Hawkes Bay Experience - coastal adaptation

TO Thames-Coromandel District Council
FROM Erin Bates - Principal Planner
DATE 1 August 2018
SUBJECT Hawkes Bay Experience - Coastal Hazards and Climate Change work

1 Purpose
This workshop involves a coastal adaptation presentation from Simon Bendall, Director at Mitchell Daysh to highlight the experience and learnings from development of the Clifton to Tangoio Coastal Hazards Strategy 2120.

2 Discussion
Elected members have expressed an interested in learning more about the Hawke's Bay experience in identifying and responding to coastal hazards.

Simon Bendall has project managed the Clifton to Tangoio Coastal Hazards Strategy since its inception in 2014.

The strategy was developed with the following scope:

1. Assess coastal hazard risks between Clifton and Tangoio associated with the following processes occurring over the period 2016 to 2120:
   - Coastal erosion (storm cut, trends, effects of sea level rise)
   - Storm surge inundation (wave set up, run up, overtopping and sea level rise)
   - Tsunami
2. Provide a decision making framework to identify, evaluate, consult on and select practicable adaptation options that respond to the identified coastal hazards risks
3. Implement the selected adaptation option(s) in a coordinated and planned manner that will provide the best overall outcome for the Hawkes Bay Community.

This presentation will provide the opportunity to learn more about the project; and an insight into the collaborative work undertaken by Hawkes Bay Regional Council, Hastings District Council and Napier City Council.
Case Study:
Clifton to Tangoio Coastal Hazards
Strategy 2120

Presentation to the Thames-Coromandel District Council

Tuesday 8 August 2018
Introductions

Simon Bendall

› Mitchell Daysh, Director
› Environmental planning background
› Project Manager for Clifton to Tangoio Coastal Hazards Strategy 2120 since inception in 2014
OVERVIEW

Overview of Hawke’s Bay work:
- Briefly set the scene
- What we set out to achieve
- The process we took
- The outcomes reached
- Some questions from TCDC
Setting the scene
Local Context

- Westshore Renourishment
- Haumoana “21”
- Whakarire Ave Revetment
- Port of Napier Expansion
- Erosion at Clifton
Inundation is the real threat…
Developed by Coastal Groups with members mainly from local councils and the Environment Agency.

Identify approaches to managing coastal hazard risks in the:
- short-term (0 to 20 years)
- medium term (20 to 50 years)
- long term (50 to 100 years)

What are others doing…

Shoreline Management Plans (1)

- Hold the Line
- No Active Intervention
- Managed Retreat
- Advance the Line

[Map of shoreline management plans]
Consistency with National Guidance
UNCERTAINTY

Source: IPCC
What we set out to achieve
Goals

› To address issues of inconsistency
› To work collaboratively between Councils and Iwi
› To respond to urgent risks and community concerns
› To develop a plan for longer term risks
› To develop a plan that can be implemented
› To develop a model to roll-out to other areas
THE VISION

That coastal communities, businesses and critical infrastructure from Tangoio to Clifton are resilient to the effects of coastal hazards.
The process we took
Setting up

Coastal Hazards Joint Committee

Technical Advisory Group
Technical Support

M I T C H E L L D A Y S H

Project Manager and Assessment Panel Facilitation

Lead Technical Advisor

Aramanu Ropiha
Cultural Values Assessment

Social Impact Assessment

Economic Analysis

Infometrics

Tonkin+Taylor

National Science Challenges

Kia manawatanga - Ngā Akina o Te Ao Tūtou
Scope

In scope
- Coastal Erosion out to 2120
- Coastal Inundation out to 2120

Out of scope
- Tsunami – CDEM
- Groundwater – science not yet available for Hawke’s Bay – incorporated into future review
Project Timeline

- **Late 2014**: Project Establishment and Context setting
- **2015**: Hazard Evaluation and Risk Assessments undertaken by Tonkin & Taylor (Stage 1)
- **2016**: Decision Making Framework + Funding Model developed (Stage 2)
- **2017**: Evaluation Panel Process (Stage 3)
- **2018+**: Implementation Phase (Stage 4)
Assessment Panels (Stage 3)

- 16 Coastal Units identified with risks mapped
- Northern and Southern Cell Assessment Panels Formed
- Panel areas ignore TA boundaries
- Panel members from Mana Whenua, Coastal Communities, Wider ‘inland’ Communities, Business Interests, DOC, Lifelines
- Tasked with developing recommended responses to coastal hazards risks
The outcomes reached
What we have achieved

- Comprehensive hazard and risk assessment for coastal erosion and coastal inundation
- 7 coastal units confirmed for priority response
- Each priority unit has a recommended 100 year plan
- Confirmed review process for introducing new information / considering other units in future
- Broad community support for approach
- Agreement for Partner Councils to commence Stage 4 – Implementation
Key Concept: Responding to Uncertainty with Pathways

