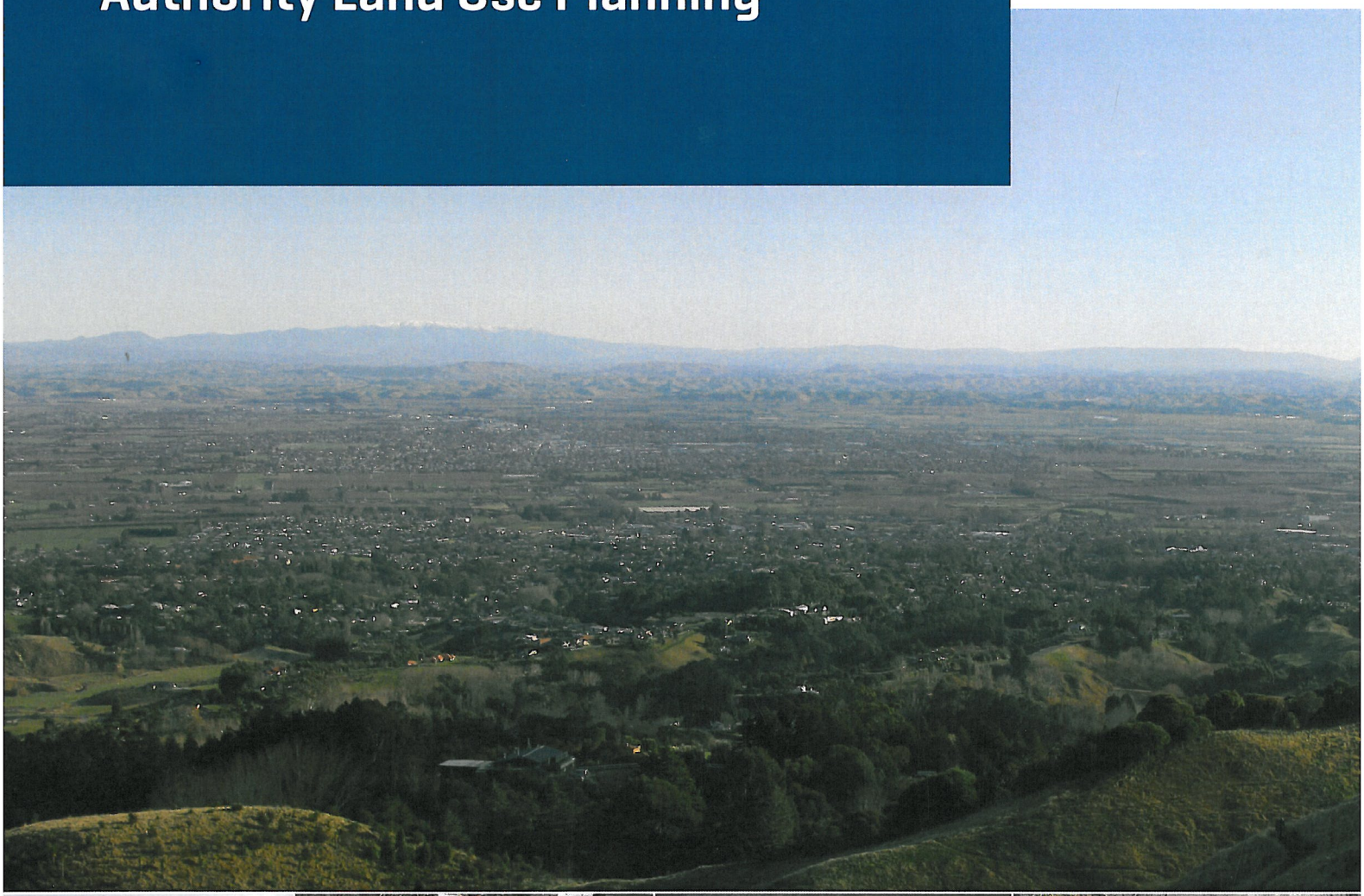
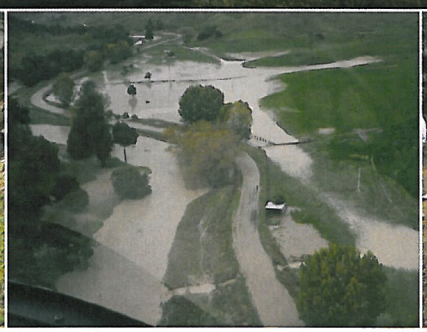
HAWKE'S BAY
REGIONAL COUNCIL

Plan to Implement the Hawke's Bay Joint Hazard Strategy for Local Authority Land Use Planning





August 2012
SD12/20
HBRC Plan Number 4397

Report for
Hawke's Bay Regional Council

Plan to Implement the Hawke's Bay Joint Hazard Strategy for Local Authority Land-Use Planning

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Contents

1 Background

The Hawke's Bay region is subject to a wide range of hazards. In June 2009, the Hawke's Bay Regional Council (HBRC) hosted an 'Integrating Civil Defence Emergency Management (CDEM), Long Term Community Planning and Resource Management Act (RMA)' planning workshop, that was attended by approximately 30 representatives from local authorities in Hawke's Bay. Attendees included Policy Managers, Planners, Asset Managers, Engineers and Emergency Management Officers.

At this workshop, current practices and provisions were identified as varying considerably across the region's territorial local authorities (TLAs). Attendees indicated a need for improved integration of local authority land use planning for hazard risks within the Hawke's Bay region, and greater consistency in the management of similar hazards in each district. One of the key outcomes of this workshop was to promote development of a joint hazards strategy to achieve this.

A joint strategy was subsequently developed by Brendan Morris Consulting Limited for the Hawke's Bay Regional Council, and was critiqued by the Hawke's Bay Planners Forum. In June 2011, the 'Hawke's Bay Joint Hazard Strategy for Local Authority Land Use Planning' (Joint Strategy), was endorsed by the Hawke's Bay CDEM Joint Committee.

The CDEM Joint Committee supported, ***"in principle, the development of joint statutory policy for natural hazard management as recommended in the Strategy, subject to an agreed process".***

This Implementation Plan is the basis for agreeing that process.

2 Strategy Partners

The Strategy Partners to the Joint Hazards Strategy are the 5 main local authorities within the Hawke's Bay region, being:

- Hawke's Bay Regional Council;
- Central Hawke's Bay District Council;
- Hastings District Council;
- Napier City Council; and
- Wairoa District Council

Relationships with other organisations with interests in hazard management in the region, whilst not Partners to the Joint Strategy, are relevant to ensuring strong integration between land use planning and civil defence emergency management in the Hawke's Bay region. These include NZ Police, NZ Fire Service, Hawke's Bay District Health Board, Work and Income, St John Ambulance, the Medical Officer of Health, and the Hawke's Bay Rural Fire Committee.

