



## **Clifton to Tangoio Coastal Hazards Strategy Joint Committee**

**Date:** Friday 19 September 2014

**Time:** 11.00 – 4.00pm

**Venue:** Napier City Council  
Council Chambers  
231 Hastings Street  
Napier

### **Agenda**

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1. Welcome / Apologies
2. Introductions
3. Background Material
  - Paul Komar report
  - Presentation by Richard Reinen-Hamill
4. Election of Chairman for the Joint Committee
5. Adoption of Terms of Reference
6. Discussion including expectations for the next meeting
7. Dates for future meetings / possible field familiarisation

#### **Attachments**

1. Background HBRC briefing paper
  2. Draft presentation – Richard Reinen-Hamill
  3. Draft Terms of Reference
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**HAWKE'S BAY REGIONAL COUNCIL**  
**ENVIRONMENT AND SERVICES COMMITTEE**

**Wednesday 09 April 2014**

**SUBJECT: COASTAL STRATEGY**

**Reason for Report**

1. Projections by climate scientists are that with continued global warming the average level of the sea will rise by about 1m by 2100. A range of 0.9 to 1.3m by 2100 is predicted by Komar. There is also evidence that this rise will be accompanied by increases in the intensity of storms and the heights of their generated waves. Coasts are therefore expected to face erosive forces over the next 100 years that are substantially higher than those experienced over the past 100 years. This will be accompanied by an increase in the frequency of waves overtopping the beach crest and inundating land close to the coast.
2. These projections are made in an assessment of coastal hazard risks which has been completed by Emeritus Professor Paul D Komar and Erica Harris in their report "Global Climate and Barrier Beach Responses". The report has already been provided to Councillors for their information.
3. The Hawke's Bay coastline between Clifton and Tangoio is defined by a gravel barrier ridge which provides a vital defence from the sea. Without it large areas of Napier City and some of Hastings District would be regularly inundated and potentially be uninhabitable.
4. The gravel barrier ridge is therefore an essential asset to Hawke's Bay. Activity affecting any part of the gravel barrier ridge can potentially affect another part. The impacts of climate change will mean that this asset is under increasing pressure in the future. Technology is now available which can assist us better understand coastal processes and associated risks affecting the coastal environment including the gravel barrier ridge and identify approaches that if implemented could either extend the length of time that the gravel barrier ridge continues to protect Hawke's Bay, or provide robust direction for an alternative engineering or planning response.
5. The concept of a multi agency strategy for managing the coast was proposed at a meeting of Hawke's Bay's local government agencies in November 2013, where Paul Komar presented the key findings of his report.
6. This paper formalises the proposal for a coastal strategy for the long term management of the coast and mitigation of risks between Tangoio and Clifton. A draft scope for this strategy is attached for discussion.
7. The paper proposes technical and governance structures to assist and oversee the development of this strategy.

**Background**

8. The report "Global Climate and Barrier Beach Responses" is referred to as the Komar Report throughout this document. This report was commissioned by HBRC to:
  - 8.1. Review the potential impacts of climate change on the coastal environment as an initial step in reviewing the region's coastal hazards.
  - 8.2. To broadly consider the sustainability of current coastal sediment extraction along the coast.

- 8.3. To set the scene to allow consideration of long term options for the Hawke's Bay coast.
9. Resource consents for the extraction of gravel from the coast at Awatoto and Napier's main beach expire in 2017. The Komar report states that these two activities are unsustainable and should be stopped. Extraction at Napier's main beach is for the Westshore renourishment project. Alternative sources of material or an alternative mitigation approach will need to be found.
  10. Overtopping of the gravel barrier ridge has already occurred in the Haumoana / Clive area and the frequency of overtopping events is likely to increase in the future as will their extent (length of beach over which this occurs). Long term overtopping of the gravel barrier ridge protecting Napier is a risk, particularly in the vicinity of Awatoto.
  11. Coastal hazards have the potential to cause significant community disruption and cost.
  12. Some of the key findings of the Komar report are:
    - 12.1. With continued global warming the average level of the sea will rise by about 1 metre by the end of the 21<sup>st</sup> century, and the intensities of storms and the heights of their generated waves will also increase.
    - 12.2. It is doubtful that the gravel barrier ridge will remain stable. The current sea exclusion banks protecting the Haumoana, Clive and East Clive area from inundation will not be adequate to prevent inundation from the sea.
    - 12.3. By the year 2100 maximum total water levels (TWL) (the sum of the measured tide and calculated wave runup levels) in the Haumoana littoral cell (Clifton to Port of Napier) are predicted to be 1.5m above present day levels, and 2.0m in the Bayview littoral cell (Port of Napier to Tangoio). This means that overtopping and inundation can be expected for the Napier gravel barrier ridge from about Kenny Road (Golf Links) south in an extreme event. A similar situation exists with the Bay View Littoral cell although the gravel barrier ridge is at a higher elevation.
    - 12.4. Extreme events (with an occurrence interval longer than 100 years) are predicted to result in wave runup some 2 metres higher than TWL for 2100. Such events have the potential to overtop the gravel barrier ridge along the entire length of the Haumoana cell's shore (including impacting Napier CDB), and at least the southern half of the Bay View cell shore. There is a real possibility of such an event occurring over the next 100 years.
    - 12.5. Climate change will change the sediment budgets for the littoral cells resulting in enhanced erosion of the gravel barrier ridges. Given this scenario it does not make sense to continue with mining of gravel at Awatoto (commercially by Winstones) and Pacific Beach (for Westshore renourishment). Cessation of the mining operations would improve the present and future integrity of the barrier ridge to resist increased storm-wave energies.
  13. It is proposed that a strategy be developed to provide a long term vision for the coast, and what is required now and in the future to most cost effectively achieve that vision.
  14. The strategy development process will involve quantification of the likelihood of occurrence and potential consequences of a variety of natural hazard events in the coastal environment, so that the risk (both likelihood and consequences) can be determined and options for mitigation of the risks can be explored.
  15. This strategy will ultimately need to fully consider a range of possible management and mitigation options and costs including:
    - Avoidance
    - Retreat using either engineering or planning approaches

- Soft gravel barrier ridge erosion mitigation. e.g. re-nourishment
  - Hard gravel barrier ridge erosion mitigation
  - Mitigation of sea inundation and tsunami hazards
16. The strategy will be as clear as possible about the collective aims of the Hawke's Bay community for this coast and provide a framework within which the feasibility of options and opportunities can be tested and prioritised. This will enable management and mitigation effort to be commenced in a coordinated and collaborative way resulting in the Hawke's Bay community being prepared for the potential impacts of the coastal hazards.
  17. A similar approach could be developed for the region's northern and southern coasts, however the highest risks are associated with the coast between Clifton and Tangoio. The process for developing the strategy for the Clifton to Tangoio coast should be adaptable for these other areas. Staff will quantify the resource requirements for this work so that provision into the draft LTP 2015/25 can be considered.

### **Current Coastal Issues**

18. **Westshore** – Renourishment at Westshore has held the coast seaward of where it was in 1986 along most of the Westshore foreshore. Renourishment material has for the last 20 years or so been sourced from the Napier foreshore. The resource consent for this extraction expires in 2017. The Komar report identifies that this is unsustainable and therefore another source of material or an alternative approach to mitigating the impacts of erosion must be identified.
19. **Napier foreshore** – The integrity of the Napier gravel barrier ridge is imperative for the security of Napier CBD and lower lying suburbs. Identification of threats to its integrity in the long term and steps that can be taken to cost effectively mitigate or minimise those threats now are important to Napier's long term future.
20. **Awatoto** – Winstone aggregates holds a resource consent to extract 30,000m<sup>3</sup> of sediment from the Awatoto foreshore annually. This consent expires in 2017. The Komar report highlights that ongoing extraction from this site is unsustainable. HBRC are discussing future options with the company. The beach crest at Awatoto is lower than the beach crest protecting Napier CBD. There is therefore a higher risk of overtopping of this gravel barrier ridge with the potential to impact the Awatoto industrial area and the Napier sewerage treatment plant.
21. **East Clive** – The East Clive and Clive communities are protected from sea inundation from a sea exclusion bank which joins with the stopbanks on the Ngaruroro and Tukituki Rivers. In 1974 a heavy sea event flooded land in this area after breaching the original sea exclusion bank. The current sea exclusion bank will over time become more susceptible to breaching if the barrier beach is weakened. Two groyne structures were constructed as part of this project to help maintain the integrity of the gravel barrier ridge. These groynes require ongoing maintenance and their long term future needs to be considered in the light of sea level rise. The Hastings sewerage treatment plant is situated immediately on the landward side of this sea exclusion bank. Outfall structures in the vicinity of the gravel barrier ridge are also at risk. Inundation of this area could impact significantly on the operation of the Hastings sewerage treatment Plant.
22. **River mouths** – Tūtaekuri, Ngaruroro and Tukituki are major rivers that discharge into Hawke Bay. In addition, the Maraetotara River, Ahuriri Estuary, Esk River and Te Ngarue and Pakuratahi Streams discharge into Hawke Bay. Climate change is predicted to result in increased peak flood flows in the region's rivers. Sea level rise will also impact on these waterways. A possible impact is a reduction in gravel getting to the coast. Additional flood protection is an option to reduce the possibility of flooding from these.

23. **Haumoana and Te Awanga** – Both Haumoana and Te Awanga are at risk from inundation from the sea, Haumoana particularly so. The 18 properties close to the sea along East Road have protected their properties with a range of coastal defence structures. These block some littoral transport of sediment to the beach to the north of these properties which will over time adversely impact on the integrity of the gravel barrier ridge protecting Haumoana. The risk of inundation of Haumoana is therefore increasing.
24. **Clifton** – The Clifton camping ground is currently under threat from coastal erosion.
25. **Sediment supply and transport** - There is a littoral drift of beach sediment from South to North along the coast. Any mitigation measures at one location that stops or reduces this littoral drift, or the supply of sediment, potentially has impacts to other parts of the beach. Komar also highlights the impact of sediment extraction to the south of the Awatoto site.
26. The strategy will need to consider each of these issues and how they relate to one another, as well as consider other potential issues that may arise along the whole of the coast in question.

### **Governance Structure**

27. As this project will involve Napier City, Hastings District and Hawke's Bay Regional councils, and run over several years, it is proposed that a governance structure for the project follows the model used for the Heretaunga Plains Urban Development Study (HPUDS).
28. HPUDS was overseen by a governance group established as a Joint Committee with two elected members from each of Hastings District Council, Napier City Council and Hawke's Bay Regional Council and included two Iwi representatives.
29. Staff have held initial discussions with representatives from Mana Ahuriri Inc, He Toa Takitini, and Maungaharuru Tangitū Trust regarding this issue. He Toa Takitini area of interest includes the coast south of the Ngaruroro River mouth. Mana Ahuriri Inc area of interest is north of the Ngaruroro River mouth to the mouth of the Pakuratahi and Te Ngarue Streams, and Maungaharuru Tangitū Trust area of interest is the northern area of the coast covered by this strategy. All parties are interested in being involved. Accordingly it is proposed that further discussions be held with each organisation seeking their agreement to participate in the strategy development, and to nominate a representative from each organisation to sit on the Joint Committee to oversee the project.
30. The Joint Committee will be supported by a technical advisory group (TAG) of senior technical advisors (staff and consultants) throughout the process. The Joint Committee would be administered by HBRC staff.
31. It is proposed that the governance group develop and agree terms of reference for themselves and the TAG group.
32. Briefing papers similar to this will be considered by Napier City Council and Hastings District Council during April/May 2014.

### **Stakeholder and interest group involvement**

33. Stakeholders and interest groups must be engaged in the strategy development process. It is recommended that regular meetings be held with stakeholders and interest groups. Stakeholders will include:
  - Port of Napier Ltd
  - Department of Conservation
  - Iwi groups and hapu with an interest in the coast

- Winstone Aggregates
  - The Haumoana WoW Group
  - Clifton and Te Awanga motor Camps
  - The Westshore Residents and Development association.
  - Residents of East Clive
  - NZTA
34. It is proposed that the stakeholder engagement process is considered and agreed through the governance group.

### **Time Line**

35. The strategy development process may take three years or more as many of the issues to be considered will be complex and may require considerable additional investigation or research to understand them sufficiently to enable a robust assessment of options and opportunities to be considered.
36. The Governance Group shall consider and agree the scope and the resources available and determine a timeline for the project. This may include further resourcing to be provided through Member Councils respective long term plans.

