered to have a sufficiently low risk to life or where the land could be remediated independently of surrounding properties (see Figure 3.2).

Areas in the flat land residential red zone had area-wide land and infrastructure damage, and an engineering solution to facilitate the reconstruction of housing and infrastructure was considered to be uncertain, costly and likely to be highly disruptive (CERA 2014a). Owners of properties that were within the red zone received an offer from the Crown to purchase their property based on the rateable value. Once settlement had been accepted by the landowner, houses were removed from the site and restoration (i.e. land was cleared and grassed, with some vegetation retained) of the land began.

The criterion for defining an area as a residential red zone was as follows (CERA 2014b):

- Significant and extensive area-wide land damage.
- The success of engineering solutions may be uncertain in terms of design, success and possible commencement, given ongoing seismic activity.
- Repair would be disruptive and protracted for landowners.

In the Port Hills, red zone areas were identified as those that were either:

- affected by cliff collapse and where there were immediate risks to life, land remediation was not considered viable and infrastructure was difficult and costly to maintain; or
- affected by rock roll and where the risk to life was considered unacceptable, was unlikely to reach an acceptable level in a reasonable timeframe and protective works to mitigate the life safety risk were not considered practicable (CERA 2014c).

Properties affected by cliff collapse and rock roll were zoned red where they faced an immediate risk to life and an area-wide engineering solution to remediate them was determined not to be practicable. As of July 2020, a total of 684 properties were zoned red in the Port Hills (LINZ, pers. comm.).

Figure 5.2 shows the compensation process and timeline for insured residential properties. Within four months of the February 2011 earthquake, the Government had an offer framework in place to begin purchasing properties – a fast response based on the scale of the damage. After five years (i.e. December 2015), the management of the acquired land became the responsibility of LINZ, which allowed for the maintenance and management of the land to continue in a coordinated manner. In September 2019, the Crown and Christchurch City Council signed the Global Settlement Agreement, which agreed that nearly all of the Crown-owned residential red-zoned land would be transferred to the Council beginning on 1 July 2020.

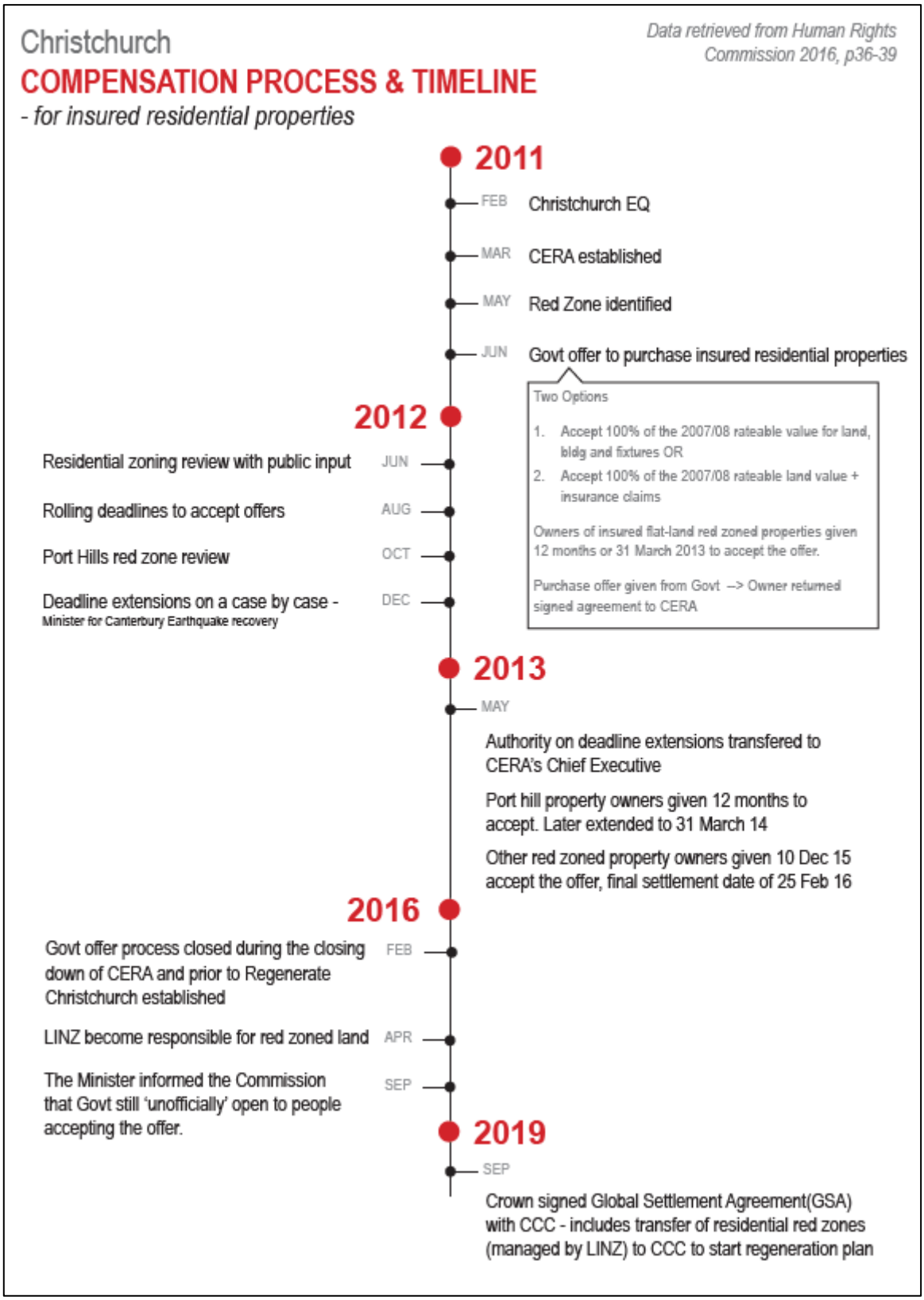

Figure 5.2 Compensation process and timeline for insured residential properties, Christchurch (adapted from MacDonald and Carlton 2016, p. 36–39).

Despite the Christchurch example being a voluntary offer, the right to compensation was not absolute. Specifically (Duncan Cotterill c2020):

- Compensation was payable at the post-earthquake value of the land, not at the pre-earthquake value.
- Compensation was only available for 'actual loss'.
- CERA was not required to pay for any loss that was insured or ought to have been insured.
- Compensation was not available for consequential loss from regulatory changes arising under the CER Act, loss from cancellation of resource consents, loss from cancellation of existing use rights, economic loss or loss from business interruption or any other loss that the Minister reasonably considered unwarranted and unjustified.
- If CERA took land under the CER Act, it also received all rights, entitlements and benefits that the landowner had or may have had against the insurer of the land or any buildings on the land.

The Minister determined whether or not compensation was to be paid, and the amount of that compensation. Landowners claiming compensation were given a reasonable opportunity to make representations as to the amount of compensation payable, but, subject to the right to appeal to the High Court, the Minister had the final say (Duncan Cotterill c2020).

5.1.3 The Planning Policy Response

In 2017, the Christchurch District Plan became operative after three years of development and hearings (see Appendix 2 for timeline). The plan was developed in response to the earthquakes and included the red-zoned flat and Port Hills areas where property acquisition had taken place. The natural hazards provisions in the plan detail the risk-based approach taken in the Port Hills and have associated map overlays, which include the flat red-zoned areas, represented as a Specific Purpose zone shown in Figure 5.3.

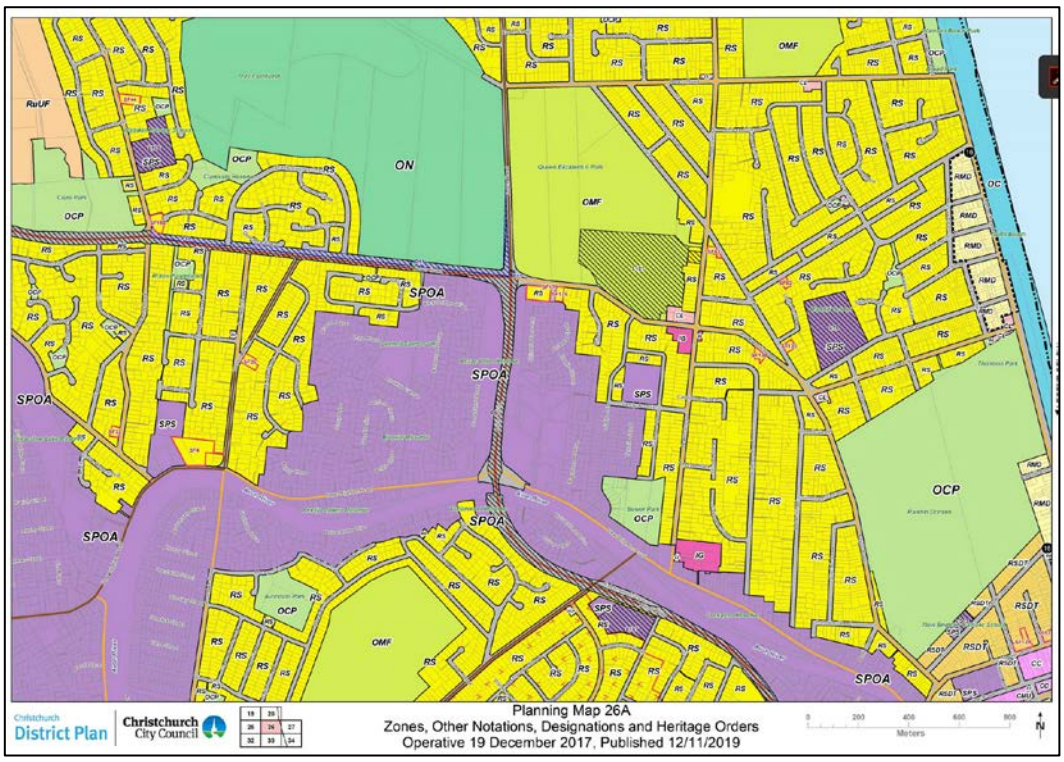

Figure 5.3 The zoned flat area in the Christchurch District Plan (Christchurch City Council c2020a). SPOA = Specific Purpose Ōtākaro Avon River Corridor, shown in purple.

Of note in Figure 5.3 is that street names have been retained in the plan, even though the land is now vacant. The explanation for the Specific Purpose (Ōtākaro Avon River Corridor) Zone is provided below:

> *"This chapter relates to the area of land that falls within the Ōtākaro Avon River Corridor Regeneration Plan. These are predominantly areas of land that run alongside the Ōtākaro Avon River which were 'red zoned' as a result of the Canterbury Earthquakes in 2010 and 2011 and which were previously part of the Specific Purpose (Flat Land Recovery) Zone, with some adjoining public open spaces. The Specific Purpose (Ōtākaro Avon River Corridor) Zone provides for a range of activities and outcomes that have been identified in the Ōtākaro Avon River Corridor Regeneration Plan. The objectives, policies, rules, standards and assessment criteria in this chapter seek to manage activities in the Zone through identifying sub-areas in the Development Plan in Appendix 13.14.6.1 and setting out specific provisions for each of them."* [4]

The ownership and management of Crown-owned residential red-zone land in greater Christchurch is being transferred over time from the Crown to Christchurch City Council. This transfer is part of the September 2019 Global Settlement Agreement, a contract between the Crown and Christchurch City Council to finalise the remaining costs and responsibilities for Christchurch's earthquake recovery and regeneration. A joint LINZ and Christchurch City Council project team is working together to manage the transfer, which includes nearly 5500 property titles that are being reconfigured so the land can be more easily managed, as described in the 2019 Ōtākaro Avon River Corridor Regeneration Plan (Regenerate Christchurch 2019). In addition, it includes the establishment of an advisory group to provide community input and advice on temporary projects and events on the land. Known as the Red Zones Transformative Land Use Group / Te Tira Kāhikuhiku, it includes members from the community, iwi and local community boards (LINZ c2020c).