3 Hawke's Bay Joint Hazard Strategy

3.1 Strategy Purpose

The purpose of the Hawke's Bay Joint Hazard Strategy is:

'to promote the integration of local authority land use planning for hazard risks within the Hawke's Bay region'

In support of this purpose, the Strategy includes:

- an indication of current practice within the region versus best practice hazard management;
- summary and conclusions under the following subheadings:
  - research & information,
  - policies & plans,
  - urban design & construction,
  - early warning systems,
  - education & participation,
  - communication & consultation,
  - monitoring & review;

  and
- recommendations for how land-use planning could be better integrated into hazard management – both generally, and for specific hazards within the Hawke's Bay region.

3.2 Strategy Recommendations

The Strategy makes recommendations in two parts:

1. General recommendations for activities in support of land-use planning for hazard management; and
2. Hazard-specific directions for improvements to land-use planning provisions, in light of the current approach of policies and plans within the Hawke's Bay region.

The combination of general and hazard-specific recommendations represents the strategy for local authorities in improving land-use planning for hazard management within the Hawke's Bay region.

3.2.1 General Recommendations[1]

Research and Information

'It is recommended that:

- *The 10-year research programme priorities are re-evaluated in terms of their alignment to TA hazard requirements and direct application to land-use planning. It is also recommended that the priorities be driven by local authority requirements rather than natural hazard science priorities, as this appears to be the current focus.*
- *The monitoring of hazard trends and the changing risks associated with them be afforded a high priority within the research and information programme. Without such a tool, it will not be possible to determine policy effectiveness over time.*
- *Hazard management be afforded a higher priority in TA LTP's, and that the management of hazards be linked to growth strategies whenever possible.'*

Policies and Plans

'It is recommended that:

- *Both the RRMP and DP's incorporate best practice concepts for land-use planning as a part of their review processes, including a preference for avoidance, and where this is not achievable, appropriate standards for mitigation*
- *Local authorities encourage the development of national statutory guidance for significant hazards in order to provide greater management clarity at regional and district levels.'*

Other Recommendations

'It is recommended that local authorities:

- *Seek to improve collective management of river flood risks by developing a practical and manageable regional approach that picks up on best practice guidance*
- *Seek greater linkages between RMA policies and plans and emergency management activities by:*
  - *Harnessing the potential of the CDEM Group Joint Committee in hazard management*
  - *Seeking opportunities to improve the coordination of public education and awareness activities*
- *Continue to promote regular liaison between local authority planners, and initiatives to improve collective hazard management*
- *Develop and implement a policy effectiveness monitoring and evaluation programme (at both regional and district levels).'*

[1] pages 7 & 8, 'Hawke's Bay Joint Hazard Strategy for Local Authority Land-Use Planning', prepared for HBRC by Brendan Morris Consulting Ltd, 13 May 2011

3.2.2 Hazard-Specific Recommendations[2]

Hazard	Land-Use Planning Recommendation	Reasons	Key Risk Reduction Tools and Mechanisms
River Flood	*Move to a regional approach via the Regional Resource Management Plan (RRMP) to focus on whole of catchment management supported by District Plans (DP's), Building Act provisions and growth strategies such as the Heretaunga Plains Urban Development Strategy (HPUDS). Adopt an approach that:* • *Connects to key best practice considerations* • *Moves towards community-driven and owned standards, and away from a default 1-in-50 year plus freeboard standard as a starting point* • *Considers scale of development in context of the long-term catchment trends and ongoing need for works and services to support development (such as pumping stations)* • *Recognises the potential impacts of low probability, high consequence events, and considers response to these events* • *Recognises and plans for the long-term trends in climate change, and has mechanisms to adjust plan provisions accordingly*	*River flood hazards are the most widespread and frequent hazards within the region. There is ongoing development pressure within flood prone areas – especially on the Heretaunga Plains.* *There is a significant gap between best practice and current practice, with little apparent consideration of and connection to whole of catchment management.*	• *RRMP and DP's: take a whole-of-catchment focus with preference for avoidance (management of water and land-use)* • *National standard: use of NZS 9401:2008 Managing Flood Risk – A Process Standard* • *Research: understanding natural systems, sediment transport and long-term catchment trends* • *Risk management: consideration of all forms of management, and explicit identification and management of residual risks.*
Coastal Erosion /Inundation	*Regional approach is best approach. Continue with proposed Regional Coastal Environment Plan (RCEP) approach, and align DP's over time.*	*RCEP and Wairoa Variation 1B incorporate best practice approach, and NCC and HDC have existing coastal zones (similar mechanisms). Region is moving towards a consistent management approach.*	• *District Plans: review, update and alignment of Napier City, Hastings District and Central Hawke's Bay District Plans to the RCEP over time* • *Research: alignment of methodologies and coastal hazard research programmes over time.*

[2] Table 2 (pages 9-11), 'Hawke's Bay Joint Hazard Strategy for Local Authority Land-Use Planning', prepared for HBRC by Brendan Morris Consulting Ltd, 13 May 2011

Hazard	Land-Use Planning Recommendation	Reasons	Key Risk Reduction Tools and Mechanisms
Earthquake	*Assuming completion of active fault trace mapping, adopt an approach that:* • *Incorporates fault traces within DP maps where politically possible, or within Council GIS databases and made available where not politically possible* • *Sets rules for setback distances from active faults where politically possible, or requires proof of consideration of active fault guidelines where not politically possible* • *Requires further site-specific information as part of consent process* • *Uses LIMs/PIMs to identify hazards.* *A similar approach should be taken for liquefaction and ground shaking hazards where this information is known.*	*Opportunity exists for improvement. Simple "heads-up" mechanisms probably most appropriate, rather than region-wide policies and rules.* *Issues with existing development difficult to overcome, so focus should be on greenfields sites where there are good opportunities for avoidance.* *Despite the above approach, it is noted that changes to building standards for ground shaking and liquefaction are likely as a result of the Darfield and Christchurch earthquakes.*	• *Building Act and Code: possible changes in building standards at the national level – ongoing attention should be paid to this* • *Active fault guidelines: broaden usage of these* • *Non-regulatory methods for large greenfields development: especially greater development rights for land retirement around active faults, reserves contributions and consideration of building type and usage.*
Tsunami	*Assuming the availability of Level 3 inundation maps, adopt a focus on land use planning provisions that support minimising risk to human lives including:* • *Rules restricting location of critical facilities within areas identified as tsunami zones within DP's – restriction of new development and retrofit of existing where practicable per the guidelines* • *Design, enhancement and protection of evacuation routes taken into account during new development or redesign – such as roading infrastructure in coastal areas* • *Consider setbacks and design of new coastal subdivisions to minimise focussing of tsunami impacts, improve road layout to support evacuation and possibly increased building design standards (reinforcement of seaward walls, vertical evacuation).* *Development of regional principles makes sense, supported by implementation options at the District level.*	*Very difficult to economically mitigate the risk of tsunami for existing buildings. However, it is possible to do this in a greenfields situation, as simple design modifications up front can limit damage to buildings and risk to human life. Existing work on coastal erosion and inundation zones will assist in mitigating tsunami risk.* *There is political and financial risk for Councils in implementing large scale retrospective standards for existing development.*	• *RRMP: focus on avoidance for greenfields areas, and planning measures to protect human life* • *DP's: development of rules to restrict critical facilities, protect evacuation routes, restrict intensification of development in high risk areas* • *Structure plans and growth strategies: take account of tsunami hazards* • *Research: complete Level 3 inundation modelling* • *Emergency management: improve links to CDEM and focus on public education and awareness.*

