Resilient River Communities | Built By | Te Uru Kahika Regional and Unitary Councils Aotearoa | Kānoa Regional Economic Development & Investment Unit

Quarterly Update **May 2023**

Nau mai and welcome

It's been a challenging start to the year with significant weather events highlighting the importance of flood protection. Our hearts go out to the communities affected by Cyclone Gabrielle here in New Zealand.

Co-investment to build resilient river communities together

Opinion:

Te Uru Kahika – Regional and Unitary Councils Aotearoa Regional Chief Executive Officer Group Convenor Michael McCartney, highlights the importance of central government co-investing alongside councils in river management on an ongoing basis. McCartney states "we must do this together," with regional government urging central government to dedicate stable funding to support future-focused flood protection and adaptation to climate change.

Following the devastating impacts of Cyclone Gabrielle, renewed discussions with central government have reinforced the importance of the Te Uru Kahika proposal: Before the Deluge, a proposal for government co-investment December 2023 for co-investment in a further 92 flood protection projects across New Zealand. The $257m investment would fast-track much needed flood protection works, supporting local investment of $170m.

In Aotearoa 675,000 people, or one in every seven, live in flood-prone areas. Every year, Regional and Unitary Councils contribute $200m to flood protection works with an estimated annual shortfall of investment a further $200m.

Co-investment in flood risk infrastructure will enable part of a necessary multi-tool approach to flood protection. This approach includes not only floodgates, pump stations, stop banks, diversions, wetland reinstatement and river management works, but also revised spatial planning, managed retreat in some cases, and environmental considerations. A substantial and immediate pipeline of co-investment from central government in infrastructure to improve resilience from river flood risks is the priority means of restoring the 'flood-damaged' confidence of New Zealanders. It would deliver savings and more effective and timely actions to substantially reduce flood risk at the most vulnerable locations throughout New Zealand.

Some of the existing infrastructure around Aotearoa are decades old and adhere to older standards. Modern practices and standards need to be implemented to build resilient river communities.

It's not only councils asking for financial support. Massey University Professor in Physical Geography Ian Fuller supported Te Uru Kahika recently, noting: "The bill [for flood protection] cannot simply be laid upon the Regional Councils and Unitary Authorities, it needs to be accommodated by society as a whole because it's a societal issue."

The December proposal follows and is concurrent to the Resilient River Communities programme which is now in its third year of five. The programme's projects have already saved New Zealand more damages from floods in the last 6 months than they cost in total and continue to prove the success that is possible when local and central government collaborate and co-invest. Stable, long-term funding including the funding requested in the Te Uru Kahika proposal is what is needed now, to do more of this critical work.

Michael McCartney is the Chief Executive of Horizons Regional Council and Regional Chief Executive Officers Group Convenor for Te Uru Kahika – Regional and Unitary Councils Aotearoa

Looking to the past, to protect the future

Northland Regional Council

For decades the natural flow of the Otiria Stream has been altered by the construction of Ngapipito and Pokapu Roads and Otiria's railroad embankment.

Newly-elected Northland Regional Council member Geoff Crawford, chair of the Taumarere Flood Mitigation Working Group, says that unlike most flood mitigation projects it is not about trying to 'tame' nature.

"This one is actually restoring the Otiria Stream to its natural flow in accordance with new national freshwater 'Te Mana o te Wai' principles."

Both Otiria and Waiharakeke sit above thousands of years-old lava flows which have been too hard for the streams to carve deep channels into. This meant in extreme flooding situations 70% of the flow from the Otiria Stream and 80% from the Waiharakeke River would travel across the associated flood plains.

The Waiharakeke River falls off the lava flow at Pokapu Rd into a series of waterfalls and over the years has carved out a massive canyon increasing the cross-sectional area from just 36 square metres at Pokapu Rd to more than 600 square metres at Otiria Marae."

Councillor Crawford says it was the community that had, several years ago, come up with the idea of returning the water to its natural flow (as it was before any built infrastructure) into an area historically much better able to cope with the large volumes of floodwater.

Stage I of the project – construction of the downstream section of a new $1.4 million 80-metre-long spillway at Otiria – was completed last year. Stage II is currently due for completion before Christmas this year and will see the replacement of an existing 18-metre-long road bridge with a new 60-metre structure, and effectively triple the flow of floodwaters that can pass beneath it.

"In previous floods this water would typically be diverted – in part by the existing bridge structure and railroad – downstream to land at Otiria and Moerewa."

A final and third stage will be completed at the same time as work on the bridge and will see excavation of the remaining 800-metres of spillway and the removal of the existing Pokapu Rd road bridge.

The works cumulatively mean that in a flood, most of the water will be sent down the new spillway and into the Waiharakeke River past the lava flow, where the river is considerably wider and deeper.