### **Scoping Document**

37. After discussion with senior staff from Napier City Council and Hastings District Council, Hawke's Bay Regional Council (HBRC) commissioned Tonkin & Taylor Ltd (T&T) to prepare a scoping document to initiate the development of a strategy.
38. This report suggests a three stage approach, and outlines the proposed scope for Stages 1 and 2. The third stage will be to develop a strategy by considering a range of options and opportunities for the management and/or mitigation of the risks. The scope for this part of the project will be established once stages 1 and 2 are well advanced.
39. It should be noted that this document suggests that hazards in addition to those highlighted by the Komar report (e.g. tsunami) should also be considered as part of the determination of the scope of the project.
40. A copy of this document appended to this paper for Councillor information. It is intended that this paper be considered by the Joint Committee as part of their formulation of the scope of the project.

### **Strategy Development Costs**

41. It is proposed that HBRC will meet the cost of consultant (Tonkin and Taylor) input to work through Stage 1 of the proposal. This will be funded within existing budgets. HBRC can also meet some costs associated with stage 2 from existing budgets however it is too early to determine whether or not budget provision will be adequate to complete stage 2. It is expected that the costs of input from other organisations lie where they fall for these two stages.
42. Stage 3 is likely to require additional investigations and studies to enable alternative options and opportunities to be assessed. The scope of Stage 3 can only be developed once stage 1 and 2 are substantially advanced. It is therefore not possible at this stage to provide an estimated cost for the project.
43. Provision will need to be included in the LTP's of the Member councils for the strategy development. It is envisaged that the Strategy development process will involve external input to assess a range of options and opportunities for the management of the aspects of the coast.

### **Potential outcome from the strategy**

44. The Strategy will determine the desired form of the coast in the long term taking into account the hazards that it will be exposed to, pressure associated with human habitation on land adjacent to the coast, and affordability to the community; and what policy, planning and physical work is required to achieve that. It will also prioritise various actions and/or activities.

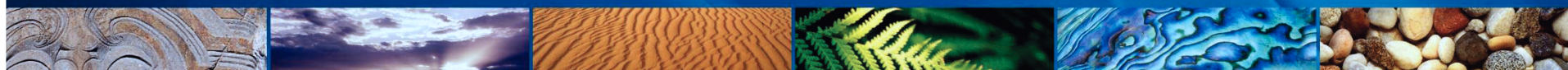
# Clifton to Tangoio Coastal Hazards Strategy



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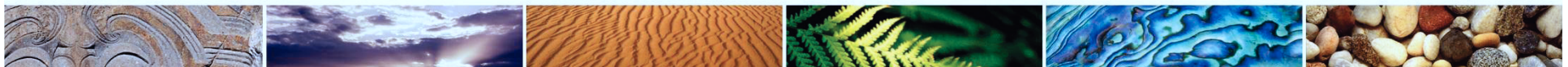
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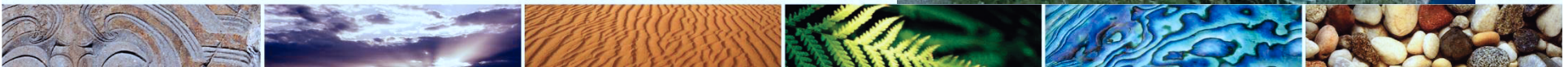
## Outline

- Objective of strategy
- What we know
- What we are doing to know more
- Climate change predictions
- Definitions and concepts
- Risk management framework
- Defining coastal hazards
- Elements at risk and vulnerability



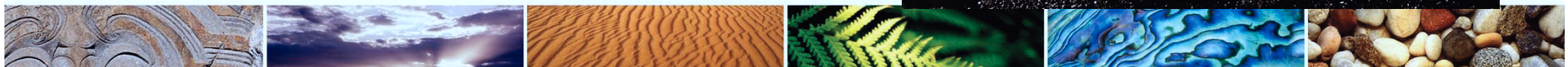
## Objective of strategy

- Describe a broad vision for the coast in 2100
- Determine options for managing or mitigating coastal hazard risks to make a more resilient community along the Hawke Bay shoreline from Clifton to Tangoio



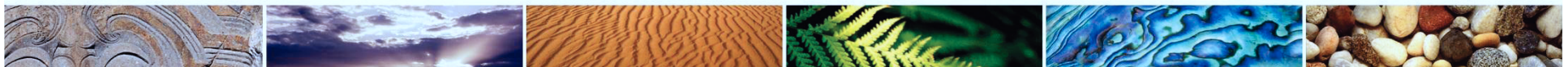
## What we know now

- Chronology of previous studies and reports
- Monitoring and data
- Waves and water levels
- How gravel beaches work
- Historic shoreline change
- How gravel moves along the beach



## Abbreviated chronology of key reports

- T&T 2004 Coastal Hazard Assessment
- T&T 2005 Shoreline Modelling Report
- Komar 2005 Environmental change, shoreline erosion and Management issues
- Kantor 2009 Southern Hawke's Bay Gravel Transport Study
- DML 2011 Hydrographic Survey of Southern Hawke Bay
- MetOcean 2011 Hawke's Bay Wave Climate
- T&T 2012 Haumoana Coastal Erosion Study
- HBRC 2012 RWSP: Gravel transport changes with changed flow regime
- HBRC 2013 Hawke's Bay Coastal Profile Monitoring
- Komar 2013 Global climate change and barrier beach response



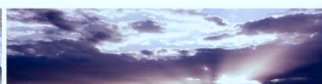




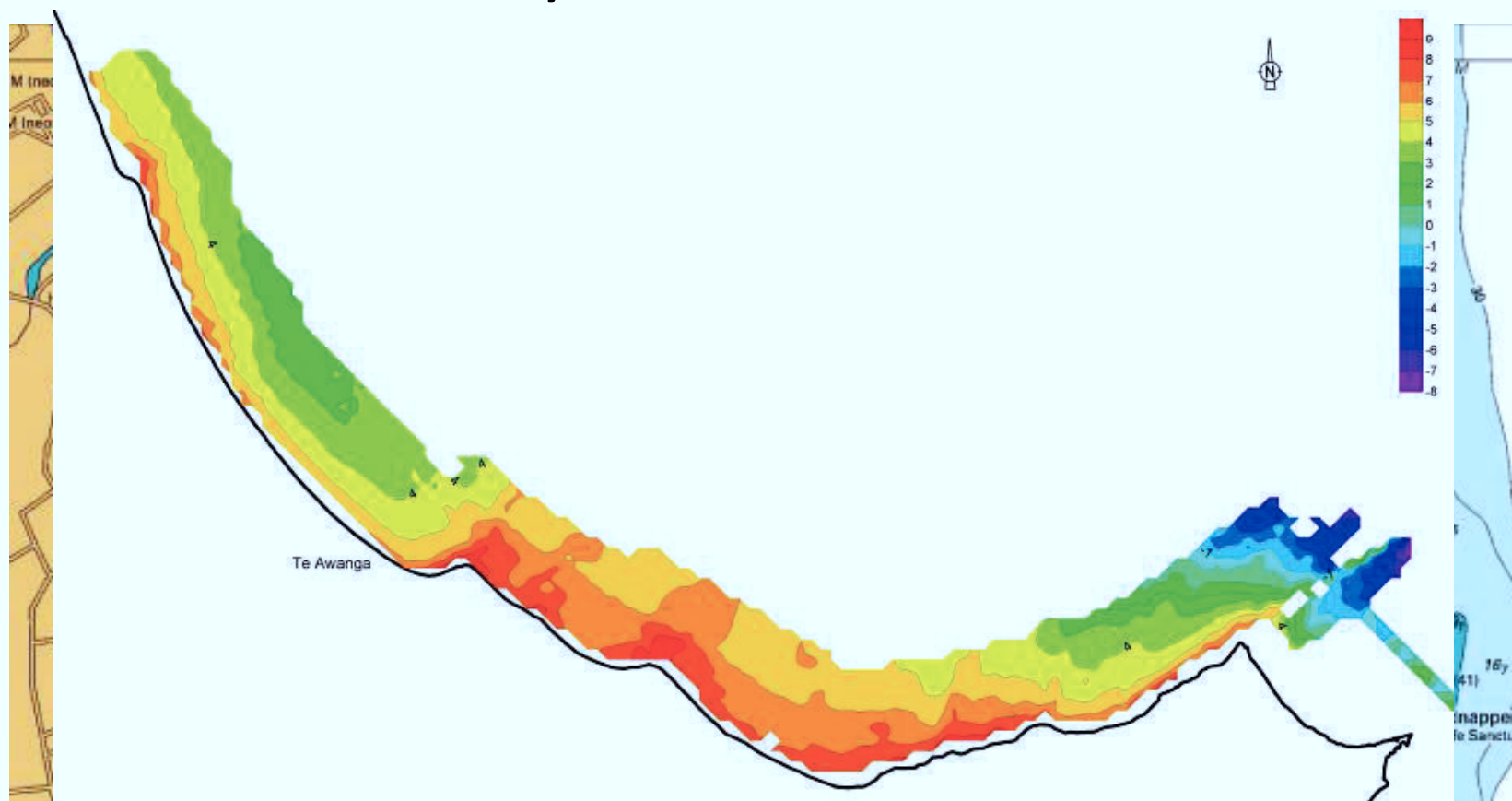
# Data acquisition and monitoring

**TABLE 4.1: PROPOSED WORK ITEM SCHEDULE AND COSTINGS, COMPACT PROGRAMME (Option 1: compact programme)**

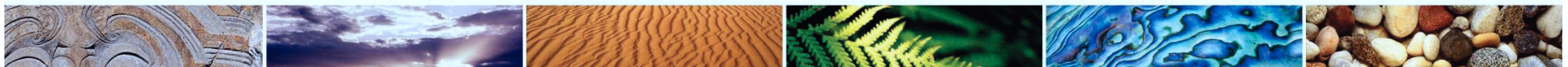
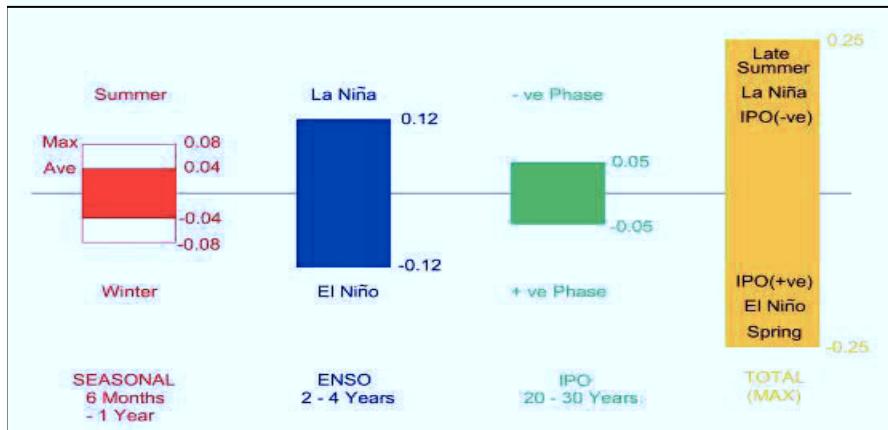
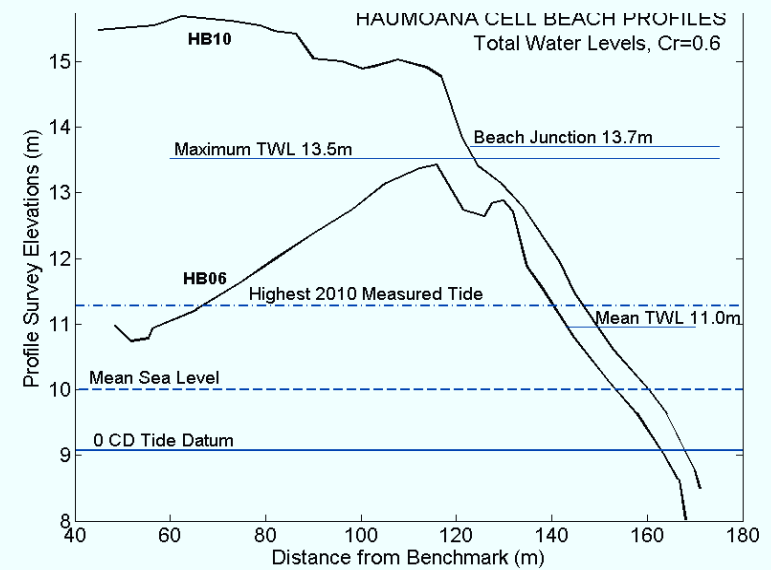
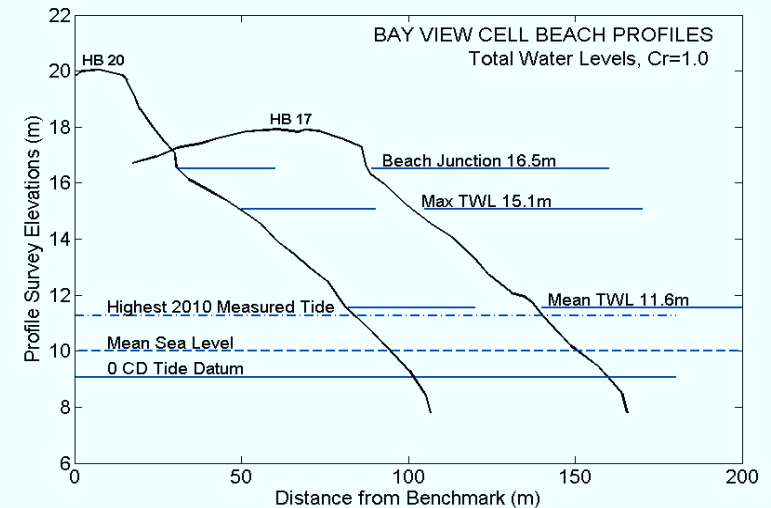
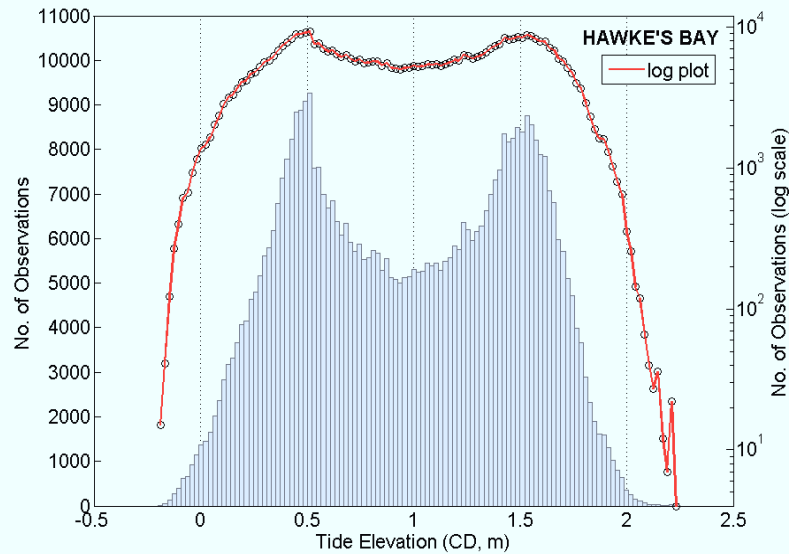
Task	Description	Financial Year									
		2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
1	Prepare/Update Meta database <sup>2</sup>	20,000					2,000				2,000
2	Open coast water level recorder <sup>3</sup>	35,000	8,000	8,000	8,000	8,000	20,000	8,000	8,000	8,000	8,000
3	Wave hindcast study <sup>4</sup>		20,000	52,000							
4	Annual license fee for Port data	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
5	Beach profiling <sup>5</sup>	26,600	26,600	26,600	26,600	26,600	26,600	26,600	26,600	26,600	26,600
6	Generation of DTMs from historic aerial photographs <sup>6</sup>		37,500								
7	Evaluation of shoreline change and wave climate data trends				60,000						
8	Wairoa river mouth water level recorder	10,000	2,000	2,000	2,000	2,000	18,000				
9	Cam-era at Wairoa River	15,000	2,000	2,000	2,000	2,000	18,000				
10	Review of sediment catchment yields					20,000					
11	Sediment properties					25,000					
12	Evaluation of short term beach fluctuations					10,000					
13	Sediment budget and shoreline change model study							30,000	30,000		
14	Coastal Hazard Mapping assessment and review									25,000	25,000
15	Internal time for project mgmt, reporting, data mgmt	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000



