



E-Bulletin ##6 Behind the Scenes 1



Often as researchers, we conduct much of the project work 'behind the scenes', and if we are not careful it is likely that there will be little shared understanding of how models are built and how they work. In this bulletin, I hope to provide an insight into how the data provided in workshop three are being used.

In workshop three we asked:

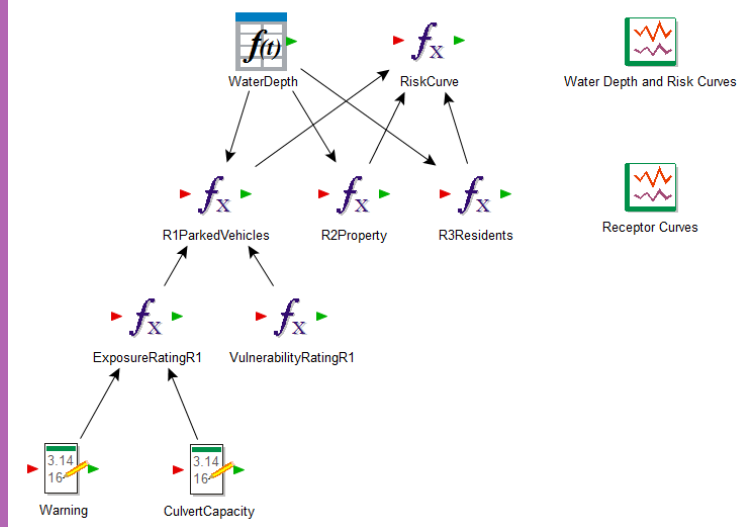
1. How the risk to receptors at each site varies with flood water depth?
2. How risk at each site was split between receptors?
3. How exposed and vulnerable each receptor was in the 2013 event (on a scale of 1-10)?

Following the workshop I have plotted the receptor curves that were sketched for the Halloughton Road—Nottingham Road—Church Street—Potwell Close flow path. To simplify matters these have been plotted for water depths up to 1 metre and risk is on a scale of 0-1.

A pilot model has also been constructed to see how this might all work in system dynamics software. Our model, which we will experiment with and improve in workshop four, uses information on the different factors affecting vulnerability and exposure at each site to draw a risk curve for each receptor based on water depth (example shown to right for Halloughton Road). In this illustrative example, we see the red risk curve is for parked vehicles, which are at risk whilst the depth is above 0.4m. The risk to property at Halloughton Road (shown in green) occurs within a narrower depth range, but reaches a greater peak with increasing depth.

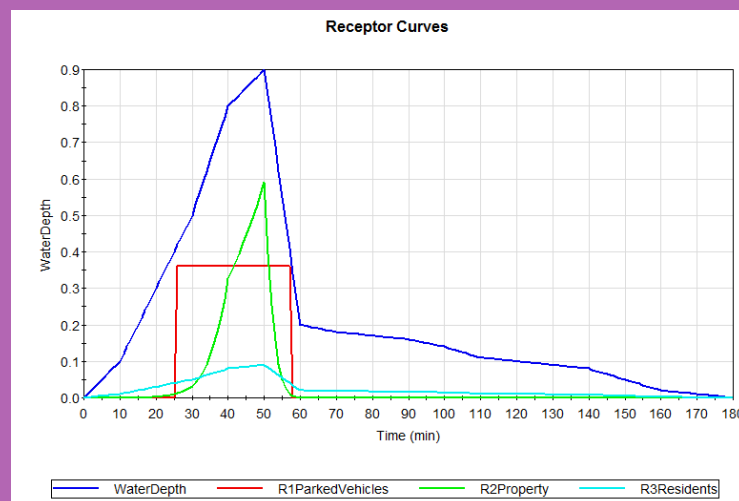
These curves are then combined (based on the weightings provided in workshop three) to form an overall risk curve at each site.

Over the next week, I will be working out the equations for the receptors at the remaining four locations, and creating a draft model (similar to that for Halloughton Road shown in the top left) for each of them.



Pilot model structure for Halloughton Road (above).

Example receptor curve graph overlain with water depth (note water depth is for illustrative purposes) (below).



Next Steps

Workshop Four will take place on Wednesday 29th April from 7:00pm—9:00pm at Southwell Library Meeting Room. This workshop will involve us having a look at how the model is progressing, and providing data and information to ensure that it is correctly showing how the risks identified at each location change with water depth.

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