4 Section 13.14.1 of the Christchurch District Plan.

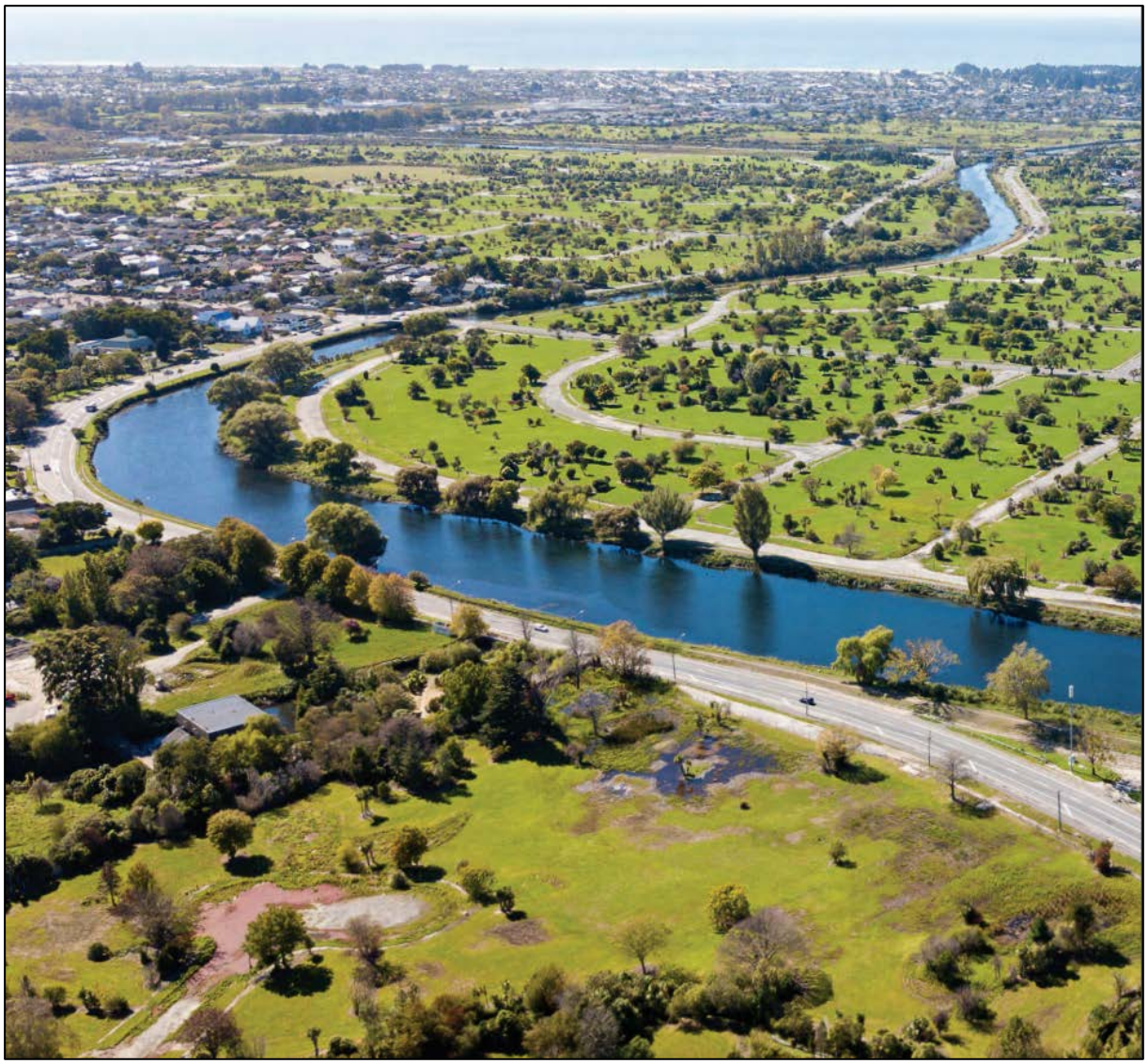

Figure 5.4 An area of the red-zoned land, as shown in the Ōtākaro Avon River Corridor Regeneration Plan (Regenerate Christchurch 2019, p. 8).

Figure 5.5 shows the effect and influence of the statutory regeneration plan on other key planning documents. The Regeneration Plan must be consistent with land-use recovery plans and will require amendments to be made to the Christchurch District Plan and the Canterbury Land and Water Regional Plan to ensure consistency.

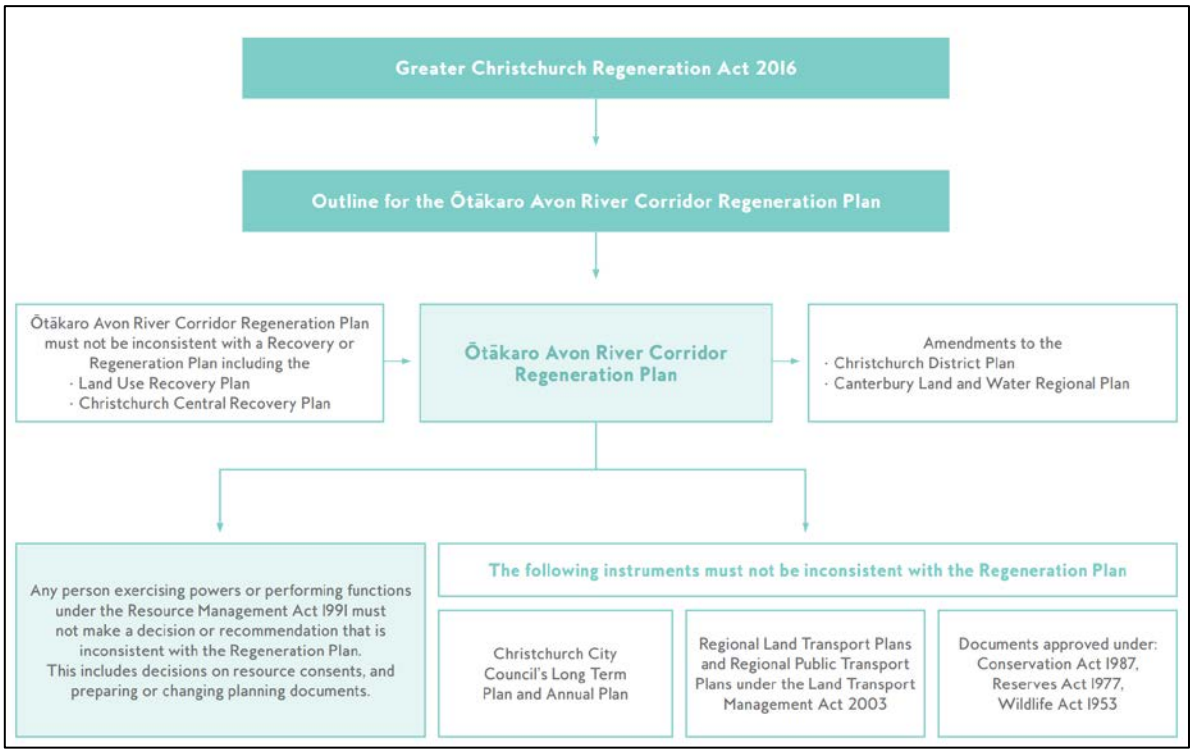

Figure 5.5 The influence of the Regeneration Plan on other plans (Regenerate Christchurch 2019, p. 19).

5.2 Matatā – Resource Management Act

5.2.1 The 2005 Debris Flow

Located on the Bay of Plenty coast of the North Island (Figure 5.6), Matatā is a small coastal community of ~645 people (Stats NZ [2013]).

Figure 5.6 Location of Matatā (Best 2016).

Located on a strip of land between the Pacific Ocean and steep hills, the township was hit by a debris flow on 18 May 2005, triggered by heavy rain in the Awatarariki Stream catchment, causing significant damage to land, buildings and infrastructure, including roads, sewerage and rail. Twenty-seven houses were destroyed and 87 properties damaged (Figure 5.7). Surprisingly, no people were killed during the event.

Figure 5.7 Matatā after the May 2005 debris flow (Photo credit: GNS Science).

The return period of the storm was initially thought to be around 200 to 500 years, but a recent updated meteorological report that takes into account climate change has determined that, by the turn of the century, a storm of the same magnitude as the 2005 event could have a return period of between 40 to 80 years. Thus, debris flows can be expected to occur as a result of future storms. Furthermore, there is also clear evidence of previous debris flows having occurred at Matatā (Campbell et al. 2020).

Options to reduce the debris flow risk through engineering solutions, catchment management, and early warning systems were investigated and discounted, which left managed retreat as the only viable risk reduction option.

5.2.2 The Property Acquisition Response

Driven by the voluntary managed retreat programme, a plan change was developed and commenced in Matatā, which led to the Crown and Bay of Plenty Regional Council committing to co-funding the acquisition process (Hanna et al. 2018). In July 2019, Central Government (specifically, the Minister of Local Government) confirmed up to $5.019 million of financial assistance toward managed retreat at Matatā. That equated to a one-third-share of the $15.058 million estimated total cost of managed retreat, with the other two shares being provided equally by the Whakatāne District Council and Bay of Plenty Regional Council. The size of the funding package was based on property valuations initiated by Whakatāne District Council in 2016 and updated in 2018 to account for likely property market movements out to July 2019 (Campbell et al. 2020).

Figure 5.8 shows the decision-making interface between the managed retreat business case and the plan changes to both the Whakatāne District Plan and the Regional Natural Resources Plan. The voluntary managed retreat is dependent on funding, while the district and regional plan changes allow for the extinguishing of existing use rights and subsequent change of land-use zoning from residential to reserve.