# Nearshore Survey 2011

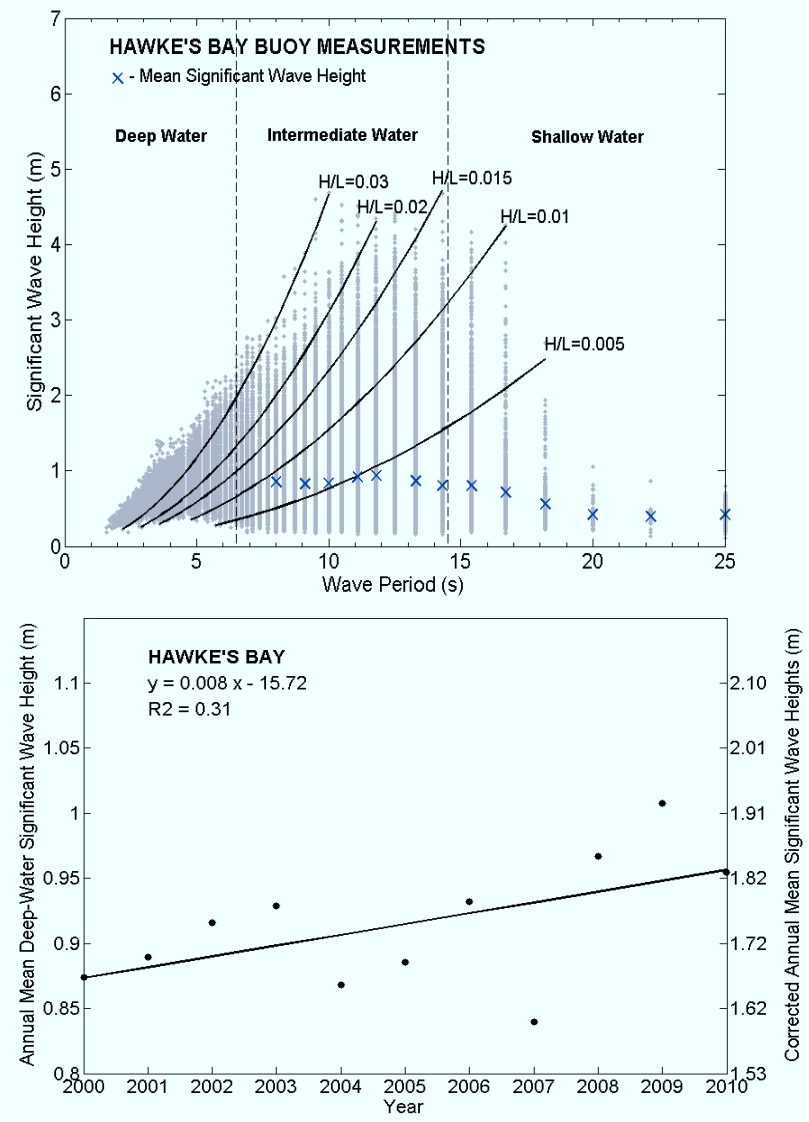
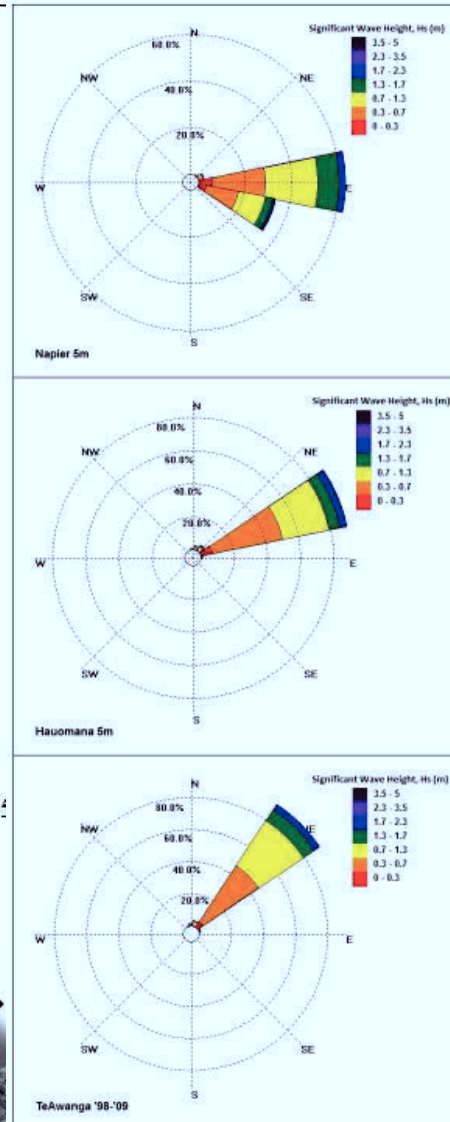


