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# Hawke's Bay joint hazard strategy for local authority land-use planning

**Prepared for:**

Hawke's Bay Regional Council

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# Purpose and objectives

The purpose of this strategy is:

> *"to promote the integration of local authority land-use planning for hazard risks within the Hawke's Bay region."*

The objectives of this strategy in support of the purpose are to:

- Provide a brief overview of the reasons for developing a joint strategy and how the strategy was developed
- Provide an indication of current practice versus best practice hazard management within the region
- Summarise conclusions reached on land-use planning and hazard management in the Hawke's Bay region, and
- Outline recommendations for how land-use planning can be better integrated into hazard management – both generally, and for specific hazards within the Hawke's Bay region.

It is important to note that this strategy is based on detailed background and analysis work contained with the supporting document *"Land-use planning and hazard management in the Hawke's Bay region"*.

The supporting document should be read alongside this strategy.

# Why develop a joint hazard strategy?

Collective feedback from planners in the Hawke's Bay region suggests that the reasons why a joint strategy is needed and benefits from a joint strategy are to:

- Provide guidance on what to consider in hazard management, and how to improve policies
- Establish a collective direction for hazard management and increased political buy-in
- Work towards consistency in regional hazard management policies
- Increase collective understanding and awareness of hazards
- Identify issues and barriers to successful hazard management
- Promote efficiencies between Councils
- Identify best practice approaches to hazard management, and
- Promote coordinated information management.

# How this strategy was developed

Development of this strategy involved the following:

**Development of the draft supporting document "*Land-use planning and hazard management in the Hawke's Bay region*"**

This supporting document contains full details of the work behind the strategy, and includes:

- **Hawke's Bay hazards and risks:** a review and summary of the existing knowledge and state of research in the Hawke's bay region
- **Land-use planning and hazard management:** an overview of the broad framework for hazard management in New Zealand – including legislative context, best practice guidance and generic tools and methods for hazard management
- **Local authority land-use planning in Hawke's Bay:** an overview of the current and anticipated future policy and plan provisions for hazard management, and tools and methods employed by local authorities
- **Hawke's Bay land-use planning issues and effectiveness:** summary feedback from interviews with local authority planners. Interviews were held in order to assess the effectiveness of current policies and plans, identify issues with implementation, seek feedback on possible improvements to policies and plans and gain feedback on the level of hazard management collaboration between local authorities in the region
- **Summary, conclusions and recommendations:** a summary of and conclusions on the state of land-use planning for hazard management, based on background research and the summary of feedback from planners, and recommendations on the future approach to land-use planning – both general and hazard-specific.

**Workshop with planners**

A workshop was held with Hawke's Bay planners in March 2011 to review the conclusions and recommendations within the supporting document, and make further recommendations on the approach to hazard management.

**Development of strategy and update of supporting document**

This strategy was developed following the planners workshop. The recommendations within the supporting document were updated based on feedback provided at the workshop, and these flow through into this strategy.

**Completion of strategy and support document**

The strategy and supporting document were completed after a further opportunity for review by planners during April and May 2011.

# Land-use planning best practice and current practice for significant hazards

Table 1 summarises the information within the supporting document on current practice versus best practice.