Hazard	Land-Use Planning Recommendation	Reasons	Key Risk Reduction Tools and Mechanisms
Landslide	*Focus on identification of potential areas at risk and identify these on DP maps. Provide simple rules requiring geotechnical investigation of instability as part of consent process*	*Not a widespread and significant hazard in high density population areas. Current heads-up approach requiring further investigation appears to be effective.*	• *Building Act: continue to push requirements for mitigation* • *Structure plans: incorporate landslide hazards* • *Guidelines: broaden usage of these*
Volcanic	*Little or no scope for inclusion. One possible inclusion could be for protection of public water supply facilities.*	*Distance from volcanoes, lack of predictability in ash fall, lack of guidance and lack of implementation of land-use rules in other areas more vulnerable are key issues to consider for Hawke's Bay. 1-in-50 year event from Tongariro volcanic centre (most likely source) produced 1-2mm ash fall within the region, with minimal consequences.*	• *Research: keep up to date with new research and modelling of ash fall scenarios*
Hazardous Substances	*Continue with current approach in DP's. There may be some opportunity to tighten rules within known hazard zones over time as these become available (such as tsunami inundation for coastal area industries).*	*The current approach appears to be comprehensive and based on best practice guidance.*	• *Guidelines: continued use of MFE guidelines*

4 Implementation Structure

Primary responsibility for the implementation of the Joint Strategy lies with the Civil Defence Emergency Management Joint Committee (Joint Committee) as the governing body representing the 5 local authorities in the region in respect of hazard management. The Joint Committee is made up of the Regional Council Chair and Mayors of the other 4 TLAs in the region.

Development of tools and methods to implement the Joint Strategy has been assigned to the Hawke's Bay Council Planners' Forum (CPF) via the CDEM Co-ordinating Executive Group (CEG). The CEG comprises the Chief Executives of each of the 5 main local authorities, plus senior representatives from other organisations with special interest in hazard management in the region. The CPF comprises local authority planners from the 5 main local authorities in the region.

The Hawke's Bay CPF have been tasked with driving the implementation process at the local authority level, assigning tasks and providing strategic overview, with the technical work associated with the various actions carried out by appropriate professionals within the various local authorities (or contracted in where necessary).

Governance Committee	CDEM Joint Committee
Executive Management Committee	CDEM CEG
Implementation Management Forum	Hawke's Bay CPF
Technical Personnel	HBRC/TLA Plan Policy Teams, HBRC technical experts & HB CDEM Group personnel *(as appropriate)*

5 Implementation Plan Format

The Implementation Plan, set out in Sections 6 & 7, is generally structured around 'actions' grouped under the respective recommendation topics contained in the Joint Strategy. These are set out in the following manner:

Introduction	This outlines the Joint Strategy recommendation topic being addressed.
Issues	This is a summary of the issues identified through Strategy research relating to that recommendation topic.
Key Approaches	These are the key approaches to be taken that will guide implementation of the specific actions.
Actions	These are the specific actions that need to be carried out to implement the Strategy in respect of the recommendation topic, and are set out following the format below.

Action				
Lead Agency	**Support Agencies**	**Cost Implications**	**Implementation Tools**	**Timing/Priority**
[Lead agency responsible for initiating and leading the action].	[One or more support agencies that will assist the lead agency deliver the action].	[Funding sources/ cost to implement the action].	[The mechanisms or processes put in place to implement the action].	[Indicative timings when the action should be completed].

6 Implementation Plan

6.1 General Implementation Management & Funding Actions

Introduction	Successful implementation of the Joint Hazards Strategy relies on the quality of working relationships between the Strategy partners – being the 5 main local authorities in the region: • Hawke's Bay Regional Council • Wairoa District Council • Hastings District Council • Napier City Council • Central Hawke's Bay District Council as well as with other civil defence & emergency management stakeholders.
Issues	It is essential that there is long term commitment to collaboration between the Partner Councils to achieve greater integration and greater consistency in hazard management approaches across the region (the key drivers for the Joint Strategy). This needs to ensure continued implementation of the Joint Strategy beyond the 3-yearly election cycle. Success also relies on adequate resources being provided by the Partner Councils to enable implementation of the Joint Strategy. This requires commitment via Long Term Plan and Annual Plan budget mechanisms. The Joint Strategy identifies a lack of priority for hazard management in Long Term Plans (LTPs) in the region. It notes that the HBRC Long Term Plan specifically recognises hazard management, but that the territorial authorities tend to wrap hazard management into emergency management. The Joint Strategy asserts the need for greater priority to be placed on hazard management by territorial local authorities.
Key Approaches	➢ Formal adoption of the Joint Strategy by the Partner Councils (Strategy Partners). ➢ Agree an implementation structure and a funding formula to resource the high level implementation of the Joint Strategy between the Partner Councils; ➢ Determine budget requirements to resource the key actions contained in this Implementation Plan for Long Term Plan and Annual Plan funding rounds of the Partner Councils. ➢ Advocate greater priority for hazard management in Long Term Plans and any growth strategies of the main territorial local authorities in the region.
Actions	The following key actions are proposed:

1. Partner Councils to formally adopt the Joint Strategy and accompanying Implementation Plan.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM Joint Committee	HBRC, HDC, NCC, WDC, CHBDC		Resolution of Partner Councils	2012

2. Adopt the 'Implementation Structure' for implementing the Joint Strategy (as outlined in Section 4 of this Implementation Plan).				
Lead Agency	**Support Agencies**	**Cost Implications**	**Implementation Tools**	**Timing/Priority**
CDEM Joint Committee	CDEM CEG, Hawke's Bay CPF		Resolution of CDEM Joint Committee	2012

3. Agree an implementation funding formula between the Partner Councils for implementation of the Joint Strategy.				
Lead Agency	**Support Agencies**	**Cost Implications**	**Implementation Tools**	**Timing/Priority**
CDEM Joint Committee	HBRC, HDC, NCC, WDC, CHBDC	Partner Council budgets	LTPs, Annual Plans	2012/13

4. Identify the specific joint actions and operational budgets necessary to implement the Joint Strategy.				
Lead Agency	**Support Agencies**	**Cost Implications**	**Implementation Tools**	**Timing/Priority**
CDEM Joint Committee	HBRC, HDC, NCC, WDC, CHBDC	Implementation budget	LTPs	2012/13

5. Advocate greater priority for hazard management in Long Term Plans and any growth strategies of the 4 main territorial local authorities in the region.				
Lead Agency	**Support Agencies**	**Cost Implications**	**Implementation Tools**	**Timing/Priority**
HB CDEM Group	Hawke's Bay CPF	HB CDEM Group budget	Submissions Inter-council liaison and discussions	On-going

6.2 Research & Information Actions

Introduction

The role of information is vital to land use planning. Researching, collecting and managing hazards data consistently, is critical to robust land use management policy and decision-making processes.

