Advisian
WorleyParsons Group

waterRIDE
What's Happening Newsletter
Issue Number 39

In the first issue of 2017, we take a look at statistical analysis of flood surfaces across a range of Annual Recurrence Intervals (ARI's). Such analysis provides an interesting way of assessing the relative "immunity" of various parts of the floodplain and critical community or business assets.

We've had a tremendous response to our Eastern Australia/New Zealand Workshops in Brisbane, Sydney and Auckland. Registration for these workshops is still open and we look forward to seeing you there!

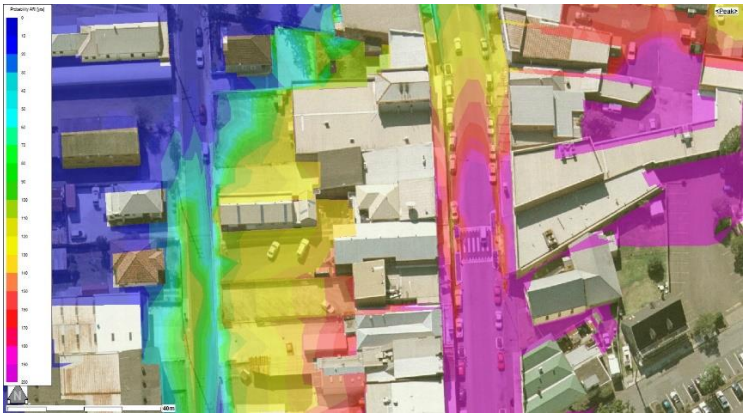
Exceedance Probability Surfaces – Ground vs Floor

When flood surfaces are available for a range of ARI's, an interesting question to ask is "at what ARI is this land or property first inundated?"

Traditional approaches deliver discrete results limited to the various ARI's that were simulated. This allows you to determine areas that are inundated in the 100yr flood, but not in the 50yr flood, but does not allow you determine a specific ARI (eg is the area inundated closer to 51yrs, or to 99yrs?).

By interpolating between surfaces, an ARI of inundation can be estimated, although care must be taken when dealing with key hydraulic behaviour drivers such as the impact of levees.

The statistical analysis tool (FPM Tools) in waterRIDE™ allows the user to determine the probability (ARI or %) at which certain hydraulic criteria is met. The figure below shows the probability (in ARI) of depth > 0.0m (ie the ARI at which each part of the floodplain is inundated).



Probability (ARI) at which a floodplain becomes inundated.

Whilst the above is useful for determining when land is impacted by flooding, in many circumstances it is more important to understand at what ARI properties or key facilities/assets become flood affected.

Generally, GIS datasets are available (or can be created) defining the location of such properties/assets with a field containing the level at which that property/asset is considered "flood affected" (eg the floor level for properties, or the pump level in a sewage treatment plant).

waterRIDE™ facilitates this integration between a GIS layer and the library of flood surfaces with varying ARI's through the Probability of Inundation Tool (FPM Tools->GIS Processing).

In the image below, a GIS layer containing property floor levels has been integrated with the same design flood surfaces used in the previous image to determine the ARI at which each property floor becomes inundated.

Probability (ARI) at which property floor levels become inundated.

Depending on your perspective, the above targeted information may be more valuable for assessing the impact of flooding on the community, or to help prioritise areas for flood mitigation works and provides an alternative way of looking at flood affectation.

waterRIDE™ Workshops – Registration Is Open

Registration for the waterRIDE™ workshops in Brisbane, Sydney and Auckland is now open.

Please refer to the information PDF here for the workshop outline, locations, dates and the registration link.

Registrations to date have been excellent across all workshop locations and we remind you that each attendee must register separately.

We look forward to seeing you there!

Quick Tip – F12 Image Export

Pressing F12 on any view will allow you quickly save the map window as an image file.

Various quality options are available as well as the ability to batch export multiple views.