# Water levels



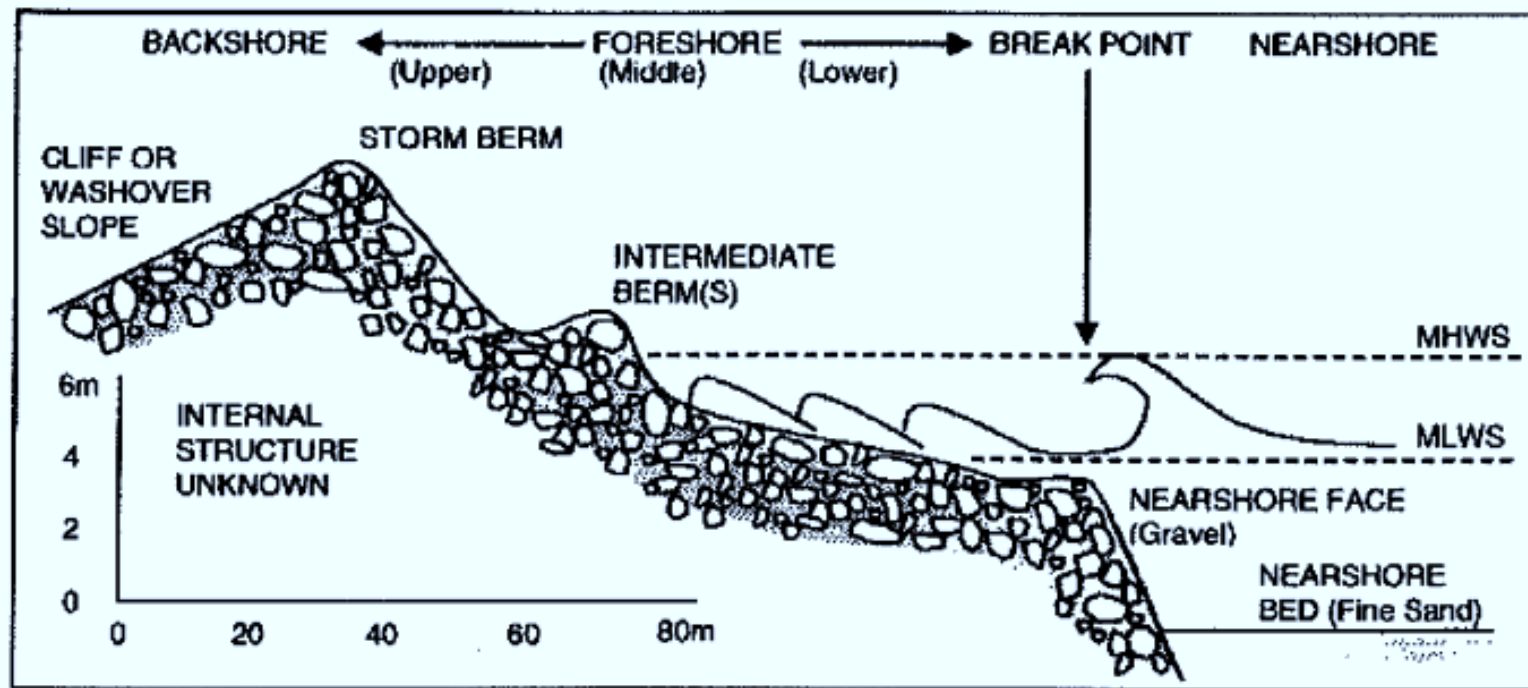


# Waves

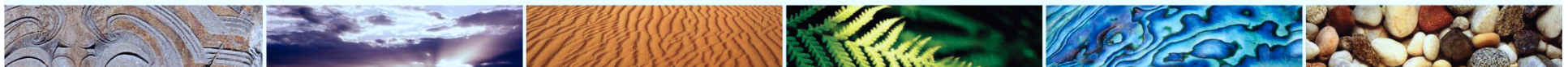


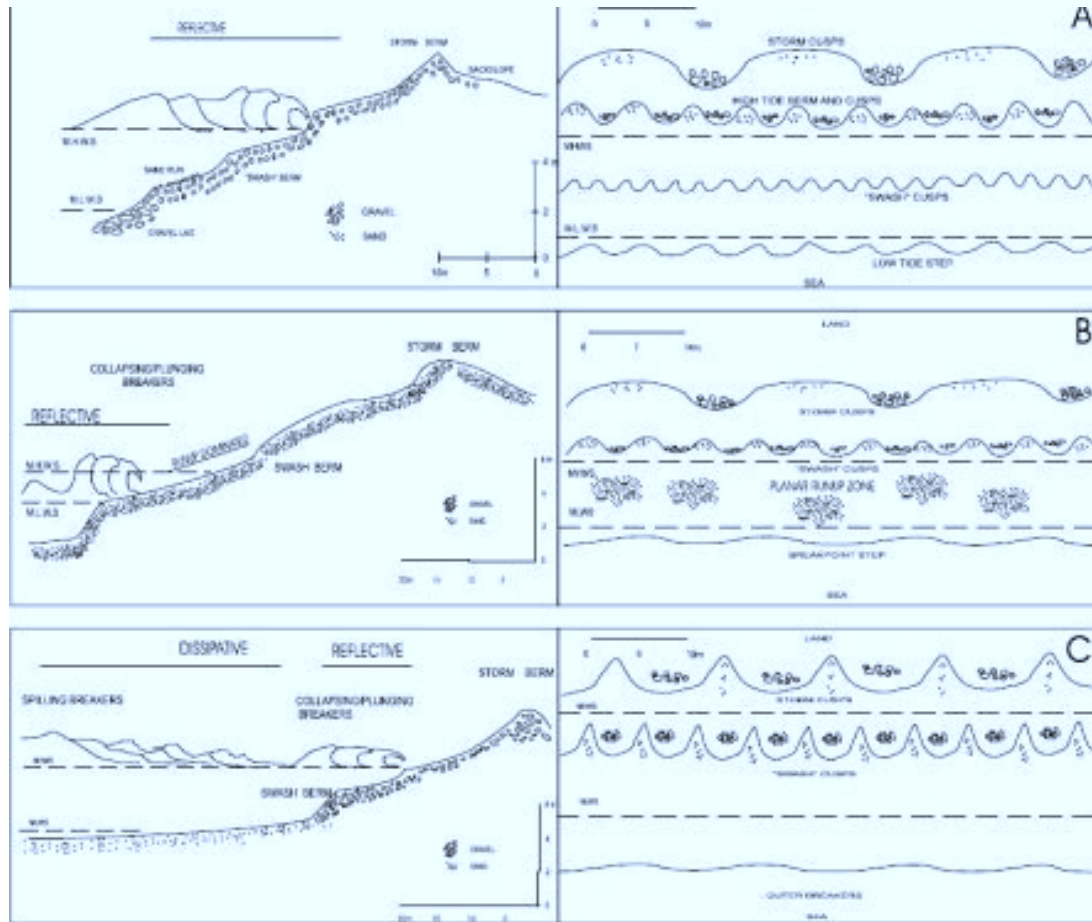


# Morphology of a gravel beach



**Figure 2.1:** Typical morphology of a mixed sand and gravel beach profile. Updated From Kirk (1980:193).



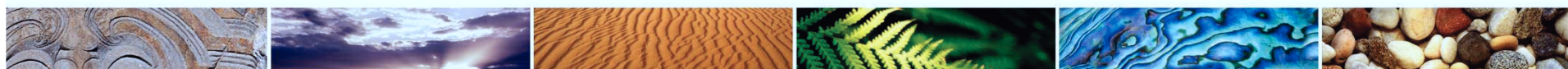
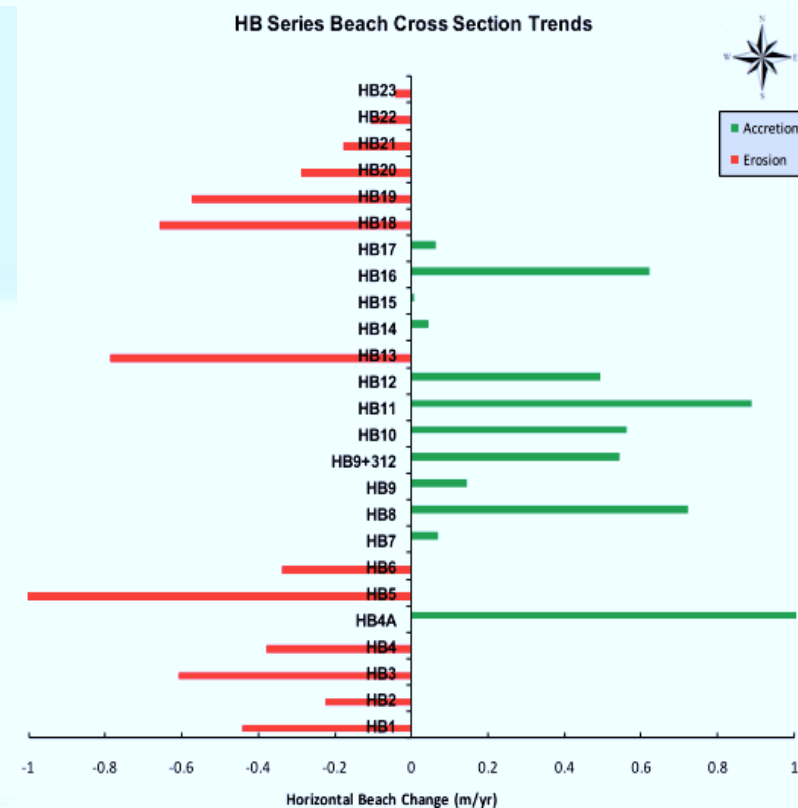


**Figure 2.1: Schematic representation of the three gravel beach types, in cross-section and plain view. The scale for each beach is different. (A) Pure gravel beach. Note the steep slope and plunging waves. Several sets of cusps are often present and a lag of coarse gravels forms at the toe of the beach. (B) Mixed sand and gravel beach. Runup dominates with a planar swash zone and cusp development at the landward limit of runup. Sand and gravel are entirely intermixed, although some surficial sorting may develop. (C) Composite Gravel beach. A sandy intertidal zone dominates the lower profile, with a low slope. The change from sand to gravel is often marked by a distinct break in slope. Spilling breakers form at low tide and during storms (Jennings and Shulmeister, 2002).**

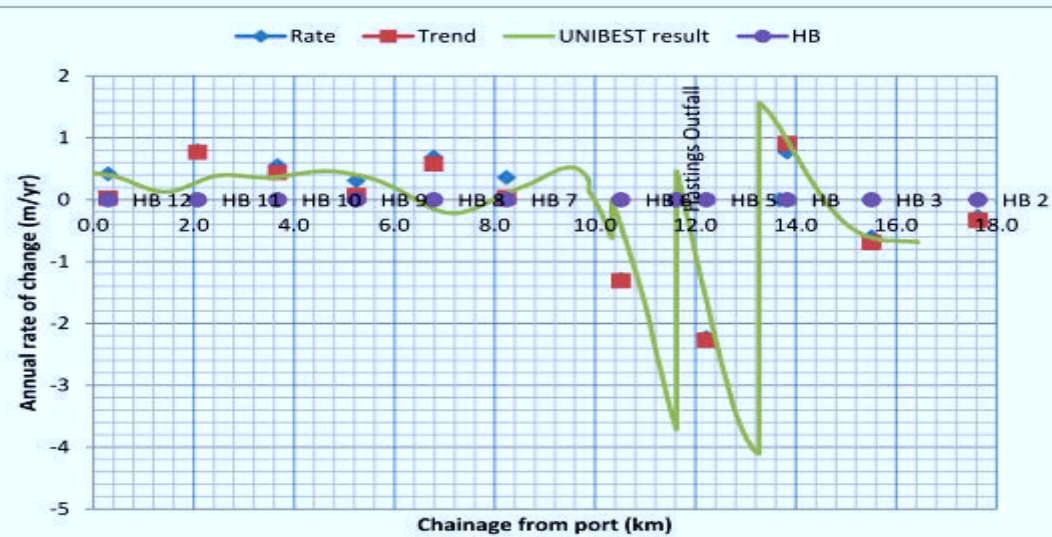
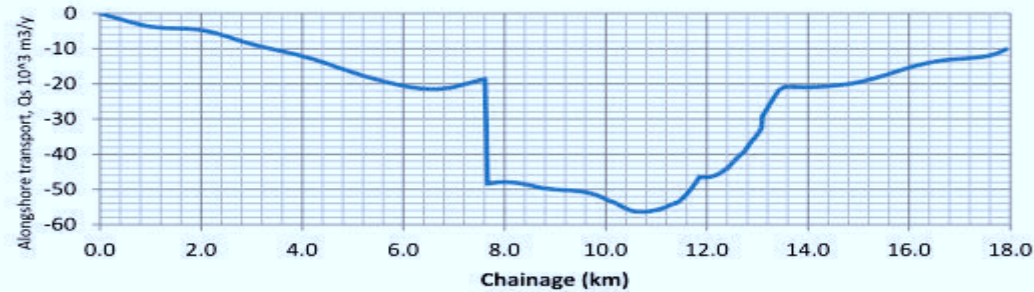




# Historic shoreline change



# Sediment transport





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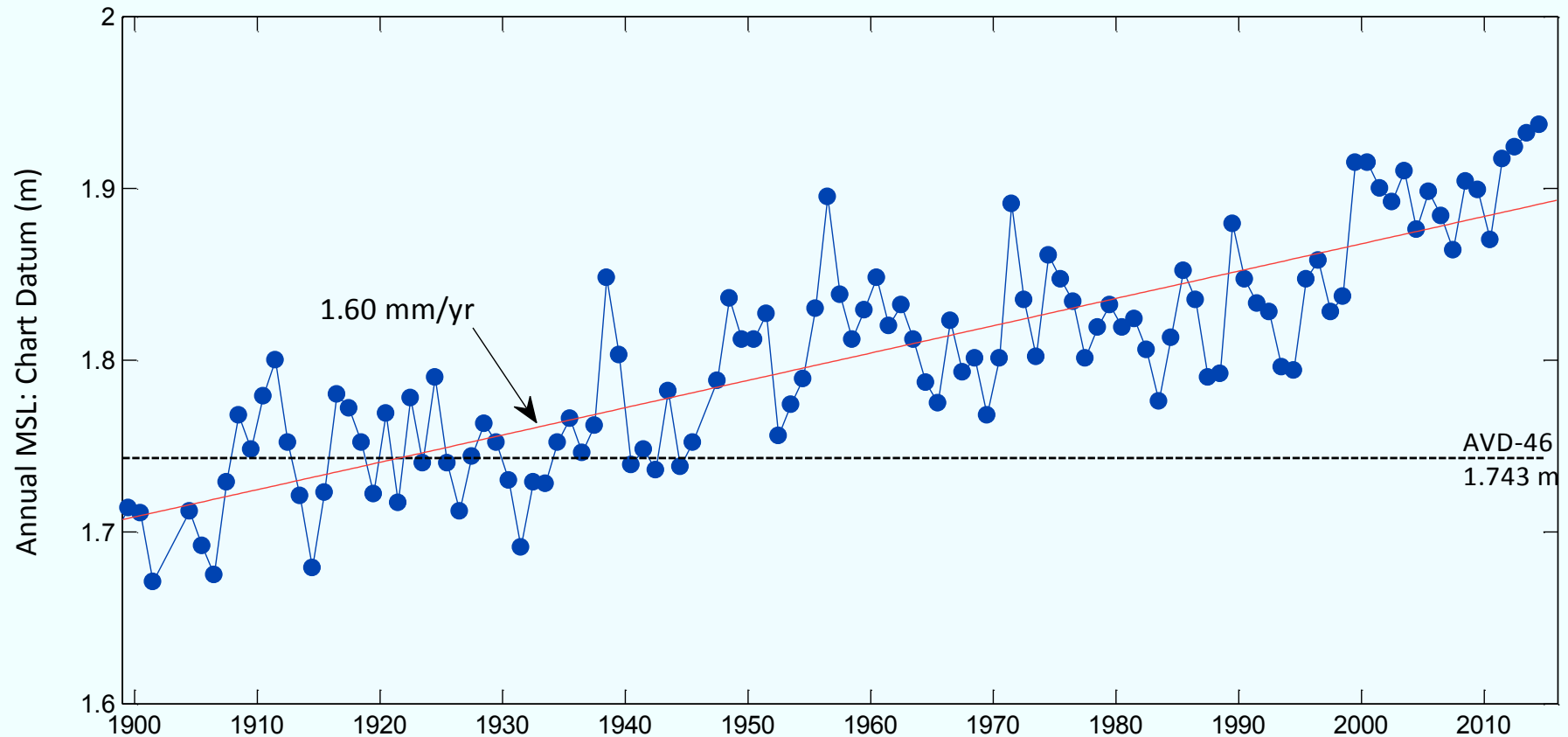
**CITY OF  
NAPIER**



Taihoro Nukurangi

Climate change (courtesy of Dr Rob Bell –  
NIWA)

### Port of Auckland: Annual MSL (1899-2014)



Linear trend for Auckland is 1.6 cm/decade  
(NZ average rate is 1.7 cm/decade compared with  
global average of 1.8 cm/decade)

