SUBMISSION

to the

Queensland Floods Commission of Inquiry

The Early Warning Network

Prepared by

Kerry Plowright
Managing Director
The Early Warning Network
10 March 2011

List of Acronyms

EA   Emergency Alert - this is the Telstra system operated by government to send alerts to mobile phones and landline based on address details listed in the white pages.

EWS   Early Warning System

EWN   The Early Warning Network

EMQ   Emergency Management Queensland

BOM   The Bureau of Meteorology

MOE   Moment of Escalation

Introduction

Recent events have questioned the adequacy of early warning systems as a result of the tragic flooding in the Toowoomba, Lockyer and Brisbane Valleys. In particular, these events have exposed a critical gap in the early warning system to effectively respond to these sorts of disasters.

The purpose of this submission while describing why the gap in the early warning system exists, mostly seeks to provide a way forward from the bitter lessons learned. In particular and relating to the issue of flood preparedness relevant to next summer's wet season, we wish to draw the Enquiry's attention to currently existing capabilities. Specifically systems and experience that already cover this gap and are in operation across the entire state today.

The Gap in Early Warning

Warning systems are far better today than just twelve months ago. The commissioning of the Emergency Alert system by the Federal and State governments has delivered to emergency management a powerful asset in the effort to protect life and property and has already been effectively used many times over.

However, the system did not work in the Toowoomba, Lockyer and Brisbane Valley disasters. Indeed, warnings were issued via EA many hours after the fact. Testimony, police statements and other evidence presented to the enquiry will reveal there was time to warn communities threatened by catastrophic flash flooding including timelines of such awareness. This specific danger to the areas threatened was recognised hours earlier. So despite a known catastrophic threat and the means to deliver an immediate warning, no such action was taken.

It should be pointed out this is not criticism of Emergency Management or the Bureau of Meteorology. State and local emergency management did an amazing job and the BOM did have a current warning in effect. Instead, the failure to warn drives from the lack of a well-defined and a dedicated Early Warning System (EWS) that would have been situationally aware and in direct communication with local emergency management. An Emergency Alert system does not an Early Warning System make. The Emergency Alert system utilised by EMQ during recent events is not an Early Warning System (EWS), it is a mechanism. EMQ used it a lot, but the two capabilities should not be confused.

"An Emergency Alert system does not an Early Warning System make."

Had a dedicated EWS been operating prior to the Toowoomba, Lockyer and Brisbane Valley disasters, residents would most probably have been warned or received some notification several hours prior to the event.

Prior to Black Saturday and as far back as 2007 EWN had suggested to state governments the need to establish an EWS for severe weather, fire and other potential threats (See EWN submission to the Royal Commission 2009 Bushfires). After the Black Saturday tragedy, an emergency alert system was implemented, but not an EWS.

A dedicated EWS also delivers a different psychology within emergency management. No longer is the responsibility of warning or awareness splintered over various disciplines and authorities. There is instead a sharp focus on all threats and what the community needs to know. This was one of the greatest failings on Black Saturday – no one was in charge of warnings.

So what is the difference between what authorities do now and an EWS? An EWS is the combination of the mechanism for sending warnings such as EA combined with a dedicated operation which continuously monitors threats and is responsible for the issuing of warnings. Currently the only dedicated early warning system in operation within Australia today is the Early Warning Network. While EWN provides services to some councils and commercial enterprise, it had no such relationship with the Toowoomba, and Lockyer Valley Regional Councils. We wish we had.

The present manner in which threats are monitored and warnings are triggered leaves a critical and often fatal warning gap when a severe event becomes catastrophic. This is called the Moment of Escalation or MOE. A dedicated EWS would be situationally aware and is less likely to get caught with its pants down during an MOE. As in the case of the Toowoomba, Lockyer and Brisbane Valley disasters, that moment would have been anticipated.

Vulnerable Communities

The devastated communities in the Lockyer Valley were known to be vulnerable to flash flooding. Even in Toowoomba, the manner in which waterways had been developed and how they managed flood water was known to be a problem. Being aware of these issues, how can these risks be treated in future? How EWN works with Brisbane City Council provides an example of how such disasters might be mitigated. Like most authorities, Brisbane City Council has identified areas vulnerable to specific and predictable threats. In Brisbane, EWN's warning system maintains shape files for various high tide events as well as areas prone to flash flooding. For example, the system accurately identifies anybody living on or below a 1.8m, 2m high tide mark. These people can subsequently be warned over multiple channels with the click of a button. This ensures only those that need it, get it, thus avoiding confusion and panic. These capabilities are further augmented with stream and flood gauges that trigger alerts into the EWN system when water levels reach a certain height or rainfall over a thirty minute period exceeds set parameters.