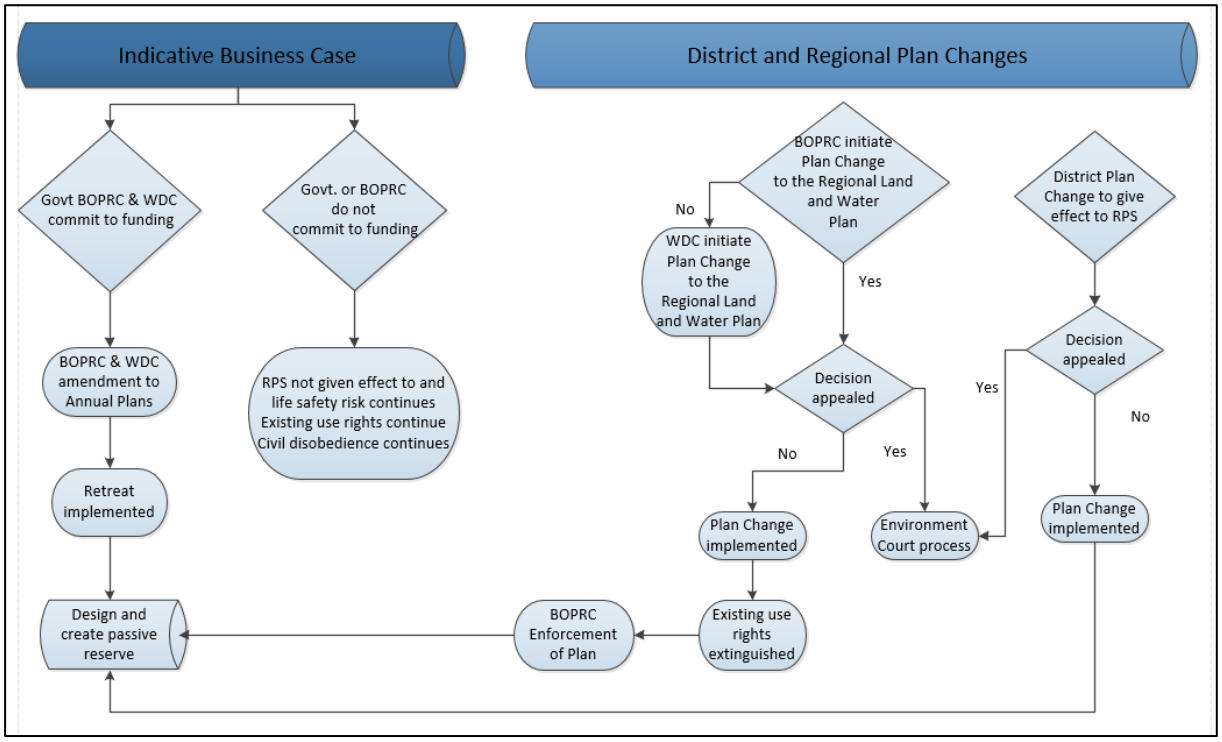

Figure 5.8 The dual indicative business case and plan change processes (Whakatāne District Council 2017, p. 14).

In 2013, the Whakatāne District Council commissioned a hazard and risk assessment for debris flows on the Awatarariki fanhead. The assessment identified the risks to life and property on parts of the fanhead as being high. The risk assessment resulted in a map of annualised loss-of-life risk contours across the fanhead, which was subsequently converted to three risk areas: high, medium and low, which, in turn, formed the basis of a voluntary management retreat programme and plan changes (Figure 5.9). The high-risk area comprised 45 properties, of which 34 are in private ownership. Of these, 16 included houses located on the sections, and the remainder were vacant sites.

5.2.2.1 Managed Retreat Programme

The Whakatāne District Council developed a managed retreat strategy that recognises the varied policy constraints, functions and obligations it has to manage natural hazards risk (Hanna et al. 2018). Managed retreat is one of 13 workstreams under the Awatarariki Debris Flow Risk Management Programme, with the District and Regional Plan Changes representing separate workstreams. The managed retreat programme is the Council's response to manage unacceptable natural hazard risk to a community of property owners within its district, as it is required to do under the Bay of Plenty Regional Policy Statement. Managed retreat was only selected when all other risk reduction options had been investigated and found to be not viable. The Whakatāne District Council developed a managed voluntary retreat strategy, which involves the provision of financial assistance to affected properties in the high-risk area (Figure 5.9) to allow either the acquisition and demolition of homes or their relocation (Batchelar 2018).

Figure 5.9 The debris flow risk areas at Matatā (Batchelar 2018, Appendix 5).

The Awatarariki Management Retreat Programme is a NZ$15 million natural hazard risk reduction initiative that is jointly funded by the Whakatāne District Council, the Bay of Plenty Regional Council and the Crown. The programme recognises that some owners of properties on the Awatarariki debris fan are exposed to an unacceptably high loss-of-life risk to future debris flows from the catchment. Participation of property owners in the programme is voluntary (Farrell 2019).

Under the programme, which was conceptualised in 2016, participating property owners are presented with an offer to sell their property to the Whakatāne District Council based on the current market value of their property, with no discount for the market impact of the debris flow or proposed plan changes. Plan changes needed to manage the loss-of-life risk had not been proposed at that time. Additional incentives have been offered, where relevant, through contributions towards legal expenses, relocation costs and mortgage break fees (Farrell 2019, 2020).

As of 27 June 2020, 24 of the 34 properties had been purchased by the Council, which includes 12 of the 16 properties with houses.

The land acquired under the managed voluntary retreat strategy will be set aside for future public use. Future activities could include passive recreational use, including access, walkways, fencing and landscape development. It is also likely that some of the land not in Whakatāne District Council ownership would be set aside to commemorate the 1864 Battle of Kaokaoroa (Batchelar 2018). A community engagement and visioning programme is currently underway to design the open space created through the managed retreat programme.

5.2.3 The Planning Policy Response

Because the managed retreat proposal is voluntary, a resource management approach to reduce risks from future debris flows on the Awatarariki fanhead area is required to appropriately recognise and address the significant risk that has been identified. Therefore, changes to the Operative Whakatāne District Plan are proposed, including:

- Identifying an Awatarariki Debris Flow Policy Area on the planning maps, including 'high risk', 'medium risk' and 'low risk' areas.
- Re-zoning the high-risk area from 'Residential' to 'Coastal Protection Zone'.
- Prohibiting all activities in the high-risk area, other than those that relate to transitory recreational use of open space.
- Making any new activities and intensification of existing activities in the medium-risk area subject to a resource consent application where natural hazard risk plays a role in deciding whether to grant or refuse resource consent and the imposition of any necessary conditions.

Because of existing use rights, changes to the District Plan are only effective in managing future risk created through new development or re-development. However, a regional rule is not excluded from applying to existing use rights and can be used to remove existing residential activities that are subject to high risk. Therefore, changes to the Operative Regional Natural Resources Plan to reduce existing risk are also proposed and include:

- adding a new objective and new policies that set the intention to reduce the natural hazard risk on the Awatarariki fanhead from high-risk to at least a medium risk level; and
- a rule prohibiting residential activities on identified residential sites within the high-risk area, scheduled to go into effect on 31 March 2021.

At the time of publication, both plan changes had been approved by an independent hearings panel but had subsequently been appealed.

5.3 Kaikōura – Building Act

5.3.1 The 2016 Kaikōura Earthquake Event

At 12.02 am on 14 November 2016, a 7.8 magnitude earthquake hit the Kaikōura area of the South Island of New Zealand. The earthquake was characterised by multiple fault ruptures, which caused extensive landslides, some of which closed the main state highway for two years. In addition, there was substantial damage to buildings in the Wellington region, resulting in the demolition of a number of buildings in Wellington City and Lower Hutt (Figure 5.10).

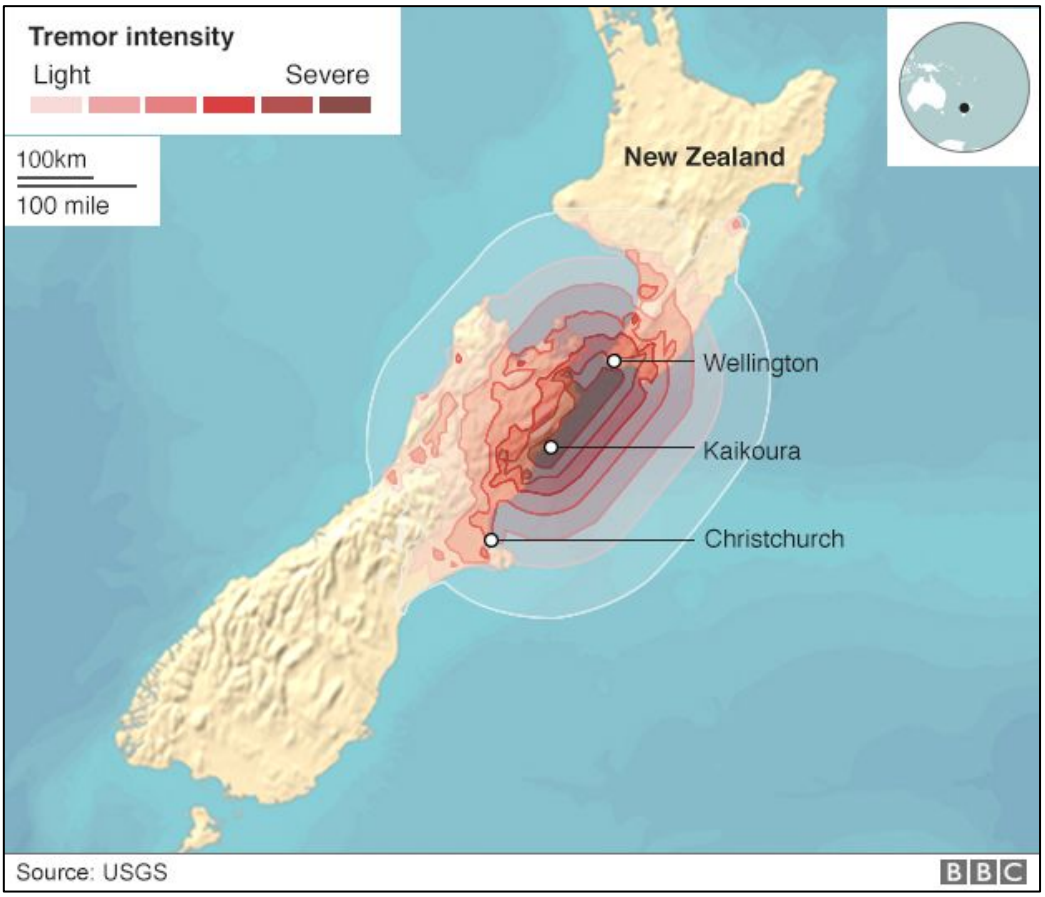

Figure 5.10 Extent of ground shaking in the Kaikōura earthquake (BBC News 2016).

5.3.2 The Property Acquisition Response

Within the Kaikōura District, buyouts were undertaken through the Building Act process rather than through the RMA. Under the Building Act, a building can be deemed dangerous under s124. Once deemed as 'dangerous', a s124 notice can be placed on the property, which warns people not to approach the building or may restrict entry and require certain work to be carried out to make the building safe.

Under s121 of the Building Act:

> *"a building is dangerous for the purposes of this Act if in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause injury or death (whether by collapse or otherwise) to any persons in it or to persons on other property."*

Note that earthquake is excluded from the "ordinary course of events" (Rogers and Sutton 2018).

5.3.2.1 Section 124 Notices under the Building Act

Councils make the decision to place an s124 notice on a building after gathering information and investigating whether the property is safe to be occupied. When councils put a notice on a building, they specify why the notice was issued and what repair work the property owner needs to do to have the notice lifted. Once the property owner has taken the required action, the Council will re-assess the building in accordance with its dangerous building policy (EQC 2020).

Sixteen buildings were issued with s124 notices after the earthquake. Most of these buildings were not considered to be dangerous because of structural weakness but because of an external threat from land upslope, movement of which could be triggered by earthquake shaking or rainfall. As the definition of a dangerous building excluded earthquake, the use of s124 was the subject of a Determination by the Department of Building and Housing [5] (Determination 2006/119), which found that a s124 notice is justifiable only if the risk of injury or death for people living in the houses is so high that, in the public interest, the building owner cannot be allowed to take that risk and that injury or death is likely in the ordinary course of events (Rogers and Sutton 2018).

5.3.2.2 Framework for Compensation

The Kaikōura District Council worked with Government agencies to address land damage and properties affected by natural hazards as a result of the 2016 earthquake. Work has largely focused on two key groups: properties issued s124 notices prohibiting entry because the rockfall hazard posed a risk to life and properties affected by land damage along Lyell Creek.

Without assistance, Council was not in a financial position to provide financial assistance to affected landowners. In mid-May 2018, the government announced it would contribute an estimated $1.5 million toward addressing natural hazards risk.

