

## Four Challenges for Emergency Management in Australia

by Chas Keys

Where natural hazards meet communities, emergency management seeks to protect people and assets. But interfacing effectively with the public is not easy, especially during emergency situations. This opinion piece identifies four major challenges faced by the emergency management sector in Australia today and illustrates these with examples drawn mainly from bushfire and flood contexts in the eastern states.

### Engaging Communities

There are two principal means by which the emergency services engage with communities outside of responses to hazardous events: community education, and warnings of the imminent arrival of a perilous event.

Educational initiatives, limited until recently to brochures which had little impact, have begun to develop over the last decade. Amongst the most noteworthy are Community Fireguard (initiated by the Victorian Country Fire Authority to guide peoples' responses to bushfires) and the NSW State Emergency Service's Business FloodSafe that is targeted at operators of commercial premises in flood-prone urban centres. These and similar initiatives elsewhere, based on close interaction with people at risk, show genuine signs of helping people to cope.

There are several views in the emergency services about the value of hazard education. One is that it is too hard and not worth the effort, because people won't listen to or heed the message: they are thought to be too focused on the exigencies of daily life to worry about occasional fires, floods or hailstorms that might (or might not) strike them at some unspecified future time. For years this view held sway, but it is now being challenged.

Warnings too are problematic. Done well, warning and the provision of information can unlock for people the 'manageability' of emergencies. But there have been many cases of warnings being inadequate or non-existent. Among them the 1998 Sydney-Hobart Yacht Race (which was hit by huge seas generated by winds associated with a deep low-pressure system), the 1999 Sydney hailstorm, the floods on the north coast of NSW in 2001, and the bushfires of 2003 (in the ACT) and 2009 (in Victoria). These events all cost lives and/or property, and agencies were criticised in the media, in post-event public meetings and in coronial and other inquiries for failures in warning processes.

Often agencies react by focusing on technological fixes like sirens and SMS-based communications. There is progress to be made in adopting new methods, but the cases noted above show that the real problems are more fundamental. The warning task is often characterised by poor conceptualisation at the agency level, given low priority amongst the managerial functions to be performed and rendered in ways that confuse rather than empower people to act in their own interests. Often, people are mystified by warnings, fail to recognise when warnings apply to their own situations and react only when the event has confirmed its arrival — by which time it is often too late for effective action. One lesson is that warnings must be preceded by education about how to recognise them, what they mean and how people should react. Engagement must prepare people for warnings as well as for the events which they announce.

### This Issue

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Another lesson might be learned from the anti-smoking campaigns of recent decades. These have been very expensive and have produced gains only slowly: even now in Australia, one in six adults smokes and rates of take-up of tobacco in some groups remain stubbornly high. Nevertheless the campaigns have created many insights about techniques to get messages across. Emergency management agencies need to recognise that education must be resourced appropriately, sustained indefinitely and varied periodically in message and medium to ensure freshness.

Agencies must be prepared to experiment and innovate and to recognise the scale and difficulty of the task and the barriers of denial and complacency that must be overcome. True engagement is labour-intensive as well as costly. This is especially problematic for volunteer emergency services, because the time their members can devote to the effort is limited. Their effort is spent in training and response much more than in helping others to be ready.

But community engagement is an idea whose time has come. We cannot continue to have large numbers of people who do not understand the risks they face, who expect that the emergency services will always protect them and who respond poorly to emergencies. Somehow the resources, financial and human, must be found.

### Land Use Management

How we use land is a powerful determinant of our vulnerability to hazards. Building near bush, on floodplains or on foreshores creates vulnerability. Until recently these realities were rarely confronted by the emergency services, but lately a number of rural fire authorities have accepted part of the land use consent role traditionally performed by local government or provided advice as referral agencies. The NSW SES has actively supported councils opposing proposed floodplain developments that pose dangers to community safety. This change represents a radical shift for agencies long focused on real-time response to emergency situations.

Where it has occurred, the shift has brought emergency services into contact with state departments of planning and the judicial authorities responsible for settling disputes about the use of land. On occasions, voices are heard from planning agencies that emergency agencies, opposing some developments, are obstructionist in their stances or opposed to development itself. More likely, emergency agencies are seeking caution in relation to developments which will significantly increase the quantum of vulnerability that communities are asked to bear - aged-care facilities on floodplains or in bushfire-prone areas, for example.

Some planning agencies, it seems, have become captive to a gradual, pernicious political shift towards development in dangerous locations. Cases have been noted recently of large-scale residential or commercial developments being proposed for sites known to have been deeply inundated in the past. Some such developments will increase greatly the difficulty of the evacuation task which will one day have to be undertaken: not only will there be more people

to evacuate, but the time available will be foreshortened.

Courts can also be at fault, sometimes taking a narrow view of the public safety concern in these matters, agreeing that because society accepts risks it is legitimate to approve proposals which will add to the quantum of risk that must be accepted - including by emergency service personnel. We are in danger of permitting the age-old reality of ill-considered developments in high-risk environments to be perpetuated.

