**Bay of Plenty Regional Council**

**Rangitāiki River Scheme Review – April 2017 Flood Event**

**Q&As**

**What caused the wall to breach?**

The panel concluded that there was not one single attributable factor that caused the breach of the College Road Floodwall to occur on 6th April 2017.

The Panel’s reasons for the floodwall failing at College Road are complex. They relate less to the design of the concrete wall itself and more to the fact that water found its way through the material beneath the wall. This caused water pressure to rise in the ground underneath the wall, to an extent that the cribwall sheared off at its base and moved inland.

The report considers the following questions in some detail:

* Did the concrete footpath laid a few years ago cause this increase in pressure?
* Would diverting water into Reid’s floodway have made a difference?
* Would different management of the lake levels upstream have made any difference?
* Did the saturated ground play a part?
* If sufficient material had been loaded on top and in front of (toe wall) would it have prevented the crib wall sliding?
* If there were additional rain gauges above the dams, would the response actions have being any different?

**Who is to blame?**

The report does not identify a source to apportion blame but does leave the reader with an outtake that we will never successfully control the indeterminable power of Mother Nature.

The report states:

* *There are many ‘what ifs’ about the event and certainty in this matter is not possible. Sometimes certainty cannot be given even when it is most wanted.*
* *There is no reason to believe that any of those involved at the time did anything less than their best*

**Will this happen again?**

* Whether our natural environment continues to be altered to the extent it has been and controlling Mother Nature are important question that require significant financial investment and therefore appropriately should be debated at the national level.
* Climate change will continue to throw these types of challenges at us so there are questions that must be asked:
  + How much money do the people of our region wish to spend controlling the environment?
  + To what extent do we alter the natural environment?
  + The assets in our Rivers and Drainage schemes are currently worth $238 million dollars. These assets include things like pump stations, stop banks, culverts and Canals. Along the Rangitāiki River, this includes:
    - 120.7km of stopbanks (that’s almost the distance form Auckland to Tauranga)
    - 9 pump stations
    - And 5 sections of concrete wall
  + Map A4 : This map shows the location of the Rangitāiki River, and along this river the assets that the Regional Council manages
* The report goes into some detail around engineering interventions and planning approaches -historical, current and for the future.
  + Human intervention drained 40,000 hectares of wetlands for conversion into farmland and pages 14-17 of the report clearly outline over a century of play between the continued interventions and ongoing natural challenges
  + Compare Map A5 (Rangitāiki Plains Historical Sketch 1866/67) with Map A1 (Rangitāiki Plains today).

**How safe are people living alongside the Rangitāiki?**

* Safety can never be guaranteed no matter where you live.
* Through our natural hazard and civil defence planning we will continue to define what is an acceptable level of risk with our communities but this must be asked of others as well:
  + those living elsewhere in the Bay of Plenty,
  + with our colleagues in other councils both locally and across the country
  + the policy makers in central government who guide our work.
* The Rangitāiki is the longest river in the Bay of Plenty. The majority of the river that stretches along the Plains is below sea level. Currently there are 40 separate pumping schemes and a circa $28 million dollar river scheme in place to enable people to live there.
* Maps A1, A2 & A5 make interesting comparisons
* The report considers whether a lower threshold for evacuations should be considered. For us in the Bay of Plenty, This could mean that people are evacuated on a monthly basis:
  + Across all the river schemes since the April floods, we have issued 12 flood warnings (2 Rangitāiki, 5 Whakatāne, 3 Kaituna, 1 Tauranga and 1 Waioeka)
  + From July 2016- June 2017, 56 flood warnings exceeded and 43 flood warnings issued in accordance with the Flood Warning Manual.
  + In the 2015/16 year, 43 flood warnings exceeded  and 26 Flood warnings were issued in accordance with the Flood Warning Manual
* The Bay of Plenty is an exciting place to live but it comes with a downside: our region is subject to various natural events including tsunami, volcanic activity, coastal processes (such as erosion), extreme rainfall, flooding and landslides.

**What happens now?**

We commissioned this report to enable Council engineers to identify what may be required in future approaches to the management of Rivers and Drainage schemes.

The report makes 29 recommendations:

2 for Legal and planning framework for flood hazard management

12 for the College Road Floodwall

6 for the operation of the Matahina Dam

4 for Evacuation planning

4 for Long term strategy and design philosophies

1 for community engagement.

* Many of these are work that the council is already engaged in or has planned.
* Some, like the two listed under the legal and planning framework (recommendations a & b) are of national significance and will appropriately be defined by central government, who through the Resource Management Act, guide our regional work.
  + Our regional work is led through the Bay of Plenty Regional Policy Statement (RPS):
  + In the RPS Plan Change 2 guides those preparing regional, city and district plans; and those considering resource consent applications in managing land use and associated activities according to their level of natural hazard risk.
  + This RPS Plan Change 2 has been awarded by NZPI (New Zealand Planning Institute) and is recognised as best practice
* Now, we will work through the findings and these are conversations that we will have with our communities:
  + We will start with those living with the Rangitāiki River but these are conversations that must be held with others as well – those living elsewhere in the Bay of Plenty, with our colleagues in other councils across the country and the policy makers in central government who guide our work.
  + There are big questions that must be asked:
* To what extent do the historical alterations of the natural environment be maintained?
* How is this funded?
* How do we balance personal safety with personal choice?