On 11 December 2018, Council announced decisions outlining how the available funding would be used to assist those facing intolerable life risk from rockfall. The Council decided the following (Kaikōura District Council 2020b):

- For three of the properties, the risk from rockfall is now considered to be tolerable, meaning that no further action is required.
- For three properties where the affected buildings have suffered extensive damage and the risk can be addressed by rebuilding elsewhere on the property, no further action is required.
- For three properties where uncertainty about whether the level of risk is tolerable remains and there are questions about the practicality and long-term effectiveness of options for protection, the owners were offered financial assistance to retreat from their properties.
- For seven properties where uncertainty about whether the level of risk is tolerable remains but practical and effective options for reducing the life risk to those properties to a tolerable level have been identified, the owners were offered financial assistance to protect their buildings.

Cost estimates suggest that the package will require all of the $1.5 million set aside by the Government. According to the Kaikōura District Council, they:

> *"… took great care in making these decisions, balancing various considerations, including allowing people to move forward; creating good long-term outcomes for the district; and providing timely, pragmatic solutions for addressing the risk to life and property".*

5 Now known as the Ministry of Business, Innovation & Employment.

The decisions followed September meetings with the owners of properties facing intolerable life risk from rockfall and were based on the latest geotechnical assessments and new risk information across the district. All of this feedback and information was considered to come up with pragmatic solutions that balance all of the issues.

5.3.2.3 The Decision-Making Process

To keep decisions about the properties affected by elevated risk from land damage / natural hazards responsible, affordable and fair, Council considered what it wanted to achieve (objectives), who it would apply to (intervention criteria) and how to engage (intervention options) (Kaikōura District Council 2018).

Objectives included:

- Protect people at an unacceptable level or risk from harm and enable property owners and residents to move on.
- Foster certainty for homeowners, residents, business owners and the community about what happens next as soon as we can.
- Ensure the community has greater resilience to future events.

5.3.2.4 Kaikōura District Council Intervention Criteria

Intervention criteria was developed and used to guide Council's work around natural hazards and land damage. If a property met one or more criteria, Council considered intervention options for that property. Three types of intervention criteria were established, including (Kaikōura District Council 2020b):

1. Life safety risks: where people were placed in situations of unacceptable life risk from natural hazards.
2. Land damage: where land was damaged to such an extent that it is no longer fit to be built on or there is a high risk of further land damage.
3. Wellbeing risk: there are no effective or practical options for remediation of damage or avoiding future damage within a reasonable timeframe.

5.3.3 The Planning Policy Response

The Kaikōura District Plan has been operative since 2008 and is currently under a 'rolling review' of each chapter (Kaikōura District Council 2020c). The natural hazards provisions (except coastal hazards) have been prioritised to be reviewed first, because in some areas of the district the level of hazard risk changed following the 2016 earthquake events. Council has updated information on flooding, liquefaction, landslides and active faults in the district, which are not covered in the 2008 District Plan. This information represents the starting point for drafting new rules within the Natural Hazards chapter of the District Plan (Kaikōura District Council 2020a). At the time this report was completed, it was not known what direction the new natural hazards chapter would take.

5.4 Lower Hutt – Public Works Act

The Hutt River is a steep alluvial river that begins in the Tararua Ranges in the north and enters Wellington Harbour at Petone in the south (see Figure 5.11). The catchment is spread over 655 square kilometres, and the 56-km-long Hutt River has a history of flooding. It takes only seven hours for heavy rain at the top of the catchment to turn into floodwaters at the Hutt River

mouth (Greater Wellington Regional Council 2019). The city of Lower Hutt is the most densely populated flood plain in New Zealand. With a history of flooding and the projected effects of climate change, coupled with existing development and associated infrastructure investments, flooding is a complex natural hazard to manage (Te Awa Kairangi Hutt City 2020).

Figure 5.11 Location of the Hutt River, north of Wellington (Greater Wellington Regional Council 2010).

5.4.1 Flood Protection

Lower Hutt city has historically relied on the widespread use of stopbanks to reduce the damaging effects of flooding. It has been projected that a 1-in-440-year flood would cause up to $1.1 billion in damage if the bank burst on the city side of the river, with 2111 houses and 462 commercial properties likely to be flooded. If the other bank burst, 3115 homes and 126 businesses could be affected, with potential damages estimated to exceed $1 billion (Greater Wellington Regional Council 2016a; see Figure 5.12).

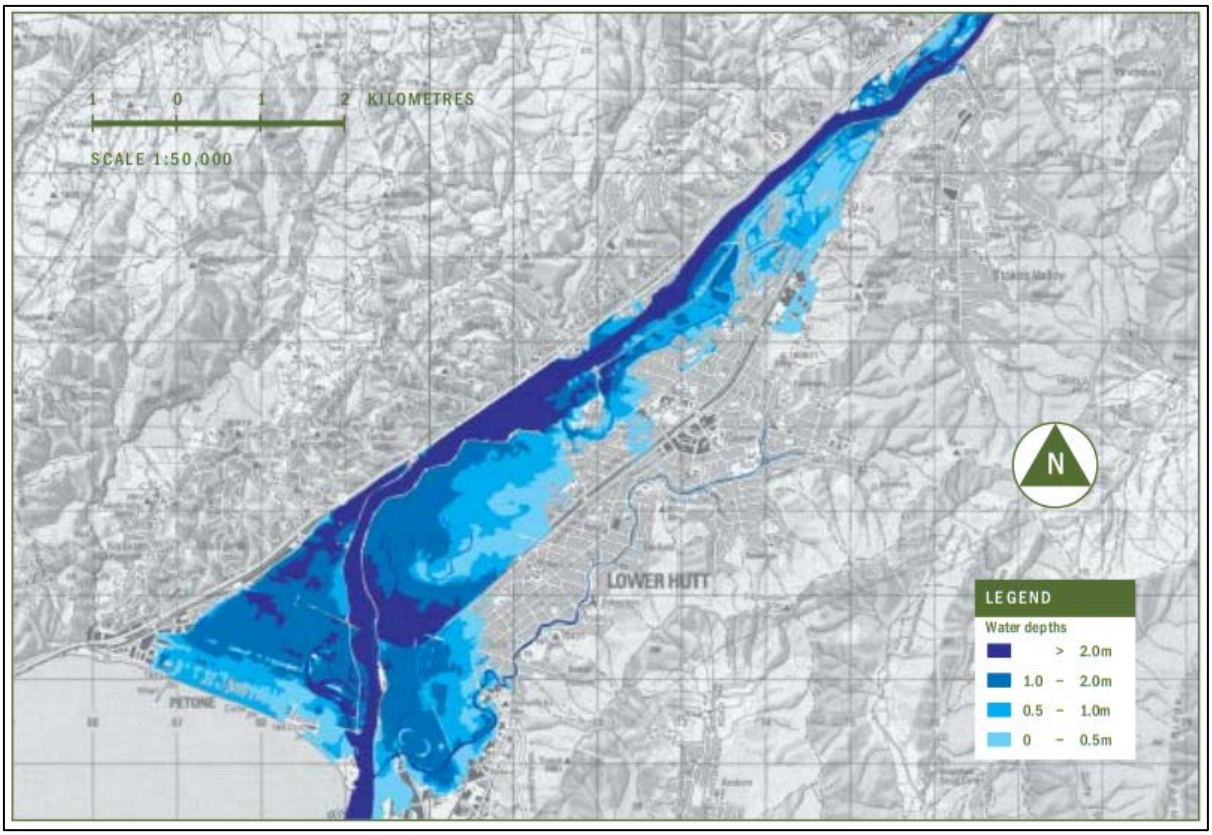

Figure 5.12 Hutt River 2300 m^3/s flood extent (440-year-event) with breaches (Wellington Regional Council 2001, p. 8).

To reduce the risk, in 2016 two risk reduction options were presented to the community as part of the 'RiverLink' Project.[6] These include (Greater Wellington Regional Council 2016a):

1. Option A: Expanding the protective design standard of existing stopbanks to a 1-in-440-year event, which would cost an estimated $143 million. This option would require acquiring 75 properties over the next five years.
2. Option B: Relying on a staged approach, costing an estimated $184 million, of which $114 million would be spent in the near future with the balance allocated over the next 20–30 years. Enhancements to the stopbanks would focus on the city side, followed by upgrades to a 1-in-440-year design standard over a 20-year timespan. The second phase would require the purchase of properties.

During the consultation phase, it was indicated that Council would consider the purchase of any property required to meet the proposed scope of work associated with the stopbank expansion at any time once the preferred option was confirmed, should owners have a desire to sell their property. Figure 5.13 shows the properties required for the river works in red hatch.

6 Greater Wellington Regional Council, Hutt City Council and Waka Kotahi NZ Transport Agency are working collaboratively on RiverLink to deliver three separate but interdependent projects: Flood Protection, Making Places Urban Development Plan, and Melling Transport Improvements (https://haveyoursay.gw.govt.nz/riverlink)

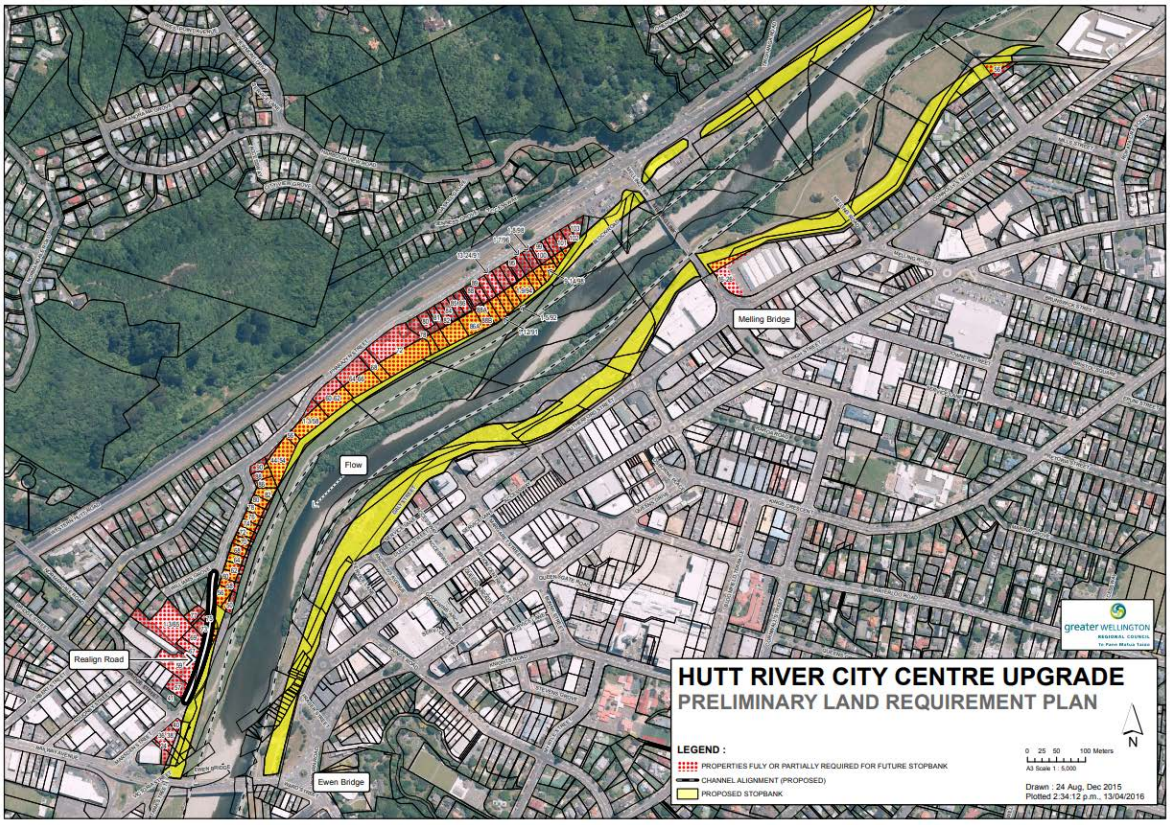

Figure 5.13 Preliminary land requirement plan for properties adjacent to Hutt River (Greater Wellington Regional Council 2016b).

