

CLIFTON TO TANGOIO COASTAL HAZARDS STRATEGY 2120

MINUTES OF THE NORTHERN CELL ASSESSMENT PANEL WORKSHOP 4 HELD AT THE HB REGIONAL COUNCIL, DALTON ST, NAPIER, AT 5.00 P.M. ON TUESDAY 21 MARCH 2017

PRESENT

Panel Members:

Craig Daly, Douglas Dickson, Garry Huata, Mark Levick, Steve Loughlin, Sarah Owen, Mike Penrose, Dorothy Pilkington, Oliver Postings, Martin Rockel, Hoani Taurima, Tim Tinker, Shaun Thompson-Gray, Michel de Vos.

Observers:

Mike Adye, Paul Bailey, Mark Clews, Gary Clode, Larry Dallimore, Rina Douglas, Craig Goodier, Graeme Hansen, Rod Heaps, Paul Kench, Tania Kerr, Judy Lawrence, James Minehan, Ann Redstone, Emma Ryan.

Facilitation Team:

Peter Beaven (Chair), Simon Bendall, Stephen Daysh, Jan Seaman (Minutes).

Technical Advisor:

Richard Reinen-Hamill.

APOLOGIES

Des Ratima, Russell Moffitt.

Garry Huata opened the meeting with a karakia.

WELCOME AND HOUSEKEEPING MATTERS

The Chairman welcomed Graeme Hansen, who will be taking over from Mike Adye at the end of the month, and advised that Judy Lawrence from the Living at the Edge team would be joining the meeting in a short while. The microphone system had been activated to enable those at the back to hear the discussion. Panel members were asked to use the microphone if requested.

Payments – in future there will not be an option to receive a voucher and payments will be made in the usual way. IRD numbers will be required and forms circulated so details can be provided.

Action: Once received, forms to be completed and returned to Monique.

CONFIRMATION OF MINUTES

Motion

That the Minutes of the Workshop 2 meeting be confirmed as a true and correct record with the following amendment:

Bullet point 5 on page 3 to read: "At Westshore the trend is erosion, with reduced erosion further north."

The motion was moved (Tim Tinker), seconded (Martin Rockel) and carried.

Motion

That the Minutes of the Workshop 3 meeting be confirmed as a true and correct record with the following addition under the WESTSHORE heading:

"Beach renourishment costs amount to \$240,000 annually.

The motion was moved (Douglas Dickson), seconded (Shaun Thompson-Gray) and carried.

Matters Arising

1. Further discussion on the Port/Ahuriri area was requested. It was noted that further discussion will take place either at this or the next workshop.
2. Clarification requested on an article in the HB Today about Napier Girls' High School and a project looking at erosion at Westshore and why the Panel wasn't informed of this. Emma Ryan said this was a knowledge-building experience for the girls, rather than a research project. It focused on coastal erosion in general and social science methods for looking at coastal management. The girls were able to ask questions of a panel and carry out other activities. The Chairman advised he had been invited to address the girls and talk about the work being undertaken by the panels.

PRESENTATION – Vulnerability Assessment for Northern Cell

Simon Bendall went through the overhead presentation. Members were presented with a summary of the risk assessment undertaken by T&T and an supplementary vulnerability assessment which built on this work. It resulted in recommendations on which coastal unit in the Northern Cell should be considered the highest priority areas.

The priority units for recommended further assessment and adaptation pathway development were Westshore (D), Bay View (C), Whirinaki (B) and Ahuriri (E). Based on current information, Tangoio (Unit A) and Ahuriri Lagoon/Airport (Unit M) may not require adaptation responses for inundation or erosion over the next 100 years, however this would need to be monitored and reviewed in future.