**Table 1[1]: Land-use planning - best practice versus current practice in Hawke's Bay**

| Hazard | Best practice | Current practice | Comments |
|---|---|---|---|
| **River flood** | MFE guidance (climate change, flood guide/manual), AS/NZS 9401:2008. Key concepts include avoidance, risk-based approach, precautionary approach, catchment-based and adaptive management, understanding natural systems, considering all forms and levels of management, management of residual risk | Use of MFE guidance to inform flood management (HBRC), no avoidance focus in RRMP and mitigation focus in DP's, little consideration of whole of catchment management, natural systems and residual risks, default to minimum BA standard. | Most widespread and frequent hazard risk, elements of best practice adopted (guidance, HPUDS), significant opportunity for improvement exists |
| **Coastal erosion /inundation** | MFE guidance (climate change, coastal change), NZCPS. Key concepts include avoidance, precautionary approach, progressive risk reduction, preservation of coastal margins, preference for soft solutions. | Development of RCEP and Wairoa Variation 1B pick up on best practice guidance approaches. | Clear national direction, alignment of CHBDC, HDC and NCC plans should follow RCEP approach over time. |
| **Earthquake** | MFE active fault guidelines. Key concepts include identification of faults and issues with accuracy, avoidance, risk-based approach, consideration of building type, consent categories and implementation advice | Hazard identification complete for CHBDC and HDC, CHBDC has rule and DP maps, HDC advice provided outside DP as part of consent | Completion of information needed, opportunity for improvement exists |
| **Tsunami** | GNS tsunami guidelines: Key concepts include managing uncertainty, risk-based approach including quantifying consequences, selecting land use importance category and consent activity status. Pre-event recovery also recommended. | No inclusion of tsunami considerations in land use planning | Significant opportunity for improvement, and considerable uncertainty in implications. |
| **Landslide** | GNS landslide guidelines. Key concepts include identification of areas at risk and issues with accuracy, avoidance, risk-based approach, consideration of building type, consent categories and implementation advice | Some hazard identification prior to development, no specific rules in DP's, existing information used to flag development proposals requiring further information | Some opportunity for improvement. |
| **Volcanic** | Absence of formal guidance. Journal paper recommends avoidance of development in high risk areas, and pre-event land use recovery | No inclusion of volcanic ash fall considerations in land use planning | Limited opportunity for improvement. |

[1] Refer to Table 3 in the supporting document

# Conclusions

The following conclusions have been summarised from the "Summary and conclusions" section within the supporting document.

## Research and Information[2]:

- The role of information is vital to land-use planning, with HBRC playing a pivotal role. Despite the issues with information provision, there is a strong ongoing need for information provision. There are opportunities to improve how information priorities are developed and aligned with TA land-use planning activities
- Monitoring hazard trends is of high importance, but the methods used do not reflect the level of importance
- Long-term plans at the TA level do not reflect a strong direction on hazard management
- HPUDS has picked up on hazards as a key driver for future development, and this approach has elements of best practice.

## Policies and Plans[3]

- The framework for hazard management in New Zealand is clear, and there is no need to develop a new regional framework
- A national driver such as the NZCPS provides a strong foundation for regional and District policy development
- The RRMP could be improved to place more emphasis on avoidance in preference to mitigation, to provide guidance for significant hazards and focus on policy implementation as well as information provision. The RRMP as it stands does not provide strong guidance on best practice or a strong driver for hazard risk avoidance
- The RCEP and Wairoa Variation 1B approach aligns with best practice guidance for managing coastal erosion and inundation hazards
- DP provisions could benefit from a consistent regional approach to hazard management that picks up on best practice guidance
- There are opportunities to improve DP provisions as part of the ongoing review processes, and pick up on best practice guidance in land-use planning to a greater extent than policies and plans do at present.

## Urban design and construction

- The Building Act and related tools are critical to the successful delivery of hazard management outcomes
- There is potential for avoidance methods to be strengthened in support of Building Act/Building Code provisions
- There is an opportunity to improve the collective approach to river flood risk management.

[2] Refer to "Risk Assessment" summary and conclusions in support document.

[3] Refer to "Institutional Frameworks" summary and conclusions in support document.

## Early warning system

- There are potential opportunities to strengthen the linkages between RMA policies and plans and emergency management, at both the political and staff levels.

## Education and participation

- There are opportunities to improve public education and awareness given its stated level of importance within RMA plans, and improve linkages to existing emergency management programmes
- There are opportunities to improve understanding about the effectiveness of LIMS and PIMS.

## Communicate and consult

- Maintaining and improving liaison between local authorities is critical to effective land-use planning, and there are opportunities to improve the interaction between TA's.

## Monitor and review

- There is a lack of ongoing evaluation of policy effectiveness.