Hawke's Bay is one of the best-served regions in New Zealand with respect to hazard research. HBRC carries out and funds most of the hazard research undertaken in the region, and has various hazards experts in-house, with recognised flooding hazard expertise in particular. Its 10-year hazard research programme, and associated funding committed to that programme, is held up as the model nationally (being the only region in New Zealand with a long term hazard research programme).

The territorial authorities in the region have good access to HBRC's hazard research data, on request, and access this regularly. The territorial authorities sometimes contribute to this research and occasionally carry out their own specific hazard research in response to particular issues.

Monitoring of hazard trends and the changing risks associated with them, is also very important in terms of determining hazard management policy effectiveness over time.

Issues

All of the District Plans in the region recognise the importance of good information to support hazard management. There is a high level of dependence on HBRC for this information and the Joint Hazards Strategy notes the pivotal role of HBRC in this role.

The Joint Strategy identifies issues around a lack of hazard information in some areas, keeping it up-to-date, and information being available at a scale that is fit for purpose. Therefore, whilst the HBRC information provision role is seen as working well and there is a reasonable level of interaction between the Partner Councils, the Joint Strategy notes that, at times, there has been a disconnect between the HBRC hazard work programme and the hazard management needs of the territorial local authorities.

Research is best when it is partnered and responsive to the requirements of those who are required to rely on it. The territorial local authorities have to date had limited involvement in the setting of priorities for the 10-year hazard research programme in the region, which has traditionally been driven largely by natural hazard science priorities. The current CDEM Group Plan review involves re-assessing the priority hazards for Hawke's Bay based on a risk assessment process.

The Joint Strategy also identifies a lack of a coordinated approach to hazard information management across the region, with local authorities often managing their data independently of each other, as well as the emergence of multiple hazard registers across the region. Current use of hazard registers in the region is seen as predominantly reactive – normally populated retrospectively alongside development proposals and consent processes.

The Minister for the Environment's Technical Advisory Group (TAG) on RMA Principles identifies a gap in local authority functions in relation to collection and provision of information on natural hazards, and that *'availability of adequate information, and in some cases inaccessible or poorly distributed information, has hindered implementation of legislation to manage natural hazards'*[3].

[3] Report of the Minister for the Environment's Resource Management Act 1991 Principles Technical Advisory Group, February 2012

	Based on the recommendations of the TAG, it is possible that it will become mandatory for local authorities to make information about natural hazards available to other local authorities within their region. All District Plans recognise the need to monitor hazards, but the Joint Strategy notes that there is no monitoring of hazard risk trends across the region other than the results of the GNS risk assessment update (2010), which are at the broad regional level. Monitoring is necessary to determine the effectiveness of hazard management policy.
Key Approaches	➢ Re-define and agree the priority hazards for Hawke's Bay in terms of risk and impact on the community as part of the Hawke's Bay CDEM Group Plan review. ➢ Continue commitment to HB CDEM Group 10-year hazard research programme. ➢ Improve alignment with territorial local authority priorities by involving them in the review of the current 10-year hazard research programme and its priorities to ensure it is directed, up-to-date and fit for purpose. ➢ Support a single repository for storage of hazard information, such as a joint GIS portal and creation of a regional web-based "home of hazards", for the integration of all spatial hazard information for the region for local authorities in the region to access and actively populate[4]. ➢ Formalise a joint approach to the development and ownership of new and updated hazard information between the Partner Councils, including joint funding provisions, within a shared services-type framework, to achieve improved hazard information management across the Region over time[5]. ➢ Develop a regional programme to monitor hazard trends and changing risks associated with them over time, and report on the results.
Actions	The following key actions are proposed:

6. Re-define and agree (using a risk assessment process) the priority hazards for Hawke's Bay in terms of risk and impact on the community.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM Joint Committee	HB CDEM Group	HB CDEM Group budget	CDEM Group Plan	2012

7. Continue commitment to HB CDEM Group 10-year hazard research programme.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HBRC	CDEM Joint Committee	HB CDEM Group hazard research budget	LTP	On-going

[4] This is a key recommendation in the draft report by Brendan Morris Consulting Limited (commissioned by HB CDEM Group) – "Management of hazard information in the Hawke's Bay region", dated July 2012.

[5] This is a key recommendation in the draft report by Brendan Morris Consulting Limited (commissioned by HB CDEM Group) – "Management of hazard information in the Hawke's Bay region", dated July 2012.

8. Review HB CDEM Group 10-year hazard research programme priorities, in terms of alignment with the requirements of the 4 main territorial local authorities and direct application to land use planning.

In reviewing the research programme, consider the agreed priority hazards for Hawke's Bay (from Action 6), and the following hazard-specific research priorities identified in the Joint Hazards Strategy:

- ***Flood: understanding natural systems, sediment transport and long-term catchment trends;***
- ***Earthquake: continued mapping of zones of faulting, following fault avoidance guidelines, along with liquefaction and ground shaking hazard research;***
- ***Coastal Erosion/Inundation: alignment of methodologies and coastal hazard research programmes over time;***
- ***Tsunami: conclude Level 3 inundation modelling; and***
- ***Volcanic: keep up-to-date with new research and modelling of ash fall scenarios.***

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HB CDEM Group	HBRC, HDC, NCC, WDC, CHBDC CDEM Joint Committee	HB CDEM Group hazard research budget	10-yr hazard research programme review adopted by CDEM CEG	2013

9. Prioritise development of a joint repository for the integration of all spatial hazard information for the Region (e.g. a joint GIS portal; creation of a regional web-based "home of hazards").

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HB CDEM Group	HBRC, HDC, NCC, WDC, CHBDC	HB CDEM hazard research budget	GIS Portal Web-based Database	2013/14

10. Continue support for the Hawke's Bay Council Planners Forum as a successful means to enhance dialogue between planners and hazard management staff within and across the Partner Councils regarding hazard management information requirements and priorities.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM CEG	HBRC, HDC, NCC, WDC, CHBDC	Partner Council budgets	Hawke's Bay CPF meetings	On-going

11. Formalise a joint approach to the development and ownership of new and updated hazard information between the Partner Councils, including joint funding provisions, within a shared services-type framework, to achieve improved hazard information management across the Region over time.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM CEG	HBRC, HDC, NCC, WDC, CHBDC	Partner Council budgets	Shared Services-Type Framework HPUDS Working Group meetings HPUDS TAG	2013/14

12. Develop and implement a regional monitoring programme to monitor hazard trends and changing risks associated with them, within the 10-year hazard research programme.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HB CDEM Group	HBRC, HDC, NCC, WDC, CHBDC	HB CDEM Group hazard research budget	HB CDEM Group Plan	2014

13. Report the results of the regional hazard trends and risks monitoring programme (from Action 11).

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HB CDEM Group		HB CDEM Group budget	HBRC SOE Report	5-yearly (commencing 2017)

6.3 Actions for Policies & Plans

Introduction

Land use planning is an important part of hazard risk reduction. RMA regulatory planning tools that can assist with hazard risk reduction include:

- National Policy Statements;
- National Environmental Standards;
- Regional Policy Statements;
- Regional Plans;
- District Plans;
- Resource consents;
- Designations
- Vesting of reserves through subdivision; and
- Hazard registers.