Sadly, too, regulation in relation to residences on floodplains has become obsessed with statistical standards in determining floor levels. It should be noted here that neither the 1% Annual Exceedance Probability (AEP) nor any other numerical standard bears any meaningful relationship to risks to life or property, and their rigid application in the absence of other considerations is inappropriate. Floods much higher than the 1% (AEP) flood will occur periodically. Until 2008, floodplain management practice in NSW was guided by an approach in which locally-defined quantitative standards were applied in conjunction with considerations of the impacts of events more severe than the adopted design floods. By government fiat this mixing of the statistical and the logical has been abandoned; the 1% AEP standard now rules. A backward step has been taken, and an internationally well-regarded floodplain management regime weakened.

Sometimes political imperatives intrude on the management arena. Immediately after the calamitous Victorian bushfires of February 2009, the Prime Minister promised that "We will rebuild these communities, brick by brick, school by school, hall by hall." Kevin Rudd was expressing solidarity with those who had lost much, but his words carried a potential to prejudice debate away from the notion that pre-existing patterns of development in an inherently fire-prone environment should not be replicated unthinkingly during the recovery process. Likewise the chair of the Bushfire Reconstruction and Recovery Authority was quoted in the press, three months after the fires, as suggesting that it was vital that the communities rebuild in the ways that they wanted. This, surely, is a recipe for not learning from experience, not rebuilding in more sustainable, less dangerous ways after a disaster and not insisting that recovery promotes resilience.

Australia's record is poor here. We no longer consider, after a serious event, whether a re-engineering of communities in the interests of greater safety is warranted. During the nineteenth century, an era of simple housing and basic infrastructure, several oft-inundated towns or parts of them were removed from the floodplains on which they had ill-advisedly been built. In the mid-twentieth century it was proposed that the central business districts of Maitland and Lismore be re-sited off floodplains, but the proposals were costly and they were abandoned. When Nyngan's levees were overtopped in 1990 and virtually every house in the town was flooded, the question of relocation was not even raised. We have become less able to consider radical solutions.

Settlement patterns are not sacrosanct. They can be altered, as they have been in other countries after disasters: in the United States several towns were

relocated after the great Mississippi flood of 1993 (a once-in-a-few-hundred-years event at most points along the river). But here we are loath to take the opportunity which disaster creates to rebuild in ways that would enhance community resilience. Rather, we modify our practices at the margin, for example by instituting minor changes to prescribed burning practices or by tinkering with building and planning regulations.

Disaster should encourage us to more far-reaching solutions. In some areas, dwellings have been removed from floodways and people prevented from building on the lowest parts of floodplains (though this approach is in danger of fading as memory fades after long periods without flooding). But equally, for example on Brisbane's creeks, many dwellings remain subject to over-floor inundation in events of 2-5 year recurrence intervals. Likewise our efforts to prevent people building in areas which are dangerously exposed to bushfires are piecemeal. We have no tradition of buying out large numbers of exposed properties and returning them to nature or to more fire-compatible uses.

Land exists, it seems, to be used at the largely unfettered whim of the owner. But it must be used in a safe, sustainable manner which demands that public safety criteria are given weight. We learn slowly: witness the residential development that has occurred in Brisbane in areas which were deeply inundated in the flood of 1974, and the oft-cited failure of Victoria and South Australia to apply the lessons of the Ash Wednesday bushfires of 1983 to reconstruction. Not to allow safety and cost criteria as much weight as 're-development' represents a strange definition of progress in a world in which risk reduction in lifestyles is thought worthy of great public investment.

### Fragmentation in the Management of Emergencies

Emergency management in Australia is a many-headed beast. The number of agencies with responsibilities in managing sources of risk is large and there is much confusion as far as agency roles are concerned. There are also great differences between jurisdictions as far as managerial approaches are concerned, except in bushfire management where between-state similarities are greater than the differences. For flood management, though, the differences are so great that it is virtually certain that 'best practice' is not being sought everywhere as a routine objective: many 'arrangements', indeed, do little to support good practice.

The comparison of Victoria and NSW is instructive. In NSW the SES is central to a system of 'unitary management' in which it leads both the planning for flood operations and the coordination of real-time response. Thus the SES leads in devising the warning, evacuation and other strategies to be followed, and it implements these treatments or coordinates their application when floods occur. In Victoria these roles are spread across a number of agencies. Local councils are responsible not just for land use planning on floodplains (as councils are in all states) but also for leading the planning for emergency responses to floods. Meanwhile the SES leads those responses except for evacuation operations which are controlled by Victoria Police. Planning, evacuation and other aspects

of response are led by different organisations, and the central response agency (the SES) is at arm's length in the planning for the response. This contravenes the principle that planning and response are best led by the same agency.