Key matters discussed:

- The influence of rising sea levels causing increased groundwater levels has not been included in the scope of the Strategy and the Panels work at this time, due to the science not being available to allow a meaningful consideration. This hazard will however present a risk for some parts of the coast and will be added when the next review is carried out. GNS Science are looking in to this matter so there is work being done.
- Clarification – there are two types of Inundation – storm surge inundation which is a temporary event and caused by waves overtopping the beach crest during storm events – this will get worse over time with sea level rise and. Permanent inundation is caused by erosion.
- Use of words “possible and likely” in the vulnerability assessment and their link to probabilities in the Tonkin & Taylor work was queried. The terms have been taken out of the Tonkin & Taylor report and the narrative is linked to a percentage probability for erosion impacts reaching a certain point which go from “certain” down to “highly unlikely”.
- Tsunami. Impacts have been modelled on a 3m, 5m and 10m wave. A 3m tsunami may occur every several hundred years so on. The other two are more extreme and less frequent.
- Connection/interrelationships between coastal units was queried. The criteria for scoring options will be looked at in the next workshop – one of the proposed criteria requires the consideration of impacts of an option on adjacent units / the cell.
- Confirmed the inundation risk for the airport area is minimal at this stage. The rising groundwater factor, which is currently not able to be considered due to lack of data and modelling, will be looked at as part of the first review process - this is likely to be more of an issue for the airport.
- The change relating to Tangoio over the last fifty years was questioned, e.g. if this assessment was being carried out in the 1960's Tangoio would be in the critical zone as there were properties at high risk. It was noted that the panel were looking at coastal hazards and inundation and the impact in Tangoio would not be as great as in other areas.

Motion

1. That the recommendation of priority units for further assessment and adaptation pathway development be approved as: Westshore (D), Bay View (C), Whirinaki (B) and Ahuriri (E).

2. Based on current information, Tangoio (Unit A) and Ahuriri Lagoon/Airport (Unit M) may not require adaptation responses for inundation or erosion over the next 100 years. This interim position will be reviewed at the next Strategy review point

The motion was moved (Oliver Postings), seconded (Garry Huata) and carried.

Stephen Daysh outlined the process for brainstorming and option development, prior to panel members splitting into groups. Observers were welcome to join a group or move around groups. Panel members would break into three smaller groups to work on option development. Each group was asked to fill out a chart, with one voting member recording and reporting back on the various options identified. It was suggested that the status quo be considered, (at least for a period of time), holding the line and managed retreat.

Following the workshop the TAG team would review and technically assess the options that were identified, and would build on the options and suggest additions or improvements to be reported back to the Panel. Work will also be carried out with Living at the Edge to build a series of pathways over the next 100 years. This will show as combinations of options over time, for example one pathway may be to defend for 25 – 30 years and then retreat. There will be a gap between this workshop and the next to allow for the work to be undertaken. It will all be reported back to the Panels for their consideration.

Panel members split into small groups at 6.10 p.m. and reported back to the meeting at 7.00 p.m.

REPORT-BACK FROM SMALL GROUP SESSION

Ahuriri Group

Shaun Thompson-Gray reported.

Potential Options - Erosion

1. Extend the East Pier to create a groyne and renourish the beach.
2. Create a groyne field along the Harding Road area. There is currently a sea wall so a staged response could be to start raising the sea wall to match sea level rise.
3. Continue renourishment of beach. Affect on reefs nearby will need to be taken into account.
4. Create an offshore reef to take the energy out of the waves.
5. Extend the port breakwater to create an area for beach renourishment.

Options – Inundation

- Only a small strip of land affected by inundation in Ahuriri. Put a planning process in place to start raising the floor level of houses.
- At a later date there is likely an issue through at Pandora – put in a stop bank with pumping stations to protect the industrial area.
- Build floodgates at Pandora and raise the road level to stop the sea coming into the lagoon.

