

Hi Pim

I request that you provide proof of your assumptions in points 1 and 2 below that there could be unmanaged risk under my proposal, or that it could fail to provide effective management of its environmental effects, or of implausibility of Te Tumu Cut exit behaving as I have described that it would.

You and Ben Tuckey and I do all agree that if the lower Kaituna River stop bank was removed between Te Tumu and Ford's Twin Cuts while the Te Tumu exit is constrained by the mole as at present, then Maketu Estuary and lowland around it could possibly flood during times of high Kaituna River flow coinciding with high tide and coinciding with storm surge.

I remind you that I had accurately described in opposition to professional engineering advice to an Appeal Court Judge, what would happen to Maketu Estuary spit and subsequent infilling of the lower Maketu Estuary following reintroduction of Kaituna flow through Ford's Twin Cuts. The same thing had previously happened when Ford's Twin Cuts was originally constructed, after Ford who was farming beside Maketu Estuary had proposed its construction according to records on file.

I remind you that engineering advice followed by BOPRC and by the Appeal Court Judge has been proven to have been entirely wrong and that guidance from the same coastal planner Jim Dahm who is contracted by BOPRC and by his close personal friend Ken Murray, son of the Ford's Twin Cuts Murray, has also been proven to have been completely wrong. I would therefore like them out of the picture now so that their obvious bias is removed from consideration.

I recommend that the mole is now removed from Te Tumu exit and that an overtopping weir consisting of a footed vertical reinforced concrete wall at a height of RLO .5m is constructed from that point and for 100 meters to the east in line with the highest point of the existing dune. I recommend that the wall rises at that point to prevent any possibility of overspill eroding the dune past the weir on its eastern end. I recommend a lowered section on the western end of the weir to encourage scour of the existing Te Tumu exit on an outgoing tide as well as placement of a port mark there to show boats where it is.

I recommend removal of the lower Kaituna River stop-bank from where the mole currently is and back to where you and I had recently stood and that another port marker be driven there. I recommend lowering of the stop-bank from that point back to and blocking Ford's Twin Cuts to form a RLO 1m metalled weir.

I recommend also constructing a RLO 1m metalled weir from the point where we had stood across an existing stop-bank and extending onto Papahikahawai Island. This could be raised with the addition of more metal to keep more water in Maketu Estuary longer to exit at Maketu, or lowered by grading metal to allow more filling of Maketu Estuary from the Kaituna River and from Te Tumu. Kaituna River fresh water would be flowing down into Maketu Estuary on a rising tide rather than onto a more rapidly rising ocean.

I recommend removing the 1971 Subsidised Rock Protection.

I recommend pushing the Papahikahawai Island stop-bank back under the mud from where it was excavated to re-establish a natural connection between ecosystems there.

I believe that you had stated to me that storm surge combined with anticipated sea level rise was unlikely to flood lowland around Maketu Estuary during the next 50 years and that further stop-banking then could mitigate the effect of sea level rise. I believe that this is completely independent of Kaituna River flood flows. I believe that the holding capacity of the ocean is so great that Kaituna River flood flows could not possibly affect sea levels. I believe that an exit at Te Tumu in excess of 100 meters wide could completely release a high tide Kaituna River flood down onto the ocean much more quickly than it does now through a constricted exit, and instead of up onto Maketu Estuary water levels which are always higher than is the ocean on a falling tide. I believe that Maketu Estuary when full of water would force Kaituna River water to exit down onto the ocean at Te Tumu. I believe that at full tide the ocean would always be lower than would be Maketu Estuary while the Kaituna River was

in flood and so how could Kaituna River floods run up into Maketu Estuary instead of down onto the ocean at Te Tumu?

I believe that outgoing Kaituna River flow could maintain and improve Te Tumu Cut navigability with extra water from Maketu Estuary high tide water levels before the RLO 1m weir stopped this from occurring on a falling tide, and also from an area of wetland maritime marsh galaxius spawning habitat between the existing lower Kaituna River course and Papahikahawai Island. I believe that the entire Kaituna River flow would initially exit on every tide at Te Tumu and until Kaituna River floods had created a channel through Papahikahawai Channel and out through a deepened lower Maketu Estuary and mouth. At that stage I believe that erosion of the sand bar adjacent to the overtopping weir at Te Tumu could reduce and more low tide Kaituna River flow could exit at Maketu when the Kaituna River was not in flood. I believe that there could never be too much Kaituna River flood flowing through Papahikahawai Channel because Kaituna River water could also enter Maketu Estuary over the RLO 1m weir while also exiting to sea at Te Tumu.