- Panels have developed “pathways” for each priority part of the coast.
- This is a series of actions over time (100 years).
- Pathways are adaptive for an uncertain future and can respond to changing conditions.
- If conditions require / allow it:
  - Can switch to next action early (or late); or
  - Switch to a new action outside of the defined pathway.
Example Pathway – Clifton

<table>
<thead>
<tr>
<th>UNIT L: CLIFTON – PATHWAY 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short term</strong></td>
</tr>
<tr>
<td>(0 – 20 years)</td>
</tr>
</tbody>
</table>

- Sea wall  →  Sea wall  →  Managed Retreat

Legend:
- Sea wall
- Managed retreat

Diagram showing the pathway from short term to long term strategies with sea wall and managed retreat as key points.
Final Report

Clifton to Tangaroa Coastal Hazards
Strategy 2120

REPORT OF THE NORTHERN AND
SOUTHERN CELL ASSESSMENT
PANELS

FINAL REPORT
14 February 2018
Lessons learned

www.hbcoast.co.nz
Lessons Learned

› Take your time and plan carefully – project architecture important
› Bringing the community “into the tent”
› Disseminating knowledge
› Developing community champions
› Blending political, technical and academic
› Right people, right time
› A ratepayer up process, rather than a council down process
› Pinch point – who pays
Questions from TCDC
TCDC Questions

- Funding
- Cross-council project structure
- Approach for TCDC to take
- Others?
Implementing defence or retreat responses will be expensive (but so is the cost of doing nothing!)

The Local Government Act 2002 & Local Government (Rating) 2002 Acts MUST be adhered to

Section 101 (3) LGA sets the process and considerations a local authority must consider, e.g.

- Public versus private good
- Intergenerational equity
- Affordability test
Hawke’s Bay Examples

**Westhore Renourishment**
Napier City Council + Hawke’s Bay Regional Council
100% public

**Whakarire Ave Revetment**
Napier City Council
100% public

**Haumoana 21**
Hastings District Council
100% private for any protection works

**Clifton Revetment**
Hastings District Council
Public 80% / Private 20%
Funding / Who Pays?

- Deciding public / private splits is a decision for Council to make
- Bias will be strong when consulting on this issue
- No “right” answer – needs to be justified

Process?
- Look at precedent (TCDC + WRC) – e.g. flood control schemes, WWTPs, etc
- Establishing a sound “base case” for the public / private split on different types of response can be helpful – then tailor for case by case
Technical Advisory Group – “Working” Base Case

<table>
<thead>
<tr>
<th>Option</th>
<th>Private</th>
<th>Public</th>
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<tbody>
<tr>
<td>Status Quo</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Renourishment</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Renourishment + control structures</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Sea Wall</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Inundation Protection (Pandora)</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Retreat the Line</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Managed Retreat (making good)</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Example: Suggestions for Haumoana

<table>
<thead>
<tr>
<th>Option</th>
<th>Base Case</th>
<th>Haumoana</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Status Quo</td>
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<td>100%</td>
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</tr>
<tr>
<td>Renourishment</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Renourishment + control</td>
<td>60%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>control structures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea Wall</td>
<td>80%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>Retreat the Line</td>
<td>90%</td>
<td>10%</td>
<td>n/a</td>
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</table>
### Example: Suggestions for East Clive

<table>
<thead>
<tr>
<th>Option</th>
<th>Base Case</th>
<th>East Clive</th>
<th>Rationale</th>
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<tr>
<td>Status Quo</td>
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<tr>
<td>Renourishment</td>
<td>50%</td>
<td>50%</td>
<td>n/a</td>
</tr>
<tr>
<td>Renourishment + control structures</td>
<td>60%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Sea Wall</td>
<td>80%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Retreat the Line</td>
<td>90%</td>
<td>10%</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Hawke’s Bay example:

- External costs are split 3rd/3rd/3rd
- Regional Council is functional “host”
- Independent project manager coordinates between Councils
- Joint Committee provides forum for Councillors and Iwi to work together
- Individual Council decision-making is preserved; Joint Committee recommends up to each Partner Council
- TAG Group shares experiences and expertise between Councils: engineers, planners, asset managers etc
Model for TCDC

- Essential: Partnering with Regional Council
- Essential: Partnering with Iwi
- Partnering with other District Council’s makes good sense – depends on spatial extent of priority areas
- An approach could be to work with Hauraki DC on the Firth of Thames coastline first, establish model to roll out to East Coast?
- Collaboration with community essential
Model for TCDC

Governance:

- Hawke’s Bay model generally works well – changes have been proposed
- Establish formal joint committee with defined ToR / mandate
- Need to have the right people in the room:
  - 2-3 Councillors from each Council + Iwi governors
  - Mayors / Chair as ex-officio members
  - CE’s / senior staff engaged
Model for TCDC

