From: Don Paterson [mailto:nat.opc@xtra.co.nz]
Sent: Sunday, 28 December 2014 5:22 p.m.
To: 'Pim De Monchy'
Subject: RE: Your proposal

Hi Pim

I have been presenting the same proposal to DOC and to BOPRC for 30 years and I have yet to be listened to. Your public consultations have consisted of telling us the public what you and Steve Everitt are going to do. You have not studied and you have not trialled my proposal. Do you recall Option P in the BOPRC Kaituna River and Maketu Estuary Management Strategy public consultation of which I had attended every Focus Group and every Working Party meeting as voluntary Chairman of the History Focus Group? That is what I had again described to you below.

How could Maketu Village flood when the sea level is always lower than is Maketu Village, when the sea is always lower than the water level in Maketu Estuary on a falling tide, and while there is unrestricted access and free drainage to the sea over sand for Kaituna River water at Te Tumu and for Maketu Estuary water at Maketu? Water would have to run up hill against gravity for flooding of Maketu Village to occur.

Steve Everitt said in my office that he was not prepared to recommend full re-diversion of the Kaituna River through Maketu Estuary even if I was. This showed me how little understanding that he had of my proposal and also of estuary processes in general and of the interaction between river and ocean and so I do now question if he is the right engineer for the job. It seems that understanding is beyond him.

There is certainty of flood relief at Te Tumu because Te Tumu would not change from how it is now, except for the fact that an overtopping weir at Te Tumu would allow for more drainage of high-tide fresh Kaituna River water to the sea more quickly adjacent to the existing exit, once Maketu Estuary had filled with Kaituna River fresh water including its ecosystem food chains at the top of every tide. On a falling tide the Maketu Estuary water level would be higher than would be the ocean at Te Tumu and so the whole Kaituna River flow would exit at Te Tumu as it does now, plus water between the Kaituna River and Papahikahawai Island would also exit at Te Tumu. The sand bar that would form at Te Tumu on the incoming tide so blocking the salt water wedge would then be eroded on the falling tide.

Low tide drainage levels in the lower Kaituna River could not be affected because the entire outgoing Kaituna River flow would continue to exit at Te Tumu maintaining drainage through that exit as it does now.

Fresh water molecules in the Kaituna River catchment flow on top of each other while being pushed towards the sea by gravity until they reach salt water and then they flow on top of the heavier salt water molecules because the two do not readily mix. This is why a flood can be seen extending well out to sea from Te Tumu exit. When there isn't a Kaituna River flood happening one can from a dingy still audibly witness a lack of mixing by the different sounds being made by the different rippling waters. This lack of initial mixing of fresh and salt water does mean that there is always fresh water flowing through the lower Kaituna River on top of the present salt water wedge. It also means that there could always be significant fresh water introduced into Maketu Estuary by my proposal.

The current salt water wedge protrudes unrestricted up the lower Kaituna River from Te Tumu so keeping galaxius spawning where there is little available ideal spawning habitat in comparison with what had been previously available in the upper Maketu Estuary as is pictured on my website www.wewtlandsnz.com. When BOPRC does trial my proposal then a sand bar will be formed by wave action at Te Tumu towards the top of the tide. This will stop the salt water wedge there and so will introduce Kaituna River catchment spawning galaxius to previously witnessed to be and recorded by Graham to be preferred maritime marsh spawning habitat that will quickly re-establish between the Kaituna River and Papahikahawai Island, except where Kaituna River low tide flood flows do maintain navigability through Papahikahawai Channel and so through Maketu Estuary in addition to maintaining navigability at Te Tumu. Navigability goes where low tide flows and so there will

eventually be two navigable exits once Kaituna River floods through Maketu Estuary at low tide have excavated sand.

Any and all lowland that does now become available above Maketu Estuary could I believe best be converted into kahikatea, flax and raupo planted v-drain wetlands to receive, settle and to purify polluted Kaituna River flood flows by exposing them to plants, while also providing ideal adult galaxius (whitebait) and tuna (eel) habitats to seed fisheries production. The more adult habitat that is now created in conjunction with Maketu Estuary maritime marsh the greater will be local fisheries production increase. Galaxius spawn (whitebait) and returning elvers (eels) will seed coastal ecosystem food chain production as had originally occurred nationwide.

I do see your drawing my proposal please as being a necessary first step to your understanding of it and it will also help me to find the engineering support that you require despite there already having been 56 years of engineering mistakes made with Maketu Estuary and which I am trying to correct.

Kindest regards

Don Paterson
CLM; HbT SRF SNTR

Chairman, History Focus Group
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From: Pim De Monchy [mailto:Pim.deMonchy@boprc.govt.nz]
Sent: Friday, 19 December 2014 7:57 a.m.
To: Don Paterson
Cc: Simon Banks (simon.banks@opus.co.nz); Steve Everitt; Pim De Monchy
Subject: RE: Your proposal

Hi Don

Thanks for your email. You have described another variation on your preferred option for the re-diversion of the Kaituna River which differs from that presented to us previously, and differs significantly from the proposal we have put forward in our application for consents.

As we discussed on site, I don't think that your described option would work because it fails to address the risks identified in Steve Everitt's engineering assessment of your previous options. These include flooding risk at Maketū township, certainty of flood relief at Te Tumu and low tide drainage levels in the lower Kaituna River. It seems that your option would EITHER leave Te Tumu Cut open in which case saline water would continue to propagate up the lower Kaituna River and in fact enter Maketū Estuary in greater volumes as well (both of which would negate the stated benefits of opening up Galaxius spawning habitat in Maketū Estuary, OR it would cause Te Tumu to close (or substantially reduce its capacity) which would ramp up the risks identified above. I can't see how you could achieve both the benefits you are claiming and concurrently address the risks.

Consistent with our previous offer, if you can find an engineer or suitably qualified person who believes that your option could provide the stated benefits while addressing at least the named risks above (not to mention the issues around navigability etc), then we will re-open the investigation of your preferred option.

Kind regards
Pim

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