What's Happening...

waterRIDE™

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resources & energy

The release of the Australian Best Practice Guidelines in Floodplain Management provides a common grounding for floodplain management across Australia. Work is underway to develop a best practice approach to the determination of flood hazards, including common "flood hazard categories".

Flood hazard mapping has been integral to waterRIDE™ since its inception, and many years ago waterRIDE™'s hazard framework was upgraded to easily accommodate any hazard definition.

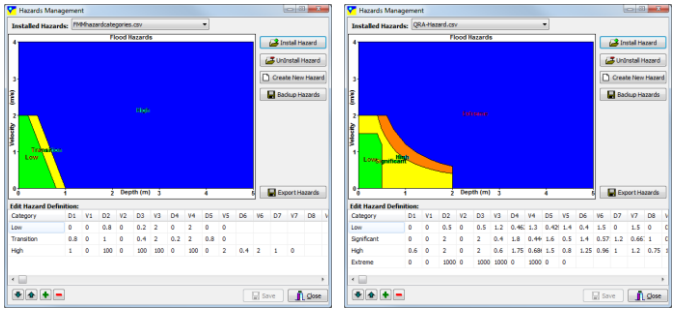
In this issue, we look at using the flood hazards tool to determine what the implications of a change in hazard category may be, across an entire jurisdiction (ie "How would a change in hazard categories affect current planning zones?").

Flood Hazard Mapping: Using Different Criteria

Flood hazards are defined in waterRIDE™ using various categories reflecting combinations of flood depth, velocity and velocity times depth.

The categories can be defined through the *Flood Hazards Manager* tool, located on the *Utilities* menu. Hazard definitions are easily defined by entering the coordinates for each category on a "depth vs velocity" chart.

Essentially, this is simply defining a "lookup" polygon for each category that is dynamically used when mapping.



NSW Floodplan Development Manual Hazards vs Queensland Reconstrution Authority Hazards

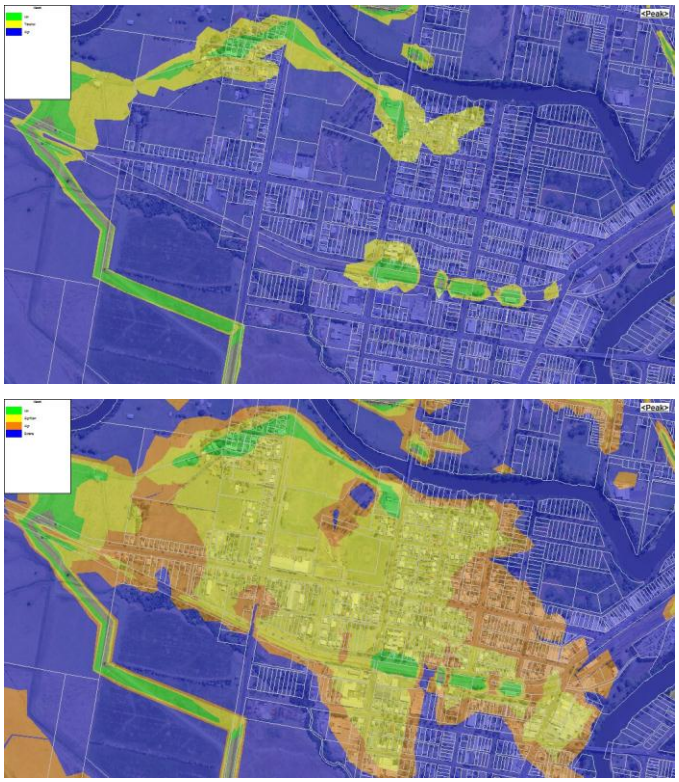
By assigning two hazards to a single model run, you can visualise the difference between the hazards, allowing you to readily determine how, for instance, a change in hazard criteria may affect land-use planning on the floodplain.

Changes could be identified on both a regional level, as well as a local level, such as identifying all properties affected by a change in hazard category through integration with land parcel information.

As an example, lets look at the differences between the NSW Floodplain Development Manual Hazard categories (FDM Hazards) and the Queensland Reconstruction Authority Hazard categories (QRA), for a township, for an arbitrary design flood.

By comparing the two hazard maps adjacent, we can see that the "low hazard" categories (green) are fairly similar. The "high" hazard zones (blue for FDM and orange/blue for QRA) are also similar, with the major exception being the "intermediate" zone (yellow colour).

In this case, the difference between the "yellow zone" for certain properties could mean a highly restrictive zoning, versus a less restrictive zoning, a potentially significant difference.



Flood Hazard Mapping: NSW Hazards (top) vs QRA Hazards (bottom)

The key driver of the difference between these maps is low velocity, higher depth "tail" on the QRA hazard chart for this intermediate category. Naturally, this will vary between different hazards.

However, it is useful to be able to quickly see how a change in hazard categories may impact an area, particularly on an individual property basis.

As a side note, when creating hazard categories, it may be useful to generate categories at discrete intervals (eg every 0.1m of depth) inside Microsoft Excel, particularly where hazards involve velocity times depth criteria.

FMA Conference – Deniliquin – May 20th to 23rd

We are running a waterRIDE™ booth at the upcoming FMA conference in Deniliquin, NSW, and we look forward to catching up with all users at the conference!