

## **Summary of draft engineering report by Tonkin & Tayler Ohiti Road Stopbank**

Engineering consultants Tonkin and Taylor prepared a draft report to HBRC in December 2023 which reviews different flood protection options, sets out the case for the preferred option, identifies risks and uncertainties, and outlines information needs that are currently being addressed by flow modelling analysis, which is due to be completed within the next weeks.

### **Takeouts from the report**

A few key points extracted from the T+T report are:

1. The proposed stopbank is being designed to contain a 1% AEP (that is, a 1:100 year) flood. The T+T report notes that the scale of the 1% AEP flood is uncertain because there are no HBRC gauging stations on the Okawa, and very limited catchment or hydrology information available. T+T is currently modelling flood flows in the Okawa Stream with a report due to be delivered to HBRC within weeks.
2. In addition to the stopbank along Taihape Road, T+T is proposing:
  - Stopbanks on the true left of the Okawa, to protect Ōmahū township, which may require raising Taihape Road.
  - Stopbanks to protect the rear of the category 2C properties from the Ngaruroro River.
3. T+T note that in events exceeding a 1% AEP event, there may be significant flooding of the Category 2C land from the Ngaruroro. T+T say that further work is needed to assess the flood risk in larger, lower probability events. T+T also state that the Land Categorisation programme is not intended to protect property from large scale flooding of the Ngaruroro.
4. T+T is modelling floods in the Ngaruroro River which shows that during large events high river levels in the Ngaruroro are likely to cause tailwater effects in the Okawa. It is unclear whether the T+T modelling will consider flooding from both the Okawa and Ngaruroro.
5. A workshop in August 2023 (Table 2 of the T+T report) discussed flood protection measures. It seems only HBRC and T+T, but not community representatives, were present.
6. In Table 2, Options 2 (Moving/raising bridge), 3 (More properties to Category 3) and 7 (Rūnanga Lake flood detention) were discounted with little analysis. Table 2 flagged some options for further analysis, but that seems not to have happened.
7. T+T state that three houses nearest Taihape Road have a 'Section 72' notice on the property title (viz., subject to natural hazard). Two vacant sections also lie in the hazard zone. The basis for these notices appears to be earlier flood models of the Ngaruroro provided by HBRC. The option to classify more land Category 3 seems to have been considered but dismissed early in the study.
8. T+T state that initial cost estimates have been prepared for two options as part of the works, but costs are not presented in the draft report.

Map of proposed stop bank copied from the T+T report.