Questions and discussion:

1. Managed retreat for houses around seafront – queried where these could be relocated and whether there was an option for intensification.
2. Managed retreat for industrial – start thinking about relocation of the industries.
3. Status quo – maintain the sea wall or just let it go.
4. Lifting the level of new buildings in the Pandora area was considered for the industrial area. It would be necessary to raise the level of the ground and buildings by about one meter. Suggested it could either kept dry with the stop banks or allowed to get wet.
5. The status quo could work for about 20 years for erosion and inundation.
6. Groynes and renourishment were queried. There is currently not a lot of renourishment so sand or gravel could be used. Groynes or offshore structures would be to hold the material or increase the time it remained, i.e. provide stability of the edge for a period of time.
7. Floodgates at the bridge site could act as tidal barriers and protect the Pandora area.
8. The Ahuriri bypass road would not be affected by erosion or inundation so access to the port would not be affected.

Westshore Group

Mike Penrose reported.

Potential Options:

1. The greatest hazard/risk is erosion.
2. Status quo. The area was split into two for consideration – top from the Esplanade to Garden St = 10 years. Garden Street to Whakarire Avenue = 3 – 5 years. Status quo would include continuation of the renourishment programme.
3. Hold the line strategy options:
 - a) Increase renourishment. Lack of freely available material may see it fail.
 - b) Build groynes. May fail due to the design specification and possibly move the problem further north.
 - c) Build a sea wall. Risk of failure due to scouring of the beach underneath wall.
 - d) Increase dredging and pumping to shore. Could fail due to lack and suitability of material. Also the barge being unable to get close enough to the beach to deposit materials.
 - e) Build a breakwater. May fail in extreme events.
 - f) Offshore reef/reefs. Same risk of failure as above.
 - g) Lower the ground behind the beach crest so waves in retreat have a lesser scouring effect.
4. Managed retreat.
 - a) Council to establish trigger points and purchase the properties affected. Failure would be reliance on early planning and proactive council policies.
 - b) Council to create alternative house sites. Some houses could be relocated. Failure – alternative housing option. Key consideration – early planning.
 - c) Review any options that may emerge from overseas.

Questions and discussion.

1. Managed retreat – is it realistic to find new areas to move to? Suggested this could be investigated but may be limited.
2. Breakwater is a general concept. Would need engineering and cost benefit analysis.

Bay View Group

Dorothy Pilkington reported.

Potential Options:

1. Erosion is the greatest risk/hazard.
2. Whirinaki – no option for status quo as it would be feasible for 10 years at the most. May be feasible to 2065 in the Bay View area but alternative road access may be required. Houses would be affected and alternative access would not be a long term solution. The railway line could also be affected and by 2065 both road and rail compromised.
3. Managed retreat at Whirinaki - look at alternative access as this would be an immediate need.
4. Hold the line – both areas had the same options.
 - a) Renourishment south of Bay View. There may not be gravel available and natural processes would move it along the coast.
 - b) Build a sea wall or gravel with renourishment. This would have a limited life of 50 years and sourcing material could be a risk.
 - c) Artificial reef, either submerged or higher than water level. Limited life up to 50 years and subject to material being available.
 - d) Stabilising the crest or dune-stabilisation. May not last but may help overcome erosion.
5. Managed retreat.
 - a) Relocation nearby, which is feasible in Bay View but not as feasible in Whirinaki.
 - b) Cash payment for home owners to move elsewhere. People may have attachments to the area, e.g. family ties/amenities. In Bay View over the crest the land is at sea level. Also potential for liquefaction in the Bay View area.

Questions and discussion.

1. In the southern areas a strong sense of community was evident. Confirmed that this was equally as important in the northern cell e.g. family ties and amenities (e.g. schools).
2. If it became necessary to abandon an area and move people away, it would be best to try and keep the community together by looking for alternatives nearby.

SUMMING UP/NEXT STEPS

Stephen Daysh advised the completed sheets would be examined and reviewed by TAG with possible additional ideas being added. The TAG group would then further develop the ideas. There would be a technical assessment with help from Richard Reinen-Hamill and T&T. A range of pathways would be developed over time using the Pathway Planning approach. There would be a break between now and Workshop 5 in order to complete this work, with report-back and discussion of the options at Workshop 5.

