From: Don Paterson [mailto:nat.opc@xtra.co.nz]
Sent: Tuesday, 22 April 2014 6:17 p.m.
To: 'Pim De Monchy'
Subject: RE: Engineer's assessment - your alternative re-diversion option

Hi Pim

If you look at the extent of lowland farmland flooding that has occurred around Maketu Estuary each time that we have witnessed significant rainfall then you can see the obviously most well suited area that could ideally be converted by BOP Regional Council into a v-drain kahikatea forested fresh water wetland recreation reserve flood plain water purification and fisheries production enhancing ecosystem.

I note from the BOPRC website that the goal of the Kaituna River and Ongatoro/Maketu Estuary Strategy is to significantly increase the volume of water (particularly fresh water) flowing from the Kaituna River into Ongatoro/Maketū Estuary by 2018 in a way that maximises the ecological and cultural benefits (particularly wetlands and kaimoana) while limiting the economic cost and adverse environmental effects to acceptable levels. Your currently preferred option of re-diversion would therefore fail to deliver because:

1. The economic cost is significant and would require the confiscation of private land against the owners wish.
2. A forecast 20% increase in flow of fresh water into Maketu Estuary is not a significant increase.
3. Your currently preferred option would significantly limit potential food chains that can now instead be recreated via the original river course that can without cost maximise the ecological and cultural benefits of re-diversion.
4. Further cost would be incurred by the increased destabilisation of the toe of Maketu Estuary spit from increasing Ford's Twin Cuts flow as I had predicted in the Appeal Court would happen and as has since been witnessed to have happened. Physical works to stabilize Maketu Estuary would be against community preference as stated in public meetings during the democratic Kaituna River and Maketu Estuary Management Strategy.

The engineering assessment that Steve Everitt has provided you with is not worth the paper that it is written on because it is a manipulation of the truth to suit old previously tried and already failed objectives by dead-wood employed by BOP Regional Council in support of the original engineering mistake that was Ford's Twin Cuts. I believe that you now need to employ a different and more open-minded coastal planner or you are going to continue to receive the same already proven to be wrong recommendations.

There is a potentially much more beneficial and also less expensive option of re-diversion that your engineering staff has refused to consider or model and that is I believe illegal under the Local Government Act of Parliament.

I summarise my recommendations for you to model as follows:

1. Leave Te Tumu entrance of the Kaituna River unrestricted as it is now for flood protection without further cost.

2. Replace the mole at Te Tumu with an overtopping weir at RLO.5m.
3. Cut through Ford Road to the south of the mole and large enough to take the full flow of the Kaituna River and to allow Kaituna River boating access to the sea via Papahikahawai Chanel and Maketu Estuary entrance.
4. Salt water will enter Maketu Estuary at high tide and during periods of high Kaituna River flow to dilute that pollution loading and while sand is continuously flushed out to sea adjacent to the weir, but this will be less salt water than does currently enter Maketu Estuary at Maketu and also less than would enter via your currently preferred option with only a 20% increase in fresh water to displace it.
5. At low tide during periods of low Kaituna River flow when wave washed beach sand has built up adjacent to the overtopping weir, which will be carrying the majority of high tide Kaituna River flow above a salt water wedge at high tide, then 100% of Kaituna River fresh water low tide flow will again flow through Maketu Estuary via Papahikahawai Channel, under the 1971 Subsidised Rock Protection and through Fords Twin Cuts and so it will return the mauri (life force) and original ecosystem food chain connection with maritime marsh galaxius spawning habitat that can be recreated within Maketu Estuary boundaries.
6. Occasional significant low-tide Kaituna River flow through Papahikahawai Channel will protect the back of the spit and the main channel will eventually bend towards Whakaue Marae and will deepen the lower Maketu Estuary and bar.
7. If the Maketu Estuary spit is deliberately breeched at its narrowest point then sand that has already in-filled the lower waterways of Maketu Estuary will be flushed back out to sea and onto the beach and the spit will reform in its original proportions without cost and without the ecological disaster that physical works would represent on this highly visible natural environment.
8. If a bridge were built to maintain pedestrian access from Ford Road to the beach at Te Tumu then it would need to be high enough to allow the safe passage of motor vessels underneath it.
9. The existing operation of the drainage scheme would not be effected and would likely be improved by the holding capacity of Maketu Estuary.
10. Flood scheme operation would remain unchanged and would likely be improved by the holding capacity of Maketu Estuary.
11. Upstream water levels would likely fall due to the holding capacity of Maketu Estuary.
12. Kaituna River flow down Papahikahawai Channel would be without cost or risk as had previously been photographed to have occurred.
13. The spit had not previously blown out because of Papahikahawai Channel flow but instead because Kaituna River flow had bent against the spit at Te Tumu. The entrance had then migrated back to Maketu through Papahikahawai Channel.
14. Flushing flow through the southern Maketu Estuary in isolation from Papahikahawai Chanel flow, bends against the back of the spit and erodes the spit narrowing it and so has allowed wave overtopping to destroy the spit and to infill the lower estuary with sand.
15. Increased flow through the unnatural man-made feature that is Fords Twin Cuts would deliver greater scour potential against the back of the spit as I had predicted in the Appeal Court would happen following reintroduction and as has since been witnessed to have occurred.
16. Deliberate resultant sand introduction into Maketu Estuary has already occurred because of unnatural introduction of Kaituna River flow into Maketu Estuary via Fords Twin Cuts in isolation from a protective Papahikahawai Channel flow.

17. We now need low tide Kaituna River floods through Papahikahawai Channel to remove that sand from the lower Maketu Estuary without cost and without environmental degradation.
18. Navigation and fishing will not be lost at Te Tumu but superior navigation and fishing will be created at Maketu.
19. Reliable timely flood release at Te Tumu will remain unchanged.
20. There will be no change or there will be improvement in day-to-day water levels up-stream due to the holding capacity of Maketu Estuary.
21. There will be no change on high water levels in the Kaituna River or at Maketu Township as both will remain higher than the sea as at present. The holding capacity of Maketu Estuary may reduce high water levels in the Kaituna River.
22. The Kaituna River had previously been recorded by photograph to have been going through Papahikahawai Channel without overtopping at Te Tumu and so this can be easily achieved with certainty while also overtopping at Te Tumu.
23. The Kaituna River will scour its own ideal depth through Papahikahawai Channel and through the lower Maketu Estuary without cost.
24. The Kaituna River will excavate its own ideal channel width through the narrowest point of Maketu Estuary spit as soon as flow is initiated there.

Steve Everitt's diagram titled Issues, Qualitative Assessment, Resolution has too many inaccuracies about what I had said to type them here and as some have already been covered above perhaps they are better left until we meet.

I had already clarified for you at a Whakaue Marae meeting that erosion to the toe of Maketu Estuary spit was accelerated as soon as the causeway that had been blocking Fords Twin Cuts was removed and before the flap-gate structures were commissioned. It had allowed fresh water to flow on top of salt water around the back of Maketu Estuary and so be directed at the back of Maketu Estuary spit on an outgoing tide so eroding the back of the spit. It is still occurring and has destroyed the toe of the Maketu Estuary spit and has in-filled the lower estuary with sand and so I believe that the Appeal Court decision that went against me should be reversed as I have been proven to have been correct.

Kindest regards

Don Paterson
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