Senate Standing Committees on Environment and Communications

Inquiry into:

Emergency communications - the capacity of communications networks and emergency warning systems to deal with emergencies and natural disasters.

Submission by

The Floodplain Management Association

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Introduction

The Floodplain Management Association (FMA) represents the interests of 86 Local Government Councils and Catchment Management Authorities from across New South Wales, plus consultants and businesses involved in management of floods and floodplains. A key role of the FMA is to provide advice and assistance to government on development and delivery of programs and investment directed at reducing future personal and property losses due to floods.

The FMA is responding to this Senate inquiry into emergency communications as the availability of timely, reliable and relevant information in times of imminent and actual flooding is a critical issue for members and their communities.

Flooding in New South Wales

Flooding is Australia's most deadly natural hazard, with almost half of recorded national flood fatalities occurring within New South Wales (Gissing, Morgan & Ronan, 2007:1). Furthermore, the estimated annual cost for flooding in NSW between 1967 and 1999 was $128.4 million, while the annual cost of bushfires during the same time frame was only $16.8 million. The more recent tragic floods across much of Australia emphasise the potential for flooding to simultaneously affect multiple communities. Climate change is expected by many to result in an increase in the frequency and severity of floods.

A priority issue raised by FMA members who are responsible for reducing flood risks for their communities is the need for timely, relevant and reliable information in emergency situations leading up to and during flooding. While member authorities are making significant investments in community flood education, and equipping communities with the necessary knowledge to enable them to appropriately respond to flood threats, it is imperative that people also have access to real time information about developing flood events so they know when and how to put flood action plans into operation.

This is particularly significant in cases of flash flooding, where there is a very short lead time between identification of the impending flood event and its arrival. Flash floods can occur so quickly, with from 2 hours to as little as 15 minutes' notice, that at-risk communities often do not receive official alerts in time, and must put their responses into operation without outside assistance.

The dangers and severity of flash flooding became apparent in Newcastle during the June 2007 flood event where in excess of $1.5 billion dollars damage occurred. Key issues during this period of flooding were that the majority of the local community was unaware of the potential flood risk, and they were unaware of the extent and severity of inundation and its effect on the road network. Many people ventured out from offices and homes when they should have remained indoors, while many people who could have safely evacuated had they received appropriate and timely advice did not. Furthermore, due to the nature of the flood, emergency services were limited in their ability to respond. This is fairly common in cases of flash flooding, and that is why it is necessary for the community to be able to access timely, accurate and relevant information.

FMA Members have raised the following issues with particular reference to:

a. the effectiveness of communications networks

e. new and emerging technologies

f. any other relevant matters.

Radio

Radio has been identified as the most common and effective method of delivering timely, accurate and relevant information to communities leading up to and during flood events.

Discussion

The utilisation of radio to disseminate information before and during flood events allows multiple individuals to listen simultaneously to official instruction. According to respondents surveyed regarding flood events during 3rd and 17th September 2010 in Victoria 51% stated that listening to the radio for regular updates and information was the most performed action. The radio was also identified as the most common source of information during this time, in collaboration with television.

It has also been found that during the NSW North Coast floods in 2009, the majority of older residents said that they received the warnings through the radio (Molino, Dufty, Crapper & Karwaj, 2011:7).

Shortcomings

The main shortcoming of radio identified by members is the aggregation of local broadcasters to become part of a syndicated network of stations. When this happens much of the broadcast content originates from a remote location, and there is limited local content. The ABC has stated that it will locally broadcast current information during local emergencies; however commercial operators of syndicated stations appear to have lesser capacity or desire to interrupt statewide or national programs to provide local or regional audiences with content relevant to a developing local situation. This is particularly the case during afternoon, evening, weekend and public holiday programs.

A second key issue regarding public radio communications before and during flood events is that information broadcast is often not accurate. Community members are frequently encouraged to call in to programs and provide information to the station, and the broader community. This information is not necessarily verified by an appropriate authority, and may be misleading or even false. Furthermore, it may in fact contradict the information or directions provided by emergency services, and may cause greater risk to the community at large.