I believe that Te Tumu Cut could never close because after every high tide the entire Kaituna River, and the top of Maketu Estuary water, and the water between them would exit to sea initially over the whole RLO .5m 100 meter long overtopping weir and then subsequently adjacent to its western end through the existing Te Tumu exit. The RLO .5 m overtopping weir would I expect become part of an expansive sand bar overtopped on the top of the incoming tide by wave action and overtopped again on a falling tide by Kaituna River flow and so it would always remain ready to receive Kaituna River flood flows.

Te Tumu Cut could never be more restricted than it currently is because it would be carrying the same outgoing Kaituna River flow. If there was a risk of lateral drift closing the exit then it would have done so already and nothing would change. Please note that Maketu Estuary did not close even when it was completely isolated from Kaituna River flow and so lateral drift has been proven to be insignificant and unable to close Te Tumu exit which will still be carrying outgoing tides and so protecting Maketu Estuary from potential Kaituna River floods. How can my proposal present risk and how can it represent unmanaged risk? How can my proposal for Te Tumu Cut exit/entrance be implausible? It is logical, practical, inexpensive and fool proof?

I believe that incoming salt water wave action at Te Tumu will infill the Kaituna River course there with beach sand while Maketu Estuary fills, so stopping the salt water wedge, and then outgoing tidal flow will re-scour it. I believe that placement of the overtopping weir where I have described will ensure that this occurs in the same place on every tide so maintaining boating access at Te Tumu.

I believe that fresh Kaituna River water will sit on top of salt water on every incoming tide between the existing lower Kaituna River course and Papahikahawai Island and it will eventually overtop the RLO 1m weir into the back of Maketu Estuary. The bigger the flow in the Kaituna River the more fresh water that will enter Maketu Estuary. A worst case scenario during Kaituna River floods is that Maketu Estuary could remain full of fresh water throughout the tidal cycle and the lower Maketu Estuary and a deepened mouth will be scoured back out to sea and so will transfer sand back onto the beach to rebuild spit height over time without Maketu Estuary water levels ever going above the high spring tide mark.

If you look at the cost to the environment of Kaituna River flow having been taken from Maketu Estuary originally so that a wetland could be drained and farmed with total disregard for local fisheries production, and if you look at the cost of 30 years of now proven to be incorrect professional engineering advice, and incorrect supporting legal advice, and unsuccessful capital works to date in attempts to improve the situation, and the cost involved of going back to the Appeal Court with a grievance, then the cost of modelling my proposal as a solution is insignificant. The ecosystem food chains that my proposal could recreate could quickly return revenue to this region.

I believe that we need to reconsider why we the public want the Kaituna River returned to Maketu Estuary: We want the mauri or spiritual significance of the Kaituna River returned to Maketu Estuary; the kaimoana back in and around Maketu Estuary supported by maritime marsh galaxius spawning habitat in the upper Maketu Estuary; pipi back adjacent to Whakaue Marae; reestablishment of ecosystem food chains; a prolific fishery back at Maketu Estuary mouth; a deep water anchorage and entrance in connection with the Kaituna River; a stable sand-spit with height sheltering that anchorage

and also sheltering the Maketu foreshore. We want to enhance a natural environment back to its former glory by using natural processes.

The proposal that you and Steve Everitt had come up with cannot achieve any of the above to the extent that my proposal can at less cost. I believe that you could now best bury your proposal and draw and model and then construct mine without risk of flooding Maketu lowlands with Kaituna River flow, and with surety that the Kaituna River outgoing flow will maintain Te Tumu exit for flood relief and boating access, as well as providing faster drainage of gravity drainage schemes upstream, until those lowlands are converted into v-drain wetland ecosystem stimulating wetland habitats.

I believe that a good place to start would be converting all farm drains into planted v-drain wetland galaxius and tuna (eel) habitats as I have previously described and in connection with Maketu Estuary maritime marsh galaxius spawning habitat to be recreated