



Modelling Group
WATER NEW ZEALAND



Streamlining Minimum Floor Level Advice for Land Development using ArcGIS online App

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ABSTRACT



Every year in the news there are regular reports of flooded homes and associated personal tragedies. A major frustration is that often, this could have been avoided with better informed decisions - the main reason for flooded homes is they have been built in the wrong place with insufficiently high floors.

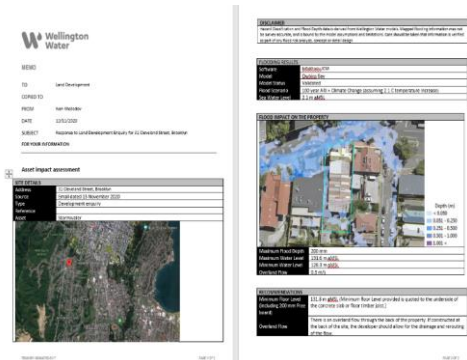
Wellington Water has commenced a flood modelling programme in 2015 with the aim to identify flooding hazards throughout the

region which will inform the District Plans. Flood hazard information is now available with the exception of a few catchments. However, a key question that arises is how to make the model results available to all parties concerned other than only through LIMS and District Plans?

At first, an occasional flood related enquiry was received by the modelling team creating little distraction from the main modelling activities. However, as time went on and modelling results became available, more and more enquiries arrived creating a significant workload for the team.

Commented [NN2]: This isn't the reason why the modelling programme started
Commented [NN1]: Can we delete according to the councils we should have finished all our model builds already

Initially there was no template for providing flood level advice and assessments of flood risks and floor levels were provided without documenting the advice. This meant that over a period of 2 to 3 years flood risk assessment for the same property would be produced with potentially different advice as the models progressed from draft to final over those years. The documentation of the flood risk assessments provided efficiencies when investigating which advice was provided using which version of the model. The documentation and advice are flagged spatially against a property





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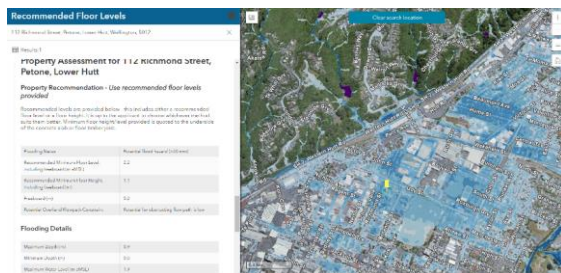


so it allows the modellers to identify whether a previous advice has been provided.

Unfortunately, though, the additional documentation ended up increasing the assessment time and responding to land development queries became the main activity for the Modelling Team. A change was needed to make modelling information easily available without consuming all the Modelling Team resources.

It was found that often land development queries were very general, with only address provided and the advice provided was simple maximum flooding values (i.e., flood level, flood depth and flow speed) for the site. Likewise, in many instances, there was no flooding or only minor flooding in which case advice would have been to use the building code to set minimum floor level instead.

As around 90% of all assessments being in the above-described category, it was realised that flooding summary can be provided for each parcel with general advice based on flooding summary generated en masse through a basic algorithm. The data generated in such a way could then be displayed on a basic App available in ArcGIS toolkit.



This App has now been created and is available through this link: [Recommended Floor Levels \(arcgis.com\)](https://arcgis.com). A clear, step by step process of how-to carryout assessment is provided in the app which is hoped will facilitate seamless transition to customer self-service when the app is made available to the public.

In conclusion, this App has already reduced workload on the Modelling Team as well as the Land Development Team, and it is hoped that once it is available to the public, will reduce the workload by as much as 90% at which point only detailed assessments will be done in-house.



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