As part of the Hutt River City Centre project, 120 properties would be acquired, comprised of pre-dominantly residential as well as mixed commercial properties (i.e. 19; Heavey 2017). Eighty-eight properties have been acquired to date.

5.4.2 The Property Acquisition Process

In 2017, a 'RiverLink Property Acquisition Strategy' (Heavey 2017) was developed by The Property Group, a property consultancy that advised the Wellington Regional Council on the acquisition process. Their strategy outlines the property interests, property acquisition methodology, strategy, timing, risks and compensatory frameworks. The primary objective of the strategy is the development of a best-practice property acquisition process specifically tailored to the RiverLink project in order to (Heavey 2017, p. 5):

1. Treat property owners in a fair, reasonable and professional manner.
2. Deliver all property requirements in time for construction.
3. Deliver all property requirements within a reasonable and fair cost threshold.
4. Identify and minimise risks associated with the acquisition process.
5. Identify priority properties and actions.
6. Provide key dates and actions required to implement and deliver strategy objectives.
7. Align with past commitments and build on existing relationships with affected property owners.

The recommended acquisition method is grounded around good faith negotiations, based on the compensatory provisions of the Public Works Act. If needed, a comprehensive Public Works Act compulsory acquisition programme is available in a parallel process (Heavey 2017).

The acquisition process for the proposed flood protection works was first initiated as a voluntary process, which at the time of writing, would be completed under the Public Works Act, if required. Local authorities have the right to acquire land for public works projects. In this case, the Wellington Regional Council serves as the lead authority.

Negotiations are being undertaken between the council and property owners in which a market value of each home is agreed upon. If an agreement cannot be reached, the council is legally entitled to make a compulsory acquisition, but only after it has made all reasonable endeavours to negotiate in good faith the sale and purchase of the land. The Environment Court can hear objections from owners about land being taken but not on compensation disputes (Chapman 2015).

The Lower Hutt acquisition process for the RiverLink project was guided by five key objectives, as outlined in Bognar (2016):

- **Objective 1** – Acquire all property required for delivery of the project within the project timeframe. This will be achieved through:
  - ensuring all project property requirements are captured within the land requirement plan in the Notice of Requirement (NoR) / designation
  - engagement of a suitably qualified and experienced property acquisition service provider(s)
  - the purchase of properties from those owners who wish to sell early on a willing-buyer-willing-seller basis through 'good faith' negotiations, and
  - timely commencement of formal Public Works Act processes (for compulsory acquisition) for those owners who are unwilling to sell.
- **Objective 2** – Properties acquired early to be managed efficiently to maximise holding return. This will be achieved through:
  - keeping properties tenanted for as long as is possible;
  - prudent management of property maintenance expenditure – minimise expenditure while maintaining a reasonable standard for tenants and neighbouring owners and preserve resale/disposal values of improvements; and
  - the outsourcing of property management to specialist residential and commercial management company(s).
- **Objective 3** – Maximise outcomes (financial returns / future land use) from disposal of surplus land and/or improvements. This will be achieved through:
  - considering options for disposal of improvements and selecting the optimum method (e.g. one contract, bundled contracts, one-by-one);
  - promoting re-use of buildings, structures and landscape materials where possible; and
  - potential district plan changes (re-zoning) of surplus land to meet long-term commercial and/or community objectives (e.g. 'Making Places').
- **Objective 4** – Achieve fair and reasonable outcomes for property owners and Council. This will be achieved through:
  - building trust by treating all landowners openly, fairly and consistently;
  - engaging in ongoing good quality communication; and

- showing empathy while also recognising that Council has responsibility to the wider ratepayer community to be fiscally prudent.

- **Objective 5** – Encourage businesses/employers whose properties are required for the works to re-establish their operations elsewhere in the Hutt Valley. This will be achieved through:
  - Hutt City Council funding of professional property advisors to assist with the sourcing of alternative land or premises and assist with business relocations
  - the remission of fees and fast-tracking of building and/or resource consents relating to relocation of businesses to new premises in the Hutt Valley, and
  - the consideration of changes to zoning and/or district plan rules to encourage business relocations within the Hutt Valley.

At the time of writing, acquired buildings were in the process of being demolished and voluntary negotiations were still underway.

6.0 CHALLENGES IN THE ACQUISITION PROCESS

Internationally, observed challenges include that (Smith and Saunders, submitted):

- complex acquisition programmes and policies often hinder purchase of contiguous properties;
- prescriptive, institutionalised acquisition policies often fail to address local needs and conditions;
- rapid, post-disaster acquisition processes can hinder public engagement;
- poor linkages between land-use planning and acquisition programmes often lead to sub-optimal outcomes spanning key elements across the overall property acquisition process;
- inconsistent development of open-space management strategies leads to varied outcomes.

In Aotearoa New Zealand, there is no standardised disaster-based hazard mitigation funding programme for property acquisition. This has the benefit of significant planning often being undertaken prior to enacting buyouts. When funding is made available, it is often created as part of a one-off process rather than as an institutionalised set of hazard mitigation programmes like those found in the United States. In most cases, this allows the national government to develop more flexible post-disaster buyout programmes that reflect local conditions and address well-documented programme elements.

However, we do suffer from poor land-use planning mechanisms to achieve risk reduction through property acquisition and a lack of pre-planning frameworks for the land once acquired (i.e. regeneration planning). More specific challenges relevant to Aotearoa New Zealand are outlined in the following subsections.

6.1 Lack of National Guidance on Levels of Risk

No formal central government guidance exists as to what is an acceptable or intolerable level of risk for loss of life. For councils needing to manage ‘significant risk’ from natural hazards (as required under the RMA), this is a critical gap in national policy. As noted by an interviewee, “National guidance on risk levels would have helped with a decision framework”.

To fill this gap, the Whakatāne District Council needed to rely on consultant advice and other guidance once they had determined the risk levels for Matatā (annualised loss-of-life risk levels ranged from 10^{-2} to 10^{-6}). After undertaking an international literature review of guidelines, they applied the Australian Geomechanics Society guidance (2007; internationally accepted guidance) to determine what was unacceptable. This was then peer-reviewed twice, leading to the finding that the modelled debris flow risk had been underestimated. The amount of consultant research and methodological decision-making resulted in costs that could have been avoided if there was national guidance on determining levels of risk and what risk levels are appropriate.

Similarly, in the Port Hills in Christchurch, levels of life-safety risk from slope instability had to be developed using international best-practice methodologies and refined for Christchurch. Following a set of standards that were ultimately developed, risk-based maps were created and included in the district plan, as outlined in Section 4.1. While the Christchurch and Matatā examples can be seen as precedent setting approaches, a full review and framework need to be developed at a national scale to provide certainty, lower costs and inform decision-making.

This will arm local governments with information that can be used to develop a sound relocation strategy and expedite the acquisition of hazards-prone housing when a decision is made to do so. This approach also requires access to the finances required to implement proposed acquisition strategies, as described in the next section of this report.

6.2 Securing Funding

One of the biggest challenges facing the Whakatāne District Council (who were leading the plan change and property acquisition process in Matatā) was securing funding from the regional council and central government to assist with paying for the voluntary acquisition programme. Funding was confirmed in July 2019, and the 14-year delay hindered decision-making by the Council and residents, creating a great deal of uncertainty. It was noted that:

> *"If it was an isolated property, it is manageable for a council to buy, but as in this case, when there are a lot of properties, a small provincial council simply cannot afford to purchase them due to the wider impacts on the community."*

In contrast, the Christchurch acquisition scheme was put in place within months of the earthquake, which allowed decisions to be made quickly by some homeowners who wanted to sell their properties. Led by central government, due to the large number of properties, there was a significant impetus among homeowners to sell their property, given repeated aftershocks that resulted in more liquefaction and landslides.

Kaikōura required funding for the acquisition of three properties and to assist in protecting seven additional homes. Despite a $1.5 million government contribution toward addressing natural hazards risk after the earthquake, the financial contribution to protect these 10 buildings was estimated to require the entire $1.5 million government offer, leaving little for other risk management priorities.

In the Hutt, the regional council paid for acquisition of properties through the Long Term Plan process (i.e. ratepayers). While the Council has borrowed funds for the process, it is also getting financial returns from commercial leasing of property, with an up to 10% return. While not profit driven, the interest costs are covered by the short-term return until the physical project begins. In January 2020, the New Zealand Transport Agency (NZTA) confirmed that co-funding was available due to an adjacent roading project that also needed land. The next stage is for the Council and NZTA to agree on how the cost of acquisition will be divided up for the properties that NZTA require. Provisions are available under the Public Works Act for land to be transferred from one agency to another without requiring valuations, etc.

6.3 Keeping Communities Together

The wholesale relocation of communities is difficult to achieve, even in small communities. For example, in Matatā: "Some are relocating within community, others are moving out. Not a lot are staying in Matatā, some are, but not a lot." Finding adequate land for relocation was a challenge, for example: "… it was hard to find 'safe' land free of other hazards, and cultural issues it was not possible. No land swap available, so a payout option was required." An additional challenge facing officials and Matatā residents is the reality that potential participants in the buyback process are at different points in their life, thereby requiring tailored strategies. According to one official: "Fourteen years after the event, several have retired and moved into rest homes."

Similarly, in Christchurch, communities did not stay together, although this was not one of the objectives of the red zoning: "… it was never the intention to have mass relocation … The intention was to provide certainty for landowners and to allow people to move forward". The timing of when people took the voluntary compensation package may have affected where they went and what options there were at the time to move elsewhere. For example, there were trends of immediate availability and pricing of housing stock in Christchurch – in the intervening years when demand was high and the prices matched and then in later years when new subdivisions were developed out west, which assisted with supply. A common occurrence among communities involved in a voluntary acquisition programme is the uneven participation of residents. This can lead to 'checkerboarding', where some eligible homeowners choose to stay, resulting in a scattered distribution of developed and vacant lots across the landscape. Due to the nature and extent of the land instability, this occurred in the Port Hills in Christchurch and, to a lesser extent, in Kaikōura. While the community footprint may remain, the community may lose members. The resulting vacant land can be difficult to manage, particularly when they are interspersed among remaining housing and public infrastructure. At the same time, infrastructure and public services need to be maintained. The provision of public services can become increasingly problematic as the local tax base is reduced when houses are acquired and converted to open space. Furthermore, the 'dilution' of community may have detrimental long-term consequences, as a vacant section represents a constant reminder of the past and a neighbourhood's sense of community is degraded. Ideally, these issues are contemplated and planned for in advance. In reality, this is uncommon and, when housing acquisition programmes are undertaken following a disaster, the speed with which they occur is often the primary metric of success rather than recognising the importance of thoughtful deliberation needed to create a comprehensive plan of action.

In the Hutt, some people did not want to leave and felt increasingly isolated as parts of the community relocated. Some decided to stay in their houses as renters once the acquisition process had been undertaken to give themselves time to find another property. A number of people moved away from the Hutt Valley to communities 'over the hill' in the Porirua suburbs of Whitby and Aotea.