Recommendations

1. Local radio broadcast stations be encouraged to be proactive and participate in the dissemination of timely, accurate information relevant to their communities in times of emergency. Where necessary, investment should be made in technological changes to enable syndicated programs to

be interrupted to enable comprehensive, real time emergency messages to be broadcast to a relevant local audience.

2. Broadcast operators be required to receive regular briefings by emergency authorities to familiarise them with emergency systems, terminologies and operational procedures to facilitate the dissemination of accurate information which can assist in achieving appropriate community responses to flooding.

Television

Television has been identified as a common method for communities to receive flood information.

Discussion

Television is a great communication tool before and during flooding as it provides community members with a visual representation of what is happening, and what they can do. It is also an effective way to provide accurate information in real time.

Shortcomings

Three key issues have been identified when utilising television to convey essential information in times of flooding. Firstly, the syndication of television stations often results in a lack of local content being provided to regional and rural communities. As is the case with radio broadcasters, much of the broadcast content originates from a remote location, and there is limited real time local content. Operators of syndicated stations appear to have limited capacity or desire to interrupt statewide or national programs to provide local or regional audiences with content relevant to a developing local situation.

Furthermore when location-specific flood warnings or evacuation information are conveyed to a broad unintended audience, people may undertake inappropriate responses. This is a noteworthy issue as differing areas of floodplain are subject to different risks and may have different emergency management procedures.

Secondly, when television stations cover a flooding situation, they often appear to focus mainly on the salvages and shocking events occurring, rather than providing the community with meaningful information. Flood warnings for at-risk areas have been left out completely to provide space for footage of rescues (Molino et al, 2009:6).

Thirdly, power failures are frequently associated with flood events. As few people have suitable alternative power sources television cannot be considered a reliable source of information during extreme weather events.

Recommendations

3. Television broadcasters be encouraged to be proactive and participate in the dissemination of timely, accurate information relevant to their community in times of emergency. Where necessary, investment should be made in technological changes to enable syndicated programs to be interrupted to enable comprehensive, real time emergency messages to be broadcast to a relevant local audience.

4. Television broadcasters be required to receive regular briefings by emergency authorities to familiarise them with emergency systems, terminologies and operational procedures to facilitate the dissemination of accurate information which can assist in achieving appropriate community responses to flooding.

Internet and Social Media

In a 2008 survey of Australian households, the Australian Bureau of Statistics found that during 2006-2007, 64% had internet access in their homes (ABS, 2008). This percentage only continues to grow exponentially, as do the ways in which the internet is useful before and during flooding. Social media such as Twitter and Facebook allows for greater discussion on emergency event information between officials such as the SES and local community members.

Discussion

The internet provides a gateway for accessing real time information regarding current flooding events. Many individuals would now consider the internet their key method of locating further material on natural hazards, with around 50% of respondents to a recent Victorian flood survey stating they would search for information about flooding on the internet (Molino, 2009).

The SES and local councils can employ websites to disseminate timely, accurate information to their communities, which is tailored to specific locales or vulnerable groups. During the September 2010 flood event in Victoria, the VICSES website received over 200,000 impressions throughout the two week period (Gissing & White, 2011).

Utilising the internet also allows officials to communicate and work remotely from virtual offices, and to receive data readings and information quickly and efficiently. This allows for a more immediate method of communication between the SES, local council groups and the community.

Social media provides officials with an avenue for direct communication with communities located in at-risk or affected areas. This method of communication also allows for the dispelling of false information perpetuated by word-of-mouth in real time; an example of this can be seen in the Queensland Police Service Media's (QPSMedia) utilisation of Twitter during the 2011 flood event.

