Kerikeri-Waipapa River Working Group Record of Actions

Meeting held in the MS Teams & NRC Waipapa Office
on Thursday 9 October 2025, commencing at 9:00 am - 10:00am

Tuhinga/Present:

Chairperson, NRC Councillor Joe Carr
FNDC Councillor, Steve McNally
BayCare, John Dawn
Iwi Representative, Kipa Munro
Lower Puketotara and Kerikeri Catchment, Fred Terry

I Tae Mai/In Attendance:

Full Meeting
Water Technology - Principal Stormwater Specialist, Bertrand Salmi
NRC CE, Jono Gibbard (online)
NRC Rivers Manager, Joe Camuso
NRC Rivers and Natural Hazards Officer, Matt Jolly
NRC Rivers Project Manager, Meg Tyler
NRC GM Community Resilience, Louisa Gritt (online)
NRC Secretariat, Haylee Labelle (online)
FNDC Team Leader - Resource Consents Engineering, Nadia de le Guerre
Heritage NZ - Northland Area Manager, Bill Edwards
FNDC Group Manager - Planning and Policy, Roger Ackers (online)
FNDC Team Leader – Growth Planning & Placemaking, Jaye Michalick
FNDC Manager Resource Consents, Trish Routley
Inge Bremer, Treasurer Vision Kerikeri
Rolf Mueller-Glodde, Acting chair Vision Kerikeri

The meeting commenced at 0900am.

Ngā Mahi Whakapai/Housekeeping (Item 1.0)

Ngā Whakapahā/Apologies (Item 2.0)

Upper Puketotara/Waiwhakarongaro Catchment, Murray Wright

Kerikeri Flood Model Update (Item 3.1)

Presented by: Joe Camuso and Bertrand Salmi

Secretarial notes: a comprehensive update on the new flood model, including its calibration, differences from the previous model, and the integration of new LIDAR data was provided.

- Explained that new LIDAR data was captured in July, followed by QA and integration into the model in late July, with adjustments made in August to correct riverbed fitting issues. This improved the accuracy of the terrain representation in the model.

  - Bertrand described calibrating the model against three historical flood events (August 2014, January 2011, March 2007), ensuring the model's river level predictions were within 200 millimetres of observed peaks, and confirming the model passed QA checks.
  - The new model uses a 2D rain-on-grid approach with the latest rainfall dataset (Herds v4), covering the entire catchment, while the 2019 model used a 1D/2D approach with an older rainfall dataset and limited catchment coverage. The new model also incorporates council stormwater assets and rural culverts.
  - Following Cyclone Gabrielle, the team adopted a new standard to model extreme events, running scenarios with double the 100-year plus climate change flow, aligning with national recommendations for assessing flood risk under future climate conditions.

- **Flood Mapping Results and Ground Truthing:** Discussed the flood extent and depth maps, highlighted differences between the 2019 and 2025 models, and emphasized the need for ground truthing to validate model outputs.
  - Compared flood extents and depths for key areas (Waipapa, KiwiFresh, Stone Store) between the 2019 and 2025 models, noting increased flooding in some areas due to improved grid-based modelling and LIDAR coverage.
  - NRC stressed that ground truthing is essential to confirm model accuracy, as local observations sometimes differ from model predictions, such as the sports field's flood status. Acknowledged that only two weeks had been available for review, and ground truthing would be a next step.
  - Presented depth maps in 0.1 or 1 metre increments and discussed the availability of velocity maps, which help identify areas of high flow and inform infrastructure planning.
  - Assumptions regarding dam water levels and the timing of rainfall events were discussed as model limitations, with Bertrand noting that initial dam levels are estimated and can affect attenuation during flood events.
- **Sensitivity Analysis and Tidal Influence:** Presented sensitivity analyses on the influence of tidal levels at the Stone Store, explaining how tidal conditions interact with river flooding and identifying areas most affected by tidal surges.
  - The team ran model scenarios with both static and oscillating tides, including storm surge conditions, to assess the impact on flood extents, particularly in the lower catchment near the Stone Store and Kemp House.
  - Results showed that tidal influence is significant in red and orange zones near the river mouth, while areas further upstream are predominantly affected by rainfall-driven flooding. The difference between static and oscillating tide scenarios was found to be minimal for most areas.
  - The analysis highlighted the need for targeted flood protection in tidal-influenced zones and informed the group about the importance of considering both riverine and tidal flooding in future mitigation planning.
- **Next Steps and Business Case Development:** NRC outlined the next steps, including drafting a Council paper, seeking funding, engaging consultants for a business case, and conducting cost-benefit analyses for flood mitigation options.
  - The Rivers team will draft a paper for the December Council meeting to seek funding for engaging Toby Kay to develop a business case for flood risk reduction options, aiming to inform the Long Term Plan by August 2026.

