

LISMORE CITIZENS'
REVIEW
OF
MARCH 2017 FLOOD

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1. FOREWORD

In the weeks following the March flood within the local community there was much discussion with family, friends, business people and citizens about the magnitude of the flood disaster. So many aspects were ill timed, badly worded and not as effective as the way floods were managed in a much less structured and centralised fashion in the past.

The Public Forums that were organised by the SES for the North, South CBD and East Lismore areas of the town generated a considerable degree of anger and disgust at the failure of the SES Senior Executives to confront the community and discuss the many aspects of the management of the flood event that were badly handled.

Over the ensuing weeks following the flood a small number of citizens were independently gathering information and by various means gradually heard about one another, made contact and subsequently started pooling information. All members of the group had either lived in the flood area and/or had been involved with an organisation or business in the town for many years, and, between them there was considerable flood knowledge and experience.

Common issues included widespread dissatisfaction, frustration, anger and disgust across the affected community at the form of the flood warning updates from the Bureau of Meteorology (BoM) as the situation deteriorated, and the management of the flood bulletins by the NSW SES and Richmond Tweed Regional SES. Through lack of local knowledge and requirements these resulted in substantial avoidable personal and financial cost to the community.

At a meeting at the Lismore City Council on June 27 Senior Staff of the Lismore City Council gave a comprehensive review of the March flood to councillors. The meeting was open to the public and two members of the Citizens' Review group attended.

During the course of the meeting it was reported that there were 12 reviews into the flood being undertaken. However from the list provided it was immediately evident that with the exception of the Lismore City Chamber of Commerce and Industry eleven of the reviews were being produced by universities, government departments or government

funded agencies, none of whom were personally or financially affected by the flood.

And so the decision to produce a Citizens' Review was born.

From the outset the sole aim was to examine various aspects of the management of the flood from the community point of view and endeavour to work towards recommending constructive structural and administrative changes in the BoM, SES, Lismore City Council (LCC) and other relevant Organisations to ensure that the March 2017 outcome would never happen again.

During the course of our investigations we garnered information from the following:

- Lismore LGA citizens and businesses
- State Emergency And Rescue Management (SERM) Act 1989
- The Lismore City SES Plan
- The Lismore City Council Floodplain Risk Management Plan 2014
- The NSW SES Plan
- The Tasmanian Flood Review
- Australasian Inter-Service Incident Management System (AIIMS)
- Independent Review of Brisbane City Council's Response to the January 2011 Flood
- Queensland Local Disaster Management Guidelines
- Queensland Floods Commission of Inquiry / Interim Report August-2011
- Managing the floodplain: a guide to best practice in flood risk management in Australia by Australian Emergency Management Institute

At the time of writing the review the members of the group are:

Keith Alcock	Joined Civic Defence (later SES) in 1962; Appointed Division Controller of Richmond Tweed SES in 1968; Officer in charge the SES during the record 1974 flood and thereafter in Emergency Operations Management until retirement in 1995
Dr Roslyn Irwin	Councillor Lismore City Council 1991 - 2008; Councillor Rous County Council 1991-1999;

	Chair Rous County Council 1995-1997; Deputy Mayor Lismore 1995-1997; Mayor 1997-1999; Local Government Association of NSW Country Executive Committee Member 2000-2006; CBD business owner until 2017
Tony Madden	Lismore City SES volunteer (1974-1980); Manager then Regional Director Dept. of Community Services North Coast; Regional Emergency Welfare Co-ordinator 1970 - 1995
Peter Thorpe	Engineer/Planner Tintenbar & Ballina Shires 1967-82; Managing Director Hepburn & Thorpe Pty Ltd 1982-2010; Constructed Stage 3 of the Lismore Levee including the Gasworks Pump Station
Beth Trevan	Health Educator, Health Service Director and Consultant 1974 - 2010; CBD Family business 1910 - 2005; South Lismore business 2005 - present

2 EXECUTIVE SUMMARY

The interpretation and management of the Lismore March flood warning system handled by the NSW and Richmond Tweed SES have been described as chaotic and grossly negligent. The lack of timely warning, coupled with the premature evacuation order, led to unprecedented and avoidable costs to those in the community who obeyed them.

Sidelining the Lismore City SES in critical decision-making deprived the community of local knowledge so vital within a constantly changing community. No centralised organisation can pretend to match the years of experience and memory which have served the Lismore community so well in the past.

The Flood Warnings issued by the Bureau of Meteorology (BoM) underestimated the situation and were not upgraded in a timeframe reflecting the evolving emergency conditions. Many practical measures need to be implemented to avoid a repeat of this unfortunate bureaucratic fiasco.

It is a matter of concern that senior bureaucrats in the NSW BoM and SES seem to have paid little or no regard to previously published recommendations from similar independent flood reviews. It could also be perceived that the NSW SES is attempting a whitewash of its culpability by to date refusing to engage with the community.

If there is an engineering solution to Lismore's flooding vulnerability it should be tested and, if found viable, implemented by the NSW government as a serious attempt to further minimise flood risks to the Lismore CBD and compensate the community for the losses caused by the inadequacy of the systems of its own organisations.

As we are about to go to print the NSW SES Independent Review has been handed down. In short from a citizen's perspective whilst it gives accolades to the Lismore City SES Unit, the Regional Headquarters performance was a chaotic debacle. The recommended solutions are more money, a bigger bureaucracy and more detailed protocols to continue under the flawed AIIMS Management system which affects the efficacy of the SES emergency operations in a detrimental way. This was the last solution that the community wanted to hear.

The overarching recommendations of the Citizens' Review are:

- the practical, knowledgeable and skilled Lismore City SES Unit must be front and centre in an emergency flood situation in Lismore and directly involved in the provision of public information
- the role of the Regional Headquarters must be to act as a logistics and coordination team to back up and support the Lismore City SES Unit in every possible way
- the NSW SES Headquarters team must support the Regional Team and sign off immediately on warnings and orders

With the cyclone season upon us in just a few months it is incumbent on all within the Lismore community to demand the NSW SES act now so the March 2017 experience is never repeated.

Beth Trevan
Coordinator
Lismore Citizens' Review Group

Date: 8 August 2017

3 HISTORICAL BACKGROUND

The earliest recorded flood in Lismore was described as a “big flood” in 1857 although in today’s terms, it is not possible to give it a height measurement. A gauge was installed on the Fawcett’s Bridge when it was built in 1891. The bridge was remodelled in 1904 and there was a claim that a new gauge which replaced the original one would give readings which would not be strictly comparable with older readings.

At different times heights have referred to a gauge on the North Coast Steam Company’s wharf. One reference refers to Lismore heights being read on the Police Station gauge until December 1955, after which the Rowing Club gauge became the official gauge.

A levee was constructed in 2005 to offer protection to the CBD from 1 in 10 year floods, and records show that a total of seventeen floods in 156 years would have overtopped the levee. If earlier, possibly less reliable measurements, are ignored, and only the floods from 1921 are considered, there have been twelve floods in 97 years which would have overtopped the levee.

So the flooding of North and South Lismore and the CBD is not new and an enormous amount of local knowledge and information has been collected over the years.

4 LEVEE

The Lismore Levee Scheme was finalised in 2005 and affords flood protection to the CBD up to the 1 in 10 year flood. The March 2017 flood was the first time that the levee was overtopped and many lessons were learned.

The levee was originally designed to be overtopped in a controlled manner by activating the large pumps at Brown’s Creek and the Gasworks to ensure the basin is filled at the same time as overtopping takes place to minimise high flood flows.

However, due to complaints and litigation threats from businesses in the basin that were flooded unnecessarily when the river rose but the levee did not overtop, it is understood that the basin equalisation effect with

the river height was disbanded and the levee management manual rewritten some 18 months ago.

The Lismore City Council Floodplain Risk Management Plan 2014 describes the CBD as “the commercial heart of Lismore where there is a wide range of retail and commercial businesses as well as housing above shops, motels and other tourist and visitor accommodation”.

It goes on to say that “the major impact of the Central and South Lismore Levees is that it gives residents and others more time to pack and leave, even if the levee is overtopped. Unfortunately the levees have engendered a sense of security for some residents who live and work within them due to the reduction in the frequency of flooding in those areas. The levee scheme has decreased the average incidence of floods in these areas from once every 4 years to once every 10 years and subsequently tended to reduce the level of community preparedness for major flooding. As a result there is a real need for ongoing public information about the limitations of the Lismore Levee and mechanisms to inform new residents of the flood hazards associated with living on the Lismore Floodplain”.

When a Flood Warning is issued Lismore City Council (LCC) staff rely on information from the NSW/Regional SES to commence operation. There is some concern that there is a lag time between what is happening at the river and reports from BoM and the SES. Timing is critical at this stage.

There are 32 gates which have to be closed as the river is rising between the heights of 4m - 9 m. Whilst the river continues to rise and the Lismore basin fills there are 5 major pumps that also operate. In order to counteract the force of the water overtopping the levee and running at pace through Brown’s Creek deflector walls have been constructed in Keen St to try to reduce damage that may be caused.

An LCC presentation on June 27 to Councillors reported that all areas of the levee system worked as expected during the March 2017 flood.

5 FLOOD VARIATIONS

It is recognised that no two floods are the same and the rate of rise usually varies considerably during the course of a flood. Some examples of variation in rate rise are as follows.

- in the 1974 flood the highest hourly rate of rise was 0.74m/hr from 5.75m to 6.49m and there was a sustained high rate between 5.09m and 10.86m, averaging 0.58m/ hr for 10 hours. During this 10 hour period the rate varied between 0.40m/hr and 0.74m/ hr.
- in the March 2017 flood the highest hourly rate was 0.86m/hr between 3.74m and 4.60m and the rate over several hours was an average of 0.57m/hr for 12 hours between the very low level of 3.03m and 9.84m. During this 12 hour period the rate varied between 0.38m/ hr and 0.86m/hr.

6 AIIMS STRUCTURE FOR EMERGENCY MANAGEMENT

The most valuable asset and resource in any emergency is the experienced, knowledgeable, local information provided by the volunteer local SES personnel who have been well trained and are very experienced in managing floods and other emergencies in their local area over many years, some even decades. These volunteers have lived and worked in the local community, are members of our families, relatives or friends and come from all walks of life with their associated experiences.

They belong to local sporting clubs, school parent organisations, interest groups etc and participate in a variety of other community activities. They are well known and respected for the voluntary SES work they do and when there is a flood or emergency callout they leave their homes and often do not return until the job is done.

NSW State Emergency Services was formally established under the State Emergency and Rescue Management (SERM) Act 1989 and operates under the Australasian Inter-service Incident Management System. (See Appendix 2) Many of the salaried SES officers are on a career path with promotions that require them to move to various

regional positions throughout the State. For some, this leads to Executive positions at SES Headquarters in Wollongong. Their skill set is in management and logistics. They work 8 hour or day/night shifts during an emergency, and the March 2017 flood required their numbers to be supplemented by out of area personnel.

Where do the Lismore City SES unit, or the Tweed and other local SES units who also come under the Richmond Tweed Regional banner (and hence any local SES, RFS or other volunteer units throughout the nation) fit in the very detailed AIIMS Incident Control Structure? Bureaucratic management is prominent, but evidence of practical skill, common sense and flexibility, so vital in an emergency is lacking. How can vital local information sources be included in decisions?

