Bay of Plenty Regional Council *22 June 2017*
Rangitaiki River Scheme Review
Further information discussed and identified during discussion on Thursday 15 June

The following information was identified and discussed during the 15 June 2017 discussion between the Review Panel and BOPRC Staff.

This information, together with responses to various modelling requests from Kyle Christensen are included the following folder with responses or links to responses provided thereafter. Some information is still to be provided.

14. Further information discussed and identified on 15 June and modelling requests

1. ***Provide information on long-sections made of the stopbanks:***
   - ***How frequently this is completed***
   - ***The most recent sections / reports***

   Long sections of stopbanks are undertaken at 10 year intervals under the AMP programme. For Rangiatiki the last long section was surveyed in 2005, with the next scheduled profile for 2017 or one year before next capacity review 2018-19. The long-section survey will now be re-scheduled to 2017 following major flood event April 2017. Note that a major flood event re-synchronizes the frequency to that year to enable post flood/scheme assessment.

   Most recent cross sections are included in the following spreadsheets:

   - Completed 2014 Hilltop import
   - 051104 Rangitāiki River Stopbank Profile

   The information from the stopbank profiles is used in the capacity analyses undertaken for each scheme. The Rangitāiki stopbank profiles are plotted against various scenarios in the Hydraulic Capacity Review undertaken for the Rangitāiki River and Reids Floodway by Opus 2011 (See p26 of 83 onwards).

   - Hydraulic Capacity Review Rangitaiki River and Reids Floodway Final Report Opus, 28 February 2011

2. ***The briefing information and advice provided to Opus ahead of the 2000 report***

Refer to the draft brief below. It references a final brief but one has not been located. Links to the brief and the Opus 2000 report are provided.

- Structural Assessment of Integrity of Rangitāiki River Stopbanks

- Stopbank Assessment Rangitaiki River Edgecumbe - Geotechnical Report No 2069. Opus International Consultants, 2000. D Dennison.

3. ***Grading information on the rotten rock that the Edgecumbe wall is sitting on***

   Rotten rock is not usually graded and is an all in product gained when clearing the overburden in a quarry operation. This has been confirmed with the quarry manager at Waiotahi Contractors.

4. ***Background information on the additional slab of concrete added on next to the wall including concrete thickness. Eg the decision document/s, any analysis completed, any other relevant information***

The rail along a section of the College Road wall was constructed under Bylaw Authority obtained by the Edgecumbe Community Board from BOPRC in 2012. The Application shows the handrail on a footing and a 400mm X 100mm concrete slab "mowing strip" between the top of the crib wall and the floodwall footing concrete. It is assumed that the slab was cast to create a wide footpath and wheel chair access past the floodwall. No details of that decision or slab information have been found. Refer to the following:

- Rangitaiki Community Board - Viv Barr - Bylaw Authority for the Development of a 2km Walkway on the Riverbank College Road Edgecumbe - 09 November 2011
- Rangitaiki Community Board - Application for Bylaw Authority - Safety hand rail proposed as part of Rangitaiki River walkway - June 2012
- Bylaw Authority Rangitaiki Community Board - Development of a 2km Walkway on the Riverbank College Road Edgecumbe
- V Barr - Bylaw Approval to install safety rail on walkway Rangitaiki River Edgecumber - 12 June 2012

5. ***Clarification on where the crib wall and the flood wall sits on the most recent cross-section provided. During the meeting, the general location was noted / shown to Charlie Price, but written confirmation would be appreciated***

Refer to: Edgecumbe Breach Site. Post Flood XS, with floodwall position added

6. ***Information from Trustpower flows etc – note: this has been provided. Thank you.***

Responses to various information and modelling requested by Kyle Christensen

- ***16 June 2017 14:06 I wish to request a modelled water level time series for MIKE 11 model chainage RANGITAIKI 13868 for a dam outflow of 680 m3/s.***

  Refer to: 2017-06-19 Email from Peter West - modelling of dam outflow of 680cumec - response to request from Kyle Kristensen 20170616 14:06

- ***16 June 2017 17:01 Can you please run a scenario where the dam discharge is increased to 550m3/s at 1800 on 5 April***

  Refer to: 2017-06-20 Email from Peter West - response to Kyle Christensen request from 20170616 17:01

- ***17 June 2017 07:56 Can I please have additional forecast information …..***
- ***17 June 2017 14:06 I have located the forecast information in Objective Connect but would still like clarification on what actual (rainfall & riverflow) data was available and used for each forecast.***

  Refer to: 2017-06-20 Email from Peter West - response to Kyle Christensen request from 20170617 07:56 & 14:06

- ***19 June 2017 09:24 Understanding of instructions, perfect inflow forecasts, contingency and pre-lowering etc***

  Refer to: 2017-06-20 Email from Peter West - response to first part of Kyle Christensen request from 20170619 09:24

  Refer to: 2017-06-20 Email from Peter Blackwood - response to Kyle Christensen request re prelowering of Lake Matahina 20170619 09:24

- ***21 June 2017 10:56***

  1. Can you please run a scenario of the flood as it happened but with Reids Floodway fully operational including the lower level fixed weir spillway (as modelled for the basis of the PDP 2014 Report – Rangitaiki Spillway Options Analysis). I would like to know the flow down the floodway and main river as well as the modelled water level time series for MIKE 11 model chainage RANGITAIKI 13868 for this scenario.

     Refer to: 2017-06-23 Email from Peter Blackwood – response to Kyle Christensen request from 20170621 10:56 re Fixed Spillway simulation

  2. Please describe what was proposed for the emergency works that were about to commence at the College Road wall including the extent and nature of these works as well as an estimate for how long it would have taken to complete them assuming there were no immediate safety concerns.

     The intention was to lay geofabic and toe-load over the fabric with rotten rock material. The work would have been done in layers over the full length of the crib wall as well as the soft patch of grass just upstream of the crib wall.

     To extend the layers up the full height of the crib wall would have taken 8 to 10 hours.