Since 1900, the mean sea level at Auckland has risen by 0.2 m

*New Scientist: 22 Oct 2011*

**Know:** Sea level is going  
to rise many metres

**Don't know:** • • • • •  
How quickly sea level will rise

Special Report: Climate Change  
*What we do know – and what we don't*  
Michael Le Page (2011)



## Three IPCC AR5 Working Group Reports

- WG I: Physical Science Basis (SPM 23-26 September 2013)
- WG II: Vulnerability, impacts, adaptation options ( SPM 25-29 March 2014)
- WG III: Options for mitigating climate change (SPM 7-11 April 2014)
- SYR (Synthesis Report): In progress (Release: 1 Nov 2014)

WG1: 209 Lead Authors and 50 Review Editors from 39 Countries, Over 9,200 scientific publications cited. Expert Review of First Order Draft + Expert and Govt Review of Second Order Draft + Govt review of draft SPM\*: 54,677 comments



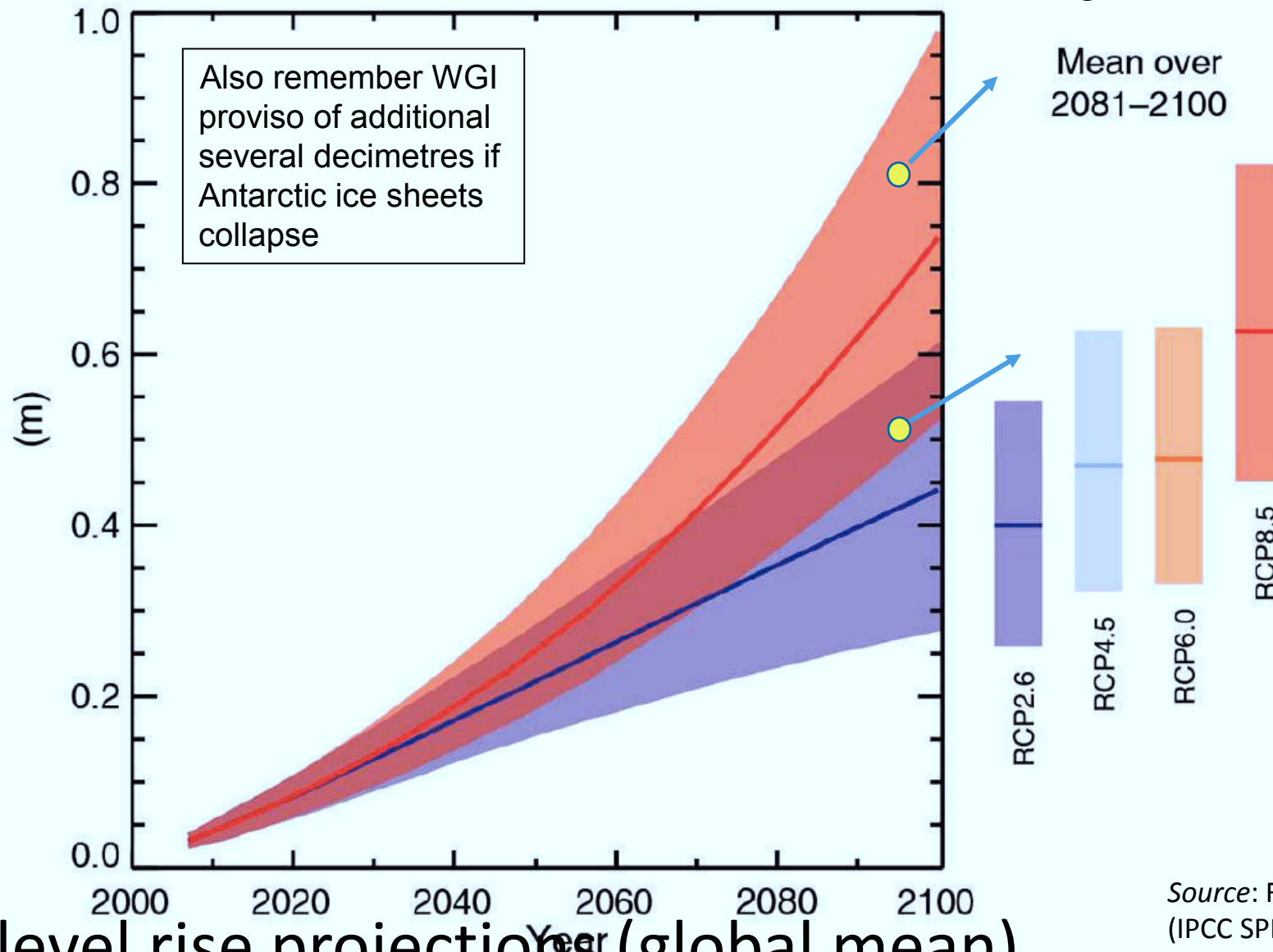
\* SPM = *Summary for Policymakers*



## IPCC Working Group I: Key findings

- There is a consistent message coming from IPCC, with similar projections to the previous two IPCC assessments (2007, 2001) – sea-level rise slightly higher
- Uncertainty in projections for a particular scenario is bounded by 5% and 95% confidence levels – main uncertainty for users is which “pathway” to adopt (down to global choices on emissions)
- It is extremely likely that human influence has been the dominant (>50%) cause of the observed warming since the mid-20th century.
- Overall, frequency of storms may not increase, but more intense storms/rainfall are likely to occur
- Cumulative emissions of CO<sub>2</sub> largely determine global mean SLR by late this century & beyond. Sea-level rise will persist for many centuries even if emissions of CO<sub>2</sub> are eventually halted

## Global mean sea level rise



Sea-level rise projections (global mean)

# New Zealand Coastal Policy Statement 2010



New Zealand Government

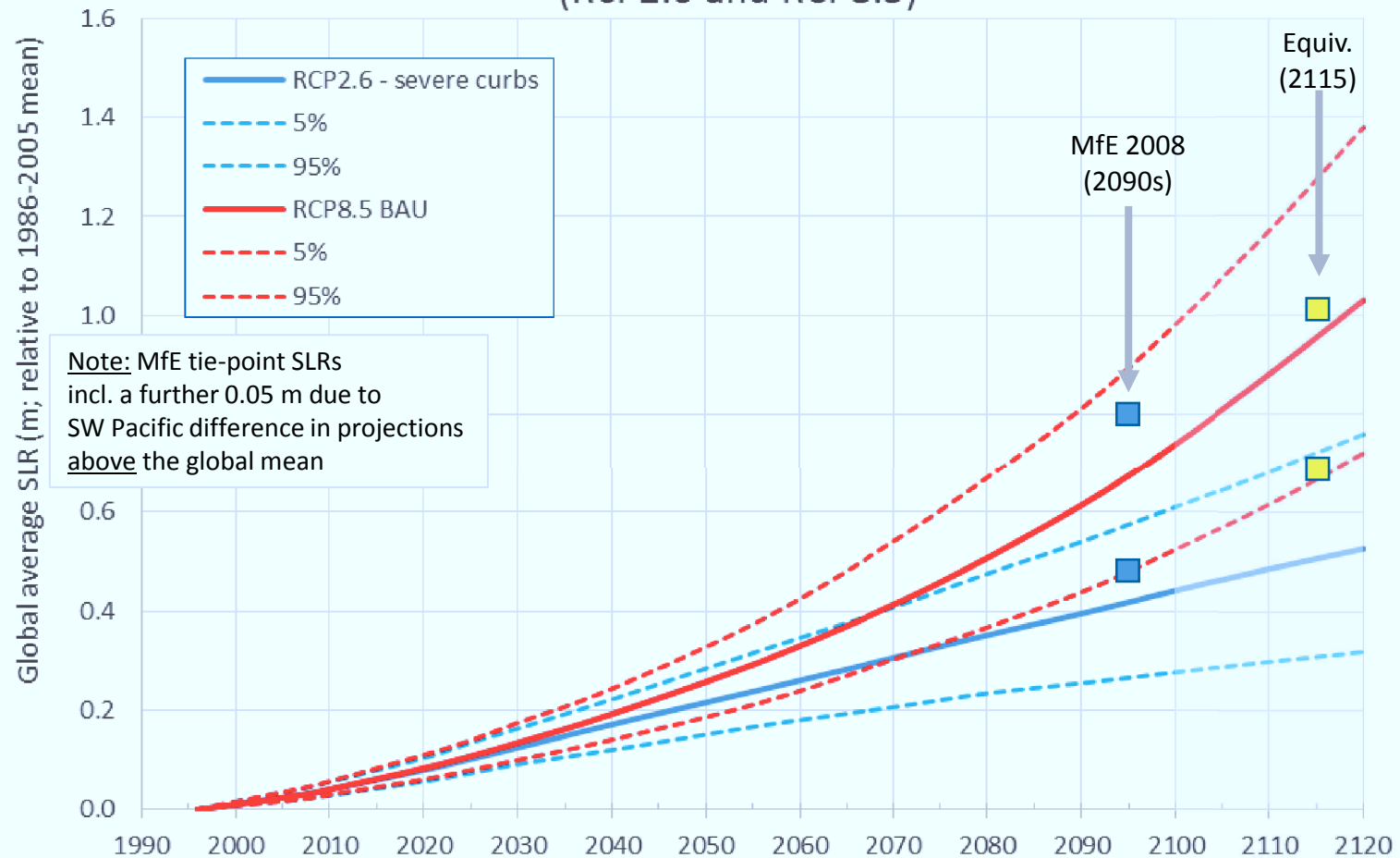
## NZCPS policies:

1. Consider climate-change & hazard effects for **at least** 100 years (Policies 10, 24-25, 27)

*So need to venture beyond the 2100 glass ceiling in IPCC reports. Need to be looking out to 2115+*

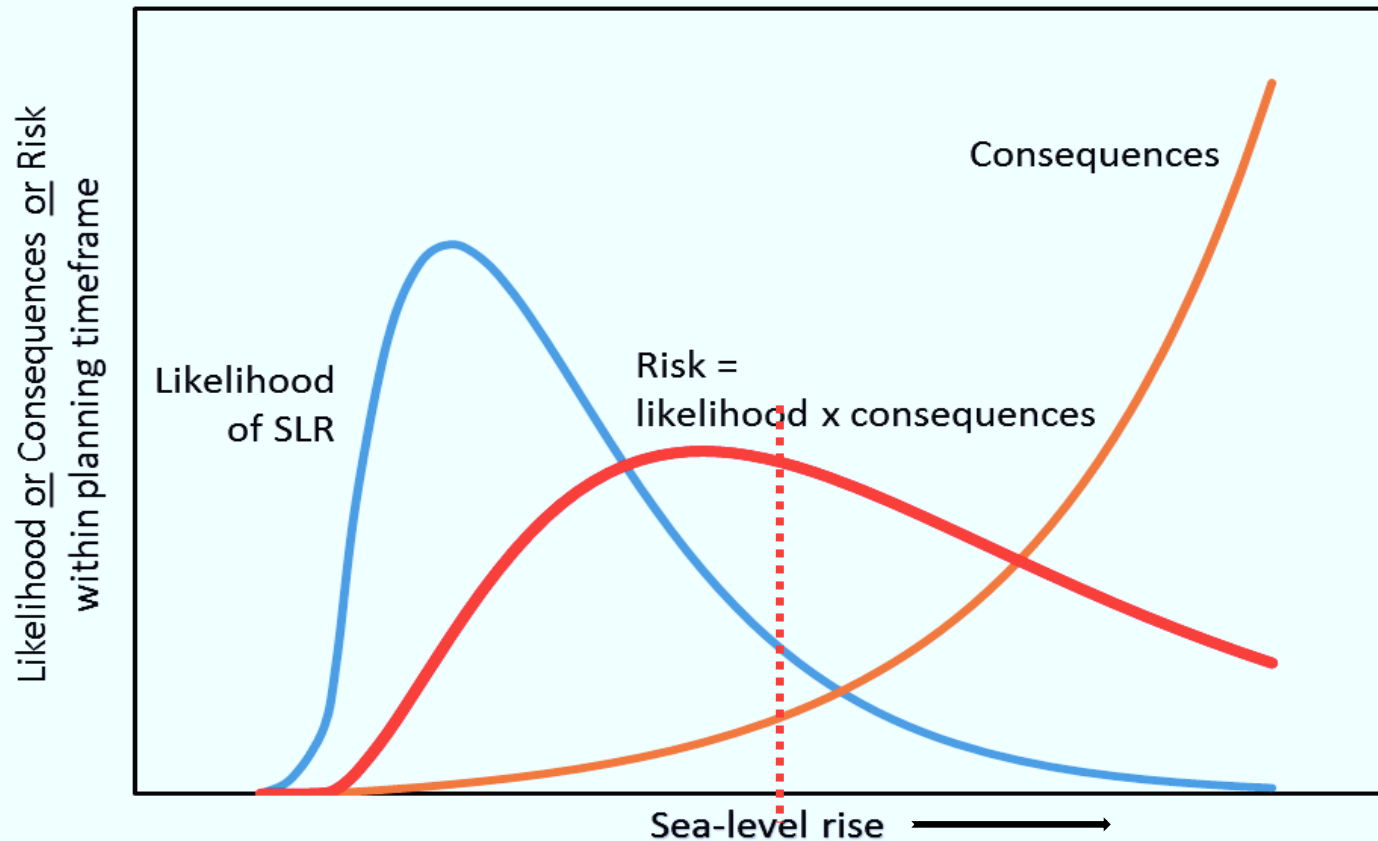
2. Not just SLR – other hazards as well (Policy 24)
3. Different approach signalled for greenfields (Objective 5, Policies 3, 25) vs existing development (Policy 27)