Since the establishment of the formal NSW SES service there have been complaints following an emergency flood situation that local knowledge and information were not included in decision making with detrimental effects on the local community. It would appear that this situation is a major issue and not unprecedented.

In an ABC Landline TV Report on the 2016 Tasmanian Floods shown in May 2017 (and also mentioned in the Tasmanian 2016 Flood Review), local resident farmers stated that there had been no local information given and they had suffered devastating personal and financial consequences. Similarly an ABC report on the south western NSW floods reported complaints that there was no local input or information provided with similar results.

A local example is the early Evacuation Orders given in Lismore in March 2017. The failure to have the order given by the informed and experienced Lismore City SES Local Controller, which is a documented requirement, is directly attributable for much of the stock and property losses suffered by residents and businesses. There is obviously a major flaw in the Incident Control structure that needs to be corrected so that there is no ambiguity.

Under the SERM Act 1989 the definition of Local Controller is as follows: "local controller" means a controller of SES units in a local government area appointed under section 17".

Page 4, Section 17 (3) states "A local controller is, subject to any direction of the Director-General or the relevant region controller,

responsible for the control and co-ordination of the activities of SES units in the relevant local government area”.

Does “subject to any direction of the Director-General or the relevant region controller” mean that the relevant regional controller can micro manage and issue Evacuation orders?

The Local Controller is either responsible for control and co-ordination of the activities of SES units in the relevant local government area or they are not. Either the wording in the Act or the Local Unit and Regional SES areas of responsibility require clarification so there can be no misunderstanding.

According to the Lismore City Council (LCC) Floodplain Plan 4.3.2 Need for Full Evacuation: “Evacuation is essential if flood levels are predicted to overtop the levee. The evacuation announcement will be made by the SES Local Controller”. The announcement was made by the Regional Incident Controller rather than the Local Controller which is required.

During the March flood, Regional SES officers ignored the knowledge and experience of local volunteers. This situation shows that there is a major and detrimental flaw in the management system.

RECOMMENDATIONS

6.1 That NSW SES use of the AIIMS Incident Control Structure clearly shows the position of volunteer SES and RFS and other volunteer units within the structure.

6.2 That NSW SES develops clear decision making responsibilities that ensure that the local controller’s position cannot be challenged or usurped

6.3 That Section 17 (3) of the SERM Act (1989) be reworded for greater clarity

7 BUREAU of METEOROLOGY

Over the period from Friday 24 March to Wednesday 29 March the development and movement of Cyclone Debbie was reported on local radio and in many media weather reports, and an appropriate Floodwatch was issued by the Bureau of Meteorology (BoM).

By Wednesday afternoon March 29 with **FLOODWATCH still in place** the BoM's prediction of a rain depression with heavy rainfall associated with the southward movement of the ex-tropical cyclone Debbie should have signalled to the BoM that a flood was clearly probable and the Floodwatch updated to a Preliminary Flood Warning.

Soon after midnight and throughout the early hours of Thursday morning March 30, widespread heavy rain began to fall across the catchment. In its regular 7 am weather segment the local ABC radio broadcast details of extremely heavy falls of more than 100mm in the catchment and a listener reported he had measured 150mm in his gauge which triggered many locals to believe that a big flood was likely. **FLOODWATCH still in place**

Very heavy rain was also falling in the Lismore town basin adding to the belief that a flood similar to 1974 was very likely. After 6-7 hours of such rain and with the rain depression still heading south a Flood Warning should have been issued at this time. **FLOODWATCH still in place**

At 9.30 am on Thursday morning a local businessman noticed that there were 8 helicopters parked in Hepburn Park which showed that, at the State level of the SES, a decision had been made that there was likely to be a major flood. **No indication was given to the public.**

Throughout Thursday morning from the Nimbin, Goolmangar and The Channon areas family members and friends were contacting Lismore residents to tell them that the river heights were heading towards 1974 levels and yet by noon **FLOOD WATCH was still in place.** At this critical point there was a time lag of about one and a half hours between river gauge heights the BoM was reporting online and what was happening on the ground throughout the catchment.

The Lismore City SES Flood Intelligence team was receiving updated information from their contacts throughout the district and from their past data were already modelling what was likely to occur. Unfortunately, as volunteers, despite their decades of experience with floods, their information was ignored by salaried SES officers at the Regional level who had none of the required local knowledge to make the appropriate decisions.

At 12:39 Thursday Flood Warning 1- **MINOR FLOOD WARNING** was issued by the BoM. At 13:52 the river at Nimbin passed its 1974 level

and was rising at 0.5m per hour. Heavy flood rain continued to fall but a **MINOR FLOOD WARNING** was still showing on the BoM website.

By 15:00 on Thursday Lismore City SES calculations showed a major flood was certain and the levee would be overtopped at around 03:30 Friday March 31, but was unable to publish this information as flood warnings and predictions are a BoM responsibility.

At 15:38 Flood Warning 2 was issued by the BoM again stating **MINOR FLOODING** currently along Wilsons River even though up to 270 millimetres had been recorded.

Finally at 15:53 Thursday Flood Warning 3 a **MAJOR FLOOD WARNING** for the Wilsons River was issued by the BoM followed by further warnings at 20:06 and 21:44. On Friday Flood Warnings followed at 01:06, and after the levee overtopped at 04:38, 08:24, 10:36, 16:05 and 21:02.

It is evident that:

- the BoM modelling requires updating to reflect more accurately what is actually happening on the ground
- there is insufficient communication between the BoM and SES from the Headquarter level through to the Regional SES and local SES level as well as other agencies
- the transfer of information within and between agencies needs to be more timely

RECOMMENDATION 2.22 from the Queensland Floods Commission of Inquiry Interim Report August-2011 would suit the NSW SES very well. It reads as follows:

“Seqwater should create a regular forum for discussion between all operational staff of the flood operations centre and Bureau staff to:

- increase the knowledge of flood operations centre staff about the Bureau’s products, abilities, advice and operations
- reach agreement as to the frequency and type of information to be shared between the Bureau and the flood operations centre during a flood event

- discuss advances in technology and science in areas including forecasting, data collection and modelling
- build relationships between the staff of both organisations”.

RECOMMENDATIONS

7.1 That the NSW SES builds a stronger relationship with the BoM that benefits and includes Regional and Local SES Units

7.2 That from the issuing of a Flood Watch BoM modelling is updated more frequently to immediately and accurately reflect what is happening on the ground in the catchment

7.3 That as soon as a minor flood becomes a probability an official PRELIMINARY FLOOD WARNING be issued by the BoM.

7.4 That the BoM immediately and formally reports the PRELIMINARY FLOOD WARNING to the NSW SES Headquarters, Richmond Tweed Regional SES , Lismore City SES and Lismore City Council

7.5 That from the issuing of a PRELIMINARY FLOOD WARNING BULLETIN consultation be established between, the BoM, NSW SES Headquarters, Richmond Tweed SES, Lismore City SES, Lismore City Council (LCC) and Police

7.6 That an SES PRELIMINARY FLOOD WARNING BULLETIN then be immediately issued to ABC North Coast, Radio 2LM, commercial and community radio stations, TV stations, Facebook, Twitter, SMS etc. to inform the community.

7.7 That the local Lismore City SES be required to independently monitor rainfall and stream heights and provide appropriate information, advice and warnings to relevant bodies e.g. Richmond Tweed Headquarters, NSW SES Headquarters, BoM, LCC, Police etc

7.8 That from the issue of the first warning, for the duration of the flood event, hourly updates on weather conditions and forecasts, flood heights (actual, rate of change, predicted heights as appropriate), warnings, etc. be provided to media outlets for broadcast

8 SES EMERGENCY OPERATIONS MANAGEMENT

The Lismore City Council Floodplain Risk Management Plan 2014 notes in part that “ During flood emergency the Lismore City SES unit operates from its permanent headquarters at 64 Brunswick Street. The Richmond-Tweed Division of the SES operates from its headquarters in Goonellabah, and co-ordinates the operations of the 13 SES units under its control. (*Recent SES Reports note 14 SES units*)

Lismore City Council also has responsibility under its Local Disaster Plan for setting up an Emergency Call Centre (ECC) in situations of major crisis, including a major flood. The Council Chambers at 43 Oliver Avenue, Goonellabah are fitted out to operate as an Emergency Call Centre when required.

The ECC becomes activated when emergencies, including floods, become large enough to require a coordinated multi-organisation response. The decision to establish an ECC is made by the Local Emergency Operations Controller (LEOCON) who is the Local Area Commander for the Richmond Local Area Police Command. The ECC includes representatives from Lismore City Council, Police, Rural Fire Service, SES, NSW Fire Service, State Departments of Community and Health Services, Ambulance, Essential Energy, Telstra, and other agencies as required”.

During the March flood the Lismore City Council set up an Emergency Call Centre at the council chambers. Together with the relevant LCC staff, Police and Ambulance (having vacated their sites due to encroaching flood waters) also operated from the LCC call centre. Unfortunately there were no SES representatives present so, as the flood waters rose it would appear that there were three Operations Rooms each operating in isolation.

The fact that the LCC Emergency Call Centre, the Lismore City SES and the Regional SES are making major decisions at three different sites is ludicrous and a disaster waiting to happen.... which it did.

It is evident that the AIIMS Management structure is appropriate for the management of a bureaucracy but is not the best organisational

structure in an emergency. A bureaucratic response to a documented protocol in an emergency is not a practical way to manage an emergency. See an example Appendix 3.

If the Richmond-Tweed Region of the SES is responsible for co-ordinating the operations of the 14 SES units under its control it is not feasible that they can or should micro manage each individual unit as the Regional staff did in March flood. This situation requires urgent review to ensure a more efficient and effective management of any future floods or emergencies. Queensland Local Disaster Management Guidelines recommend a bottom up management of a flood event (see diagram Appendix 4) which would seem far more practical.

Local management is imperative. The Lismore City SES Unit must be responsible for emergency management in the Lismore Local Government Area. Ideally a Regional SES delegate (preferably with training in flood behaviour in the catchment) should be attached to the Lismore City SES Unit during an emergency and have direct contact with a Regional staff member appointed to specifically handle two-way information with, and for, the Lismore City Unit.

Regional Headquarters Emergency Management is for Support, Logistics and Coordination and should contain Regional staff, the Police LEOCON and a senior representative from each of the RFS, Fire & Rescue, LCC, Ambulance, Welfare etc. each with a direct telephone and computer connection to their own agency. The Regional SES must be directly connected to the NSW SES Headquarters (where a BoM representative is present) for immediate response both ways.