6.4 Speed of Process

Christchurch's voluntary acquisition programme commenced very quickly (within four months of the February earthquake), due in large part to the enactment of the Canterbury Earthquake Recovery Act. As a LINZ staff member noted, the compensation package offered: "… was not social welfare but payout for land. The purpose of the red zoning was to make offers to those affected. It was not for Resource Management Act purposes, but for buy backs."

In contrast, Matatā's process was drawn out, as the local council grappled with managing the risk under the RMA and Building Act, with little support from central government. As noted by a Council staff member: "Fourteen years since the event happened; it's way too long. The long timeframes have not made it easier; a shorter timeframe would have made managed retreat discussions easier."

Kaikōura's confirmation of acquisition for three properties took just under two years after the earthquake, which is deemed relatively fast compared to the other case study areas, albeit with much lower numbers of properties. The process in the Hutt started in 2016, and, by August 2020, 88 of 120 properties had been acquired, with the flood mitigation project due to start in 2025.

6.5 Demolition, Deconstruction or Relocation of Buildings

Once homes are acquired, a decision needs to be made on which of three options will be followed: either their relocation, deconstruction or demolition. Due to the amount of homes being acquired in Christchurch, several issues arose which informed the demolition, deconstruction or relocation options. Relocation and demolition options were implemented, based on a number of factors outlined in Table 6.1:

Table 6.1 Factors that determined demolition or relocation of houses.

Factor	Description
Age of building	New building standards meant many old building materials were no longer up to building code requirements.
Building materials	Many older homes had asbestos, which required strict health and safety measures for removal.
Availability of land	Many new subdivisions had covenants that did not allow for relocatable homes.
State of the market	The market was flooded with homes, which made deconstruction uneconomic.
Economics	Availability of land for relocation, connection of services (i.e. cheaper to rebuild).

Sorting facilities were arranged for salvageable items, and clean concrete went to the Port of Lyttleton for a reclamation project, whereby the material was used as fill to expand port operations. In addition, wood from houses demolished in Christchurch were re-purposed for a range of activities, including public and private art and other uses. For example, Figure 6.1 shows a commissioned artwork made from timber salvaged from demolished houses in Christchurch and is displayed at GNS Science head office in Avalon, Lower Hutt.

Figure 6.1 Timber salvaged from demolished houses in Christchurch transformed into art depicting the earthquake events (Photo credit: WSA Saunders).

In Matatā, the houses were either acquired and demolished, relocated or deconstructed. The council's and property owner's preferences were to see houses re-used rather than demolished. Of the 12 properties the council has acquired, two have been demolished and the rest relocated (the two-storey buildings have had the top storey relocated and the ground floor deconstructed). Figure 6.2 shows a house being prepared for removal.

Figure 6.2 House in Matatā being prepared for relocation (Photo: G Smith).

6.6 Relocation of Owner-Occupier Commercial Activities

In the Hutt, a third of the properties needing to be acquired for flood management purposes were commercial. This posed some specific challenges for the Council attempting to relocate the owner-occupier businesses (tenanted businesses are on fixed term leases). With assistance from the Council, owner occupiers need to identify another building and space to relocate their business, which can be challenging due to the type of commercial activity and trying to find a comparable property in the current market. The business runs the risk of losing profile, losing a good location (e.g. close to the state highway) and being separated from their customer base. If an appropriate and comparable location cannot be found, the Council may need to buy the business outright and close them down, which is not a good outcome for either the business owner, the Council or the wider community. An example of the challenge being successfully met is PetVet, a veterinary practice that relocated to a new purpose-built premise not far away from the original location.

6.7 Regeneration Planning

Regeneration planning strategies involve thinking through appropriate use of the resulting open space following the acquisition and demolition or relocation of hazard-prone housing. In the case of Matatā, it was deemed insensitive to the residents to start making formal plans for the use of the land before settlements had been reached and prior to the plan changes being progressed. Engagement has commenced with those that own or owned land and sold it to the council and with the local iwi on plans for the design of the area, including a new landscaped western entry into the Matatā township.

In Christchurch, very little regeneration planning for the Port Hills has taken place due to the scattered nature of the acquisitions. This ‘checkerboarding’ of acquisition properties made it difficult to create a cohesive plan, as the properties were distributed within the existing community. In contrast, the flat land along the Avon River did have a comprehensive plan developed, the 2019 Ōtākaro Avon River Corridor Regeneration Plan (as outlined in Section 4.1.3).

A visually pleasing document (Figure 6.3), the plan's contents includes a vision and objectives, future land-use options and how the regeneration plan will be phased over time. The vision and objectives are formed around (Regenerate Christchurch 2019):

- practicing mahinga kai[7]
- regenerating nature
- connecting and involving communities
- creating prosperity
- providing a destination for all
- living with water, and
- creating a living laboratory.

Figure 6.3 Cover of the Ōtākaro Avon River Corridor Regeneration Plan (Regenerate Christchurch 2019).

In Matatā, while the acquisition process is not yet complete, the remediation design process has been developed. The design process focuses on a collaborative approach with mana whenua, affected landowners, the Matatā community and Whakatāne District Council. The approach establishes agreed-upon steps throughout the design process (see Figure 6.4) to identify and express heritage, cultural value, community value, environmental values and amenity values (Boffa Miskell Limited, date unknown).

7 For Ngāi Tūāhuriri and Ngāi Tahu, mahinga kai is an important concept that can be described as the places where natural resources are obtained and the philosophies and practices that surround them. Mahinga kai means to work (mahi) the food (ngā kai) and refers to the seasonal migration of people to key food gathering areas during the summer, where they would gather and prepare natural resources to sustain them through the colder months (Regenerate Christchurch 2019, p. 26).

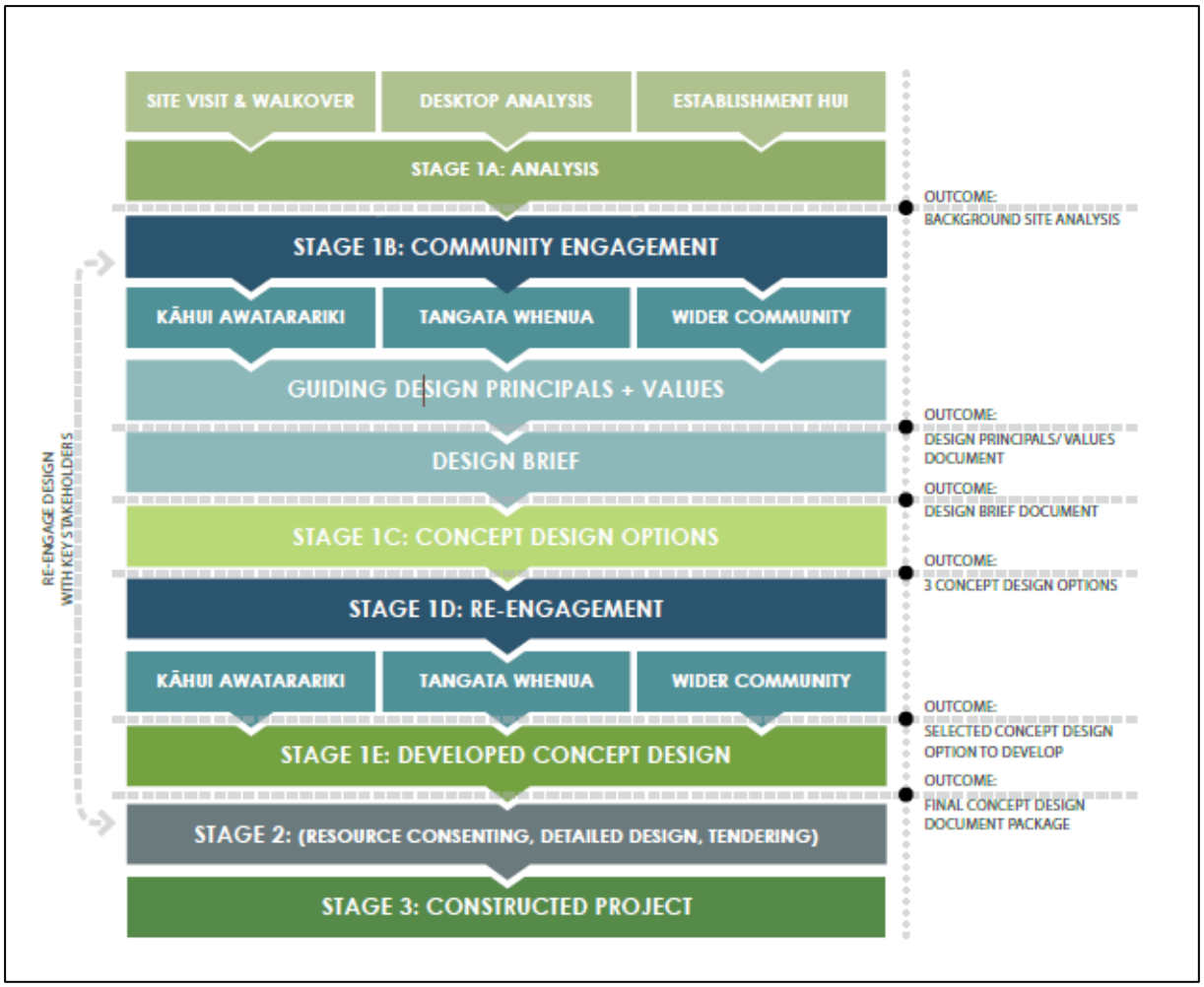

Figure 6.4 Awatarariki Remediation Design Process (Boffa Miskell Limited, date unknown).

The focus of the process is to ensure that all involved understand and contribute to capturing and expressing (Boffa Miskell Limited, date unknown):

- clear understanding of project brief
- clear expectations of project scope
- debris event history
- heritage values
- cultural values
- environmental values and condition
- community aspirations
- vision for Matatā community 'way of life'
- funding availability, and
- project objectives and principles.

The project centres around the community and tangata whenua participants and their aspirations for their community. The main design objective is to create ownership through the process for the eventual design outcome (Boffa Miskell Limited, date unknown). Appendix 3 shows the engagement process associated with the design process.

7.0 LESSONS FOR FUTURE ACQUISITIONS

A number of important lessons are captured in this report. This represents a good start on a larger recommended strategy intended to inform the buyout processes undertaken in Aotearoa New Zealand and the United States. Common lessons include a good team, having a robust and transparent process and timeliness of decisions. Not only is guidance needed to consolidate these lessons, it is important to develop a method to transfer these lessons to practice in order to account for changes in staff over time and the development of an organising mechanism to share and institutionalise lessons at national, regional and local levels of government. The research literature shows that lessons identified post-disaster are often not actually learned but rather documented and then largely forgotten. To do otherwise requires a focused approach, outlined in Appendix 4.

Only three properties were purchased in the Kaikōura case study, so no analysis of lessons has been undertaken to date due to the small sample size.

7.1 Christchurch Lessons

CERA has documented eight lessons, which are summarised below and reproduced in full in Appendix 4 (CERA 2016). A key lesson from CERA is that social recovery policy is personal:

> *"the CERA zoning and red zone offer policy affected people at a more local level than much central government policy normally would, in what was for many the most challenging time in their lives"* (CERA 2016, p. 20).