## AR5 global mean sea-level projections extended to 2120 (RCP2.6 and RCP8.5)





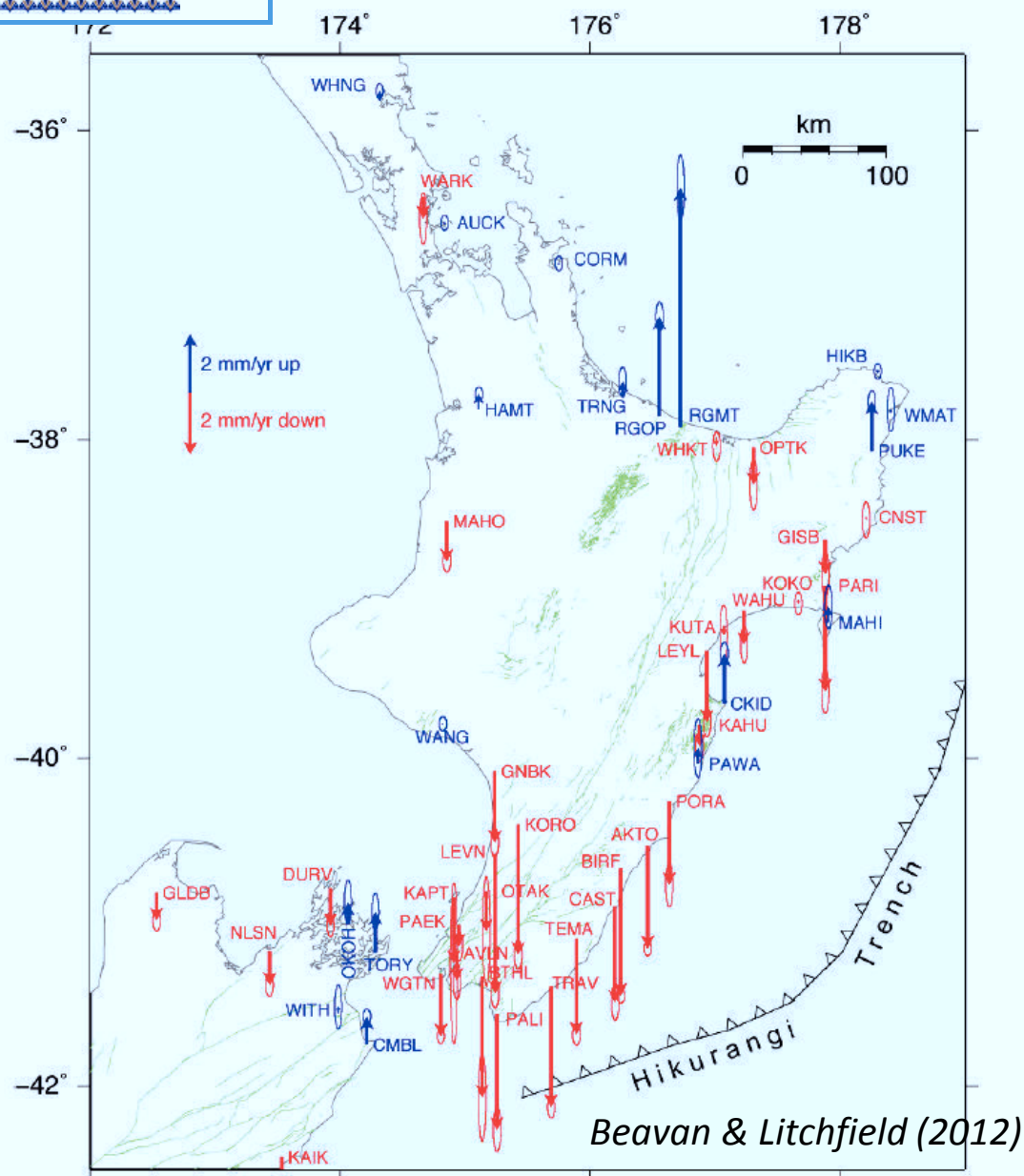
# The rising sea-level challenge



Risk peaks for higher SLR within a timeframe, hence need for erring on upper range and an even higher SLR for greenfields developments

Relative sea-level rise:  
What we have  
to adapt to.

Long-term local vertical  
land movement an  
important ingredient:  
cGPS network (GeoNet)

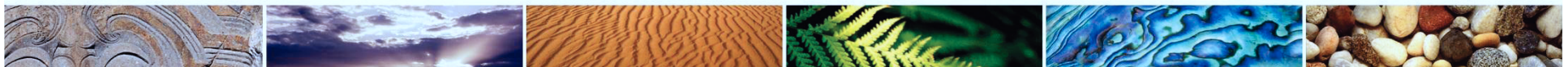
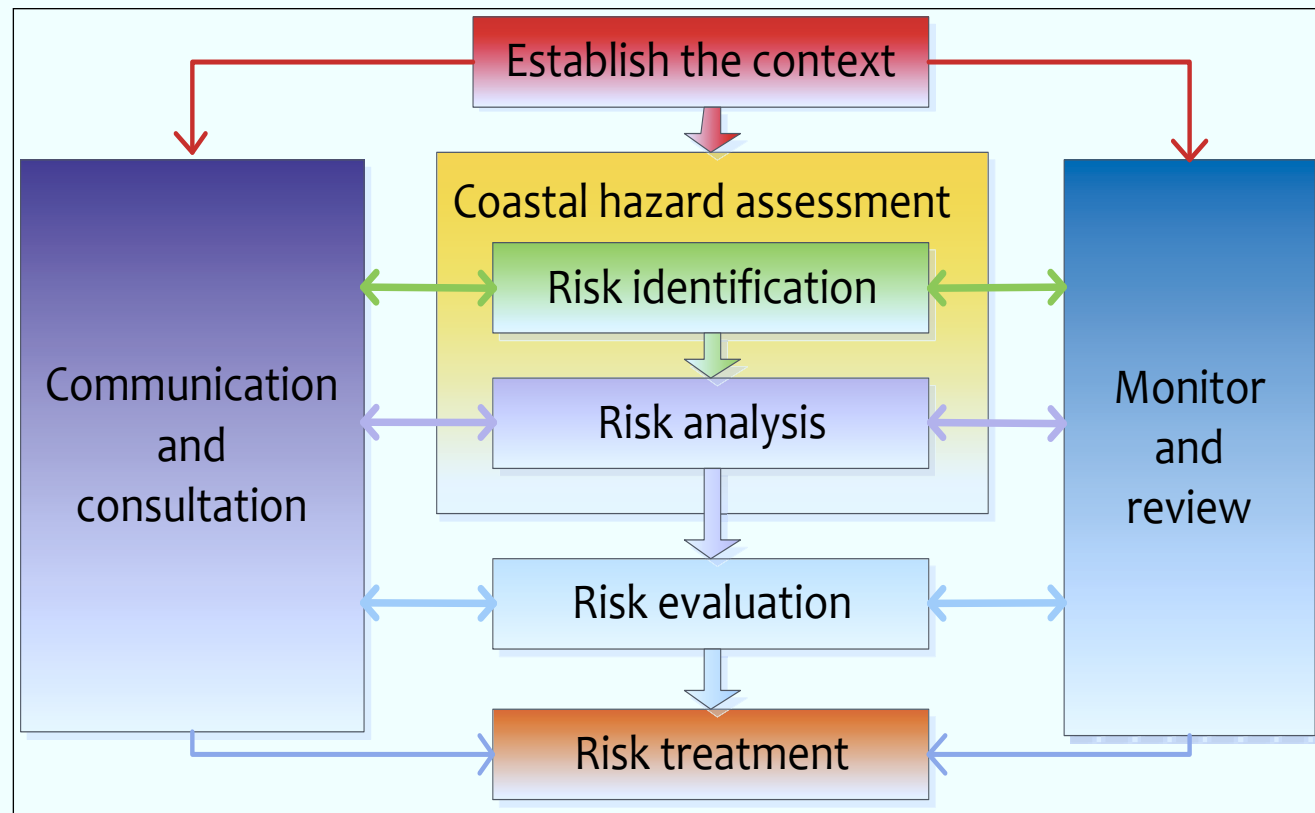


## Pathway ahead ...



- Last few IPCC reports convey a consistent message, with similar projections
- No excuse for waiting on more certainty to undertake adaptation or “deliberate planning”
- Changes in frequency of coastal inundation will be most noticeable effect incl. king tides
- Clearly specify planning or design timeframes
- Adaptation: implemented locally with community and council, starting with hotspots
- Innovation incl. adaptive management in stages and “out-of-square” thinking
- Governance & policy/planning – will need some paradigm shifts e.g. retreat –who decides?, who pays?, when? in interim?

# Risk management framework





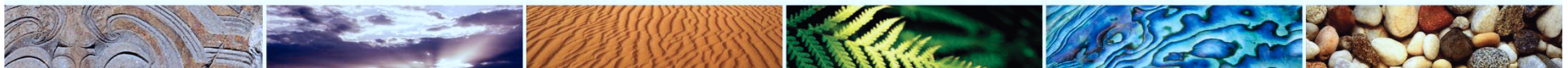
## Stage 1: Establish the context

Defining the basic parameters within which coastal hazard risk must be managed.

Sets the scope for the rest of the risk management process.

This stage includes establishing:

- Agreed terminology
- the objective and scale of the coastal hazard risk assessment
- the external and internal environment
- stakeholders and others who may have an interest in the particular area
- the context of the risk management process
- risk criteria.



# Definitions and concepts

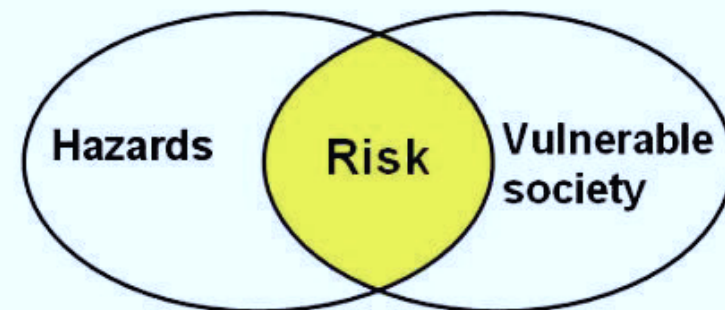
## Natural Hazard

A potential damaging physical event that may cause loss of life, injury or other health impacts, property damage, social and economic disruption, or environmental damage.

## Risk

The probability of harmful consequences, or expected losses resulting from interactions between hazards and vulnerable conditions

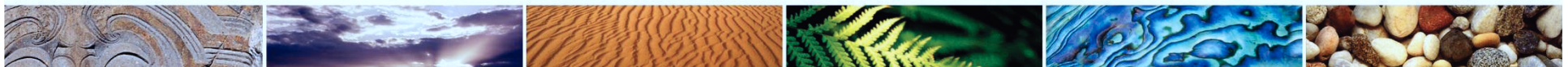
$R = \text{Likelihood of a hazard} \times \text{consequence}$  is the most common NZ definition.