The $7M total cost of the project is being funded 57% by Kānoa, the Regional Economic Development & Investment Unit, with another 28% met through targeted local and regionwide Northland Regional Council River rates. In recent months the project has secured a final 13% ($1M) from the Far North District Council's 'Better Off Fund'.

When the project is finished, water will once again flow into the places it had for thousands of years before human influences.

Dunedin River Managers Forum – 9-10 March

River managers from regional and unitary councils around New Zealand gathered in Dunedin 9 and 10 March for workshop meetings to share our insights and reassess our strategies following Cyclone Gabrielle, to better equip Aotearoa against future climate change consequences affecting our rivers.

The Otago Regional Council hosted event included speakers from Kānoa - Regional Economic Development & Investment Unit, Te Uru Kahika and LGNZ provided key updates from their respective areas, then progress updates from river managers about co-funded Kānoa Climate Resilience Flood Protection Programme projects were shared and discussed.

Kānoa Climate Resilience Advisory Board Chair, Basil Chamberlain highlighted the achievements to date and appreciation of the vital support from Kānoa staff.

Some of the highlights discussed included work done on the Awanui River that lifted the flood protection to Kaitaia and saved the town from flooding during a 1-in-100 year rainfall event last August, a major upgrade of the stopbanks on the left bank of the Waipaoa River that protected Gisborne city and adjoining high-value intensive horticulture land from Cyclone Gabrielle flooding.

In the Hawke's Bay, work on upgrades to cope with larger storm events, such as the Heretaunga Plains scheme has started to lift protection from 1-in-100 year flood levels to 1-in-500 year levels. Part of this project is the Taradale stopbank upgrade which was completed late last year and was instrumental in protecting much of Napier from catastrophic flooding from Cyclone Gabrielle, highlighting how vital these upgrades are.

River managers discussed the new fish passage pumps (see Fish-friendly Pumps article in this newsletter for details) and flood protection gates installed in the Waikato, Mataura stopbank upgrade work, berm restoration and social procurement developments in Canterbury and Otago, and a new Otiria spillway and bridge development arising from iwi hapu community consultation in Northland.

There was a field visit to the Otago Regional Council Water of Leith flood protection upgrade project, this project provides protection to the Dunedin CBD area including Otago University and the new hospital under construction.

This quarterly event is an important meeting of river engineers and managers to learn from each other and work together to ensure shared learnings and best outcomes for river management are achieved for Aotearoa.

Fish-friendly pump marks milestone in fish passage journey

Mangawhero pump station

Tuna (eels) were sighted going through the enclosed Archimedes screw pump at the Mangawhero pump station near Aka Aka, north Waikato, while Waikato Regional Council tested the new pump in operation.

During the successful test run, several tuna went through the pump and pump station outlet, making it to the other side safe and sound.

Pathways to the Sea Project Manager Michelle White says the instalment of the pump marks a massive milestone towards managing fish passage in New Zealand waterways as required by the National Policy Statement for Freshwater 2020.

“The council acknowledges the need for more sustainable use and management of our flood protection scheme assets, and this pump is the start of our mission to provide native fish with safe passage to the sea for spawning,” says Mrs White.

She says the council will be testing the enclosed Archimedes to see how successfully it passes New Zealand native fish species as part of its research into minimising fish mortality through pump stations.

The pump has been sourced from the Netherlands and is the first of its kind in New Zealand. In Europe, enclosed Archimedes screw pumps have proven to be 100 per cent fish friendly.

“We’re looking to see how this kind of pump works with our native eels and if we get the same results,” says Mrs White.

“We’ll be looking at whether tuna avoid the pump, what size tuna are passing through and assessing to see if there is any injury or mortality as a result of tuna passing through.”

The monitoring will take place during the migration season in 2023.

Integrated Catchment Management chair (North) Stu Husband says the pump has benefits other than safe fish passage.

“It operates to support drainage in the catchment, and to transfer water during high rainfall events,” says Cr Husband.

“It rotates very slowly and delivers high efficiency so is cheaper to run, and it’s a simple design that won’t require much maintenance.”

A second site where an enclosed Archimedes screw pump will be installed is Churchill East pump station, near Te Kauwhata.

Waikato Regional Council received $4.48 million from funds administered by the government’s regional economic development Unit, Kanoa – RDU, to support the upgrade of up to five pump stations in the Waikato to enable safe fish passage. Other sites are still being assessed for suitability.

A blessing will be held at the Mangawhero pump station in the coming weeks.

Resilient River Communities

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Te Uru Kahika

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Kānoa
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Video Launch

This short clip looks at the projects that are taking place around Aotearoa, why the Resilient River Communities programme was established and the people who are passionate about its success. Hear more about the effects of flooding on communities, as well as insurance implications and social outcomes from those directly impacted around New Zealand.

Watch the clip here.

Growing the network

We're growing the distribution of this newsletter. If you know someone who would like to be in the loop on Resilient River Communities please forward this to them and they can subscribe here.