- Riley has been instructed to update cost estimates for the K3A dam, and a Quantity Surveyor will be engaged to refine total cost estimates, considering past discrepancies between initial and final project costs.
- A gap analysis will be conducted with Toby and the team to identify missing hydrology or geotechnical information needed for the business case, with financial modelling to be performed in-house.
- Discussions included the need for a cost-benefit analysis to determine the value of flood mitigation for beneficiaries, consideration of targeted rates, and the impact of current Council policies requiring developers to fund infrastructure for new developments.

- **Policy, Funding, and Stakeholder Considerations:** Discussed policy implications, funding mechanisms, and stakeholder responsibilities for flood mitigation, including the role of targeted rates, developer contributions, and the need for inter-council coordination.
  - Discussed past and current policies on targeted rates for flood infrastructure, noting that previous rates were community-specific and that any new rate would require consultation and potentially be structured to reflect differential benefits.
  - FNDC Council resolutions require that comprehensive flood mitigation for new developments be designed and funded by developers, with no cost to Council, raising questions about how to allocate costs and benefits between existing and future landowners.
  - NRC CE emphasized the need for coordination between Regional and District Councils, especially regarding development levies and the distribution of benefits from flood protection works.
  - The discussion highlighted ongoing issues with local drainage and stormwater systems, particularly in the Waipapa industrial area, and the need for significant upgrades to address both current and future flood risks.
- **Peer Review and Publication of Model Results:** Confirmed that the flood model has undergone peer review, with further review by Toby Kay planned, and discussed the timeline and prerequisites for publishing model results.
  - The model was peer reviewed by SK Engineering, with Toby Kay engaged for an additional review to ensure confidence in the model outputs before public release.
  - Louisa explained that the model results are not yet published due to the need for ground truthing and QA/QC, and an estimated publication date will be provided once these steps are complete.
- **Wastewater Pump Station Flood Risk:** Fred Terry raised the issue of the wastewater pump station in the lower catchment being located in a flood zone, highlighting the need for Council action to protect this critical infrastructure.

  The pump station at the lower section of Amokura Drive, which serves the Kerikeri Road area, is at risk of flooding, and past incidents of overflow during heavy rainfall were noted, indicating the need for protection works.

Moved (Carr / Working Group)
To accept and support the next steps and to add a 9th step "To model effect of bund to protect Waipapa Industrial Estate". The motion was accepted by all of the working group members with no objections.

Agreed action points:

- **NRC Secretariat to circulate the presentation slides with the meeting minutes**
- **NRC Rivers team to conduct ground truthing of the flood model results by gathering feedback from people on the ground to confirm and improve confidence in the model outputs**
- **NRC Rivers Team to determine and communicate an estimated timeline for publishing the flood maps on the NRC website after ground truthing and QA/QC are completed**
- **NRC Rivers Manager to draft a paper for the December Council meeting seeking funding to engage Toby Kay for development of a business case on flood risk reduction options for Kerikeri, including cost estimates and timelines.**
- **NRC Rivers Manager to update the cost estimates for the K3A dam and obtain a total cost estimate, including engaging a Quantity Surveyor Engineering Group for detailed numbers (Riley).**
- **NRC Rivers Manager to perform a gap analysis to identify missing information, including additional hydrology or geotechnical data needed to inform business case options development for K3A and spillway.**
- **Run financial modelling scenarios in-house to determine the impact of flood mitigation options on rates, considering government grants and funding sources.**
- **Include a cost-benefit analysis in the business case to assess what land would be enabled for development and the associated benefits for landowners and funding mechanisms.**

Whakamutunga (Conclusion)

The meeting concluded at 10.08am.