

OUT OF THE FLOOD AND INTO THE FIRE?

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Several papers at the recent FMA conference touched on the issue of risk to life from flooding and what is an appropriate risk for people to take; either voluntarily or involuntarily. In light of the deaths of several people in Qld, NSW and Vic in recent floods, *Floodplain Manager* this month provides an overview of this complex issue.

Both keynote speakers at the conference were from the United States and acknowledged that country's approach to this issue is poor.

Al Goodman, who is from Mississippi, noted that for decades United States floodplain management policies, and in particular its National Flood Insurance Program, encouraged redevelopment of high risk floodplains irrespective of the safety risks. It was only after the disastrous 1993 Mississippi Floods that entire communities were relocated where it was deemed the risk to life was too great. He conceded that in the last decade that approach had lost momentum.

Marshall Frech who runs the not-for-profit Flood Safety Project (www.floodsafety.com) suggested that the situation was more sinister with financial institutions, developers and politicians being complicit in placing lives in areas of known unacceptable risk. He cited several examples, supported by graphic footage, where homes have been rebuilt in areas where scores and even hundreds of lives have been previously lost in floods. In his view, the use of the 1 in 100 flood for floodplain planning is "woefully inadequate" and described as "enlightened" the approach taken in parts of Australia where consideration is given to the consequences of flooding up to the Probable Maximum Flood.

This approach is best documented in the NSW Floodplain Development Manual which Duncan McLuckie, of the NSW Department of Environment and Climate Change, explained at the workshop on Floodplain Planning.

While he acknowledged that a ministerial direction in 2007 reinforced the idea that the 1 in 100 flood is the most appropriate for setting residential floor levels, the direction and the manual make it clear that human safety considerations can override that.

Steve Opper from the NSW State Emergency Service has been at the forefront of investigating life safety risks from flooding for existing and proposed developments for more than a decade. He presented some general views at the Floodplain Planning workshop and some specific responses to two recent court decisions on the NSW Illawarra Coast.

His view is that in floodplain management decisions "life safety is paramount". An important decision according to Opper is whether the best human response to a flood is to evacuate or shelter-in-place. This he said "depends on the circumstances" and an influential consideration is whether it is an existing or new development. With an

existing development this can often be the best option where floodwaters rise and fall quickly but do not present a high hazard within the building.

However, he was reluctant to endorse new developments where sheltering in place is the proposed response to being surrounded by high hazard floodwaters.

In his workshop presentation, Danny Rose of Tweed Shire Council pointed out some practical difficulties for local government, were sheltering in place for new development to be prohibited. He pointed out that a 1 in 100 flood on the Tweed River would require 13,000 people to evacuate from existing developments but in some locations there is inadequate time for that to take place and in most locations there would be insufficient resources available for evacuees at their destination.

At the same time, the NSW Department of Planning has identified the Shire as a growth area for the state with several thousand people meant to move in. Most of the locations with terrain suitable for development are either on the floodplain or would be isolated by floodwaters. The only way new development can be accommodated is if developments are designed as places of safe refuge in a flood. This would be contrary to the NSW SES current position.

Of course Tweed Shire is not the only place facing this dilemma, with Gold Coast City Council just over the border having a larger and more developed floodplain, with even more pressure for additional development.

In Melbourne, Melbourne Water has committed to reducing the risks for existing development with its Waterways Operating Charter stating that it will reduce intolerable flood risk by 10% over the next 5 years and by 30% within the following 5 years. Converting existing low rise development to high rise development could be part of the solution but this would mean people sheltering in place during a flood.

Opper pointed out some real practical difficulties with sheltering in place including:

- people trying to travel through high hazard floodwaters to get home to the “safe” location
- people leaving the safety of their home if they become impatient with the duration of isolation
- fires brigades being unable to reach buildings which may have an increased risk of fire from the use of improvised lighting and heating if electricity and gas are cut off
- people being unable to evacuate burning buildings because of the surrounding high hazard floodwaters
- ambulances being unable to reach building occupants in the case of a medical emergency

He raised these latter points in a paper entitled “When Too Much Risk Just Isn’t Enough – Welcome to Fortress Flood” which was critical of two recent NSW Land and Environment Court decisions which approved seniors living facilities in areas

with a high flood risk. In both cases the SES and local councils argued that the proposals by the developers to have a strategy to shelter in place placed residents and staff at an unacceptably high risk, particularly considering the additional vulnerability of elderly occupants.

Paul Nichols, of Cardno Forbes Rigby, had been an expert witness engaged by both of the developers and presented a paper which gave an alternative view on the merits of developments which were designed to be places of refuge in a flood. In fact he argued that such developments could also be used to reduce the risks for existing surrounding developments and deliver a net risk reduction.

Opper's and Nichols' papers were presented consecutively and a lively discussion from the floor followed. Paul Nichols sought to respond to that discussion through a letter to Floodplain Manager which we have published on this page.

It is clear that this debate will occur with increasing regularity around the country as floodplain management practitioners wrestle with what is a tolerable risk to life and what is a practical way of developing floodplains in response to tolerable risk limits.

The conference proceedings will be available to FMA members at www.floods.org.au.