**Is the Regional Council going to do anything differently?**

* Whether our natural environment continues to be altered to the extent it has been and controlling Mother Nature are big questions that require significant financial investment and therefore appropriately should be debated at the national level.
* The Regional Council is just one of a number of organisations responsible for natural hazard management in NZ. A range of both volunteer and paid organisations deliver under two different acts of legislation (RMA and CDEM) with consideration given to how these work alongside the ToW.
  + Appendix D (page 142/143) of the report outlines the roles and responsibilities for natural hazard management in New Zealand.

**Could the Regional Council have done more (when the rains fell in April)?**

Significant rainfall occurred over Feb-April 2017:

* By March the rainfall total for the region was 246% higher than average with some areas in the Bay of Plenty being as high as 550%.
* Rivers in the region were up to ten times the normal flow
* Saturated ground across the region meant as more rain fell, slips occurred causing roads to close and hillsides opening up by as much as 200metres in some areas.
* Rain gauges became overwhelmed requiring manual data retrieval

BOPRC staff

The report details the breadth of experience and commitment of Regional Council staff, specifically those working within our Rivers and Drainage, Data Services and Engineering teams.

Chair Doug Leeder said “When you read through the time logs you get an appreciation of the round the clock work undertaken by staff, and this is especially humbling to read with the knowledge that these aren’t just ‘staff’, but people whose own families and properties were being affected by the floods”.

The panel found that

* *There is no reason to believe that any of those involved at the time did anything less than their best*
* *It is unreasonable to expect the Regional Council Flood Managers to have recommended ad hoc evacuations any earlier than was done so during the event.*

**What information was supplied to the Panel?**

This was an independent review therefore the Panel were at liberty to request information from whomever they thought appropriate.

Information supplied to the panel can be found on [www.rrsr.org.nz](http://www.rrsr.org.nz)

**What was the cost of this independent review?**

* When Council established the review and approved the Terms of Reference, in May 2017, it noted that the preliminary cost estimate for the review was up to $500,000, with expenditure being incurred in the two financial years of 2016/17 and 2017/18.
* The final costs of the review are not yet known as there is always some lag from the time costs are incurred until invoices are received and processed.
* Based on the known costs to date, and estimates for the completion of the review, it is expected that the final cost of the review will be very close to $500,000.  This amount includes the Panel members, as well as their support services (Secretariat, communications and legal).  It also includes expenses such as travel and accommodation.

**Key Dates:**

Feb/March 2017 Record rainfalls result in saturated ground across the majority of the Bay of Plenty

31 March 2017 BOPRC Flood Management team commence 24/7 operations, including Matahina Flood Management Plan actioned

3 April 2017 Cyclone Debbie: Emergency Management Bay of Plenty activate in stand-by mode to support Whakatāne CDEM Emergency Operating Centre

6 April 2017 Floodwall at College Road, Edgecumbe breaches.

10 April 2017 BOPRC announces independent review to be led by Sir Michael Cullen

11 April 2017 State of Emergency declared for Bay of Plenty Region  
CDEM Emergency Operating Centres active in Western Bay, Rotorua, Whakatāne, Kawerau & Opotiki

12 April 2017 Cyclone Cook

14 April 2017 State of Emergency for BoP terminated

22 May 2017 Independent Review Panel and Terms of Reference announced

14 June 2017 BOPRC announces over 250km of stopbanks across the region are being investigated for repairs due to significant weather events over March and April

29 June 2017 BOPRC commits $500,000 to Liveable Homes to aide Edgecumbe residents, and this is additional to the $200,000 provided to recovery activities in April.

24 July 2017 Review Panel requests more time to process the large quantity of information

18 Sept 2017 Whakatāne District Council release their independent report into their Civil Defence response actions to the April 6th weather event.

19 Sept 2017 Review Panel complete report

3 October 2017 Report into the Rangitāiki River Scheme Review –April 2017 Flood Event is released

**What has the Regional Council done since the event?**

*Works across the Region*

* + Emergency repairs are ongoing  - teams working incredibly hard on this
  + We have visited and flown with a drone all our river schemes now and have a detailed view of the repairs required to get the schemes back to pre-April condition (noting that this is not just Edgecumbe and also not just the Rangitāiki River. We have more than 250km of riverbank, stopbank and other flood protection assets across 5 River Schemes)
  + More than 500 repair jobs have been identified across the region and we have pulled that information into a Restoration Plan (dollar figures next to each job and prioritising the work). Actual works will take many years and possibly up to $40million across the region.
  + It has been an incredibly wet winter and that has slowed down many of the repair works

*College Road Stop bank rebuild*

* + Initially filled breach site on College Road with 4200 tonne rotten rock
  + Have recently completed the purchase of a number of properties around the area of the breach site for the area to rebuild the stopbank (purchase cost $1.6million)
  + Completed initial geotechnical investigations along the stopbank side
  + Engaged consultant engineers GHD to develop concepts which will be independently peer reviewed. Contract value $3.4million. (timeline - preferred design selected in mid-November, the contract for the repair to tender in late November, construction starting in mid-January 2018. The stop-bank construction is expected to take between 3 and 4 months, followed by work on services, road works, footpaths and landscaping, through until the end of May).
  + Two community representatives are providing a link between the Edgecumbe community, the engineering consultants and Bay of Plenty Regional Council team working on the stop bank design and Red Zone reinstatement.
  + We are working with the community on an appropriate way to acknowledge this significant milestone before any works start on site

*Supporting work with Recovery Office*

* + Staff and resources to support the good work of the Recovery team
  + Gave $500k to Liveable Homes
  + Provided $250k to the Whakatāne District Council Recovery Office along with a number of staff for several months and other in kind support.

*Rangitāiki River Scheme Review*

* + Commission the Review (see media release)
  + Provide information, staff time and responses to the Review team throughout the review process