Sometimes, operational control over local emergencies is exercised by elected people. It is common in Queensland for tactical decision-making to be undertaken by political figures who may seek to influence the deployment, for example, of defence force assistance in contradiction of standing arrangements between the Commonwealth and the states. In the process, local emergency services' personnel can be marginalised: a case, perhaps, of managers not being thought to have the necessary expertise. Rather politicians, untrained and inexperienced in emergency management, direct responses to severe storms and makes for many problems in applying educational initiatives. Moreover, past initiatives are easily undermined. In Maitland (NSW) during the 1980s the Public Works Department fixed markers to power poles to indicate the depths of floodwater in the record 1955 flood.

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But the markers have not been supported by the council, probably because of their presumed (and likely overstated) impact on property values. Markers lost through pole replacement or taken by souvenir hunters and people fearing for their house prices are rusting and falling off the poles. The council has made no effort to replace them, and no other agency has challenged the unstated policy of neglect of a useful, low-cost educational initiative which is being stealthily eroded.

## Preparing for Events

In the main, the emergency services attract people who are action and field-oriented rather than managerially attuned. Some members have a deep-seated mistrust of 'planning', and this mistrust can be shared at high levels in the emergency agencies.

Training is also problematic. The skills inculcated in manual training activities are revered, which means that fire-fighting and rescue techniques and the operation of floodboats and chainsaws have high priority. But there is less emphasis on developing managerial skills. Yet training builds culture, and when the focus is on physical skills the culture can be narrow and the ways in which agencies define their approaches to their roles are affected. Members are not always encouraged to visualise or plan for situations they might need to manage - for example, warning or evacuating large numbers of people.

In the bushfire arena, there is little planning to support the 'prepare well and defend or evacuate early' policy which is accepted virtually throughout the nation. The internal contradictions of the policy - arising for example from the fact that sometimes there will be no warnings to help people define their risk or to work out what constitutes 'early' in the life of an event - have been glossed over. So too has the inconsistency underlying the fact that some fires are so severe that fire-fighters will withdraw whereas people who have prepared well and stayed to defend cannot. Appropriate shelters in defensible locations have not been provided, evacuees being left largely on their own, and many who live in dangerous environments do not understand the implications of the 'defend or evacuate' policy. Both the planning and the education are flawed.

Planning for floods is also flawed. In many areas there are no response plans to guide those who manage flooding, and the quality of the plans that do exist varies greatly between states. Many plans fail to define the warning strategies that should be utilised in floods of differing severity, and few spell out how mass evacuations will be staged even where a known potential exists for thousands of people to have to leave. The focus has been mainly on riverine flooding, with little note taken in most states of the potential for flooding caused by dam failure, severe thunderstorms, storm surges or tsunamis.

There are other differences in the conceptualisation of the scope of the flood planning that is undertaken. In NSW, for example, local flood plans seek to guide responses to floods of all potential severities from 'nuisance' floods

to those beyond the scale of the worst experienced since European settlement. A conscious attempt has been made to compile flood intelligence (information on the effects of flooding in specified locations) for floods greater in scale than the 1% AEP event, which means that warning, evacuation and other strategies can be devised for extreme floods and that SES operatives are sensitised to the potential for such floods in their areas. In Victoria, by contrast, at least one municipal flood response plan deals only with floods up to the 1% AEP event as the 'worst credible case scenario'. The risk is that such a plan will not adequately anticipate very big, highly consequential events. Queensland, by contrast again, largely lacks specific planning for floods beyond what is contained in the relatively generic all-hazards (general disaster) plans. The same is true in other states except in a few council areas where the risk of flooding has been well appreciated.

Often the sense persists that plans are foisted on responders rather than being developed with their input. Sometimes responders are not familiar with planning processes, feel threatened by or are unwilling to contribute to them, and the resulting separation of planners and responders exacerbates the responders' lack of trust in plans. Inadequate planning also means that responders learn their management task largely during floods, with attendant ramifications for things to be left undone, done poorly or done at inappropriate times. Moreover the operational experience of past generations of responders is not captured for the benefit of their successors. This is a problem where floods occur infrequently.

With some exceptions the conclusion is unavoidable that 'advance' planning for the moment of floods, bushfires and the other hazards of nature remains immature. The same is also true in relation to planning in the real time of developing events: the Victorian Royal Commission on the 2009 bushfires heard that real-time intelligence gathering and planning were secondary in the thinking of fire managers to the application of resources. This comment can be made about the emergency services sector at large.

## Summary

Australia's emergency managers face many challenges. A higher priority must be given to intelligence and planning so the nature of the response task can be better appreciated beforehand, more effective warning systems developed and response operations optimally supported. Likewise performance could be strengthened by ensuring jurisdictional arrangements reflect good practice. There is also a need for better supported community engagement processes and for a stronger focus on the building of long-term community resilience. Several of these matters are inter-related.

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