The above planning tools provide opportunity for certainty and consistency of decision-making, are flexible in dealing with different natural hazards, allow for variance in approaches across districts and sub-districts, provide opportunity to ensure best practice, and assist in the capture of hazards information on an on-going basis.

Alongside RMA plans, CDEM Group Plans prepared under the Civil Defence and Emergency Management Act 2002 (CDEM Act) also set important policy around hazard management. Hawke's Bay's Civil Defence & Emergency Management Group is currently reviewing the 2005 CDEM Group Plan (as amended May 2010) for the region. The review of the HB CDEM Group Plan is expected to be completed during 2013.

CDEM Group Plans are becoming more relevant when preparing and reviewing regional policy statements and regional and district plans in terms of integrated hazard management policy[6].

Issues

The Joint Hazards Strategy notes that there is currently no national statutory guidance for significant hazards, but that there are various best practice guidelines for hazard management available (providing both general and hazard-specific guidance).

The Minister for the Environment's TAG identifies that local authorities in New Zealand have not adequately coordinated their efforts in relation to hazard management, and that the planning framework is fragmented and incomplete. It refers to an uncertainty as to roles and responsibilities for hazard management, and barriers to information sharing as contributing to this failure. Based on the recommendations of the TAG, it is likely that regional councils will be given the lead function of managing all the effects of natural hazards as part of the next phase of RMA reforms.

Similarly, the Joint Strategy for Hawke's Bay identifies that there has been limited use of best practice guidelines for hazard management in development of land use planning policy among the local authorities in the region. Consequently, whilst there are isolated examples of best practice, regional and district plans continue to vary across the region in terms of their management of hazards, which leads to inconsistency and variable effectiveness.

[6] A move towards mandatory consideration of CDEM Group Plans has been signalled as part of the Minister for the Environment's TAG recommendations for upcoming RMA reform. However, the TAG report is not official Government policy and may not be adopted.

	With the exception of the Regional Coastal Environment Plan, the Joint Strategy suggests regional policies and plans in Hawke's Bay do not provide strong guidance on best practice or present a strong driver for hazard risk avoidance. District Plans across the region collectively contain few specific hazard management rules, are not consistent in their approach to hazard management, and are primarily mitigation-focussed for natural hazards, despite all recognising the importance of avoidance (for example, relying on the use of standards contained in the Building Code as mitigation mechanisms in preference to RMA mechanisms to avoid hazards). The Joint Strategy suggests that this may partly reflect a degree of reluctance to put restrictions in place that may discourage development and economic growth in at-risk areas, or that may be seen to impinge on private property rights. There is potential for hazard risks to end up secondary to short-term public concerns. The Joint Strategy recommends that regional and district plan policy needs to incorporate best practice concepts for land-use planning as a part of their review processes, including a preference for avoidance, and where this is not achievable, appropriate standards for mitigation. It concludes that land use planning could benefit from a consistent regional approach to hazard management that picks up on best practice. In conjunction with this, the Joint Strategy identifies a lack of on-going evaluation of policy effectiveness. Section 35(2A) requires every local authority, at intervals of not more than 5 years, to compile and make available to the public a review of the results of plan effectiveness monitoring. There is also recognition in the Joint Strategy of the need to develop greater linkages between RMA policies and plans and emergency management activities. RMA hazard management policy in the region could benefit from alignment with the CDEM Group Plan currently under review.
Key Approaches	➢ Advocate to central government for national statutory guidance for significant hazards. The Minister for the Environment's TAG Report includes a recommendation that the Government promulgate a NPS or NES on the management of natural hazards. ➢ In the absence of national statutory guidance, develop stronger regional guidance through a change to the Regional Policy Statement (RPS) to improve policy direction on managing the effects of hazards on land use that promotes best practice and a strong emphasis on hazard risk avoidance. ➢ Evaluate governance arrangements and land use planning tools to best deliver improved and effective hazard management outcomes for Hawke's Bay. ➢ Harmonise hazard management and land use planning across the region. Options might include: harmonised district plan provisions; a regional plan for natural hazards; or development of a combined Hawke's Bay Natural Hazard Management Plan under the RMA that covers both regional and district functions in relation to managing the effects of hazards[7].

[7] A move towards a statutory imperative for development of combined regional and district hazard plans has been signalled as part of the Minister for the Environment's TAG recommendations for upcoming RMA reform. However, the TAG report is not official Government policy and may not be adopted.

	This will also provide opportunity to develop greater linkages between RMA policies, plans and implementation; and emergency management activities in Hawke's Bay (including consideration of the CDEM Group Plan). ➢ Implement a plan effectiveness monitoring programme for natural hazard provisions across the Region, based on expected environmental results and key monitoring indicators.
Actions	The following key actions are proposed:

14. Advocate to central government on behalf of the region for the development of national statutory guidance for significant hazards, in order to provide greater decision-making clarity at regional and district levels.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM Joint Committee	CDEM CEG	Implementation budget	Government engagement mechanisms	On-going

15. Prepare a change to the RPS which will provide strategic-level guidance around best practice for management of various hazards across the region, with strong emphasis on hazard risk avoidance in preference to mitigation, where appropriate.

When preparing the RPS change, consider alignment and consistency with the 'hazard-specific actions' identified in Actions 20-25.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HBRC	Hawke's Bay CPF, CDEM Group	Council budget	RPS 10-yr hazard research programme	Notification by July 2013[8]

16. Commission an Options Report to evaluate and recommend the most effective governance arrangement and land use planning tools to best deliver improved and effective hazard management outcomes for Hawke's Bay and achieve greater linkages between RMA policies and plans and emergency management activities.

Analysis of governance options might include evaluating the pros and cons of leaving functions and powers in relation to natural hazards where they currently lie, versus shifting (transferring) functions and powers to one or other agencies (utilising the 'transfer of functions and powers' facility provided in section 33 of the RMA).

In conjunction with evaluating governance arrangements, RMA plan options to facilitate improved hazard management might include:

i. Harmonising district plan provisions relating to natural hazards across the 4 main territorial local authorities in Hawke's Bay;

[8] The HBRC 2012-22 Long Term Plan includes budget for preparation of a change to the RPS for notification in July 2013.

ii. The development of new regional land use provisions in terms of Regional Council functions in respect of natural hazards, for insertion into the Hawke's Bay Regional Resource Management Plan (or as a separate regional plan solely addressing natural hazards); and

iii. The development of a combined Hawke's Bay Natural Hazard Management Plan that covers both regional and district functions in relation to managing the effects of hazards and land use.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
Hawke's Bay CPF	CDEM CEG	Implementation budget	Options Report	2013/14

17. Adopt the preferred planning regime for hazard management across the Region, including rolling out any changes to governance arrangements necessary to support that approach (based on recommendations in the Options Report from Action 16).

