

Review of KCDC Flood Hazard Management Draft Modelling

Terms of Reference

Background

KCDC has commissioned a *Flood Hazard Study and Model Re-Build* from AWA Ltd. to improve the Council's ability to manage the district's flood hazard risks for various purposes (see Table 1.1 of the *KCDC TENDER Technical Specification* (the "Scope of Work").

The SoW is included as Appendix A of AWA's *Kāpiti Flood Hazard Management Methodology Report – Final Draft for Review* ("AWA's Draft").

KCDC has now opened AWA's Draft for public submissions.

Focus

The purpose of this CRU Review is to allow CRU to respond to this request for submissions. Given the wide range of possible uses for the AWA Draft, the focus is on the narrower issue of the extent to which AWA's Draft is fit-for-purpose in supporting flood hazard risk assessments in the Kāpiti District, both now and into the future. However, any comment on how any shortcomings in the AWA Draft might limit the ability for its results to be used for the purposes identified by KCDC would be appreciated.

Issues to be Addressed

The CRU Review needs to identify areas where the AWA Draft materially falls short of best practice and/or the results of its use are likely to be materially misleading. The CRU Review should address (without limitation):

- The quality of AWA's modelling, any third-party modelling, and their integration. This should identify the appropriateness of the models used to realistically model Kāpiti's flood hazard risks and any major gaps, e.g. missing drivers of risk or sources of mitigation.
- The various data sources used, their appropriateness, and the steps taken to address their limitations, likewise, the parameterisation and model calibration.
- The assumptions made in building the models and in their use, highlighting where these are likely to be unrealistic/unwarranted in the context of a flood hazard risk assessment. Where assumptions are controversial, their source should be identified (including from the SoW) and their reliability commented on.

- Model validation, sensitivity, and uncertainty analysis have been undertaken. Redoing or replicating AWA's work is not expected, although any high-level reassessment would also be appreciated.

Summary

The intention is for the CRU Review to provide a high-level assessment that highlights any material limitations in AWA's Draft in supporting flood hazard risk assessments in the Kapiti District and that can be used to specify any further work needed to address any significant weaknesses in it and its fitness-for-purpose.