**Hazard & risk materialize**



**Disaster = Emergency in CDEM Act**



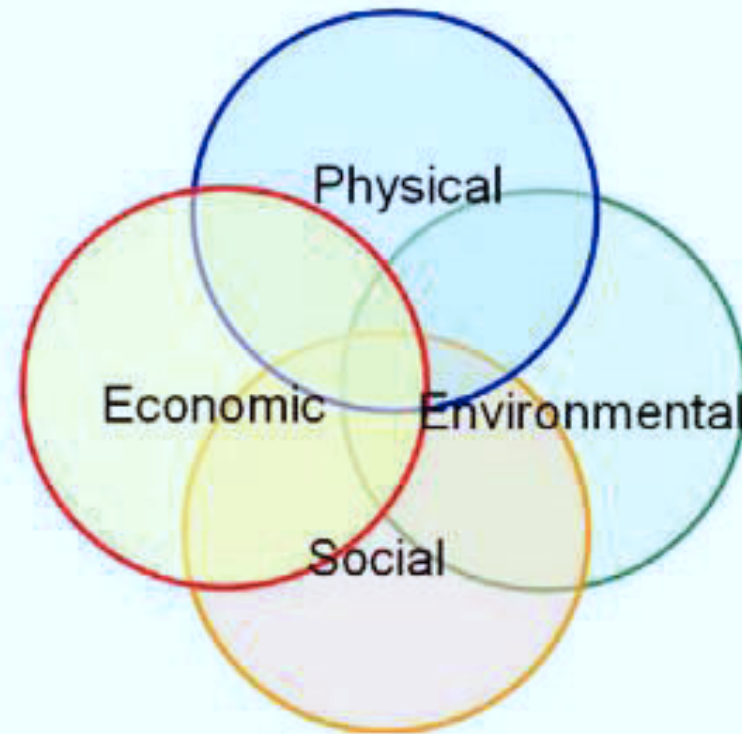
## Definitions and concepts (continued)

### Vulnerability

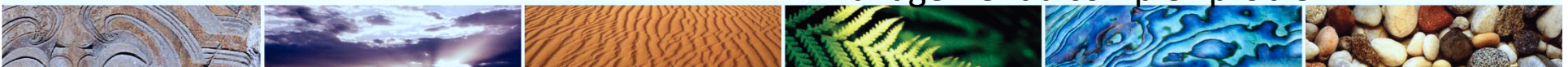
Vulnerability is the condition determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Vulnerability is:

- Multi-dimensional
- Dynamic
- Scale dependent
- Site-specific



There are multiple definitions and different conceptual frameworks for defining vulnerability that make risk management a complex problem



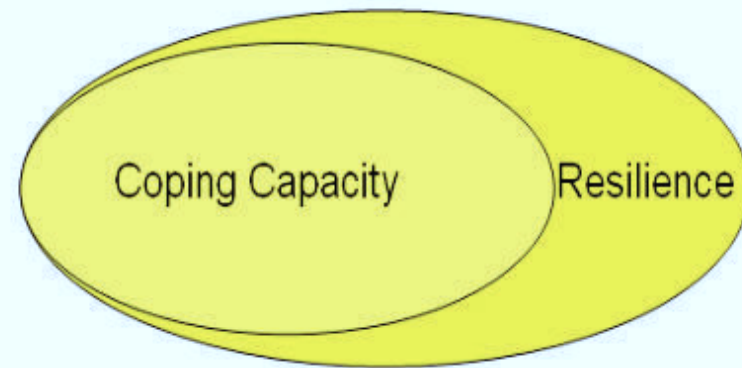
## Definitions and concepts (continued)

### Resilience

The ability of a community exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

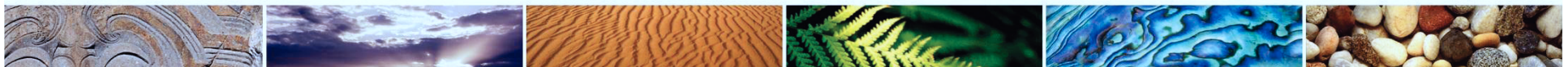
### Capacity

The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.



Coping capacity and resilience  
(Thywissen, 2006)

Resilience is the flip side of vulnerability – a resilient community is not sensitive to climate change and has the capacity to adapt (IPCC, 2001).



## **Regulatory context - interplay of many statutes**

### **RMA**

Control the use of land for the purposes of the avoidance or mitigation of natural hazards

### **NZCPS**

Policy 24: identify coastal hazards

Policy 25: avoid increased risk of social, environmental and economic harm

Policy 27: assess range of options for reducing risk in areas of significant existing development

### **CDEM**

Promote sustainable management of hazards

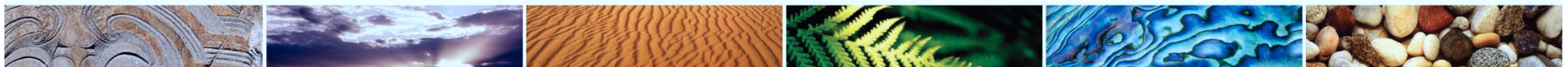
Achieve acceptable levels of risk

Co-ordinate Reduction, Readiness, Response and Recovery

### **Building Act**

### **LGOIMA**

### **Local Government Act**





## Definitions and concepts (continued)

### Acceptable risk

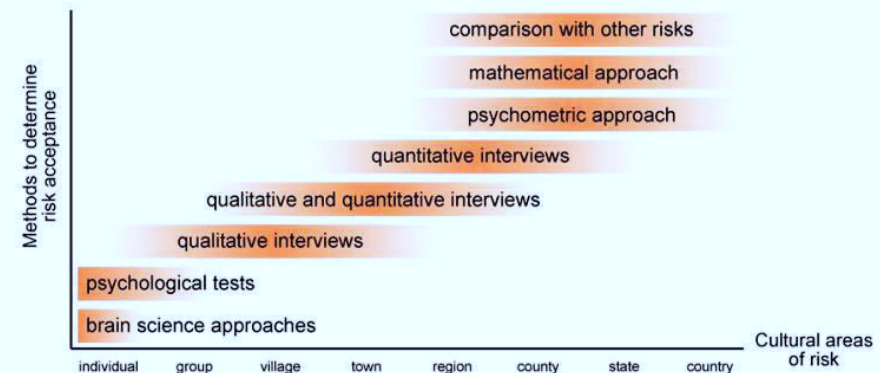
The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions.

### Tolerable risk

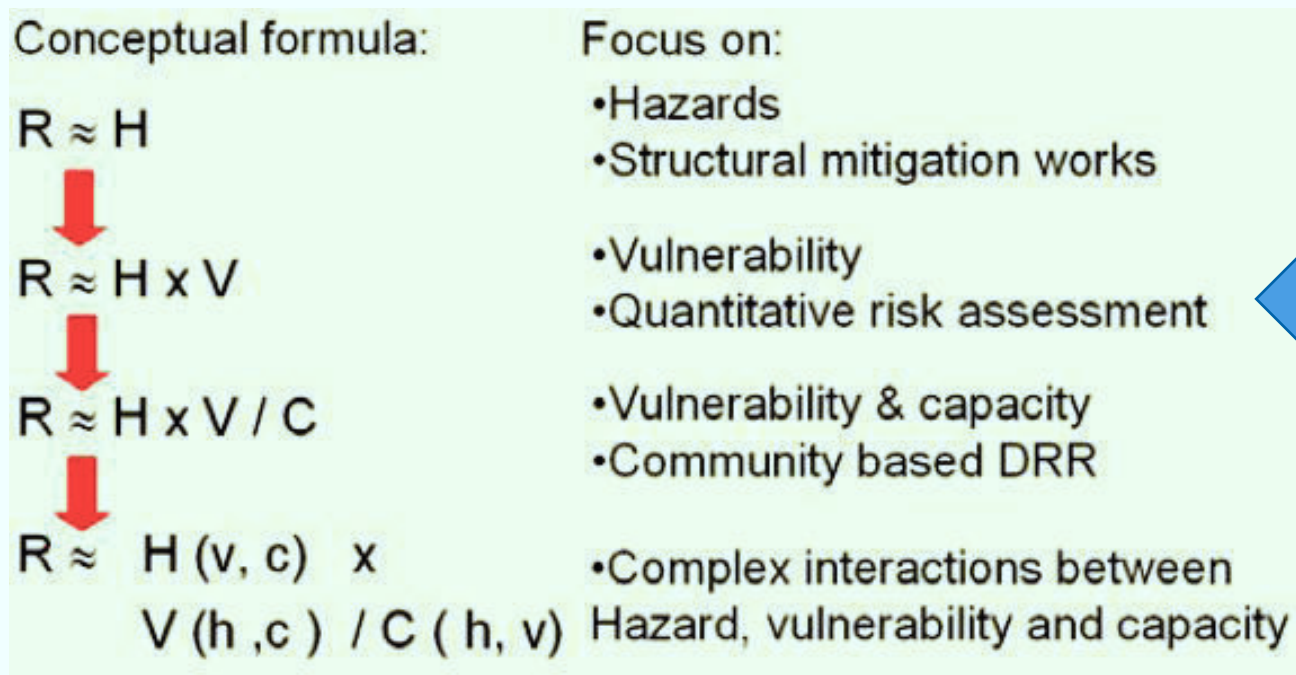
A risk within a range that society can live with so as to secure certain net benefits. It is a range of risk regarded as non-negligible and needing to be kept under review and reduced further if possible.

### ALARP

**As Low As Reasonably Practicable.** Risks, lower than the limit of tolerability, are tolerable only if risk reduction is impracticable or if its costs are grossly in disproportion to the improvement gained.

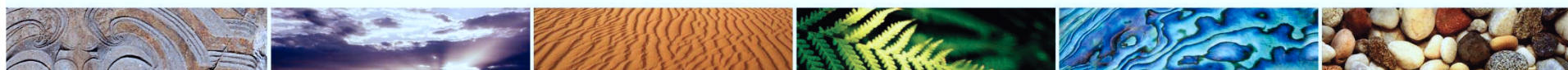


## Changing paradigms of risk and vulnerability

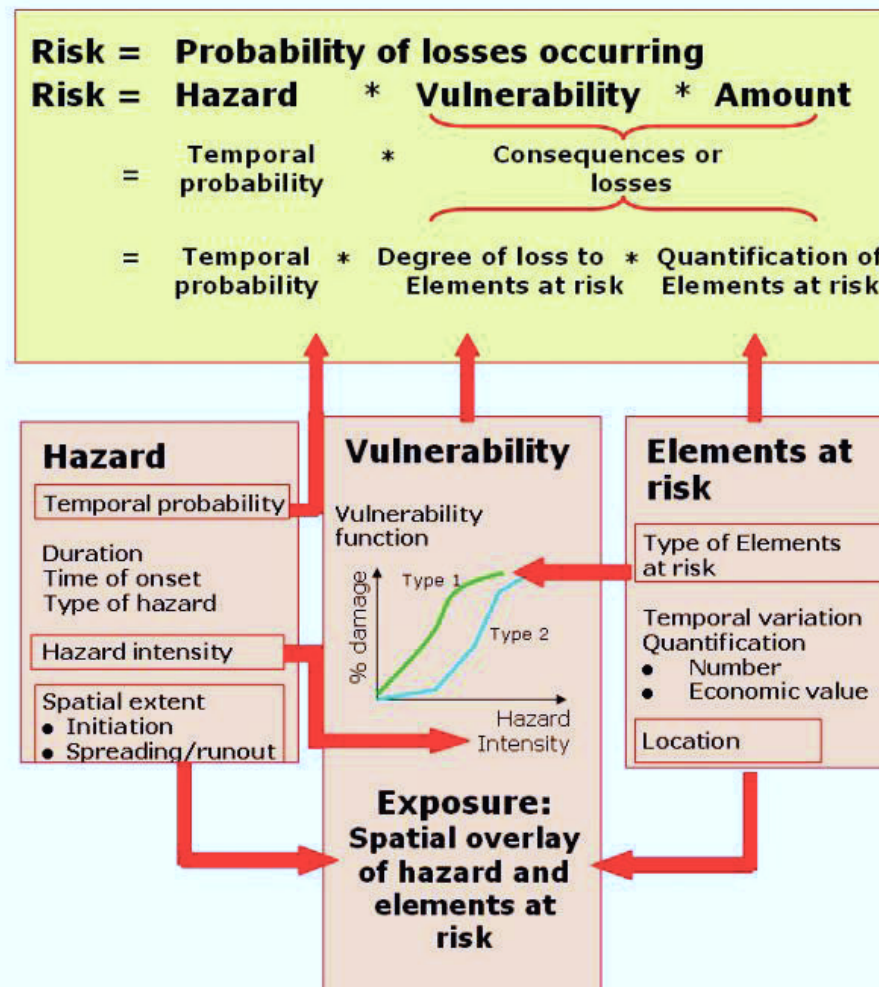


Source: ITC, 2013

The complex interaction between nature and society is resulting in new understandings of risk.