The number of followers on the QPSMedia Twitter page grew from just under 2,000 to 10,788 in 25 days. Also, members of the community found the QPSMedia information useful and ReTweeted it to their friends and family. The ReTweet volume was 70.4% of the 14,362 Tweets sent out by QPSMedia (iGo2Group, 2011).

Shortcomings

While the internet and social media offer many opportunities for efficient and timely communication with both communities and officials, they do suffer from the following issues:

Firstly, transmitting stations for wireless internet and mobile devices tend to be unreliable during flood events. During the June 2007 flooding event in Newcastle, for example, approximately 30% of mobile towers in the Lower Hunter Central Coast region failed (pers comm Bureau of Meteorology, 2011). It is imperative that mobile telephone transmission towers be considered essential services.

Mobile phone towers should be located above the Probable Maximum Flood (PMF) level wherever possible, and be designed to operate during extreme weather conditions and when external power supplies are not available.

Secondly, official websites being utilised to convey information to the public at times do not have the capacity to withstand the sheer volume of internet traffic that occurs during extreme weather conditions.

Thirdly, power failures are frequently associated with flood events. Few people have suitable alternative power sources to ensure continued operation of internet devices during long periods of power failure.

Recommendations

5. Mobile phone towers be located above the Probable Maximum Flood (PMF) level wherever possible, and be designed to operate during extreme weather conditions and when external power supplies are not available.

6. The ability of official websites used to convey flood information to the public be reviewed, and where necessary appropriate resources be allocated to upgrade systems to the required capacity.

Telephone – Landline and Mobile Devices

Several methods of delivering flood messages to local communities use landline and mobile devices: simple voice and SMS systems, and the recently implemented national Emergency Alert System (EAS) and the Greater Shepparton City Council's Community Telephone Alert System (CTAS).

Discussion

The EAS was initiated after the 2009 Victorian bushfires and communicates all-hazards warnings to both landlines and mobile devices through voicemail and text messages to individuals within at-risk or affected areas.

The CTAS was used for the first time during September 2010, and worked as planned (Molino et al, 2011:6). This is an indicator that telephone alert systems can be efficient and successful before and during flooding.

Shortcomings

The automated EAS cannot give priority to its own calls; during flood events many community members are making personal calls to friends and family to ensure their safety and the EAS warnings can only be received when these landlines are available.

Furthermore, while this system centres on at-risk and affected communities, it does not target visitors to the area, and due to the timeframe for disseminating information it is of no use during instances of flash flooding.

The definitive issue regarding telephone-based methods of communication is that during flooding events they are ineffective during power failures, extended blackouts, and the aforementioned failure of mobile phone towers.

However, with further development these systems have potential for providing communities with timely, accurate information before and during flood events.

Recommendation

7. Further investment be made into the development of telephone-based alert systems to improve their reliability and ability to deliver real-time information to flood affected communities.

New Technologies

While the FMA does not necessarily endorse the recently developed YellowBird Alert system, it is important to note that it may have the potential to promptly deliver detailed information to communities within at-risk or affected areas, while addressing some of the shortcomings of existing systems identified earlier in this submission.

The FMA understands that the system uses existing radio broadcast infrastructure, does not rely on the integrity of the mobile phone network, and can selectively switch on radios to receive emergency messages in targeted areas.

Recommendation

8. The potential of the YellowBird Alert system to augment existing communications systems be evaluated.

Other Issues

While this inquiry is mainly focussed on communication systems, the importance of the language and content of emergency warnings and messages tends at times to be overlooked. FMA members have identified the need for clear and consistent flood messages, and also the need for incorporation of multilingual messages for some communities.

Flood messages are issued as a means of reducing flood losses, but it is common for individuals to be unfamiliar with flood and official terminology. By ensuring consistent non-technical language is used in flood warnings, a clearer understanding of the situation may be achieved with the greater likelihood of appropriate community response.

Recommendation

9. Emergency messages utilise consistent non-technical language and where appropriate be developed for consumption by people of non-English speaking backgrounds.

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