Prioritising of actions will be carried out and early-action areas defined in the pathways. The other tool is “real options analysis process” i.e. determining the best time to respond.

A comment was made that in the interests of transparency it should be clear that what is being proposed will be in the best interests of the community as a whole, especially with regard to who will pay. This relates to managed retreat and relocation options and at some stage it will be necessary to say “buyer beware”. Planning instruments need to be part of the process with warnings about the risks. Confirmed this will be looked at in the next stage of the process.

Central government funding was queried. There is a ministerial technical working group looking at these issues and at this stage there is an open mind. Some workshops to discuss funding options have been held. This is ongoing and advice for the ministers is being prepared.

It was noted that there are five marae in the area that will be affected. Questioned whether there is a strategy to report back to the wider whanau. Simon Bendall confirmed that there is a study being carried out on the cultural values that exist along this coast to help the assessment of options but also the process is designed so that everyone on the Panels is representing a group or community, but to help with reporting and communications back to those being represented there will be two community discussion meetings (one for north and one for south). The intention is that these meetings are open to all however if it is felt that specific meetings at marae / for mana whenua would be valuable then feedback on this would be welcomed.

GRAVEL MOVEMENTS

Richard Reinen-Hamill spoke about issues relating to gravel supply and movement along the coast.

The gravel beach crest that exists along this coast was primarily formed from the onshore movement of gravels laid down on the sea bed during the Holocene period where sea levels rose up around 120 m to the present level and from erosion of the rock mass that formed Cape Kidnappers – it is largely a marine structure, rather than one formed directly by rivers supplying gravel. This can be seen by looking at the shape of the coast, which does not show as a delta expanding out (as would be seen from river deposits) but exists as an inverse curve – the sediments from the catchment (gravels, sands and silts) have then infilled and formed the plains behind the beach crest.

It was confirmed that little new material is coming into the system, with the main sources being from ongoing erosion of Cape Kidnappers and onshore movement of gravels from the seabed at that location (around 18,000 m³/yr) as well as from gravel supplied from the Tukituki River (around 13,000 m³/yr). Over time as it moves north the gravels abrade, getting finer and the silt and sand size fractions move offshore. There is no more gravel coming into the system in the northern area.

The beach slope is a function of the grain size, e.g. finer material produces a flatter beach slope and larger grain sizes form a steeper beach, so grain size is important in considering nourishment. Fine material will be flatter so larger volumes would be required. Coarser material makes for a steeper slope and less material. Nourishing with similar or slightly coarser material is a rule of thumb, however, this depends on the area of the beach being renourished.

Solutions to Westshore steepness were queried and whether sea bed material being replaced could help. Replacing the seabed with sand would raise the seabed and reduce wave heights reaching the coast, but wave energy would erode this over time. RR-H said there were examples in Italy where a sill was created and filled in, however, this was only done over small areas. The risk is that the waves will scour the material out. With increasing sea level rise there will be more wave energy and the waves will move material away. Smaller amounts of sand will be rapidly smoothed, except for perhaps Hardinge Road. Large amounts over large areas would be required to be effective.

Questioned whether there was gravel moving along the ocean floor to Westshore and whether the shipping channel had an impact. It was confirmed that what is getting dredged from the channel is sand and silt which suggest no significant quantities of gravel moving past the port. It is mostly sand/silt transport from the southern area and the shipping channel traps some of this material.

When no further extraction of gravel is carried out at Awatoto there is expected to be accretion at that point. This could result in some benefit along the Clive shoreline as the accretion will act as a "soft groyne" changing the wave angle and promoting additional sediment deposition to the south of the accretion area.

EDGE EVALUATION SHEET

Evaluation sheets were handed out for completion at the meeting. Feedback from the surveys will be available at the next reporting period.

NEXT MEETING

The next meeting will be on Wednesday 24 May, commencing at 5.00 p.m.

Garry Huata closed the meeting with a karakia.

The meeting closed at 8.00 p.m.