From:	NSW Government
To:	Flood Inquiry
Subject:	Floods Inquiry
Date:	Thursday, 19 May 2022 6:19:38 PM

Your details

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Submission details

I am making this submission as	An academic/researcher
Submission type	I am making a personal submission
Consent to make submission public	I give my consent for this submission to be made public

Share your experience or tell your story

Your story	I live in a flood affected area and have lived with the consequences personally and professionally of these events. I also volunteer with the RFS ad received the National Emergency Service Medal for my contributions during the fire season. I am now working on a Phd to identify how attitudes to technology can better enable regional and remote communities to manage natural

	disasters.

Terms of Reference (optional)

The Inquiry welcomes submissions that address the particular matters identified in its Terms of Reference

1.1 Causes and contributing factors	I am particularly concerned by the approach, management and lack of strategic oversight of data which could have supported better planning and preparedness. As an example, when a developer makes submission to a local council about a land, they gather and provide survey information which demonstrates a shift in ground height. In some locations, this may also include reclaiming swamp land or impacting natural water flows. Local councils have GIS capabilities which are often underutilized or invested in. This information feeds back into NSW planning and is stored. However I do not think that the broader impacts of some planning decisions are considered. The information could be used to better understand historic flood patterns and predict changes to services. As an example, there was an 80yr old resident who talked with NSW Water Board employees as they tried to clear a drain in Harrington. She explained that the drain use to be sufficient, as the water was usually at a rate and flow to travel out safely. However the redevelopment in Harrington has changed the water flow and it now pools in a different area, which brings with it significant debris from the national/state park in the area. This clogs the drain but also puts additional pressure due to the increased and changed flow. Where the drain had been suitable for previous flood events, the changes to ground height, new housing and road infrastructure had changed conditions. No consideration of this had occurred to consider the impacts and increased likelihood of flood. This is not a unique story, but simply an example of a common problem.
1.2 Preparation and planning	There are available technologies not utilised by regional and remote councils which could enable

	better preparation and planning of natural disasters. For example, at sports fields in metro Sydney, there are ground moisture sensors which measure the water content and dictate if the sprinklers activate or if the field is closed to use. In regional areas, ground staff walk around and drive for several hours to make those decisions. The lac of moisture on the ground was a key contribution factor to risk during the fire season and could have helped in predicting breakouts. The same sensors can be modified and used to track water height and rates of flow. This information can build accurate data modeling of flood events. This information could easily be fed into modeling system and utilising accurate mapping, predict flow. There would be no need for the human error that saw lismore being told to no longer need to evacuate and then being rushed out hours later. The modeling should lean more on accurate data sources which are in place long before the event unfolds. This must be a consideration out of this inquiry. The primary outcome of my Phd studies is to look at the attitudes of large regional employers - including councils - to technology and how it impacts community preparedness and resilience to natural disasters.
1.3 Response to floods	I have a technology focus in my studies and my professional life. I do not understand the issues that have been experienced by emergency services with regards to flood information and coordinating systems and technologies. There are multiple technologies that enable and ensure services and the rapid flow of information. I have heard anecdotal evidence that the SES lost access to some systems and data during the most recent flood events in the Lismore region. Furthermore, in disaster events, there are more options on how to activate. coordinate and manage rescues and volunteers. There are also broader protocols and considerations in gathering data and managing communications. The story of the lady in Lismore who created an excel spreadsheet, made it public, utilised

	google docs and allowed others to engage is a great example. It shows the power of civilian action but also the freely available way to capture and share information. The SES infrastructure and technology needs review and investment. Again, there are a multitude of apps, platforms and options to make this happen and it doesn't require the level of investment some might think. As an example, there are several systems commonly in use by local councils and state government, including the RMS, which allow people to identify and provide information on put holes or road hazards. This can occur via an app or the web. It can be enabled to provide exact geographical information. It would not be a stretch to change the settings to go from identifying the road hazard or pot hole, to a flood event or a person needing rescuing. There are significant opportunities for innovation and empowerment which would save lives.
1.4 Transition from incident response to recovery	Local responses and recovery has to be place based and involve directly impacted participants to facilitate the social recovery as well as the economic. The work of local councils has been significant although it is important to note that this is not usually in the experience or education of a council worker. There have been some amazing efforts by incredible people - which in itself has been part of the healing. The work of NSW government in providing support and funding has also been significant. Longer term strategic decisions, including those tough discussions around planning and rebuilding, need to be facilitated. As Lismore has experienced, the question must be asked on why the city centre is built in such a flood prone area. This is particularly important as experience of emergency personal dictates that once we have a major 'unprecedented event' - that becomes the new benchmark and it will occur again. So it is not a question of if northern NSW will flood again, but when? Considering that, Kempsey for example, has one of the largest water catchment areas in the southern hemisphere and a low

	lying city centre, as well as an incredible percentage of flood plan in its LGA - there must be implications for further planning and development requirements. Otherwise we are allowing investment in disaster. In fact, worse than that, we are enabling further catastrophizing by increasing the impact on people and changing the characteristics of the flood plan.
1.5 Recovery from floods	Part of the recovery must include allocation of responsibility to technology and digital infrastructure. Australia has significant experience with natural disasters and we do not seem to be putting in place, all the lessons learned. The poor wiring and placement of generators in the Ballina area which brought down the NBN is a classic example. We need to have a more resilient structure to manage the impacts of disaster and a more responsive back up plan to enact.
1.6 Any other matters	I would be very interested and ready to further the discussions around the use of technology in regional and rural areas, for the strengthening of preparedness and management of future national emergency events. This is the point of my studies and will be ongoing work, for the benefit of the community. I also think that this is a key consideration for the future of our regional areas.

Supporting documents or images