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM Joint Committee	HBRC, HDC, NCC, WDC, CHBDC	Partner Council budgets	Council Resolutions Transfer Agreements (if necessary)	Notification by July 2016

18. Prepare the required changes to RMA policies and plans around land use planning for hazard risks in Hawke's Bay as signalled in the Options Report from Action 16 and as adopted in Action 17.

Any RMA plans or plan changes must align with the guidance provided in the RPS (from Action 15), incorporating both general and hazard-specific best practice.

When developing plan provisions, consider alignment and consistency with the 'hazard-specific actions' identified in Actions 20-25, and the provisions of the reviewed HB CDEM Group Plan.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
Hawke's Bay CPF	HBRC, HDC, NCC, WDC, CHBDC	Partner Council budgets	District Plans, Regional Plan, or Combined Plan	Notification by July 2016

19. As part of preparing changes to RMA policies and plans around land use planning for hazard risks in Hawke's Bay (from Action 18), implement a plan effectiveness monitoring programme for natural hazard provisions across the Region, based on expected environmental results contained in those documents and key monitoring indicators.

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HBRC	HDC, NCC, WDC, CHBDC	Council budget	Monitoring Programme Plan Effectiveness Monitoring Report	Reporting 5-yearly (with baseline report in 2017)

6.4 Hazard-Specific Actions

The following actions present hazard-specific directions for improvements to land-use planning provisions to address gaps identified between best practice and current practice, with reference to relevant best practice guides, key tools, mechanisms and standards, and contemporary approaches to addressing each of the hazards specifically identified in the Joint Hazards Strategy.

6.4.1 Flood

Introduction	Flood hazard is the most widespread and frequent hazard within the region and has a high risk profile in the Hawke's Bay CDEM Group Plan. River flood management activities form a major component of the mitigation of flood hazard risks within the region – from design, construction and maintenance of stopbanks and river management to ongoing maintenance and operation of flood pumps. Flood warning and management plays an important role in helping to achieve protection of human life and safety. The Hawke's Bay Regional Council has nationally recognised in-house flooding hazard expertise. Flood hazard research has been a priority focus for hazard research in Hawke's Bay. Key flood research areas in Hawke's Bay include: • Flood event reports; • Site-specific flood risk assessments; • Flood hazard areas; and • Research supporting HBRC in its river flood management role.
Issues	There is on-going development pressure within flood prone areas – especially on the Heretaunga Plains. Climate change is also expected to exacerbate flood hazards. The Joint Hazards Strategy identifies that there is a significant gap between best practice and current practice in terms of flood hazard management in the region, with little apparent consideration of, and connection to, whole-of-catchment management. The Joint Strategy identifies issues with flood management around: • level of certainty in mapping flood hazard areas; • uncertainty around sediment transport and natural systems; • protection of natural ponding areas for flood retention and management purposes; and • dealing with residual risk from super-design events. The Joint Strategy suggests there is little agreement on dealing with these issues collectively at present. There is a need to improve the collective approach to flood risk management.
Key Approaches	➢ Improve collective management of flood risks by developing a practical and manageable regional approach that picks up on best practice guidance, and a whole-of-catchment management approach.
Actions	The following key actions are proposed:

20. In preparing the change to the RPS (Action 15) and any subsequent changes to RMA policies and plans throughout the Region (Action 18), focus on a whole-of-catchment management approach to flood hazard with preference for avoidance of significant risk, in a manner that:

i. connects to best practice concepts contained in:

- *NZS 9401:2008 'Managing Flood Risk – A Process Standard', based around:*
  - *Engaging communities and stakeholders;*
  - *Understanding natural systems and catchment processes;*
  - *Understanding the interaction of natural and social systems, in a catchment-based management context;*
  - *Decision-making at the local level;*
  - *All possible forms and levels of management; and*
  - *Residual risk.*
- *MfE Guide 'Preparing for future flooding: A guide for local government in New Zealand' (2010), based around incorporating climate change impacts into flood risk management planning (which draws upon both the ISO 31000 and AS/NZS 9401:2008 Standards, and is supported by the guidance manual).*
- *Quality Planning website climate change guidance note which includes advice on methods for considering and addressing climate change effects under the RMA, and also good practice examples of how local authorities have incorporated consideration of the effects of climate change into existing plans.*
- *MfE Guide 'Preparing for climate change: A guide for local government in New Zealand' (2008), and supporting MfE guides 'Climate Change and Long-Term Council Community Planning' (2008) and 'Climate Change Adaptation and Second Generation RMA Plans' (2008), based around integrating climate change obligations into Council activities.*

ii. Moves towards community-driven and owned standards, and away from a default 1-in-50 year plus freeboard standard as a starting point;

iii. Considers scale of development in context of the long-term catchment trends and on-going need for works and services to support development (such as pumping stations);

iv. Recognises the potential impacts of low probability, high consequence events, and considers response to these events;

v. Recognises and plans for the long-term trends in climate change, and mechanisms to adjust plan provisions accordingly;

vi. Recognises HBRC's Regional Stormwater Strategy.

6.4.2 Coastal Erosion/Inundation

Introduction	Hawke's Bay has 353 km of coast line on the Pacific Ocean. Erosion and inundation are hazards for some coastal communities. The region has been moving towards a consistent management approach to coastal hazards, and there are some existing examples of the adoption of elements of best practice in land use planning within the region. This is most evident in the management approach adopted in the Regional Coastal Environment Plan (RCEP). The RCEP's approach gives effect to the 2010 NZ Coastal Policy Statement's policies relating to coastal hazards. Coastal erosion hazard research has been a priority focus for hazard research in Hawke's Bay. Key coastal erosion research areas in Hawke's Bay include: • Region-wide coastal hazard assessments and hazard zone determination; • Numerous location-specific reports for Haumoana and Westshore coastlines; and • Other supporting technical reports.
Issues	The Joint Hazards Strategy identifies that there remains some inconsistency in the approach to the management of coastal hazards across the region, and identifies that there is a need to align district and regional plan policy approaches over time. Climate change is also expected to exacerbate coastal hazards.
Key Approaches	➢ Achieve regional consistency in the approach to the management of coastal hazards, building on the approach taken in the RCEP.
Actions	The following key actions are proposed:

21. In preparing the change to the RPS (Action 15) and any subsequent changes to RMA policies and plans throughout the Region (Action 18), continue to move towards a consistent regional approach to coastal hazards across the region that:

i. aligns with the approach taken in the RCEP;

ii. connects to best practice concepts contained in:

- ***MfE Guide 'Preparing for coastal change: A guide for local government in New Zealand' (2009) based around the following principles for planning & decision-making:***
  - ***Precautionary approach (to new development as well as changes to existing development within coastal margins);***
  - ***Progressive risk reduction (including progressively reducing the level of risk for existing developments);***
  - ***Importance of natural coastal margins (as a fundamental form of coastal defence and as an environmental, social and cultural resource – coastal margins should be secured and promoted); and***
  - ***Integrated, sustainable approach (manage development and coastal hazard risk with the aim of contributing to the environmental, cultural, social and economic wellbeing of people and communities).***

