



# Assessing flood risk

Here's a behind-the-scenes look at how Zurich's underwriters and actuaries determine and price your clients' flood risks and the technology that has made it all possible.

One of the key reasons why Australian insurers lagged behind other Western countries in making flood cover available on a wide scale was their difficulty in obtaining the necessary information to accurately price the risk. And while technology has played an important role in helping to overcome many of the obstacles, it's not all smooth sailing just yet (more on that later).

When Zurich Australia made the decision to automatically include flood cover in all its commercial policies late last year – an industry first – the first step in that process was to develop a sophisticated flood modelling tool that enabled its underwriters to accurately assess the risk for each property.

## The challenges in modelling flood

Zurich enlisted the services of MapData Sciences (MDS) to build the necessary interfaces for modelling risk into the company's Z.stream® platform. These interfaces link Zurich to the databases of MDS and its partners PSMA Australia and Risk Frontiers.

By way of background, PSMA owns G-NAF® (Geocoded National Address File), which lists all valid physical addresses in Australia according to their exact latitude and longitude. Meanwhile, Risk Frontiers, which is based at Sydney's Macquarie University, provides quantitative risk assessment for each location's flood risk based on Average Recurrence Intervals (e.g. an ARI of 50 means a flood is expected once in every 50 years).

While this has provided an excellent tool for underwriting risks in NSW, Queensland and some parts of Victoria and Tasmania – where flood data from Government authorities is more readily available – information for WA, SA and Northern Territory locations is not as accessible. So while our flood modelling now has solid foundations for the eastern seaboard, there's still work to be done to incorporate data from other sources (e.g. the WA Department of Water) to broaden the geographical reach of our database.

## Assessing your client's risk

Since 8 September 2008, Zurich has included automatic flood cover in all new and renewal commercial property policies Australia wide. For a small number of customers at very high risk of flooding, Zurich will not be able to offer cover.

The great thing about the flood modelling that we have developed is that it takes much of the guesswork out of risk assessment. So just because your client's property is located in a flood-affected postcode doesn't necessarily mean they'll be deemed a 'high risk' by association.

Let me give you an example. The postcode for Raymond Terrace, which is situated on the Lower Hunter River in NSW, is 2324 and marked for flood referral. So in assessing the application and pricing the risk, the Zurich underwriter will refer to the Zurich Hazard Data Search.

The search might reveal that while a property

situated on the river bank has an ARI of between 20 and 50 (FloodAUS rating of 4), a property two blocks from the river might have an ARI of between 50 and 100 (rating of 3) while a property four blocks back is at no flood risk (rating of 0). So the risk modelling tool provides a markedly improved outcome for the latter two clients, who on face value seemed to be in a risky location according to generic data.

## Some interesting statistics

Brokers may be surprised to hear that only 1 per cent of Zurich's in-force book for NSW, Victoria and Queensland – for which extensive data is available – was deemed not to be an acceptable risk to date. Meanwhile, 94 per cent of risks were assessed as being at no flood risk, while 5 per cent were rated as being at some flood risk necessitating a loading. ●

ZURICH Hazard Data Search			
<b>Risk Location</b>			
Street Address	61 FORT STEPHENS STREET	Latitude	33.741366
Urban	RAYMOND TERRACE	Longitude	-152.36192
Postcode	2324	Location ID	GANFW705799008
State/Region	NSW	Elevation	6 Report 320
<b>Hazard Data</b>			
Data last updated: 16/09/2008 16:55			
Flood	3	Water Depth (m)	0.5
Hailstorm	4		
Earthquake	2	Soil Zone	2 Peak Ground Acceleration (m/s <sup>2</sup> ) 0.08
Heatwave	1		
Cyclone	2	Distance To Shore (km)	0

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Screenshot of the final internal Zurich Hazard Data Search Screen that an underwriter would see for a new business flood referral.