A bottom up proposed structure is as follows:

Proposed SES Emergency Operations Structure

13 other
Richmond Tweed
individual LGA SES
Units

Clearly defined responsibilities

Lismore City SES Unit
Lismore LGA
Coordination Centre

Richmond Tweed delegate

Clearly defined responsibilities



Richmond Tweed Regional SES Unit
R/T Region Emergency Operation Coordination

Clearly defined responsibilities

LEOCON, RFS, Fire & Rescue, LCC, Ambulance, Welfare etc



Each connected directly by phone and computer to own agency



NSW SES Coordination Centre
NSW SES Emergency Personnel, BoM
SEOCN and designated others
Clearly defined responsibilities

RECOMMENDATIONS

- 8.1 That Lismore City SES have ongoing input and genuine consultation with all agencies throughout the flood event*
- 8.2 That a Regional delegate be present at the Lismore City Unit during an emergency operation*
- 8.3 That there is a clear delineation of roles and responsibilities of each operational area between, local, regional and state agencies*
- 8.4 That during an emergency the Lismore City SES Unit has sole responsibility for decisions and operations within the Lismore Local Government Area*
- 8.5 That the Regional representative at the Lismore City SES Unit be directly connected to Regional Headquarters by computer and telephone for fast distribution of information*
- 8.6 That Richmond Tweed SES be responsible for Logistics, Support and Coordination*
- 8.7 That the LEOCON operates from Richmond Tweed SES Operations Room along with delegates from RFS, Fire & Rescue, Ambulance, Welfare, Lismore City Council and other designated organisations as documented*
- 8.8 That each delegate is connected to their own organisation by telephone and computer*
- 8.9 That there is no delay in approval and dissemination of media Bulletins and Lismore City SES Evacuation Orders once they have been agreed.*

9 COMMUNICATION SYSTEMS

It is of some concern that in this day and age the NSW SES Head Office, Richmond Tweed Regional Headquarters and the Lismore City SES Unit during an emergency event are communicating with one another and media organisations using faxes when there are so many new technologies available.

As an example of communication issues, on Wednesday night March 29 the BoM website still showed a Floodwatch bulletin. Records show that the NSW SES Facebook page issued Flood Tips at 21:07 and then two hours later at 23:21 the NSW SES issued an Evacuation Order “Lismore South & North CBD You must leave now. Evacuation is in place. Do not delay your evacuation” .

More than twelve hours later at 12:39 on Thursday Flood Warning 1 “moderate flooding along Wilson River” was issued by the BoM to the NSW SES and it is understood that it was received by the Lismore City SES at 14:01, almost 1½ hours after the Bulletin was issued. Additionally SES Flood Bulletin 2 was faxed to the media by the Richmond/Tweed Regional SES at 16:00 but Lismore City SES did not receive this faxed Bulletin until 16:32, more than half an hour later. There is obviously a major communication problem within the SES.

The Independent Review of Brisbane City Council’s Response to the January 2011 Flood page 33 states “One of the most challenging tasks in dealing with a multi-jurisdictional response to a major disaster incident is the effective communication and sharing of information and data between agencies. To help address this issue during the flood a dynamic web-based mapping solution was fielded using web mapping technology shared with all emergency response agencies to provide an up-to-date common operating picture.The web service was published using cloud computing technologies..... The system is scalable and allowed for LDCC operations and for significant growing use by the public. Flood CoP (Flood Community of Practice) proved to be a vital tool in disseminating information, and coordinating and publishing flood response efforts and progress.....”

In order to improve their communication with the community, Lismore City Council is establishing a Web Disaster Dashboard similar to the Logan City Council. This website provides useful information in preparation for, and during, a disaster event within the catchment. Current information is available on flood mapping, river heights, emergency numbers, weather warnings, road hazards, power outages, evacuation centres, plus news and social media (See example Appendix 5).

RECOMMENDATION

9.1 That the NSW SES and LCC evaluate the Flood CoP system and / or recently developed technological communication systems that operate in the cloud and enable all agencies to be connected within the control room and back to their own organisations and the public for speedy transmission of information

10 SES FLOOD BULLETINS

Whilst no flood warning information was being issued from the BoM from 07:40 through to 11:00 Thursday March 30, the Lismore City SES Facebook page issued two Severe Weather warnings, a general warning and a Sandbag Post.

In the hours whilst the river is rising it is critical to keep the community informed on a regular basis at least hourly. Systems using regular radio bulletins for disseminating warnings and intelligence that worked perfectly well in the past to minimise personal and financial losses to flood affected communities, appear to have been replaced with Social Media that was obviously ineffective.

Flood Warning 1 was issued by the BoM on March 30 at 12:39 and appeared on the Lismore City SES Facebook page at 12:45 as a Moderate Flood warning but the Regional SES Bulletin was not broadcast on radio until 13:51.

Amongst a lot of detailed, badly prepared, vague expressions and imprecise timings SES Flood Bulletin 2 at 4.00 pm mentioned the anticipated river height of 11 metres at Lismore but did not mention the vital information that at 11 metres the levee would be overtopped and water would start entering the CBD, and more importantly did not mention that 11 metres was not necessarily the peak. The BoM require that Flood Warnings “provide a predicted flood level and the time at which a River will reach that level”. This was not done.

SES Flood Bulletin 2 was 2 ½ pages in length and radio staff were being asked to read it “verbatim and repeat it periodically”. It contained a lot of information that, from a local perspective, was absolutely unnecessary and not what the local community, and especially the CBD businesses, needed to hear at that time. Four hours later at 8.00 pm

SES Flood Bulletin 3 gave information that obviously related to the Wilsons River but instead named our local river as the Tweed.

In relation to the Flood Bulletins too much was expected of radio staff who do a great job. One radio announcer is reported to have remained at his station for over 15 hours in order to provide information to the community, but in that time only three radio SES Flood Bulletins were issued at 12.38pm, 4.00 pm and 8.00pm, the crucial period whilst the river continued to rise and the community needed information.

At the CBD Forum a representative of the Canegrowers Association reported that farmers down the river had not been provided with any relevant local information and the floodwaters were upon them before they had time to take appropriate action. As a result there was considerable, and in some cases, devastating loss of livestock and equipment.

Perhaps the SES should go back to the system of earlier years when Regional staff actually read the information on air. A special soundproof broadcast booth was built in the Regional SES HQ building at Goonellabah for this express purpose and the community may wonder why this perfectly effective system has been discarded.

The move to use Social Media (SMS, Facebook, Twitter) might be useful particularly to the younger generation. But the community has been served perfectly well over many years by regular broadcasts over commercial and ABC Radio. Additionally, should phone lines and electricity be disconnected, battery operated radios can still keep the community informed.

Regular Radio bulletins should contain current key gauge heights and up to date road information relating to those roads radiating from Lismore and other major towns in the Region. Together with this information radio bulletins give important messages to keep the community informed as to any developing problems in their area.

RECOMMENDATIONS

10.1 That from the time that the BoM Flood Warning is issued the catchment community be directed to listen to ABC and Commercial radio broadcasts for SES FLOOD BULLETINS which will take place hourly following the news

10.2 That clear and concise Bulletins containing verified and accurate Lismore City SES intelligence be broadcast on the hour after the news, and every hour to keep the community informed of the developing flood threats and timing of critical events such as when the water would overtop the Levee and enter the CBD and the predicted river peak when it is calculated.

10.3 That hourly Flood Bulletins be sent through all TV and multi media channels such as Twitter, Facebook, SMS, and SES, RMS, BoM and LCC websites.

11 ROAD BULLETINS

Road information is also critical for school buses and families that work in and around Lismore to ensure their safety. The claim that SES have performed a significant number of rescues from vehicles entering flooded roads would seem to indicate that the current system requiring travellers to visit Local Government websites to glean road info is seriously flawed. Roads here traverse Shire boundaries requiring drivers to visit more than one site. Listening to a Radio broadcast while driving might help reduce the number of SES rescues and potential road accidents whilst trying to operate a mobile phone.

RECOMMENDATION

11.1 That an RMS road information summary be included in a regular radio broadcast particularly whilst the river is rising to peak level

12 ROCKY CREEK DAM AMBER ALERT

For residents of Keerrong Valley floor and other nearby areas the sudden announcement that Rocky Creek Dam was on Amber Alert and was “holding for now” was alarming. Residents reported that there had been no prior education as to what an Amber Alert meant to those below the dam and there was no contact number to find out what was happening.

It is evident that prior education and clearer information for downstream and North and South Lismore residents as to safety from the dam and likely danger is required from Rous Water.

RECOMMENDATIONS

12.1 That an education program for affected residents below the dam be carried out as soon as possible.

12.2 That consultation with residents as to the appropriate wording of White, Amber and Red Alerts including a telephone contact number be undertaken and agreed

13 EVACUATION ORDER

It is evident that lack of local knowledge and poor management on the part of those NSW & Regional SES staff issuing warnings and orders contributed significantly to the magnitude of the losses suffered.

Throughout this critical decision making phase the failure of Regional and NSW SES Headquarter staff to recognise, appreciate and include the extensive local experience and knowledge within the Lismore City SES shows a degree of arrogance and is a serious management issue. Making critical decisions with insufficient local knowledge has been shown to have a very detrimental outcome for the local community.

Worse still due to the resultant level of destruction there has been considerable anger, criticism, derision and in some cases personal attacks levelled at the local Lismore City volunteers resulting in a lack of confidence and distrust of the SES organisation as a whole. This is grossly unfair to the local Lismore City volunteers when the loss of stock and equipment was the direct result of decisions made by senior salaried Regional and NSW SES staff and does not augur well for the response of the community to future SES directives. This should be of concern to the NSW SES Executive.

There seemed to be considerable confusion in the issuing of multiple Evacuation Orders and no evidence of local input. **At 23:21 on Wednesday March 29 the NSW SES Facebook page issued an Evacuation Order** which read:

**** Evacuation Order****

Lismore South & North, Lismore CBD, Chinderah, Kingscliff, Fingal Head and Bilambil. You Must leave NOW. Evacuation Order is in place Do not delay your evacuation. Roads will be congested and may slow your travel See more” (Appendix 6)

The question has to be asked “Who authorised this Lismore Evacuation Order at this time and where did their information come from?”

The Order was issued several hours before the heavy flood rain had even started falling in the Richmond catchment, almost 12 hours before the river in Lismore started to rise and 28 hours before the levee overtopped. It would seem that whoever gave the order thought that Lismore South & North, Lismore CBD was part of the Tweed catchment. Where was the Lismore local or Tweed local input??

From the issuing of the Wednesday night Evacuation Order up to 12:39 on Thursday afternoon flood information in the lead up to the first Moderate flood prediction was limited to two Severe Weather warnings, a General Warning and Sandbag Post on the Lismore City SES Facebook site. There was no real indication to the community of the severity of the situation.

On Thursday March 30 the critical timeframe of the major flood warning was as follows:

15:53 BoM Major Flood Warning
16:21 NSW SES Evacuation Order given

That’s just 28 minutes!!

The 16:21 Evacuation Order was issued on the NSW SES Facebook page. This was almost 9 hours before the Lismore City SES Intelligence Team predicted the levee overtopping and over 10 hours before the actual topping plenty of time for the businesses in the CBD to pack up and evacuate safely.

To add to the confusion just 20 minutes later at 16:41 the Mayor, on his Facebook page, issued a flood post that stated "Major Flooding in Lismore TONIGHT! Possibly 11m during the night which will not go over the levy, but will flood a lot of places around town. Stay safe!"

Then at 17:38 an SMS Message was received by the Lismore community from NSW SES Headquarters that read:

“SES FLOOD EVACUATION ORDER. People in low lying parts of North, South & CBD of Lismore must evacuate immediately”.

This SMS was repeated at 01:35 hrs on Friday 31 March 2017.