# Recommendations

The recommendations have two parts:

1. General recommendations for activities in support of land-use planning for hazard management, related to the summaries and conclusions in the previous section
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.

## General Recommendations

### Research and information[4]

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.

[4] Refer to "Risk Assessment" summary and conclusions in support document.

- 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[5]

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[6]

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).

## Hazard-specific recommendations

The following hazard-specific recommendations are made based on:

- The gaps identified between best practice and current practice, per Table 1
- Summaries and conclusions from the supporting document
- General recommendations
- What is considered to be realistic and achievable for land-use planning and hazard management within the Hawke's Bay context, based on research and discussions with local authority planners in Hawke's Bay.

The recommendations in Table 2 are supported by reasons and key tools/mechanisms that are required in support of the recommendations.

[5] Refer to "Institutional Frameworks" summary and conclusions in support document.

[6] Refer to "Urban Design and Construction", "Early Warning System", "Education and Participation", "Communicate and Consult" and "Monitor and Review" summary and conclusions in support document.

**Table 2[7]: Hazard-specific recommendations on the approach to land-use planning in Hawke's Bay**

| 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:<br>• Connects to key best practice considerations (refer to Table 1)<br>• Moves towards community-driven and owned standards, and away from a default 1-in-50 year plus freeboard standard as a starting point<br>• 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)<br>• Recognises the potential impacts of low probability, high consequence events, and considers response to these events<br>• 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.<br><br>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)<br>• National standard: use of NZS 9401:2008 Managing Flood Risk – A Process Standard<br>• Research: understanding natural systems, sediment transport and long-term catchment trends<br>• 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 | • District Plans: review, update and alignment of Napier City, Hastings District and Central Hawke's Bay District Plans to the RCEP over time |

[7] Refer to Table 4 in the supporting document

| Hazard | Land-use planning recommendation | Reasons | Key risk reduction tools and mechanisms |
|---|---|---|---|
| **Coastal erosion /inundation (cont.)** | | management approach. | • Research: alignment of methodologies and coastal hazard research programmes over time. |
| **Earthquake** | Assuming completion of active fault trace mapping, adopt an approach that:<br>• Incorporates fault traces within DP maps where politically possible, or within Council GIS databases and made available where not politically possible<br>• Sets rules for setback distances from active faults where politically possible, or requires proof of consideration of active fault guidelines where not politically possible<br>• Requires further site-specific information as part of consent process<br>• Uses LIMS/PIMS to identify hazards.<br><br>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.<br><br>Issues with existing development difficult to overcome, so focus should be on greenfields sites where there are good opportunities for avoidance.<br><br>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<br>• Active fault guidelines: broaden usage of these<br>• 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:<br>• Rules restricting location of critical facilities[8] within areas identified as tsunami zones within DP's – restriction of new development and retrofit of existing where practicable per the guidelines<br>• Design, enhancement and protection of evacuation routes taken into account during new development or redesign – | 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 | • RRMP: focus on avoidance for greenfields areas, and planning measures to protect human life<br>• DP's: development of rules to restrict critical facilities, protect evacuation routes, restrict intensification of development in high risk areas |

[8] Based on Land Use Importance Category (LUIC) 4 (buildings that are essential to post-disaster recovery or associated with hazardous facilities) and LUIC 5 (buildings whose failure poses catastrophic risk to a large area, such as large scale dams or hazardous facilities).

| Hazard | Land-use planning recommendation | Reasons | Key risk reduction tools and mechanisms |
|---|---|---|---|
| | such as roading infrastructure in coastal areas<br>• 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)<br><br>Development of regional principles makes sense, supported by implementation options at the District level. | tsunami risk.<br><br>There is political and financial risk for Councils in implementing large scale retrospective standards for existing development. | • Structure plans and growth strategies: take account of tsunami hazards<br>• Research: complete Level 3 inundation modelling<br>• Emergency management: improve links to CDEM and focus on public education and awareness. |
| **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<br>• Structure plans: incorporate landslide hazards<br>• 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 |