Better Informed Communities

EWN has proven that opt-in systems are highly successful and work well in tandem with the EA system. The Townsville opt-in service, now being closely followed by Brisbane, has experienced such a high take-up that almost complete penetration of the community has been realised. Residents who opt-in are actively seeking more information in a timely manner. This permission to warn and inform over multiple channels results in a

community far better prepared instead of waiting to the last minute. Opt-in permits local emergency management and councils to cover a far greater range of contingencies and greater control of informing their communities than EA can reasonably be expected to. This is not a criticism of EA, but a recognition of the additional benefit of a permission based system running in parallel with EA.

EWN is the most experienced operator of early warning systems in Australia. It is hoped that this experience might be considered by the Queensland Floods Commission of Inquiry. EWN would like the Commission to consider the benefits of establishing a state or National Early Warning Centre (NEWC) to help mitigate similar events in the future.

Why Listen to EWN?

EWN has been operating a national early warning centre for nearly four years and is the first ever location based alert service for severe weather. It is the efforts of EWN that have proved the viability and benefits of such services and the capabilities and practices needed to power them. The operation is unique and has developed specialised IP and systems to manage such an operation accumulating significant experience and capability along the way.

Nationally EWN monitors potentially dangerous incidents and tracks severe weather in real time alerting people directly in its path. Events include storms with potential for hail, flash flooding or damaging winds, fires, tsunami etc. The service is available to the public, business and government. EWN is the only operator of such a service anywhere.

Since commencing operations the service has sent over 8,250 warnings (each warning may include thousands of members) for severe weather, flooding, tsunami and other critical notifications. EWN has warned for every severe event in Australia since it commenced operations without any outage of service. This 24x7 operation has been effectively managed with just a handful of people.

A key element of EWN's service is the geographic information system that enables true location based services. People, organizations or devices are registered to the system then located via fixed or mobile latitude and longitude co-ordinates. Within the alert and mapping engine of EWNs system, data such as weather is spatially overlaid on alert maps providing unprecedented situational awareness and accuracy in such events as emergency notification. EWN's location based services also provide the ability to track, locate and alert mobile phones based on their physical location at the time.

Lessons are being learned. It should be noted that at 0048hrs on March 7 an Emergency Alert was issued by the Tablelands Regional Council for residents of Mareeba, Biboohra and Bilwon areas for flash flood conditions. While the outcome of the Tablelands rain event was not catastrophic the alert should be seen as a positive application of the EA system, whether it was issued in a timely manner is another question, it would be worthwhile evaluating the amount of time it took from 'threat realisation' to actually sending the alert.

Emergency management is presently on high alert. This isn't always the case and disasters by nature ambush the system, catching it by surprise. The lesson learned here is that a facility needs to be in place that is situationally aware, does not have to 'gear up' and can act immediately under its own authority.

What might the NEWC look like?

EWN believes serious consideration should be given to a government supported expansion of already operational and proven systems in the form of a National Early Warning Centre (NEWC). This would not require a major undertaking or financial commitment. Current operations would be expanded to comprise a small team of about seven. The NEWC would work directly with BOM, state emergency management and to local authorities. The NEWC would:

1. Monitor weather, fire and any other hazards state or nationally 24x7
2. Have the authority to issue warnings
3. Have access to an opt-in data base system (As per EWN model and the way it operates with Brisbane and Townsville City Councils) and the Emergency Alert system
4. Have access to BOM and all other available telemetry
5. Have access to local authorities and all other emergency bodies

Subsequent to a MOE the NEWC would probably hand over to state or local authorities or act under their direction.

Conclusion

Recent severe weather events have exposed a fatal gap in the process by which early warning is provided to the public when a severe event becomes catastrophic. Solutions to this are readily available. Experienced early warning operators, systems and capabilities not only exist but are already operational within Queensland to cover this gap. A solution might take the form of a dedicated early warning facility supported by government. The establishment or expansion of current operations to form a warning centre is simple, can happen quickly and is inexpensive.

EWN is happy to demonstrate to the Enquiry the operation of its early warning system and how it is being utilised to help protect life and property.

Additional Reading

EWN submission to the Royal Commission 2009 Bushfires
https://www1.ewn.com.au/support/EWN_Submission.pdf

Example of EWN in operation
https://www1.ewn.com.au/media/melbourne_hail_storm_report.pdf

Contact Details

Kerry Plowright