It is very concerning that in the CBD Forum response to the question 3 *“Why was an evacuation order given? What are the trigger points?”* the NSW SES Response was: “As outlined in the Lismore Flood Emergency Sub Plan, the principle trigger for issuing an Evacuation Order for identified areas in North and South Lismore, and the CBD, is when the BoM predicts that the Wilsons River will exceed 10.6 metres on the Rowing Club Gauge at Browns Creek Spillway”.

When does local knowledge and common sense come into the equation?

It is inconceivable to have an Evacuation trigger based on a prediction that is not likely to occur for in this case almost 11 hours and in effect was so detrimental to the local community. This is classical bureaucratic management based on a documented protocol which is totally removed from the reality of community knowledge and requirements.

Almost two hours after the 16:21 Evacuation Order was issued at 18:08 the BOM site recorded the Wilsons River height of only 6.4m having risen at 0.43m in the previous hour. This height was 4.2m BELOW the overtopping height of the levee and the average rate of rise during this period was 0.5m per hour. This ensured many hours were available to pack up in safety the levee being constructed specifically to give business owners additional time to pack up before the water entered the CBD . It actually overtopped at 04:03 on Friday morning.

There has been anger expressed, and also many vocal complaints about the timing of the Evacuation Order and the manner in which it was delivered in some instances. As demonstrated above, given that there was plenty of time before the levee overtopped, the evacuation orders were given far too early.

The inappropriately officious manner in which the Evacuation Order was verbally delivered to some business owners who were packing up was reported at the CBD Public Forum in May 12. Several business owners, who had been through many major floods safely, continued packing knowing they had many hours to get the job done and leave the CBD safely well before the flood waters entered their premises. Threatening directives given to people trying to save their stock and property shows

a complete lack of understanding of the situation these people were in. An Evacuation event requires the timing to be practical as well as safe, with empathy shown to those being affected.

One business in Carrington Street reported that starting at about 6pm there were automated phone calls to the business which said 'There is an Evacuation Order in place in the Lismore CBD. You are required to leave now'. These calls came roughly every ¼ of an hour until the owners finally left their business premises at 7.30 p.m, and after the second, they simply ignored them. Had they left when the first call came, the damages incurred due to stock loss would have been substantially higher. It was fortunate that as a long-standing business, they knew what to do and that the evacuation order was far too early.

It is understood that the key aim of the SES is to reduce risk in emergencies and save lives. However, there has never been a loss of life in the CBD in the multiple major floods that inundated businesses in the CBD in the last 100 years and that fact should be included in any decision making. Additionally, most of the buildings in the CBD have two stories and can accommodate several hundred people in safety at the peak of the flood.

So it was that no lives were lost but very many livelihoods were lost as well as many millions of dollars worth of stock completely destroyed. Some business owners face financial ruin, and there are now many empty shops in the CBD where business owners have just walked away.

For many years there has been an established Flood Warden in South Lismore. This system has worked very well for residents and businesses. Due to the many new residents and businesses that have been established in the years between major floods a CBD and, if possible, a North Lismore Flood Warden system would greatly assist in preparing the businesses to lift their stock as the river is rising.

RECOMMENDATIONS

13.1 That local Lismore City Unit Local Controller or delegate must be involved in the development and approval of the content and wording of Warnings, Evacuation Orders & Emergency Alerts before they can be sent to the Commissioner or his delegate for final approval and dissemination

13.2 That all Richmond Tweed Regional SES personnel on casual or permanent appointment to the Regional Headquarters undergo annual compulsory and specific river catchment training sessions with the Lismore City SES Intelligence team.

13.3 That street wardens be established in the CBD and North Lismore.

13.4 That in the period between the first Flood Warning Bulletin and the Evacuation Order SES CBD street wardens regularly move from business to business giving the owners/managers relevant information regarding predicted river heights and timeframes and the likely water height in their business building.

13.5 That the CBD street wardens continue to patrol the CBD updating the business owners/managers and staff with predicted heights until the Evacuation Order is given

13.6 That the Lismore Flood Emergency Sub Plan changes the principle trigger of “when the BoM predicts that the Wilsons River will exceed 10.6 metres on the Rowing Club Gauge at Browns Creek Spillway” from Evacuation Order to issuing a PRELIMINARY EVACUATION WARNING for identified areas in North and South Lismore, and the CBD

13.7 That the decision to issue an Evacuation Order always be based on a recommendation by the Lismore City SES Local Controller/ Local Incident Controller prior to implementation by the Commissioner or his delegate

13.8 That the Evacuation Order indicate a definitive time to depart premises

13.9 That the Evacuation Order by the Lismore City SES Local Controller be issued at least two hours prior to the predicted overtopping of the levee

14 RESCUE

The Lismore Citizens Group acknowledges the tremendous work done by the SES in providing assistance and carrying out rescues during the March flood. The Forum report states that there were 763 requests in

the Lismore LGA and Lismore City SES attended over 200 flood rescues.

There were complaints, however, from community members who called the SES designated number 132500 for information and assistance and the person who answered the call, presumably in Wollongong, had no idea about the flood or where any of the mentioned streets, towns or villages were. One local resident who requested assistance from rising waters was told a boat would be sent to them from Grafton. Another 132500 caller somehow ended up in the Premier's Office and was kept waiting on the telephone for over 20 minutes whilst an answer to his inquiry was sought from several people only to be told in the end they couldn't assist. In a time of crisis an immediate and informative response is required.

A local businessman who had kayaked into his business in Woodlark Street to evaluate the damage and prepare to clean up as the water receded also reported that he was approached by an out of town SES Rescue boat and crew who asked for street directions in order to carry out a rescue. It was patently obvious they had no idea where they were going and in an emergency the time lost could very well lead to loss of life.

RECOMMENDATIONS

14.1 That requests for assistance are directed to a local telephone number within the Lismore City Council Emergency Call Centre with multiple lines available and local community volunteers trained to answer calls and report requests to the relevant organisation.

14.2 That the local Emergency telephone number appears in a prominent position on all SES Flood Bulletins.

14.3 That during an emergency the SES 132500 number be removed from all Flood Bulletins

14.4 That all LGA requests for assistance be handled by Lismore City SES Unit.

14.5 That prior to leaving the base all SES crews are given very clear instructions on the exact location of the property at which their assistance is required.

15 EVACUATION CENTRE

By late evening on the Thursday of the March flood about 150 evacuees were housed at the Evacuation Centre set up at Southern Cross University (SCU). This was the first night of emergency relocation. It has been reported by a volunteer that there was no warm clothing available for wet, bedraggled people to change into and as the night progressed there was no food available. It had also not been made clear to evacuees that animals were not to be relocated with the families and that was a short term problem.

Fortunately one of the volunteers knew a manager of Aldi and was able to have the store in Goonellabah reopened and a supply of sustainable food and some clothing was made available. Given that the basic elements of victim care is the availability of warm bedding, dry clothing and nourishing food it is amazing that these staples were not available from the outset.

It is evident that in the 10 year timeframe since the last major flood the list of emergency providers is not up to date. The previously documented clothing suppliers were not able to meet the emergency. Fortunately a volunteer was able to get a compassionate friend to reopen Aldi to deal with the emergency. This points to the requirement to update critical resource information.

RECOMMENDATION

15.1 That Richmond Tweed SES in conjunction with the LCC, FACS and other local organisations identify and document emergency resource requirements for evacuees and devise protocols to ensure that the required resource supplies and volunteer organisations are on site and available from the time that the evacuation centre is opened to evacuees.

16 PRE AND POST FLOOD VEHICLE MANAGEMENT

As the flood waters were rising on Thursday afternoon and evening and CBD businesses were trying to pack up, sightseers were clogging the

streets along the levee to see what was happening. This severely hampered businesses trying to save, lift or move plant and stock.

Then as flood waters were receding during Sunday April 2, business owners were anxious to survey the damage and start cleaning up. The best time to clean premises after a flood is as the last of the water is leaving the premises and before the mud has dried. There was some suggestion that due to OH&S issues formal approval to enter the CBD would not be granted by authorities until Wednesday April 8. That would have been an added disaster but thankfully common sense prevailed.

However, as the flood waters receded and business owners returned to their businesses to take stock and clean up they were again hampered by hundreds of sightseers who filled all the streets and footpaths in the CBD. One South Lismore resident who was trying to get to Lismore Base Hospital reported that it took 1½ hours as there was a traffic jam on every street. Another shop keeper in Molesworth Street reported that the traffic was jammed to a standstill on the street and the number of people on the footpath was so deep that it was impossible to move the mud out of the premises into the gutter.

In the past, as the flood waters receded police were positioned to control vehicular traffic on all the major entry points into the CBD such as Bruxner Highway at Bunnings, Ballina St, Conway Street, Keen and Leycester St. Only those people who were directly involved with businesses or were volunteering to assist with the clean up were allowed to enter the area. Each person and each vehicle was issued with a sticker which enabled them to move freely within the CBD. The system worked well.

As the waters recede parking on high ground in Lismore is at a premium because residents and car retail yards take up most of the available spaces before the flood. Volunteer helpers and staff who do not need their vehicles in the CBD could be ferried from checkpoints in Ballina Street or Leycester Street or other designated stops in a BUS that continues to complete a circuit in and out of the CBD on a half hour turnaround. This would enable staff and volunteers to move freely in and out of the CBD as the day progresses, at the same time minimizing the traffic issue in the CBD.

It is entirely feasible for the SES to hire several suitable buses that could undertake this task. Assembly areas to board these buses will need to be chosen carefully and broadcast over radio stations and by multi media.

RECOMMENDATIONS

16.1 That a vehicle and volunteer management system is developed to ensure that only those with legitimate reasons are allowed to enter the CBD until such time as the area is operational.

16.2 That Richmond Tweed SES develop a plan to hire sufficient buses to ferry staff and volunteer helpers from one or more selected locations out of the remaining floodwaters to the CBD and other selected areas based on advice from the Lismore City Local Controller.

17 RECOVERY

The Lismore City and Richmond Tweed SES, Lismore City Council, other agencies and local and out of town volunteers who provided assistance during the recovery period deserve the highest praise. The speed and manner in which the clean up occurred was astounding, and some small businesses in the CBD, who had packed up and emptied their premises as the river rose, were back in business two days after the water receded.

Full marks to the Lismore City Council staff for the efficient and systematic organisation of removal of the destroyed house furniture and stock from businesses that so quickly accumulated out onto the street. The fact that all the rubbish had been removed and normal garbage services resumed throughout the town within 14 days is a credit to all those who were involved.

18 VOLUNTARY ASSISTANCE

In past floods as flood waters were rising, calls for assistance to help lift furniture and stock in homes and businesses were made over the radio. These days as radio stations will only make announcements that have come from a formally recognised source, this avenue no longer exists.

A woman who is in her late 70s and lives alone phoned the SES and asked for assistance to help lift her washing machine and

understandably the response was “we don’t do that”. There was no other contact point for assistance. It would seem that a pre flood volunteer system similar to the post flood system set up by the Lismore Helping Hands group also needs to be considered.