1. **It takes a special kind of team** – taking the time to set up the right team from the start is important.
2. **There is no instruction manual for recovery policy** – unlike developing public policy in 'business as usual' conditions, developing recovery policy has its own unique challenges.
3. **Achieve a positive recovery for as many people as possible**.
4. **Prioritise the process for providing advice to ministers** – while CERA was under incredible time and resource pressures, tensions were experienced between processes designed for business as usual and the disaster recovery context.
5. **Communication is critical** – communicating such deeply personal information to the public was a huge challenge and was learnt as CERA went.
6. **Community engagement is vital to your strategy** – make community engagement absolutely core to the programme.
7. **Collaboration builds a greater collective understanding for all involved** – engage early, value the relationships, involve community leaders and bring partner agencies along through the process.
8. **Use a planned, adaptive community engagement approach** – start with large-scale meetings and then, over time, focus on smaller groups.

7.2 Matatā Lessons

While the Matatā case involved a smaller number of people at risk, they faced a much longer process. A number of lessons have become apparent for the lead Council staff member involved in the 15-year process. These include:

- **Relationships** – having a good relationship with professional colleagues and landowners is vitally important. Council staff have known the landowners since 2005, including several properties that have changed hands over the time. Being respectful and ensuring the dignity of the residents was a central focus of the process.
- **Robust and transparent process** – emphasis was placed on creating and maintaining an open and communicative process. A lot of thought went into the development, testing and reviewing of processes so that delivery was efficient and equitable.
- **Quality assurance** steps were incorporated into process. This included an acquisition panel responsible for final approval of all purchases. The panel includes the Chair of the Council's Audit and Risk Committee, the former CEO of Christchurch City Council (who reports to Department of the Prime Minister and Cabinet) and an ex-Assistant Auditor General. The Panel added a layer of robustness to the acquisition process, as well as providing confidence to the three funding partners.
- **Timeliness** – the time taken from the initial debris flow event to the acquisition of property and associated plan changes took too long, which had an adverse impact on all those involved. These delays were in part caused by changing technical advice and the lack of guidance around developing and implementing a natural hazard risk management framework involving managed retreat.

7.3 Lower Hutt Lessons

The Lower Hutt flood management works have been well planned, with an associated communications strategy. Notwithstanding that the acquisition process is still underway, lessons to date include:

- **Commitment** – the acquiring agency needs to be committed to the process; they need to be able to purchase a property quickly if someone wants to sell.
- **Confidence in decision makers** – in this case, the Chief Executive Officer of the Wellington Regional Council could approve the property acquisitions rather than the full Council. This was enabled by having a good transparent and robust approval process, substantiated with many reports.
- **Timeliness** – quick decision-making and delegated approval processes are important to keep the process progressing.
- **Teamwork** – it is important to have a consistent team to ensure continuity who work well together and can provide clear and consistent messaging.

8.0 CONCLUSION

Aotearoa New Zealand is a very dynamic, geologically active country surrounded by oceans that will continue to be impacted by significant events, both weather-related and geologically triggered. As climate-change impacts increase the magnitude of many events, we need to assess and investigate the challenges and opportunities associated with the acquisition of hazard-prone property. Property acquisition should be used as a last resort. Ideally, good land-use planning should proactively locate activities out of significant hazard areas or identify additional mitigation measures to reduce the consequences of extreme and less severe events. However, legacy planning issues of the past, along with improved knowledge of our hazardscape, will result in the need for hard conversations and pre-event planning for the thoughtful application of varied risk-reduction techniques. It also requires recognising that the majority of housing acquisition programmes occur in the aftermath of disasters and creating a national strategy that accounts for pre-event planning for proactive and reactive hazard-prone housing programmes makes sense to include integrating this approach with existing legislative mechanisms that already exist, such as those described in this report.

Four legislative mechanisms that enable property acquisition have been outlined in this report. They include special legislation (CER Act in Christchurch), the Resource Management Act 1991 (Matatā), the Building Act 2004 (Kaikōura) and the Public Works Act 1981 (Hutt City). Each have their own nuances and objectives: to enable recovery (Christchurch), to change existing use rights and re-zone land under the Resource Management Act (Matatā), to reduce the risk of dangerous buildings (Kaikōura) or to extend a stopbank (levee) as a public work (Hutt City).

Voluntary acquisition programmes are favoured over compulsory acquisition. Notwithstanding this, six key challenges have been highlighted:

1. There is a lack of national guidance on the acquisition of hazard-prone housing, which results in inconsistencies in post-event policy formulation.
2. Securing funding, which is required to implement buybacks, remains an ad-hoc process, which hinders planning for these eventualities.
3. Keeping communities together as part of a buyback process and the merits of such an approach vary depending on local conditions, including the desire of residents to do so.
4. Speed of process is often viewed as the primary metric of success, yet successful acquisition projects take time to develop and implement (although, increased time does not automatically lead to better outcomes).
5. Demolition, deconstruction or relocation strategies have an important but often under-developed part to play in the overall planning process.
6. Regeneration planning needs to be well-programmed to include recognising physical and social elements in associated design strategies.

Lessons from CERA have been well-documented. These lessons need to be reviewed and compared with other experiences, such as those at Matatā, Hutt City, Kaikōura and other examples as identified, to provide a comprehensive list of cases that exemplify varied approaches and to include the level of national and subnational financial commitments, as well as planning and policy choices. As the acquisition of hazard-prone housing becomes more ubiquitous and efforts are made to capture associated lessons, each case should document associated local context, drivers, community engagement and options chosen.

8.1 Recommendations

Internationally, Smith and Saunders (submitted) have recommended the following actions going forward:

- develop guiding principles for the acquisition process;
- improve pre- and post-disaster planning for housing acquisition;
- develop a hybrid version of the United States and Aotearoa New Zealand programmes that simplify and streamline acquisition programmes, which include flexible and adaptive approaches that recognise unique local conditions and needs while providing a predictable source of funding needed to develop and implement housing acquisition projects;
- improve planning processes across the lifespan of the property acquisition system to include the wise management of acquired land; and
- improve international lesson-drawing and institutionalise results.

In addition to these recommendations, the following Aotearoa-New-Zealand-based recommendations are intended to improve the acquisition process for communities and councils who find themselves needing to implement this risk reduction management option:

- A full review of property acquisition examples across hazards in Aotearoa New Zealand, is required to understand the different legislative challenges and opportunities, principles, extent of acquisitions, processes and outcomes.
- Lessons identified from different experiences should be collated into a comprehensive report that is regularly updated to inform policy changes and guidance, including needed modifications to existing legislation such as RMA reform, Building Act determinations and the post-event programmes developed to confront major disasters like those occurring in Christchurch.
- National policy and associated guidance should be developed to improve hazard-prone property acquisition processes. This should include whether levels of risk are focused on life safety and/or destruction of property or livelihoods or based on physical and social vulnerabilities as well as a framework for developing pre-event guidelines and procedures. In addition, the appropriate national ministries should consider the potential development of a national funding mechanism to pay for some of the costs associated with this important risk reduction and climate-change adaptation technique.
- The Ministry of Business, Innovation & Employment (the administrative body of the Building Act) should provide further guidance on the use of the Building Act to reduce risk.
- Programmes should be readily accessible to all at-risk property owners in an area.

8.2 Further Research

This initial scoping research has raised several areas where further research is required to gain a greater understanding of the property acquisition process, challenges and opportunities. These areas need to be explored further within the context of Aotearoa New Zealand, but also internationally:

Principles of Land Acquisition:

- Investigate international obligations for equity, risk reduction, fairness and good outcomes, e.g. Sendai, Sustainable Development Goals and relationship to Treasury's Living Standards.
- Explore how indigenous rights can be included in any principles developed.
- Develop principles of housing acquisition, drawn from a global assessment of best practices.

Case Studies:

- Conduct more in-depth assessment of housing acquisition programmes in the United States and Aotearoa New Zealand at the community level, building on preliminary work done to date. Specific to Aotearoa New Zealand, these include:
  - a comparison case study of Edgecumbe acquisition process for flood management purposes, and
  - a longitudinal study of regeneration of land.

Governance Arrangements:

- Further investigate the legalities of different mechanism options for property acquisition to achieve a reduction in risk.
- Explore different funding frameworks that could be applied.
- Consider timeliness of decision-making and how this affects outcomes.
- Plan for the regeneration of land.

People-Orientated:

- Investigate the 'dilution' of community through checkerboarding to see if there are detrimental long-term consequences (i.e. a vacant section being a constant reminder of the past, adjacent property valuation, community-level economic impacts).
- Ensure community input into the future use/management of acquisitioned land.
- For those that have been involved in an acquisition process, consider where they go and their experiences, challenges and personal outcomes.
- Evaluate the engagement process.

Contribution to Knowledge:

- Develop an international learning lab between New Zealand and United States organisations focused on the acquisition of hazard-prone housing.
- Write a textbook focused on an international comparative study of housing acquisition and resettlement programmes.

9.0 POSTSCRIPT – PLANNING REFORM

During the final review process of this report (29 July 2020), the Ministry for the Environment released the report 'New Directions for Resource Management in New Zealand' (Resource Management Review Panel 2020). This report is the result of the most significant, broad-ranging and inclusive review to take place within the planning system since the RMA came into force in 1991. The review process was an opportunity to design a new system for resource management in Aotearoa New Zealand that delivers better outcomes for our environment, society, economy and culture. A large number of recommendations are made that will re-orient the planning system to focus on delivery of specified outcomes, targets and limits in the natural and built environments. One of these recommendations is directly relevant to this research.

Recommendation 7 from the Climate Change and Natural Hazards section (Chapter 6): (Resource Management Review Panel 2020, p. 191), states that:

> *"A Managed Retreat and Climate Change Adaptation Act should be introduced to:*
>
> *i) provide for managed retreat, powers to change established land uses and to address liability and options for potential compensation*
>
> *ii) establish an adaptation fund to enable central and local government to support necessary steps to address climate change adaptation and reduction of risks from natural hazards."*

This implies that there will be improved policies developed for managed retreat and compensation to reduce risks.

A very comprehensive and lengthy document, there has not been the time to include an assessment, analysis and discussion on the implications of this recommendation within this report. However, as the next step in the reform process will be consultation to develop government policy and the form of future legislation, the continuation of this research will provide a valuable opportunity to further understand and improve the process and inform any future policy development.

10.0 ACKNOWLEDGMENTS

We would like to thank all those who agreed to be interviewed for this project and for their time in reviewing the report, as well as Sarah Beavan from the University of Canterbury for her time to take us through the red zone. The research based in Aotearoa New Zealand was funded through the MBIE 'Earthquake Induced Landscape Dynamics' Endeavour Programme and through the EQC Champion of Land Use Planning for Natural Hazards position.

In writing this report, our thoughts are with the people of Canterbury, Kaikōura and Matatā who have experienced earthquakes, landslides, liquefaction and debris flow. They were traumatic events for many in each community and for council staff, with substantial loss of property, livelihoods and, in the case of the Canterbury earthquake sequence, life. Many have experienced ongoing difficulties during the long recovery process following each of these events. We acknowledge these past and current communities, and our thoughts are for their future. We hope our reflections can help other communities and councils, now and in the future, to reduce the likelihood of experiencing similar traumatic events.

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APPENDICES

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APPENDIX 1 INTERVIEW PROTOCOL AND QUESTIONS

Semi-Structured Interview Protocol:

Comparative Study of the Acquisition of Hazard-Prone Housing

Thank you for agreeing to talk with us today.

My name is Gavin Smith and I am a professor at North Carolina State University. I am leading a pilot study that seeks to draw lessons from other countries that have undertaken the process of acquiring and, in some cases, relocating hazard-prone properties in order to reduce future risk from natural hazards and disasters. Key elements of this study include gaining a better understanding of both the acquisition and the relocation process.