- ***NIWA Guide 'Coastal Adaptation to Climate Change: Pathways to Change' (Nov 2011) which provides guidance on a 4-step risk management approach to climate change in the coastal environment, based on development of local adaptation plans.***
- ***Quality Planning website climate change guidance note which includes advice on methods for considering and addressing climate change effects under the RMA, and also good practice examples of how local authorities have incorporated consideration of the effects of climate change into existing plans.***
- ***MfE Guide 'Preparing for climate change: A guide for local government in New Zealand' (2008), and supporting MfE guides 'Climate Change and Long-Term Council Community Planning' (2008) and 'Climate Change Adaptation and Second Generation RMA Plans' (2008), based around integrating climate change obligations into Council activities.***

6.4.3 Earthquake

Introduction	Hawke's Bay is one of the most seismically active regions of New Zealand and in the 160 years since substantial written records began, several large and damaging earthquakes have occurred. Most notably the earthquake of 1931. Parts of Hawke's Bay are also particularly vulnerable to liquefaction and ground shaking hazards. Major earthquakes have the highest risk profile in the Hawke's Bay CDEM Group Plan. Earthquake hazard research has been a priority focus for hazard research in Hawke's Bay. Key earthquake research areas in Hawke's Bay include: • Historical impact assessments (primarily 1931 earthquake); • Numerical assessment; • Lifelines assessment; • Community understanding; • Liquefaction potential; and • Fault trace surveys. Fault trace surveys for Napier City and Wairoa District is one of the significant research projects currently being completed. This follows fault trace surveys already completed for prioritised areas within Hastings and Central Hawke's Bay districts.
Issues	The Joint Hazards Strategy identifies different approaches have been applied to-date to earthquake hazards across the region, with some TLAs incorporating active fault traces on district planning maps and others electing to provide advice as part of consent processes. Identification of faults brings issues of accuracy. MfE guidelines document a methodology to accommodate uncertainty, limited accuracy and limited data. The Joint Strategy acknowledges that opportunity exists for improvement in the management of earthquake hazards across the region but that issues with existing development are difficult to overcome. It also anticipates that amendments to building standards for ground shaking and liquefaction are likely as a result of the Darfield and Christchurch earthquakes, which will require attention.
Key Approaches	➢ Focus on avoidance for greenfield sites where there are good opportunities for avoidance, and planning measures to protect human life where avoidance is impracticable. ➢ Develop regulatory and non-regulatory methods to address active faults, liquefaction and ground shaking hazards, where information is known. ➢ Pay attention to possible changes in building standards at the national level.
Actions	The following key actions are proposed:

22. *In preparing the change to the RPS (Action 15) and any subsequent changes to RMA policies and plans throughout the Region (Action 18), focus on avoidance for greenfield sites and planning measures to protect human life, and incorporate:*

    i. *Fault traces within planning maps (or, where not politically possible, incorporate fault traces within Council GIS databases made available);*

    ii. *Rules for setback distances from active faults (or, where not politically possible, require proof of consideration of active fault guidelines);*

    iii. *Requirement for further site-specific information as part of consent processes;*

    iv. *Consider a standardised approach to Earthquake-prone Buildings Policies prepared by TLAs under the Building Act.*

    v. *Use of non-regulatory methods such as:*
    - *LIMs/PIMs as methods to identify hazards;*
    - *greater development rights for land retirement around active faults;*
    - *reserves contributions; and*
    - *consideration of building type and usage.*

    vi. *Best practice concepts contained in:*
    - *MfE/GNS Guidelines 'Planning for development of land on or close to active faults' (2003) based around taking a risk-based approach in areas likely to be developed or subdivided, and communicating the risk of hazards in built-up areas, and include resource consent tables which can assist in categorising activity status.*

    A similar approach should be taken for liquefaction and ground-shaking hazards where this information is known.

23. *Monitor and implement changes in building standards at the national level around ground-shaking and liquefaction.*

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
HDC, NCC, WDC, CHBDC			Building consents, Earthquake-prone Buildings Policies	On-going

6.4.4 Tsunami

Introduction	The East Coast of New Zealand is recognised as having the highest tsunami risk in the country, from both local, regional and distance sources. Tsunamis have a high risk profile in the Hawke's Bay CDEM Group Plan Tsunami hazard research has been a primary focus for hazard research in Hawke's Bay over the past few years. Key tsunami research areas in Hawke's Bay include: • Regional tsunami hazard assessments, including probabilistic and paleo-tsunami reports; • Local source report; and • Inundation modelling. Tsunami inundation modelling is one the most significant research projects currently being undertaken in the region. Existing work on coastal erosion and inundation zones will also assist in mitigating tsunami risk.
Issues	The Joint Hazards Strategy acknowledges that it is very difficult to economically mitigate the risk of tsunami for existing buildings. However, it is possible to do this in a greenfields situation, as simple design modifications up front can limit damage to buildings and risk to human life. The Joint Strategy recognises that there is likely to be limited community support plus financial risk for Councils in implementing large scale retrospective standards for existing development.
Key Approaches	➢ Focus on avoidance for greenfield sites where there are good opportunities for avoidance, and planning measures to protect human life. ➢ Develop rules to restrict critical facilities, protect evacuation routes, and restrict intensification of development in high risk areas. ➢ Take account of tsunami hazards in structure planning, growth strategies, and any associated spatial planning initiatives.
Actions	The following key actions are proposed:

24. In preparing the change to the RPS (Action 15) and any subsequent changes to RMA policies and plans throughout the Region (Action 18), focus on avoidance for greenfield sites and planning measures to minimise risk to human lives, that:

i. connects to best practice concepts contained in:

- ***GNS Guideline 'New Zealand's Next Top Model: Integrating tsunami inundation modelling into land use planning' (in prep), based around a risk-based approach which involves quantifying and/or qualifying consequences to an event, selecting a land use importance category based on consequences, and determining resource consent activity status based on the land use importance category, and pre-event recovery planning for land that is already developed.***

ii. Assuming the availability of Level 3 inundation maps, adopt a focus on land use planning provisions that support minimising risk to human lives including:

- ***Rules restricting location of critical facilities within areas identified as tsunami zones – restriction of new development and retrofit of existing where practicable per the guidelines;***
- ***Design, enhancement and protection of evacuation routes taken into account during new development or redesign – such as roading infrastructure in coastal areas;***
- ***Consider setbacks and design of new coastal subdivisions and developments to minimise focussing of tsunami impacts, improve road layout to support evacuation and possibly increased building design standards (reinforcement of seaward walls, vertical evacuation).***

6.4.5 Landslide

Introduction	Landslide is not a widespread and significant hazard in high density population areas within the region.
Issues	The Joint Hazards Strategy suggests that the current approach to landslide hazards (identifying potential areas of risk and requiring geotechnical investigation of instability for new developments) is effective, with some opportunity for improvement.
Key Approaches	➢ Continue to focus on identification of potential areas at risk and identify these on planning maps. Provide simple rules requiring geotechnical investigation of instability as part of consent processes.
Actions	The following key actions are proposed:

25. In preparing the change to the RPS (Action 15) and any subsequent changes to RMA policies and plans throughout the Region (Action 18), continue to focus on identification of potential areas at risk of land instability and identify these on planning maps, and incorporate:

i. Best practice concepts contained in:

- ***MfE/GNS Guidelines 'Planning for development of land on or close to active faults' (2003) and 'Guidelines for assessing planning policy and consent requirements for landslide prone land' based around taking a risk-based approach in areas likely to be developed or subdivided.***

ii. Rules requiring geotechnical investigation of instability for consent processes.