As the flood waters receded three young women recognised that a lot of assistance would be required in the clean-up phase so they established a community hub called Lismore Helping Hands using Facebook initially, then Twitter and a Lismore.recovers website that connected volunteers with people in need. Using the Railway station building in South Lismore as a base it was a tremendous success due to the tireless work of many individuals, other local service organisations and community groups.

As the number of volunteers grew to over 2000, Lismore Helping Hands was supported by Lismore City Council, Lismore Chamber of Commerce and Industry and Southern Cross University.

A business in Carrington Street said the provision of food and drinks, and the offers to help them clean up from volunteer organisations locating themselves in the CBD were inspiring. Almost every hour, young people walked around the streets offering bottles of water, sausage sandwiches and cakes, which were much appreciated.

Hearty congratulations to all the volunteers and organisations ... and thank you for your initiative, compassion and hard work.

RECOMMENDATIONS

18.1 That a pre flood volunteer assistance system similar to Lismore Helping Hands be established by LCC to commence operating at the time that the first Flood Warning is issued.

18.2 That in the event of a major flood a formalised system for volunteers such as the very successful Lismore Helping Hands be established under the umbrella of LCC as part of the Recovery phase.

18.3 That as recommended in 16.2 the bus service for volunteers come under Lismore Helping Hands umbrella

19 SES PUBLIC FORUMS

The SES Public Forums held for North and South Lismore residents and businesses and the CBD and East Lismore businesses and residents on May 12 and 13, and Feedback to North and South on June 27 were extremely disappointing. The community was shocked at the level of devastation, and residents and businesses were looking for answers as to why so many aspects of the flood management that had previously worked so well were not implemented or had failed.

The fact that Senior salaried personnel from the SES and Police were present at the Forums and refused to answer questions was an insult to the many business and community members who were exhausted from cleaning up and trying to re-establish their home and business lives and had turned up as requested by the SES. Additionally, it has been reported that the Lismore City SES representatives who were present and carrying the brunt of the blame were told by senior SES personnel that they were not allowed to speak - they were effectively gagged.

The Forum Report sent out on June 23 2017 states:

“The aim of NSW SES Post Event Community Forums is to listen to the community to enable the SES:

- to build an accurate picture of each community’s experiences and perspectives during the recent flood events in order to better serve their needs, and
- to discuss ways that we can work with communities, to continue to improve their preparation, response and recovery to disaster events.

The forums are a necessary first step in a process to engage the community and support strategies that work towards the common goal of building resilience”.

The use of a forum facilitator to conduct the forums and write the follow-up reports was not appreciated and has not raised any confidence in the NSW SES flood management process. The bureaucratically worded Feedback from Lismore CBD and East Lismore Post Flood Forum left a lot to be desired and many questions from the community remain unanswered.

Notification of the postponement of the Forum “workshop” until after the several reviews currently in progress have been finalised has not progressed the matter at all. From the North and South Lismore communities and businesses the Forum and the Feedback produced little of value. It is now four months since the flood and the CBD community has still not had the opportunity to question the NSW SES decisions that led to the most disastrous outcome this town has ever experienced.

To date there has been no opportunity to discuss with Senior State and Regional SES Executive the key issues surrounding the details of the Flood Management, Flood Warning System, Flood Bulletins and Evacuation Order. This once again demonstrates the decision makers’ lack of local knowledge of the needs and requirements of the suffering local community at that time. Additionally, the wording of the Forum reports has been largely demonstrated to be for SES self protection, or perceived as another ‘cover-up’.

RECOMMENDATION

19.1 That the SES Commissioner and other Senior SES Executive members come to Lismore and attend a public forum to discuss with the local community many aspects of the March flood that the community members would like improved.

20 FUTURE REQUIREMENTS

20.1 PREPARATION

At an appropriate time, possibly late this year and before the next flood occurs a very well designed and presented public information program should be embarked upon.

Preparing the likely flood-affected communities requires more than issuing State wide messages like “Don’t ride, swim or drive in floodwaters”. Education and warnings need to be specific to the threats facing each flood affected community, not just a one size fits all approach. The co-operation of other organisations is guaranteed under the SERM Act and the AIIMS program. It requires the SES to interpret who will be affected and how they should react to minimise losses.

Awareness and education is not something that will happen overnight, but community confidence will build as the SES demonstrates that the decision makers have effective knowledge and experience.

RECOMMENDATION

20.1 That a Public Education Program be designed and implemented within the next six months

20.2 VOLUNTEERS

Volunteers with extensive flood experience need to be recruited to bolster the Intelligence Sections at both Lismore City SES as well as Richmond/Tweed SES Region Headquarters. These volunteers will become the heart of the SES Organisation and provide vital detail to the Incident Controllers at both levels when required to make important decisions that affect the community.

RECOMMENDATION

20.2 That additional volunteers with extensive experience be recruited and trained to assist decision making at both the Lismore City and Richmond Tweed SES Headquarters

20.3 RIVER CATCHMENT LGAs

As much as this review is focussed on the March 31 flood in Lismore, equally important is the potential disaster that could ensue if the Upper Richmond River and Mid Richmond Rivers were also to flood at or around the same time.

In the past floods have covered the major populated areas of Kyogle LGA, Casino, Coraki, Woodburn, Broadwater (all part of Richmond River Shire) and the total flood period can be as long as two weeks. A local contact telephone number is required for local assistance and the Mid-Richmond villages of Woodburn or Coraki, being the strongest units in the Shire, may need to address this important issue and recruit additional volunteers to enable it to happen. Additionally, as flood memory in these areas may not exist Flood Wardens should be trained and appointed.

A planned approach to Medical Evacuations and re-supply to and from remote areas, food essentials to major towns and fodder operations is required. The need for a planned approach particularly for fodder

operations cannot be stressed too highly, as is the need for local knowledge because of the large area covered by floodwaters.

This is a task for the Local Controllers, however the Richmond River Shire and Kyogle Shire, because of the lack of volunteer numbers and Unit strength, will need support. Ideally they should be encouraged to recruit local experienced residents rather than rely on FIFO resources, to benefit from their local knowledge.

It is understood that there is an arrangement for Lismore City SES Local Controller to support /assist these areas, but this should only be seen as a stopgap measure when a major flood operation occurs.

RECOMMENDATIONS

20.3.1 That the Kyogle, Casino and Lismore Local Controllers undertake to recruit more experienced Volunteers targeted to assist in operational tasks such as Fodder Operations

20.3.2 That Plans be prepared involving the Dept of Agriculture, Local Land Services, Stock and Station Agents, that will enable an effective Fodder Operation to be mounted when required.

20.3.3 That Flood wardens be appointed in each of the Kyogle, Casino, Coraki, Woodburn and Broadwater localities

20.3.4 That the strength of the Kyogle and Richmond River Shire Units be addressed as a matter of urgency.

21 FLOOD MITIGATION

Over the decades there have been many discussions and flood reviews regarding the options for mitigating the effect of floods in the CBD. The construction of the levee in 2005 to protect the CBD from minor flooding was viewed by many as the best and most affordable option at the time.

Given the devastating outcome of the March flood, the time has once again arisen to address a number of issues relating to Lismore's vulnerability.

1. There is an urgent need to properly maintain structures in place to allow overland flow. The removal of Tuncester Rd rail line needs to be considered.
2. There is urgent need to breach rail embankments where those structures are detrimental to the flow of flood waters.
3. There is an urgent need to establish a catchment model to allow various scenarios to be tested with rigour.

Technical expertise is now available to provide answers to serious questions.

Statistically we may not have another 10 years to the next overtopping and the very future of the City is at stake.

A CONCEPT TO ALLEVIATE THE IMPACT OF FLOODING IN LISMORE

During the 1980s Dr Florian Volpato, an Italian immigrant and Lismore businessman, brought a small team of Italian engineers to Lismore to devise a solution to the regular flooding of the town. Their advice was quite simple: bypass the town.

Is this possible? Physically it is certainly possible.

Of the 1400 km² that make up the catchment of the Wilson River at Lismore, 900km² make up Leycester Creek. It is this catchment that deserves closer scrutiny, and put simply, some flood flow could be diverted to bypass Lismore City.

The challenge would be to do it in a non destructive manner, with assessed benefits that exceed the costs, and do not negatively impact on downstream properties.

Currently, most of the flow in this stream is confined at the double bridges and disused rail embankment to a choke point probably less than 100 metres in width. The recently measured differential in flood height upstream of South Lismore and that at Loftville was 4.30 metres.

This huge energy potential reveals how much of that is currently being squandered in the obstruction of flow where Leycester Creek meets the rail embankment, the conflict at the junction with Wilson's Creek, and even the detrimental effects of the levee wall.

Is there another way to using this energy potential to drive a scheme aimed at mitigating the flood impact on the City?

If a “dynamic basin” was created by tapping the Creek at the double oxbow above South Lismore with an invert level of possibly RL 7.50 to RL 8.00. the dynamic energy in the flood flow above this level could be used leading it to a point where the options of release are constrained by the Airport and the Treatment Works in the vicinity of Three Chain Road. (See Appendix 7 & 8)

From this point a diversion channel parallel to the airport boundary at a sufficient grade to draw flow out of the basin in a higher velocity non destructive manner to the point where the constraint to flow opens up, and allows it to dissipate across the flood plain. Here it finds its way into the river, in a manner where the resultant flow is directed or trained to be parallel to the Wilsons River flow.

This “dynamic basin” outflow is an “easier” route for the flood flow above this level than the alternate route of fighting its way through South Lismore.

It is believed there is computer modelling in place which produces a reasonable match to measured data. It would seem its use at a reasonable cost, could permit this concept to be examined and assessed, including its impact on the River downstream of Loftville.

The earthworks involved whilst significant, could be used to provide levees protecting most of South Lismore, and a base to rationalise a crossing point to provide flood free access to Caniaba Road, Three Chain Road, and Bentley Road.

RECOMMENDATIONS

21.1 That Lismore City Council, Rous Water, and the Richmond River County Council work together to apply for grant funding to evaluate additional flood mitigation in the Lismore Floodplain.

21.2 That the diversion proposal as detailed be modelled by the experienced firm BMT WBM, which has a proven record in addressing today's engineering, environmental and floodplain issues.

22 CONCLUSION

Over the past month members of the Review group have spoken to many residents and business owners and collected and verified information in order to produce a credible document. Recommendations have been made from a citizen's point of view covering a wide range of areas, each borne out of the positive and negative ramifications of decisions made, information communicated, services provided and deeds performed during the flood.

The evidence presented shows:

1. The BoM update from Floodwatch to Minor Flood Warning was far too late as was the Major Flood Warning.
2. The SES Flood Bulletins were badly worded and misleading.
3. The CBD Evacuation Order was issued many hours too early and associated door knocks were badly handled.
4. There were major ramifications in bringing in SES personnel from out of area regions to act as Incident Controllers.
5. The Public Forums did not answer the community questions of what went wrong.

Lismore City Council also has a responsibility to inform residents and businesses on flood risks and provide information and strategies that will assist them to be prepared in the event of a flood.

The section in the NSW SES Independent Review Page 44 titled Region Response (Appendix 9) describes a chaotic staffing regime at the SES Regional Headquarters that reads more like a TV comedy script from Yes Minister or Utopia than a high quality emergency management team that the community relies on and expects. Unfortunately the ramifications for the community were disastrous and for many their livelihoods were destroyed.