Technical:

- Technical Advisory Group great model
- Planners, engineers, asset managers, finance, community / iwi engagement
- Needs dedicated lead – independent or in-house
- Dedicated admin support – in-house
- Consultant engagement should be managed by a functional lead
Thank You

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Other slides...
NZCPS bias towards managed retreat – in our work, the economics don’t stack up unless risks are immediate. A lot of work needed e.g. definition, process, responsibilities, funding, etc…

There is no specified timeframe for council implementation of the NZCPS (unlike the National Policy Statement for Freshwater Management which councils must implement by 2025)

Much of our coastline does not have a long term plan in place to deal with sea level rise and climate change

Does the UK Shoreline Management Plan approach provide a model for NZ?

If so, how do we achieve this? What is the role of Central and Local Government?
Assessment Panel Process

Dynamic Adaptive Pathways Policy (DAPP)

- Identifying options / pathways
- Defining criteria
- Scoring options
- Testing with the community
- Presenting recommendations

Multi-Criteria Decision Analysis (MCDA)

- Applying economic analysis
- Real Options Analysis (ROA)
### Final Preferred Pathways

#### Northern Panel

<table>
<thead>
<tr>
<th>Unit</th>
<th>Pathway</th>
<th>Short term (0 – 20 years)</th>
<th>Medium term (20 – 50 years)</th>
<th>Long term (50 – 100 years)</th>
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</thead>
<tbody>
<tr>
<td><strong>UNIT E1: AHURIRI – PATHWAY 6</strong></td>
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<td>Status quo</td>
<td>Sea wall</td>
<td>Sea wall</td>
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<tr>
<td><strong>UNIT E2: PANDORA – PATHWAY 3</strong></td>
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<td>Short term (0 – 20 years)</td>
<td>Medium term (20 – 50 years)</td>
<td>Long term (50 – 100 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inundation Protection</td>
<td>Inundation Protection</td>
<td>Inundation Protection</td>
</tr>
<tr>
<td><strong>UNIT D: WESTSHORE – PATHWAY 3</strong></td>
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<td>Short term (0 – 20 years)</td>
<td>Medium term (20 – 50 years)</td>
<td>Long term (50 – 100 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Renourishment</td>
<td>Renourishment + Control Structures</td>
<td>Renourishment + Control Structures</td>
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<tr>
<td><strong>UNIT C: BAY VIEW – PATHWAY 3</strong></td>
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<td>Short term (0 – 20 years)</td>
<td>Medium term (20 – 50 years)</td>
<td>Long term (50 – 100 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Status Quo / Renourishment</td>
<td>Renourishment + Control Structures</td>
<td>Renourishment + Control Structures</td>
</tr>
<tr>
<td><strong>UNIT B: WHIRINAKI – PATHWAY 4</strong></td>
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<td>Short term (0 – 20 years)</td>
<td>Medium term (20 – 50 years)</td>
<td>Long term (50 – 100 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Status Quo / Renourishment</td>
<td>Renourishment + Control Structures</td>
<td>Sea wall</td>
</tr>
</tbody>
</table>
# Final Preferred Pathways

## Southern Panel

<table>
<thead>
<tr>
<th>Unit</th>
<th>Short Term (0 – 20 years)</th>
<th>Medium Term (20 – 50 years)</th>
<th>Long Term (50 – 100 years)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit L: Clifton</strong> – Pathway 5</td>
<td>Sea wall</td>
<td>Sea wall</td>
<td>Managed Retreat</td>
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</tr>
<tr>
<td><strong>Unit K2: Te Awanga</strong> – Pathway 3</td>
<td>Renourishment + Groynes</td>
<td>Renourishment + Groynes</td>
<td>Renourishment + Groynes</td>
<td></td>
</tr>
<tr>
<td><strong>Unit K1: Haumoana</strong> – Pathway 2</td>
<td>Renourishment + Groynes</td>
<td>Renourishment + Groynes</td>
<td>Managed Retreat</td>
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<tr>
<td><strong>Unit J: Clive/East Clive</strong> – Pathway 1</td>
<td>Status Quo</td>
<td>Renourishment + Groynes</td>
<td>Retreat the Line / Managed Retreat</td>
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</tr>
</tbody>
</table>
Getting things done

- Urgent issues – can RMA react?
- Example: In Hawke’s Bay, the Strategy sets out a plan that, if adopted:
  - Haumoana – groynes + renourishment
  - Westshore – offshore sand renourishment
  - Clifton – revetment wall (already underway)
Urgent Issues - Getting Things Done: Clifton Revetment

- Application lodged with HBRC
- 77 submissions (76 for / 1 against)