# Basic functions of risk assessments



Source: ITC, 2013

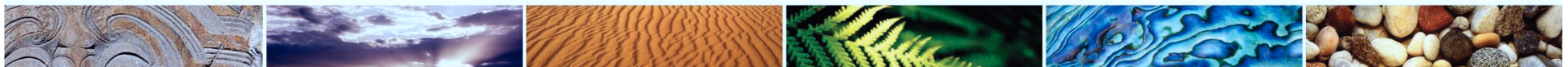
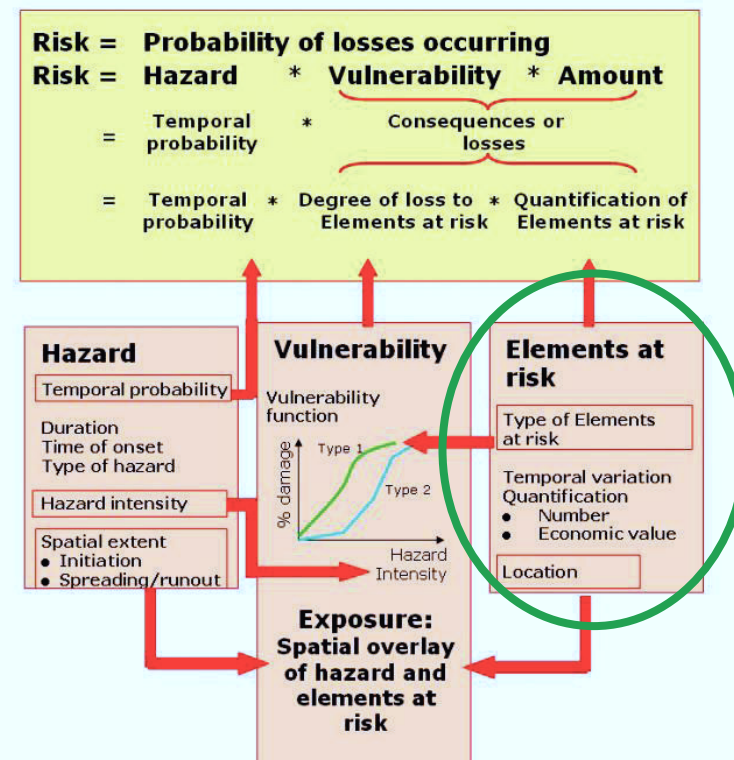




# Elements at risk

All objects, persons, animals, activities and processes that may be adversely affected by the hazard, directly or indirectly.

- Physical elements
- Essential facilities
- Transportation facilities
- Lifelines
- Population
- Soci-economic aspects
- Economic activities
- Environmental elements



# Definitions and concepts (continued)

## Risk reduction or mitigation options

### **Avoidance**

Eliminate the risk by modifying the hazard

### **Reduce**

Mitigate the risk by modifying the vulnerability to damage and disruption

### **Transfer**

Outsource or insure and modify the financial impact of hazards

### **Accept**

Accept and budget for the expected damages

### **Risk reduction**

#### **Structural**

Seawalls, levees, dams, building strengthening, etc.

#### **Non-structural**

Policy/planning

Legal and regulatory

Organization structures

Resources

Research

Preparedness and contingency planning

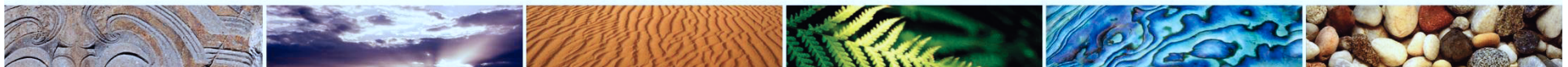
Early warning

Emergency planning

Information and communication

Education and training

Public awareness



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# Terms of Reference for the Clifton to Tangoio Coastal Hazards Strategy Joint Committee

June 2014

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## 1. Definitions

For the purpose of these Terms of Reference:

- “**Act**” means the Local Government Act 2002.
- “**Joint Committee**” means the group set-up to recommend both draft and final strategies to each partner Council.
- “**Coastal Hazards Strategy**” means the Coastal Hazards Strategy for the Hawke Bay coast between Clifton to Tangoio, refer to Appendix 1 for project background information.
- “**Hazards**” means all natural hazards with the potential to affect the coast including coastal erosion, storm surge, flooding or inundation of land from the sea, and tsunami; and includes any change in these hazards as a result of sea level rise.
- “**Member**” means a Local Authority that is a full participant in the development of the Coastal Hazards Strategy.
- “**Representative(s)**” means the Mayor or Chairperson or councillor(s) of a Member, or alternate(s) that have been resolved by the Member to be a member of the Coastal Hazards Strategy Joint Committee.
- “**Appointee(s)**” means a person appointed to the Joint Committee who is not a member of a local authority Member, under clause 31(3) of Schedule 7 of the Act.

## 2. Name

- 2.1 The Committee shall be known as the Clifton to Tangoio Coastal Hazards Strategy Joint Committee.

## 3. Members

- 3.1 Each of the following local authorities is a Member of the Coastal Hazards Strategy Joint Committee:
- Hastings District Council
  - Napier City Council
  - Hawke’s Bay Regional Council

## 4. Appointees

- 4.1 A representative from each of the following organisations may be an Appointee to the Coastal Hazards Strategy Joint Committee:

- Maungaharuru –Tangitu Trust
- Mana Ahuriri Incorporated
- He Toa Takitini

## **5. Status**

- 5.1 The Coastal Hazards Strategy Joint Committee is a joint standing committee under clause 30(1)(b) of Schedule 7 of the Act.

## **6. Purpose of Terms of Reference**

- 6.1 The purpose of these Terms of Reference is to:
- 6.1.1 Define the responsibilities of the Coastal Hazards Strategy Joint Committee as delegated by the Members under the Act.
  - 6.1.2 Provide for the administrative arrangements of the Coastal Hazards Strategy Joint Committee as detailed in Appendix 2.

## **7. Representatives and Appointed Members**

- 7.1 Each Member is to be represented on the Joint Committee by two persons only, being two elected persons. Representatives are obligated to attend all Joint Committee meetings; there is no allowance for alternate representation in the absence of the representative(s).
- 7.2 Under clause 30(9) Schedule 7 of the Act, the powers to discharge any representative on the Coastal Hazards Strategy Joint Committee and appoint his or her replacement shall be exercisable only by the Member that appointed the representative being discharged.
- 7.3 In addition to the representatives of the Members, there shall be appointed to the Committee 3 appointees under clause 31(3) of Schedule 7 of the Act. The appointees shall give consideration to the interests of Mana Whenua and/or Tangata Whenua throughout the Strategy area and will be voting members.

## **8. Delegated authority**

- 8.1 The Coastal Hazards Strategy Joint Committee has the responsibility delegated by the Members for:
- 8.1.1 Considering and recommending a draft strategy to each of the partner councils for public notification,
  - 8.1.2 Considering comments and submissions on scenarios and the draft strategy and making appropriate recommendations to the partner councils,
  - 8.1.3 Considering and recommending a final strategy to each of the partner councils for approval, and
  - 8.1.4 Appointing an appointee as described in 6.3 above.

## **9. Powers not delegated**

- 9.1 Any power that cannot be delegated in accordance with clause 32 Schedule 7 of the Local Government Act 2002.

- 9.2 The determination of funding for undertaking investigations, studies and/or projects to assess options for implementing the Coastal Hazards Strategy.

## **10. Remuneration**

- 10.1 Each Member of the Coastal Hazards Strategy Joint Committee shall be responsible for remunerating its representatives on the Coastal Hazards Strategy Joint Committee and for the cost of those persons' participation in the Coastal Hazards Strategy Joint Committee. The Members shall not be responsible for remunerating the appointees.

## **11. Meetings**

- 11.1 The New Zealand Standard for model standing orders (NZS 9202:2001), or any New Zealand Standard substituted for that standard, will be used to conduct Coastal Hazards Strategy Joint Committee meetings as if the Coastal Hazards Strategy Joint Committee were a local authority and the principal administrative officer of the Hawke's Bay Regional Council or his or her nominated representative were its principal administrative officer.
- 11.2 The Coastal Hazards Strategy Joint Committee shall hold all meetings at such frequency, times and place(s) as agreed for the performance of the functions, duties and powers delegated under this Terms of Reference.
- 11.3 The quorum shall be half of the total members plus one if that membership is an even number or half of the total members rounded to the next whole number if the membership is an odd number.

## **12. Voting**

- 12.1 In accordance with clause 32(4) Schedule 7 of Act, at meetings of the Coastal Hazards Strategy Joint Committee each Member's representatives and the appointees have full authority to vote and make decisions within the delegations of this Terms of Reference on behalf of that Member without further recourse to that Member.
- 12.2 Each representative, the appointee and the Committee Chairperson each has one vote.
- 12.3 Casting votes are not permitted.

## **13. Election of Chairperson and Deputy Chairperson**

- 13.1 On the formation of the Coastal Hazards Strategy Joint Committee the representatives and appointees shall elect a Coastal Hazards Strategy Joint Committee Chairperson and may elect a Deputy Chairperson. The Chairperson is to be selected from the group of elected representatives from a local authority.
- 13.2 The mandate of the appointed Chairman or Deputy Chairman ends if that person through resignation or otherwise ceases to be a member of the Coastal Hazards Strategy Joint Committee.



## **14. Reporting**

- 14.1 All reports to the Committee shall be presented via the Technical Advisory Group or from the Committee Chairperson.
- 14.2 Following each meeting of the Joint Committee, the Project Manager shall prepare a summary report of the business of the meeting and circulate that report, for information to each Joint Committee Member following each meeting. Such reports will be in addition to any formal minutes prepared by the Administering authority which will be circulated to Joint Committee representatives.

## **15. Good faith**

- 15.1 In the event of any circumstances arising that were unforeseen by the Members or their representatives at the time of adopting this Terms of Reference, the Members and their representatives hereby record their intention that they will negotiate in good faith to add to or vary this Terms of Reference so to resolve the impact of those circumstances in the best interests of the Members of the Joint Committee collectively.

## **16. Variations**

- 16.1 Any Member may propose a variation, deletion or addition to the Terms of Reference by putting the wording of the proposed variation, deletion or addition to a meeting of the Joint Committee.

## **17. Adopted by**

- 17.1 The Coastal Hazards Strategy Joint Committee made up of the following

**Napier City Council**

**represented by**

**Hastings District Council**

**represented by**

**Hawke's Bay Regional Council**

**represented by**

**Maungaharuru-Tangitū Trust (MTT) represented by**

**Mana Ahuriri Inc** **represented by**

**He Toa Takitini** **represented by**

## **Appendix 1 – Project Background**

### **Project Goal**

A Clifton to Tangoio Coastal Hazards Strategy will be developed in co-operation with the Hastings District Council (HDC), the Hawke's Bay Regional Council (HBRC), the Napier City Council (NCC), and groups representing Mana Whenua and/or Tangata Whenua. This strategy will be developed to provide a framework for assessing options for the management of the coast and parts of the coast for the next 85 years from 2015 to 2100.

### **Project Assumptions**

The Coastal Hazards Strategy will be based on and influenced by:

- The long term needs of the Hawke's Bay community
- Existing policies and plans for the management of the coast embedded in regional and district council plans and strategies.
- Predictions for the impact of climate change
- The National Coastal Policy Statement

### **Project Scope**

The Coastal Hazards Strategy is primarily a framework for determining options for the long term management of the coast between Clifton and Tangoio. This is expected to include:

- An assessment of the risk from natural hazards with the potential to impact on the coastal environment. This may include a range of return periods for each hazard and a determination of acceptable risk to the community for various return period events.
- Sea level rise and increased storminess predicted to occur as a result of climate change and a determination of acceptable risk to the community for various scenarios.
- Identification of areas of community risk and/or specific community risks and opportunities for improving community resilience. This may include a protocol for assessing community consequences and comparing and prioritising mitigation approaches.
- Approaches to quantify the potential impacts including computer modelling and specific underlying parameters and assumptions that are used in the development of those models.
- Stakeholder involvement and participation.
- Protocols for expert advice and peer review.
- An action plan of ongoing activity assigned to various Members.

The Strategy will:

Describe a broad vision for the coast in 2100, and how the Hawke's Bay community could respond to a range of possible scenarios which have the potential to impact the coast by 2100.

Propose policies to guide any intervention to mitigate the impact of coastal processes and hazards:

- Regional Policy Statement
- District Plans
- Council long-term plans
- Infrastructure Development Planning (including both policy and social infrastructure networks).

## **Appendix 2 - Administering authority and Servicing**

The administering authority for the Coastal Hazards Strategy Joint Committee is Hawke's Bay Regional Council.

The administrative and related services referred to in clause 16.1 of the conduct of the joint standing committee under clause 30 Schedule 7 of the Local Government Act 2002 apply.

Until otherwise agreed, Hawke's Bay Regional Council will cover the full administrative costs of servicing the Coastal Hazards Strategy Joint Committee.

A technical advisory group (TAG) will service the Coastal Hazards Strategy Joint Committee.

The TAG will provide for the management of the project mainly through a Project Manager. TAG will be chaired by the Project Manager, and will comprise senior staff representatives from each of the participating Councils and other parties as TAG deems appropriate from time to time. TAG will rely significantly on input from coastal consultants and experts.

The project manager and where appropriate the TAG shall work with stakeholders. Stakeholders may also present to or discuss issues directly with the Joint Committee.

Functions include:

- Providing technical oversight for the study.
- Coordinating agency inputs particularly in the context of the forward work programmes of the respective councils.
- Ensuring council inputs are integrated.