Arrogance, ignorance, ego, power struggles, confusion and uncertainty have no place in emergency management. A bureaucracy containing career-oriented personnel making decisions from 600 kms away with no local knowledge will never replace the locally managed, competent teams who previously operated with few resources and did a superb job. This is a critical issue that must be resolved as a matter of urgency.

It is recognised that the Commissioner commenced in the position only 5 weeks before the Lismore flood and this was his first major emergency within the NSW SES bureaucracy. It was a devastating example of what not to do but also a wonderful opportunity to bring about considerable attitudinal and organisational change.

It is hoped that the Lismore Citizens' Review is accepted in the spirit in which it has been produced, with the recommendations seriously considered by NSW SES, BoM, LCC and other relevant organisations. Many have statewide application. It is anticipated that it will also be included in the Charrette to be organised by Lismore City Council.

As stated in the Foreword, our sole aim was to examine major aspects of the management of the flood from the community point of view, and endeavour to recommend constructive structural and administrative changes that would ensure that the avoidable devastation that occurred during Lismore's March 2017 flood would never happen again.

The community response to future directives from the SES will depend on it.

APPENDIX I

LIST OF RECOMMENDATIONS

6 AIIMS STRUCTURE FOR EMERGENCY MANAGEMENT

6.1 That NSW SES use of the AIIMS Incident Control Structure clearly shows the position of volunteer SES and RFS and other volunteer units within the structure.

6.2 That NSW SES develop clear decision making responsibilities that ensure that the local controller's position cannot be challenged or usurped

6.3 That Section 17 (3) of the SERM Act (1989) be reworded for greater clarity

7 BUREAU OF METEOROLOGY

7.1 That the NSW SES builds a stronger relationship with the BoM that benefits and includes Regional and Local SES Units

7.2 That from the issuing of a Flood Watch BoM modelling is updated more frequently to immediately and accurately reflect what is happening on the ground in the catchment

7.3 That as soon as a minor flood becomes a probability an official PRELIMINARY FLOOD WARNING be issued by the BoM.

7.4 That the BoM immediately and formally reports the PRELIMINARY FLOOD WARNING to the NSW SES Headquarters, Richmond Tweed Regional SES , Lismore City SES and Lismore City Council

7.5 That from the issuing of a PRELIMINARY FLOOD WARNING BULLETIN consultation be established between, the BoM, NSW SES Headquarters, Richmond Tweed SES, Lismore City SES, Lismore City Council (LCC) and Police

7.6 That an SES PRELIMINARY FLOOD WARNING BULLETIN then be immediately issued to ABC North Coast, Radio 2LM, commercial and community radio stations, TV stations, Facebook, Twitter, SMS etc. to inform the community.

7.7 That the local Lismore City SES be required to independently monitor rainfall and stream heights and provide appropriate information, advice and warnings to relevant bodies e.g. Richmond Tweed Headquarters, NSW SES Headquarters, BoM, LCC, Police etc

7.8 That from the issue of the first warning, for the duration of the flood event, hourly updates on weather conditions and forecasts, flood heights (actual, rate of change, predicted heights as appropriate), warnings, etc. be provided to media outlets for broadcast

8 EMERGENCY OPERATIONS MANAGEMENT

8.1 That Lismore City SES have ongoing input and genuine consultation with all agencies throughout the flood event

8.2 That a Regional delegate be present at the Lismore City Unit during an emergency operation

8.3 That there is a clear delineation of roles and responsibilities of each operational area between, local, regional and state agencies

8.4 That during an emergency the Lismore City SES Unit has sole responsibility for decisions and operations within the Lismore Local Government Area

8.5 That the Regional representative at the Lismore City SES Unit be directly connected to Regional Headquarters by computer and telephone for fast distribution of information

8.6 That Richmond Tweed SES be responsible for Logistics, Support and Coordination

8.7 That the LEOCON operates from Richmond Tweed SES Operations Room along with delegates from RFS, Fire & Rescue, Ambulance, Welfare, Lismore City Council and other designated organisations as documented

8.8 That each delegate is connected to their own organisation by telephone and computer

8.9 That there is no delay in approval and dissemination of media Bulletins and Lismore City SES Evacuation Orders once they have been agreed.

9 COMMUNICATION SYSTEMS

9.1 That the NSW SES and LCC evaluate the Flood CoP system and / or recently developed technological communication systems that operate in the cloud and enable all agencies to be connected within the control room and back to their own organisations and the public for speedy transmission of information

10 SES FLOOD BULLETINS

10.1 That from the time that the BoM Flood Warning is issued the catchment community be directed to listen to ABC and Commercial radio broadcasts for SES FLOOD BULLETINS which will take place hourly following the news

10.2 That clear and concise Bulletins containing verified and accurate Lismore City SES intelligence be broadcast on the hour after the news, and every hour to keep the community informed of the developing flood threats and timing of critical events such as when the water would overtop the Levee and enter the CBD and the predicted river peak when it is calculated.

10.3 That hourly Flood Bulletins be sent through all TV and multi media channels such as Twitter, Facebook, SMS, and SES, RMS, BoM and LCC websites.

11 ROAD BULLETIN

11.1 That an RMS road information summary be included in a regular radio broadcast particularly whilst the river is rising to peak level

12 ROCKY CREEK DAM AMBER ALERT

12.1 That an education program for affected residents below the dam be carried out as soon as possible.

12.2 That consultation with residents as to the appropriate wording of White, Amber and Red Alerts including a telephone contact number be undertaken and agreed

13 EVACUATION ORDER

13.1 That local Lismore City Unit Local Controller or delegate must be involved in the development and approval of the content and wording of Warnings, Evacuation Orders & Emergency Alerts before they can be sent to the Commissioner or his delegate for final approval and dissemination

13.2 That all Richmond Tweed Regional SES personnel on casual or permanent appointment to the Regional Headquarters undergo annual compulsory and specific river catchment training sessions with the Lismore City SES Intelligence team.

13.3 That street wardens be established in the CBD and North Lismore.

13.4 That in the period between the first Flood Warning Bulletin and the Evacuation Order SES CBD street wardens regularly move from business to business giving the owners/managers relevant information regarding predicted river heights and timeframes and the likely water height in their business building.

13.5 That the CBD street wardens continue to patrol the CBD updating the business owners/managers and staff with predicted heights until the Evacuation Order is given

13.6 That the Lismore Flood Emergency Sub Plan changes the principle trigger of “when the BoM predicts that the Wilsons River will exceed 10.6 metres on the Rowing Club Gauge at Browns Creek Spillway” from Evacuation Order to issuing a PRELIMINARY EVACUATION WARNING for identified areas in North and South Lismore, and the CBD

13.7 That the decision to issue an Evacuation Order always be based on a recommendation by the Lismore City SES Local Controller/ Local Incident Controller prior to implementation by the Commissioner or his delegate

13.8 That the Evacuation Order indicate a definitive time to depart premises

13.9 That the Evacuation Order by the Lismore City SES Local Controller be issued at least two hours prior to the predicted overtopping of the levee

14 RESCUE

14.1 That requests for assistance are directed to a local telephone number within the Lismore City Council Emergency Call Centre with multiple lines available and local community volunteers trained to answer calls and report requests to the relevant organisation.

14.2 The local Emergency telephone number is to appear in a prominent position on all SES Flood Bulletins.

14.3 That during an emergency the SES132500 be removed from all Flood Bulletins

14.4 That all LGA requests for assistance be handled by Lismore City SES Unit.

14.5 That prior to leaving the base all SES crews are given very clear instructions on the exact location of the property at which their assistance is required.

15 EVACUATION CENTRE

15.1 That Richmond Tweed SES in conjunction with the LCC and other local organisations identify and document emergency resource requirements for evacuees and devise protocols to ensure that the required resource supplies and volunteer organisations are on site and available from the time that the evacuation centre is opened to evacuees

16 PRE AND POST FLOOD VEHICLE MANAGEMENT

16.1 That a vehicle and volunteer management system is developed to ensure that only those with legitimate reasons are allowed to enter the CBD until such time as the area is operational.

16.2 That Richmond Tweed SES develop a plan to hire sufficient buses to ferry staff and volunteer helpers from one or more selected locations out of the remaining floodwaters to the CBD and other selected areas based on advice from the Lismore City Local Controller.

18 RECOVERY - VOLUNTARY ASSISTANCE

18.1 That a pre flood volunteer assistance system similar to Lismore Helping Hands be established by LCC to commence operating at the time that the first Flood Warning is issued.

18.2 That in the event of a major flood a formalised system for volunteers such as the very successful Lismore Helping Hands be established under the umbrella of LCC as part of the Recovery phase.

18.3 That as recommended in 16.2 the bus service for volunteers come under Lismore Helping Hands umbrella

19 SES PUBLIC FORUMS

19.1 That the SES Commissioner and other Senior SES Executive members come to Lismore and attend a public forum to discuss with the local community many aspects of the March flood that the community members would like improved.

20 FUTURE REQUIREMENTS

20.1 PREPARATION

20.1 That a Public Education Program be designed and implemented within the next six months

20.2 VOLUNTEERS

20.2 That additional volunteers with extensive experience be recruited and trained to assist decision making at both the Lismore City and Richmond Tweed SES Headquarters

20.3 RIVER CATCHMENT LGAs

20.3.1 That the Kyogle, Casino and Lismore Local Controllers undertake to recruit more experienced Volunteers targeted to assist in operational tasks such as Fodder Operations

20.3.2 That Plans be prepared involving the Dept of Agriculture, Local Land Services, Stock and Station Agents, that will enable an effective Fodder Operation to be mounted when required.