6.4.6 Volcanic

Introduction	Volcanic hazards in Hawke's Bay are mainly limited to ash fall hazard. Volcanic hazards (ash fall) has a high hazard profile in the Hawke's Bay CDEM Group Plan.
Issues	The Joint Hazards Strategy currently identifies little or no scope for inclusion of volcanic hazards in regional hazard management policy in Hawke's Bay. This is due to distance from volcanoes, lack of predictability in ash fall, lack of guidance and lack of implementation of land use rules in other areas more vulnerable. However, recent events in August 2012 in relation to volcanic activity on Mt Tongariro may warrant a further look into scope for inclusion. The Joint Strategy refers to an absence of formal guidance in relation to volcanic hazard management, other than a paper in The Journal of Disaster and Trauma Studies by Becker, J et al 'A synthesis of challenges and opportunities for reducing risk through land use planning in New Zealand' (2010).
Key Approaches	➢ Review scope for inclusion of volcanic hazards in regional hazard management policy for Hawke's Bay. ➢ Keep up to date with new research and modelling of ash fall scenarios.
Actions	No key actions are proposed.

6.4.7 Hazardous Substances

Introduction	Hazardous substances are addressed locally in each of the district plans within the region.
Issues	The Joint Hazards Strategy states that the current approach to the management of hazardous substances in the regional and district plans appears to be comprehensive and based on best practice guidance. It identifies that there may be some opportunity to tighten rules within known hazard zones over time as these become available (such as tsunami inundation for coastal area industries). The Joint Strategy refers to the MfE Guideline 'Land use planning guide for Hazardous Facilities' (2002).
Key Approaches	➢ Continue with the current approach to hazardous substances within the respective regional and district plans, and on-going use of MfE Guidelines. ➢ Consider specific rules within known hazard zones over time as these become available. ➢ Develop regulatory and non-regulatory methods to address known risks associated with the storage, use and disposal of hazardous substances, and that needless differences be avoided between local authorities' methods.
Actions	No key actions are proposed.

7 Monitoring & Reporting on Implementation Progress

Introduction	In adopting the Joint Hazards Strategy, the Strategy Partners need to be able to gauge overall progress towards achieving the actions contained in this Implementation Plan.
Issues	Implementation actions need to be time-bound to maintain any momentum. Momentum can easily get lost without clear direction. An overview and reporting back of progress towards achieving the various actions contained in this Implementation Plan, and of major milestones in particular, is important. It is also important to identify if there are any risks to the achievement of any actions early, to enable appropriate and timely response.
Key Approaches	➢ Regular Progress Reports ➢ Major milestone delivery reporting
Actions	The following key actions are proposed:

26. Develop and implement regular reporting arrangements on action implementation, implementation risks and other relevant implementation matters for consideration by the CDEM Joint Committee (refer Implementation Timeline in Appendix 1).

Lead Agency	Support Agencies	Cost Implications	Implementation Tools	Timing/Priority
CDEM CEG	Hawke's Bay CPF	Implementation budget	Progress Reports Major Milestone Delivery Reports	Annually At time of Major Milestone Delivery

Appendix 1: Implementation Timeline

JOINT HAZARDS STRATEGY IMPLEMENTATION TIMELINE

2012

- Action: On-going advocacy for hazard management provision in LTPs — 5
- Action: On-going support for HB CPF as channel for integrating planning/ CDEM — 10
- Action: On-going commitment to 10-yr hazard research programme — 7
- Action: On-going advocacy for national statutory guidance on significant hazards — 14

- Action: Formally adopt the Joint Hazards Strategy — 1
- Action: Re-define and agree priority hazards for Hawke's Bay — 6

2013

- Action: Adopt implementation structure — 2
- Action: Review 10-yr hazard research programme with TLAs — 8
- Action: Prepare a change to the RPS to incorporate strategic guidance around best practice for the management of natural hazards in the Region — 15
  MILESTONE: Notification July 2013

- Action: Agree implementation funding formula — 3
- Action: Identify joint actions & operational budget requirements — 4
- Action: Develop joint repository for integrating all spatial hazard info for the Region — 9

2014

- Action: Monitor progress towards achieving Strategy Actions — 26
- Action: Formalise joint approach to development & ownership of new & updated hazard info — 11
- Action: Investigate governance/RMA planning regime options for hazard management — 16

- Action: Develop regional hazard trend/risk monitoring programme — 12
- Action: Adopt preferred planning regime for hazards, including necessary changes to governance arrangements — 17

2015

- Action: Incorporate hazard-specific best practice — 20-25
- Action: Prepare necessary RMA plan(s)/change(s) to align natural hazards management across the Region, and incorporate best practice
  MILESTONE: Notification July 2016 — 18

2016

- Action: Implement 'State of the Environment' regional hazard trend/risk reporting — 13
- Action: Implement RMA Plan effectiveness monitoring & reporting programme for natural hazards — 19

2017

2018

Key:

- 17 — Cross reference to Implementation Plan action
- General advocacy actions
- General implementation actions
- Research & information actions
- Policy actions

JOINT HAZARDS STRATEGY IMPLEMENTATION TIMELINE

2012

- Action: On-going advocacy for hazard management provision in LTPs — 5
- Action: On-going support for HB CPF as channel for integrating planning/ CDEM — 10
- Action: On-going commitment to 10-yr hazard research programme — 7
- Action: On-going advocacy for national statutory guidance on significant hazards — 14

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2013

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- Action: Agree implementation funding formula — 3
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2015

- Action: Incorporate hazard-specific best practice — 20-25
- Action: Prepare necessary RMA plan(s)/change(s) to align natural hazards management across the Region, and incorporate best practice. MILESTONE: Notification July 2016 — 18

2016

- Action: Implement 'State of the Environment' regional hazard trend/risk reporting — 13
- Action: Implement RMA Plan effectiveness monitoring & reporting programme for natural hazards — 19

2017

2018

Key:

- Actions - cross referencing to actions in the Implementation Plan
- 17 — CDEM Joint Committee lead agency actions
- 17 — CDEM CEG lead agency actions
- 17 — HB CDEM Group lead agency actions
- 17 — CPF/LA lead agency actions
- 17 — HBRC lead agency actions