

Insurance Day – 5th September, 2006

Coping with threat of rising waters

Recent flood events such as those caused by Hurricane Katrina have highlighted the need for insurers and reinsurers to more accurately predict the potential impact and damage from flooding. As flood risk in the UK seems set to increase, Dr Justin Butler, Managing Director of flood mapping consultants Ambiental Technical Solutions looks at the latest developments in flood risk technology.

Global catastrophes such as Hurricane Katrina and the Asian Tsunami have highlighted the urgent need for a better understanding of flood risk. It is now thought that Katrina could eventually cost insurers billions in damage, making it the most costly hurricane to make landfall in US history.

Though Katrina's windspeeds, which reached 140mph, caused colossal damage, it was the devastation from associated floodwaters which surprised residents and the insurance industry the most.

Many people simply weren't prepared for the scale of damage caused by the flooding in New Orleans. Furthermore, the huge cost to the insurance, reinsurance and financial communities has forced many countries, including the UK, to look long and hard at the vulnerability of their own urban centres. Globally, floods affect more people and cause more damage each year than any other natural hazard, and the problem is getting worse. In the UK, recent years have seen incidents of flooding in the UK increase in both severity and frequency. Events including those experienced in the South of England during October 2000, Boscastle in 2004 and Carlisle in 2005, have pushed flood risk up the political and financial agenda.

In England and Wales alone, over five million people reside, with property and assets worth over £220 billion and are located within areas that are at risk of flooding (*Foresight report, 2004*). Urban centres are particularly at risk, including London, Hull, Portsmouth and Cardiff. Indeed, Ambiental have identified 130 towns and cities in the UK, which are, to some degree at risk of

flooding and a significant flood event has the potential to result in catastrophic, 'Katrina-like', insured losses.

Looking to the future, the level of flood risk in the UK is set to increase. It is now generally accepted that climate change is responsible for rising sea levels and altering the frequency and intensity of flood events.

According to the ABI (Association of British Insurers), *'Coastal floods and storm damage will increase markedly over the next 50 years. Bad storms that occur just once a century could happen every five or ten years.'* (*A future for the floodplains*, July 2006). Development pressures in floodplain areas such as the Thames Gateway will also mean that the number of 'at risk' properties is expected to increase four-fold by 2080 (*Foresight*, 2004).

Finally, recent cutbacks in flood defence spending from the Environment Agency and continuing uncertainties over levels of government funding, could exacerbate the problem and this has put many insurers on high alert.

How will the insurance industry be affected?

The growing problem of flooding, and in particular urban flooding, is likely to have a massive impact on the UK insurance industry. For example, the increasing risk to property, businesses and human life, as well as increasing reinsurance costs, could leave the UK insurance sector facing either massive losses and/or, a marked increase in premiums to maintain cover.

Increasingly, flood risk mapping technology is being employed by insurers to address the growing problem of flood risk in the UK. These tend to be relatively low detail, national-scale maps and information systems which are incorporated into underwriting systems. However, in many cases these flood risk maps are not designed for insurance purposes and do not capture the detail and complexity of flood risk in urban areas.

Urban flood risk has a number of unique features that can also act to exacerbate losses. Urban areas contain large accumulations of both residential and commercial property, creating potentially catastrophic flood-loss scenarios.

Standing flood water can also render areas inaccessible for months after an event, generating additional loss streams such as business interruption.

Finally, as the world saw from Hurricane Katrina and the Asian Tsunami, the rapid onset of floodwaters can lead to a tragic loss of life.

To address this growing problem, insurers need high-detail flood risk maps and information specifically designed for risk-rating in urban areas. This information needs to address the complexity of urban flood risk, whilst integrating the effects of climate change, urban development and potential changes in flood defence.

The urban flood risk solution

The changing nature of flood risk in the 21st century has required the development of more detailed and flexible tools for analysing flood risk around the world. New developments in ultra high detail, three dimensional urban flood risk modelling gives insurers the ability to identify which areas are at the greatest risk of flooding, and to what extent.

The changing nature of risk and the environment around us means that extreme flood events will undoubtedly increase in frequency and severity in years to come. In the UK, insurers must be prepared to better understand and manage flood risk in high-value, 'high risk' urban areas.

The ability to accurately predict the potential impact of flood waters using new types of technology will ensure that rising waters in our cities do not necessarily lead to rising losses for the insurance industry.

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