20.3.3 That Flood wardens be appointed in each of the Kyogle, Casino, Coraki, Woodburn and Broadwater localities

20.3.4 That the strength of the Kyogle and Richmond River Shire Units be addressed as a matter of urgency.

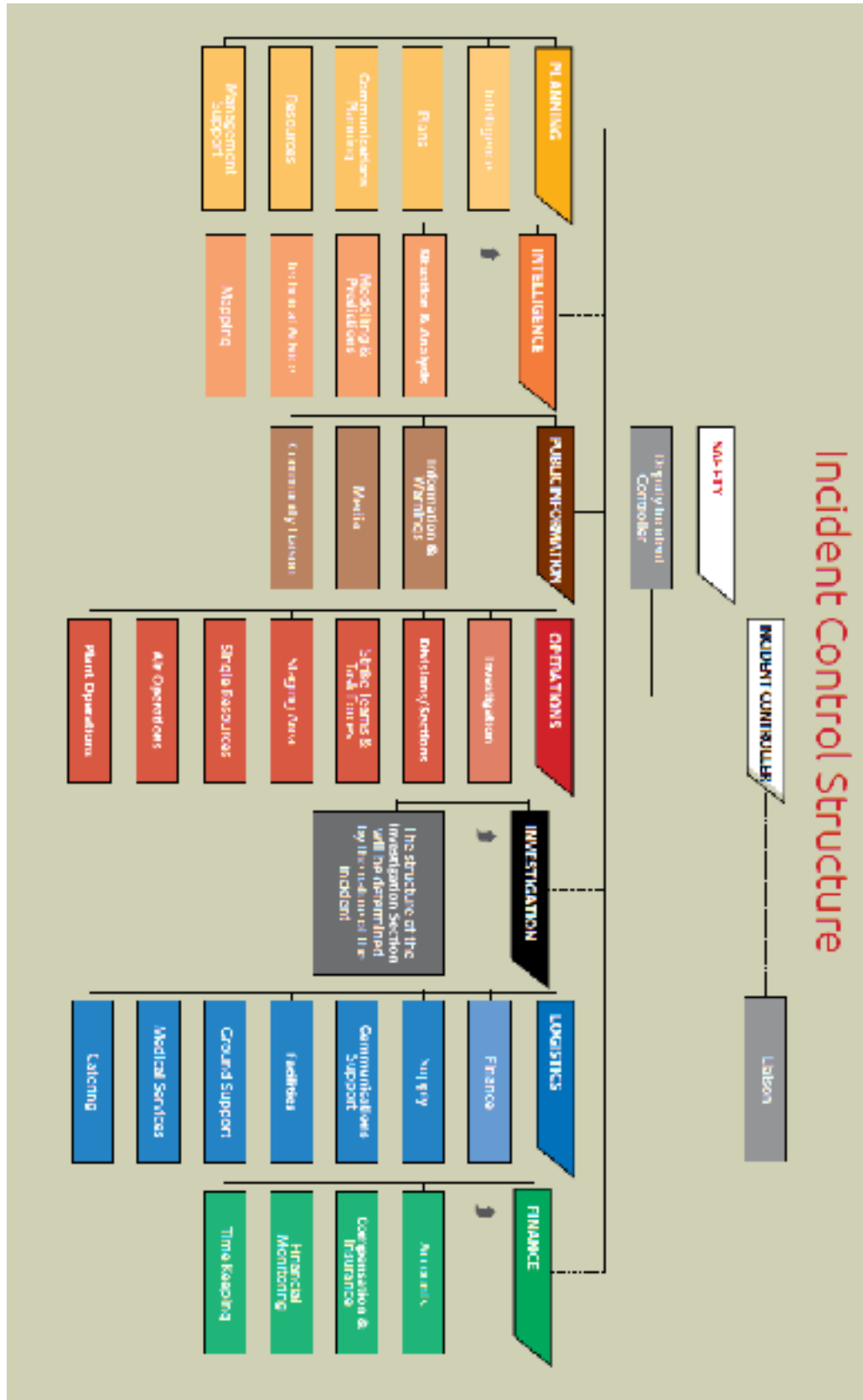
21 FLOOD MITIGATION

21.1 That Lismore City Council, Rous Water, and the Richmond River County Council work together to apply for grant funding to evaluate additional flood mitigation in the Lismore Floodplain.

21.2 That the diversion proposal as detailed be modelled by the experienced firm BMT WBM, which has a proven record in addressing today's engineering, environmental and floodplain issues.

APPENDIX 2

AIIMS Incident Control Structure



APPENDIX 3

A Flood Story

On the Thursday March 30 as the river started to rise and it was evident that there was going to be a flood throughout the day a trucking business based in South Lismore loaned their trucks and drivers at no cost to various businesses to enable them to remove their stock and equipment out of flood waters to safety.

As evening approached they returned to their own business and loaded up three trucks with produce and equipment and proceeded to drive the trucks out of their South Lismore premises to higher ground.

By this time the river was rising quickly and water was already across the road in South Lismore blocking the way to the hill at Caniaba. It was also approaching the road at the roundabout at the entrance to the Ballina Street bridge. Continuing on in order to get out of town through the CBD route to higher ground they drove their three trucks onto the Ballina Street bridge only to find that the road on the Molesworth St side was blocked off with a barrier, so having no alternative the drivers parked the three trucks on the bridge as they had nowhere else to go.

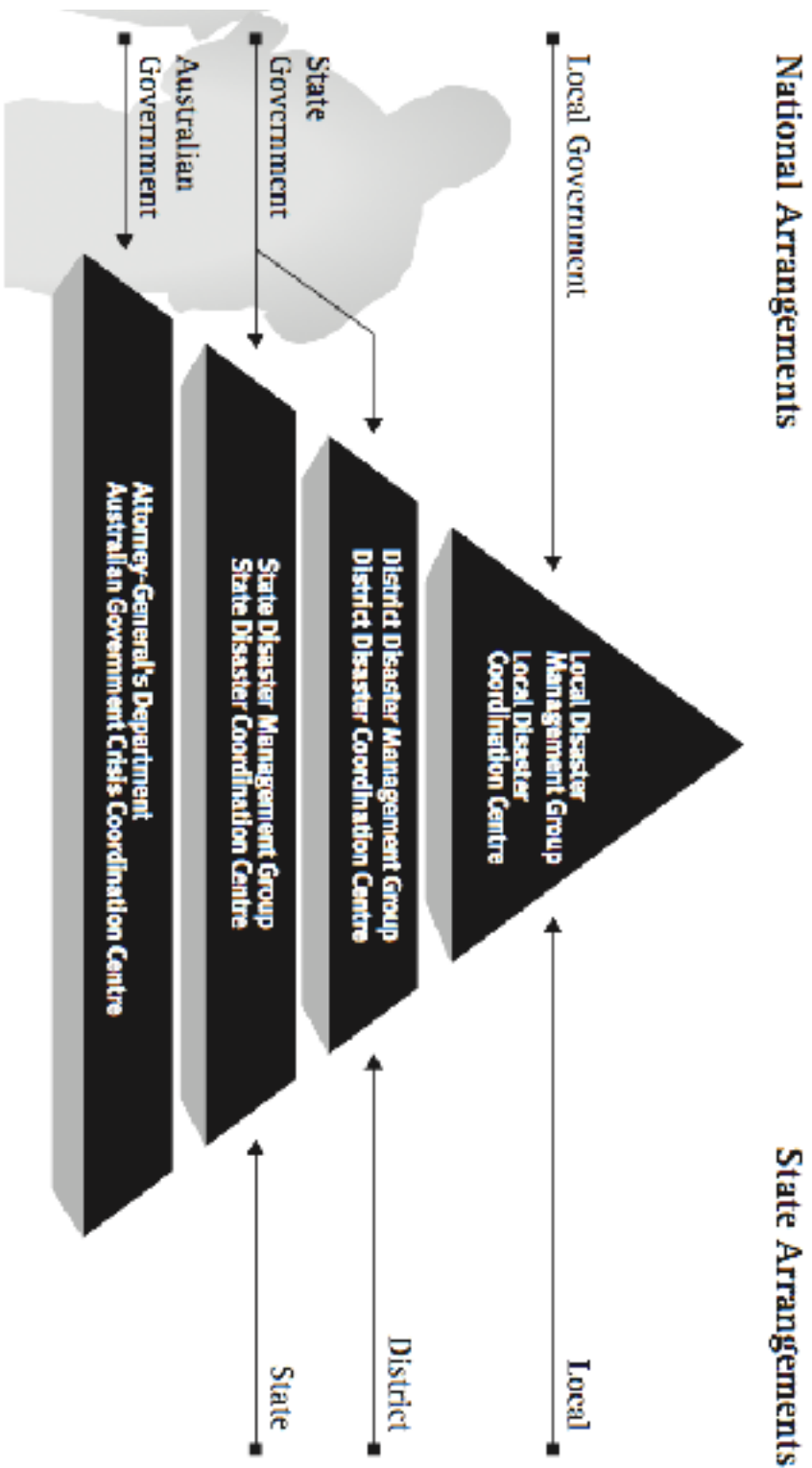
A policeman then approached them and in an officious manner ordered the drivers to remove the trucks from the bridge immediately or they would be fined. As the junction at the Molesworth and Ballina St junction had a barrier across it and there was water behind them the only available place to put the trucks was off the bridge and on the verge near Heritage Park where there was no water at the time.

The time that this occurred was around midnight and there was no evidence of water over the road at the junction of the Molesworth and Ballina St roundabout. SES personnel were still patrolling the CBD in vehicles at that time and it was more than three hours before the levee overtopped and still possible to safely exit to higher ground via Molesworth, Conway, Keen, Orion and Leicester Streets.

Presumably the policeman drove from the bridge to safety that way. All that was required was for the barrier to be moved aside whilst the trucks moved through and replaced again but as the water rose the parked fully loaded trucks all went under at a cost of hundreds of thousands of dollars to the company.

Queensland Local Disaster Management Arrangements

APPENDIX 4



APPENDIX 5

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APPENDIX 6

Wednesday March 29 Evacuation Order



The image is a screenshot of a Facebook post from the NSW SES (New South Wales State Emergency Service) page, dated 29 March. The post is a text-based announcement regarding an evacuation order. It features the NSW SES logo at the top left, followed by the text "NSW SES" and "29 March · 🌐". The main text of the post is in bold and reads: "**Evacuation Order**". Below this, it states: "Lismore South & North, Lismore CBD, Chinderah, Kingscliff, Fingal Head and Bilambil. You must leave NOW. Evacuation Order is in place". It then continues: "Do not delay your evacuation. Roads will be congested and may slow your travel.... See more". The bottom half of the post is a large orange rectangular box with white text. The text inside the box reads: "EVACUATION ORDER" in large, bold, capital letters. Below this, it says: "Now is the time to leave. Do not delay. Evacuation orders are mandatory." and "If you require assistance from the NSW SES during storms and floods call 132 500 or 000 if life threatening". At the bottom of the post, there is a dark blue bar containing the SES logo on the left and the hashtags "#NSWSES #NSWFloods" on the right.

NSW SES
29 March · 🌐

****Evacuation Order****

Lismore South & North, Lismore CBD, Chinderah, Kingscliff, Fingal Head and Bilambil. You must leave NOW. Evacuation Order is in place

Do not delay your evacuation. Roads will be congested and may slow your travel.... See more