Wendy Saunders, a Senior Hazards and Climate Adaptation Planner at GNS Science, Lower Hutt, New Zealand, is part of the research team and will be joining with me in the New-Zealand-based interviews.

As part of this study, we are interviewing local, regional and central government representatives to gain an understanding of the different processes that have been followed in the acquisition and relocation of hazard-prone communities.

In order to capture your remarks, we'd like to record our conversation if that's okay with you.

While the acquisition and relocation of hazard prone homes can be contentious, you are not expected to delve into political elements of the process and this pilot study does not seek to do this. Nor do we seek to discuss any topic that may harm a person's reputation.

If issues come up in our conversation that are deemed politically sensitive or may harm a person's reputation, I will steer our conversation back to a set of broader questions we plan to ask you. In addition, you are welcome to say that you do not want to discuss specific issues you see as politically sensitive or may harm a person's reputation.

The questions posed here today will be used to help our research team identify broad lessons and inform the selection of communities in which we plan to conduct a more in-depth study.

You are under no obligation to answer any question and may discontinue your participation at any time.

Understanding the Acquisition Process

First, we'd like to understand the process undertaken to acquire the homes in your community.

Please describe the general approach taken to acquire the properties.

Who was responsible for the overall management of the process?

What types of funding were used to finance the acquisition and demolition of homes (i.e. who paid)? Note: examples may include national, state, local, homeowner, insurance proceeds, a combination of funds, other.

What other resources were used, beyond the funding just discussed? (mention examples if needed: e.g. data and analysis, technical experts, local knowledge, use of locally respected individuals to encourage participation).

How was the public involved in the decision-making process associated with acquisition?

Were efforts made to encourage a community-wide acquisition process? If yes, please describe.

PROBE: Do you think these efforts were successful?

Did some homeowners choose to remain? If so, why do you think this was the case?

What was done with the land following the acquisition of the homes?

Was a plan written to address the question of open space management? If yes, do you know what it was called?

Approximately how long did the acquisition process take, from the precipitating event to the completion of the project?

What were some of the challenges associated with the acquisition process?

PROBE: How were they addressed?

Were steps taken to speed up the acquisition process? If YES, please describe.

What acquisition-based lessons do you think are worthy of capturing?

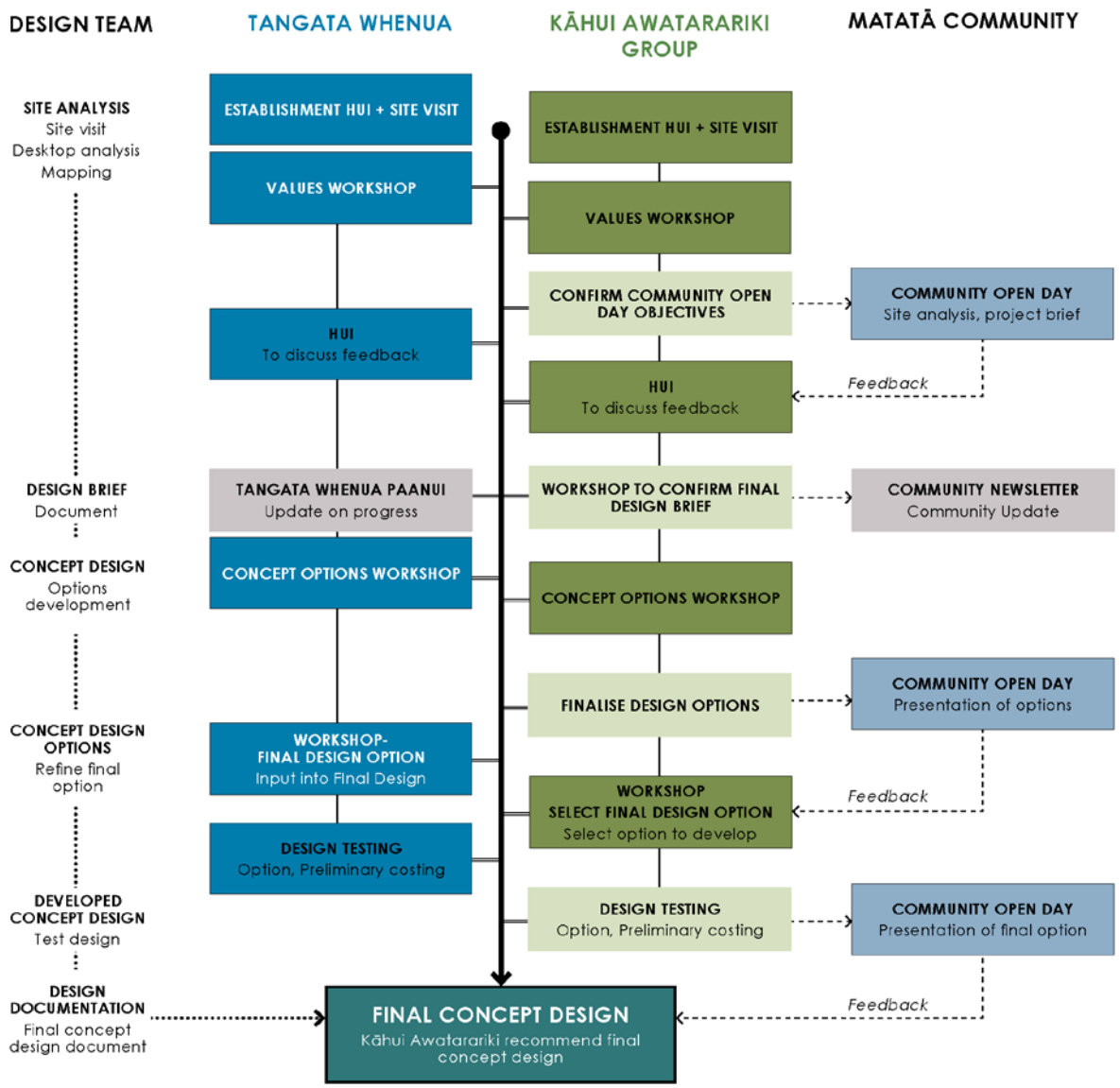
PROBE: This may include successes as well as actions that could have been done better.

Did those tasked with the acquisition programme develop procedures to transfer the lessons learned to others? If yes, please discuss.

APPENDIX 2 CHRISTCHURCH DISTRICT PLAN REVIEW TIMELINE

(Christchurch City Council c2020b).

APPENDIX 3 AWATARARIKI REMEDIATION DESIGN ENGAGEMENT PROCESS



(Boffa Miskell Limited [date unknown]).

APPENDIX 4 CANTERBURY EARTHQUAKE RECOVERY AUTHORITY DETAILED LESSONS

CERA has documented eight lessons (CERA 2016), the key one being that social recovery policy is personal: the CERA zoning and red zone offer policy affected people at a more local level than much central government policy normally would in what was, for many, the most challenging time in their lives

Lesson 1: It takes a special kind of team

Taking the time to set up the right team from the start is important. That team includes:

- Authentic leaders who are not afraid to make tough calls and who are empowered to do so.
- Staff with resilience, innovation and agility, who are willing to push 'traditional boundaries'.
- Public policy experts who understand government systems and can navigate them quickly.
- Technical experts who can assist with the policy advice – such as geotechnical and insurance experts and legal and community engagement specialists.
- Staff who are committed to see the work through and to build strong institutional knowledge.
- Staff who can build and maintain strong relationships both within the organisation at all levels (up, down and across) across both key institutions and the community.
- Staff who can relate to the realities of the situation and who understand and are committed to the disaster area and, where possible, are located in the disaster area or city.

Lesson 2: There is no instruction manual for recovery policy

Unlike developing public policy in 'business as usual' conditions, developing recovery policy has its own unique challenges.

- Disaster recovery is situation-specific. CERA had few, if any, directly applicable international or national parallels to draw upon to develop the policy response, so we had to develop policy from scratch.
- Recovery objectives and priorities will always depend on multiple factors, such as the scale of disaster, economic and financial situation (private and public), social impacts and capability to respond (private and public). Likewise, those factors will shape trade-offs between individuals and groups, areas, community and national interests, etc.
- Expect timing and resource constraints and an incredibly dynamic environment.
- Provide ministers with timely, free and frank advice based on good information. In our experience, that was always better than taking more time to provide advice based on perfect information.

Lesson 3: Achieve a positive recovery for as many people as possible

- You will need to make tough trade-offs between both individual/personal circumstances and community needs, including costs, health and wellbeing and the need for timely, pragmatic policy responses.
- Be as open and transparent as possible and seek to understand people's situations.
- Put a system of psychosocial services and supports in place to help affected communities.

Lesson 4: Prioritise the process for providing advice to ministers

While CERA was under incredible time and resource pressures, we experienced tensions between processes designed for 'business as usual' and the disaster recovery context.

- Make decisions very early on about the policy development process, in particular, the scope for and level of consultation as part of the policy development.
- Understand the legal framework ministers are operating within.
- Consistent, regular communication is vital, but there are inevitably constraints on how much consultation is possible when the public is seeking urgent answers and people are suffering.
- Throughout the process, communicate clearly about and document the context and rationale. For CERA, doing so meant that, when decisions were challenged in court, we had the information about the context available for the courts to consider.

Lesson 5: Communication is critical

Communicating such deeply personal information to the public was a huge challenge, and we learnt as we went.

- Present information about important policy decisions in a range of different ways and by the right people.
- In interactions with those affected by these policy decisions, include listening and engagement rather than just having officials transfer information to members of the public.
- Communicate information within the context of the 'big picture' of recovery and recovery objectives.
- Anticipate technical issues that can disrupt communication and try to inform those affected by decisions before public announcements of those decisions.
- As the court proceedings highlighted for us, it is important to be clear about policy terms and implications (for example, the multiple meanings of the term 'zones').

Lesson 6: Community engagement is vital to your strategy

Make community engagement absolutely core to your programme.

- No community recovery programme can progress until affected property owners and communities have the opportunity to express their views and to speak about barriers and concerns that are important to them.
- Be clear about when you are in 'informing mode' as opposed to 'collaboration mode'.
- Take the time to actively listen to people.
- Use the information emerging from engagement activities to review and reconsider your future approach to engagement planning, implementation and policy.

Lesson 7: Collaboration builds a greater collective understanding for all involved

- Engage with recovery partners who have a stake in your engagement processes. Bring these partners together to build a greater collective understanding of the breadth of issues and technical complexities and of the impact of the earthquakes on people's lives.

- Engage early with community leaders to understand the circumstances and needs of their communities and to create the relationships and networks necessary for ongoing collaboration.
- Value these relationships and make them central to your ongoing planning.
- Community leaders can advise on locations and conditions for engagement specific to their community. Make them part of the engagement process so that they can also help the community hear and engage with your messages.
- Bring partner agencies along with you through your process. Make sure the messages from different partners are consistent.

Lesson 8: Use a planned, adaptive community engagement approach

- Start with large community meetings to communicate core policy and key messages to large numbers of affected residents. Over time, focus more on smaller groups of residents with complex needs.
- In some cases, in larger meeting use ‘breakouts’ to discuss points and provide feedback.
- Actively use your engagement process to learn more about the impact of your decisions on communities. Use this information to develop more responsive engagement.
- Be flexible, as recovery occurs at different rates for different people. Some people are in circumstances that allow them to make decisions more quickly than others, and some groups are more vulnerable than others.

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