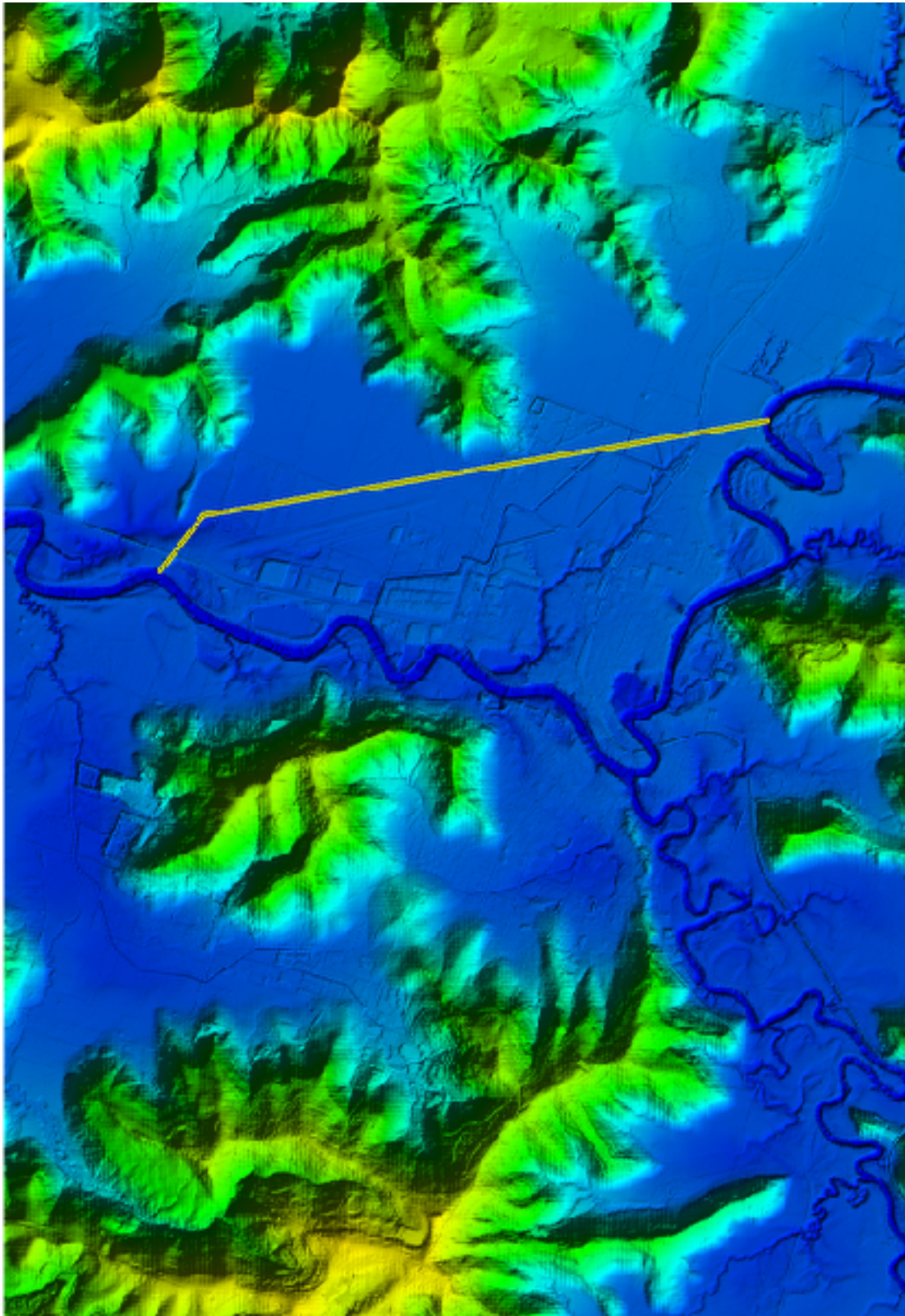
EVACUATION ORDER

Now is the time to leave. Do not delay.
Evacuation orders are mandatory.

If you require assistance from the NSW SES during storms and floods call 132 500 or 000 if life threatening

SES #NSWSES #NSWFloods

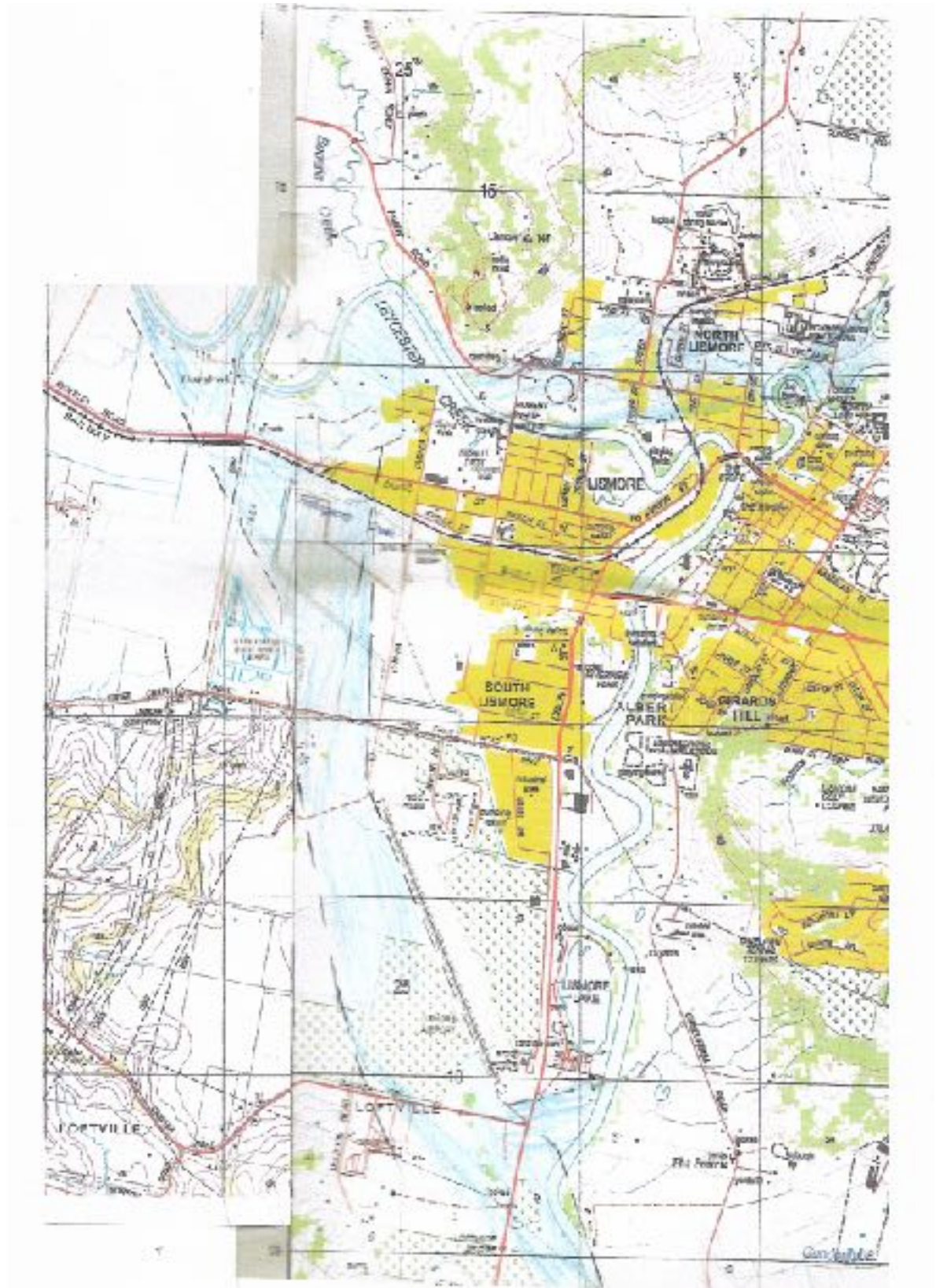
APPENDIX 7



Topographical map of the Leycester Creek water diversion

APPENDIX 8

Street view of proposed water diversion marked in blue



APPENDIX 9

Excerpt from Independent Review of the NSW State Emergency Service Operational Response Northern Rivers Floods March 2017

Page 44

Region Response:

The SES Richmond Tweed Region Headquarters commenced 24 hour operations at 7am on the 30/3/17²⁸. An Incident Management Team (IMT) commenced functioning at this time, however it was not a fully staffed IMT with many individuals performing multiple roles. Over the period of operational response, a significant number of resources from out of area were sent to the Region to assist Local Units due to the high volume of work experienced by these units.

Incident Controller:

The role of an Incident Controller is a vital one and has been previously discussed in this review. It is also important for all those involved in the response to understand who the Incident Controller is. In this event, it is clear that there was significant confusion as to who was the Incident Controller on the afternoon of Thursday 30/3/17. This confusion was contributed to by some of the processes in place.

The Review found that the Region Controller for Richmond Tweed Region was the Incident Controller for this event on Thursday 30/3/17 until relieved by the nightshift Incident Controller at 10.15pm²⁹. Confusion arose due to the following events/processes occurring:

An Assistant Commissioner arrived at the Richmond Tweed Region HQ at approximately 3.30pm (30/3/17). The Assistant Commissioner saw their role as providing guidance, mentoring and undertaking some of the media responsibilities. The Incident Controller believed that if a senior officer attended, they would take over the event.

The Incident Controller (without any direction) stepped back out of the role of Incident Controller and took on the role of Region Commander liaison with emergency services and stakeholders. However, the Region Controller was involved in planning for the evacuation order post this timing and continued to wear the Incident Controller tabard on the 30/3/17.

Out of Area Assistance (Incident Controllers). On Thursday 30/3/17) two out of area Incident Controllers arrived at approximately 4.30pm and 6pm30 (this was post the issuing of the Evacuation Order for Lismore CBD). The original plan had been for them to commence duties on 31/3/17. However, due to staff shortages and tasking/ organising difficulties within the IMT, the Assistant Commissioner asked one of the Region Controllers to perform the role of Deputy Incident Controller, effective immediately. This commenced somewhere between 4.30pm- 5pm, however some members of the IMT believed that this person was now the Incident Controller as they began directing and organising staff.

The Deputy Incident Controller commenced duties as the nightshift Incident Controller at 10.15pm. No documented handover occurred between Incident Controllers until 10.15pm that evening.

Recommendation 7

That the NSW SES

- Implements a formal handover document that clearly identifies who is the Incident Controller
- ensures that the Incident Controller is clearly identified to all Incident Management Team members.

Incident Management Team

The Incident Controller established an Incident Management Team on Thursday 30/3/17, however believed that due to the management of the three catchment areas into flood planning that they did not have sufficient planning staff.

The Incident Management Team was established under the AIIMS principals and whilst a number of people were undertaking multiple roles, all were wearing tabards. The Incident Controller understood their role to be as a 'clearing house' for units and to provide a link to State Operations. The IMT dayshift 30/3/17 consisted of Local Regional staff and some out of area staff who were in Lismore for another course.

The roles of Incident Controller, Intelligence Officer, Operations Officer and Public Information Officer were all performed by local Regional staff. The nightshift was a skeleton crew due to the limited resources and the Deputy Incident Controller was a local Regional staff member. It should be noted that during the Thursday and Friday many of the staff involved in this event worked extraordinary hours in their efforts to ensure the safety of the community. Fatigue management is discussed later in this report.

Improvements to the process used by the Richmond Tweed Region Incident Management Team were identified as follows:

- Full utilisation of the Incident Management Toolbox
- Placement of records/templates etc on the NSW SES centralised system, not the local system where there is limited access
- Ensuring that individual flood knowledge is captured and documented centrally and electronically
- The planning group consisted of the Incident Controller and Intelligence Officer. Planning Officer needed to be present for these discussions.

Recommendation 8

That the NSW SES ensures that:

- All Regions are fully utilising the Incident Management Toolbox
- Placement of records/templates etc on the central system, not the local system where there is limited access
- Ensuring that individual flood knowledge is captured and documented centrally and electronically.

The Richmond Tweed Region Incident Management Team was short staffed due to the lateness of the Out of Area Assistance request and the processes previously discussed in obtaining staff to fill positions, who had the appropriate skills. Key IMT positions were not filled and SES staff were performing multiple roles, under extreme stress, in a dynamically changing event and was not able to perform to the optimum level.

An improved system and process for the deployment of OOAA staff has been previously discussed. There is also the need to ensure that a pre-deployable IMT is able to be assembled at short notice to supplement Region resources during such an event. This ability does not currently exist within the NSW SES. The pre-deployed IMT needs to complement the Region IMT. There needs to be a blend of local knowledge and strong leadership within the IMT.

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