NSW STATE EMERGENCY SERVICE

Lismore City

Local Flood Plan

FloodSafe

March 2018

To be reviewed no later than March 2023

LISMORE CITY FLOOD EMERGENCY SUB PLAN

A Sub-Plan of the Lismore City Local Emergency Management Plan (EMPLAN)

Volume 1 of the Lismore City Local Flood Plan

AUTHORISATION

The Lismore City Flood Emergency Sub Plan is a sub plan of the Lismore City Local Emergency Management Plan (EMPLAN). It has been prepared in accordance with the provisions of the ***State Emergency Service Act 1989*** (**NSW**) and is authorised by the Local Emergency Management Committee in accordance with the provisions of the ***State Emergency and Rescue Management Act 1989*** **(NSW)**.

Recommended

NSW SES Lismore City Local Controller

Date: 7 March 2018

Endorsed

Chair, Local Emergency Management Committee

Date: 7 March 2018

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DISTRIBUTION LIST

This Local Flood Plan is distributed through the NSW State Emergency Service in electronic format and is maintained on the NSW SES website (www.ses.nsw.gov.au).

VERSION HISTORY

The following table lists all previously endorsed versions of this plan.

Description	Date
Lismore City Local Flood Plan	August 2013
Lismore City Local Flood Plan	November 2006

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

The Lismore City Local Controller
NSW State Emergency Service
61 Brunswick Street Lismore NSW 2480

Amendments promulgated in the amendments list below have been entered in this plan.

Amendment Number	Description	Updated by	Date

Document Issue: 02112015

LIST OF ABBREVIATIONS

The following abbreviations have been used in this plan:

AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AIIMS	Australasian Inter-service Incident Management System
ARI	Average Recurrence Interval (Years)
ALERT	Automated Local Evaluation in Real Time
AWRC	Australian Water Resources Council
BUREAU	Australian Government Bureau of Meteorology
CBRN	Chemical, Biological, Radiation or Nuclear
DCF	Dam Crest Flood
DSC	Dams Safety Committee
DSEP	Dam Safety Emergency Plan
DVR	Disaster Victim Registration
EMPLAN	Emergency Management Plan
FRNSW	Fire and Rescue NSW
GIS	Geographic Information System
GRN	Government Radio Network
IAP	Incident Action Plan
IFF	Imminent Failure Flood
LEMC	Local Emergency Management Committee
LEMO	Local Emergency Management Officer
LEOCON	Local Emergency Operations Controller
LO	Liaison Officer
LGA	Local Government Area
MHL	Manly Hydraulics Laboratory

NOW	NSW Office of Water
NSW RFS	New South Wales Rural Fire Service
NSW SES	NSW State Emergency Service
NSW VRA	Volunteer Rescue Association
OEH	Office of Environment and Heritage (previously DECCW)
PMF	Probable Maximum Flood
PMR	Private Mobile Radio
PMP	Probable Maximum Precipitation
PIIC	Public Information and Inquiry Centre
REMC	Region Emergency Management Committee
REMO	Regional Emergency Management Officer
REOCON	Regional Emergency Operations Controller
RMS	Roads and Maritime Services
SEOCON	State Emergency Operations Controller
SERCON	State Emergency Recovery Controller
SEWS	Standard Emergency Warning Signal
SITREPs	Situation Reports

GLOSSARY

Annual Exceedance Probability (AEP). The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood level (height) has an AEP of 5%, there is a 5% chance (that is, a one-in-20 chance) of such a level or higher occurring in any one year (see also Average Recurrence Interval).

Assistance Animal. A guide dog, a hearing assistance dog or any other animal trained to assist a person to alleviate the effect of a disability (Refer to Section 9 of the Disability Discrimination Act 1992).

Assembly Area. An assembly area is a designated location used for the assembly of emergency-affected persons before they move to temporary accommodation or a nominated evacuation centre. As such these areas do not provide welfare assistance nor are they used for long term sheltering or provision of meals.

Australian Height Datum (AHD). A common national surface level datum approximately corresponding to mean sea level.

Average Recurrence Interval (ARI). The long-term **average** number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods reaching a height as great as, or greater than, the 20 year ARI flood event will occur **on average** once every 20 years.

Catchment (River Basin). The land area draining through the main stream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.

Coastal Erosion. The loss of land along the shoreline predominantly by the offshore movement of sand during storms.

Coastal Flooding. Flooding due to tidal or storm-driven coastal events, including storm surges in lower coastal waterways. This can be exacerbated by wind-wave generation from storm events (1).

Dambreak Study. A Dambreak Study is undertaken to determine the likely downstream inundation areas in case of a dam failure. Modelling is undertaken for a range of dam breach possibilities and design floods. The dambreak study includes information such as the extent of flooding, flood travel times and flood water velocities. The study can assist dam owners, regulators, and emergency agencies in the preparations of evacuation plans, dam break and other flood warning systems, and hazard classification of affected areas.

Dam Failure. The uncontrolled release of a water storage. The failure may consist of the collapse of the dam or some part of it, or excessive seepage or discharges. The most likely causes of dam failure are;

- **Flood Induced Dam Failure**: Dam failure caused by flood, either due to overtopping erosion or by subsequent structural failure.
- **Sunny Day Dam Failure**: Dam Failure as a result of factors other than flood i.e. other than flood flow into the reservoir. Causes of "Sunny Day" dam failure can include internal erosion, landslide, piping, earthquake or sabotage.

Dam Safety Emergency Plan (DSEP). A DSEP outlines the required actions of owners and their personnel at dams in response to a range of possible emergency situations. The NSW Dam Safety Committee requires a quality controlled DSEP, with associated dambreak warning procedures to be prepared for prescribed dams where persons may be at risk downstream, if the dam failed.

Design Flood (or Flood Standard). A flood of specified magnitude that is adopted for planning purposes. Selections should be based on an understanding of flood behaviour and the associated flood risk, and take account of social, economic and environmental considerations. There may be several design floods for an individual area.

Emergency Alert. The national telephone warning system used by emergency services to send voice messages to landlines and text messages to mobile phones within a defined area, about likely or actual emergencies.

EMPLAN (Emergency Management Plan). The Plan established in accordance with the provisions in the *State Emergency Rescue Management Act 1989*. The object of an EMPLAN is to ensure the coordinated response by all agencies having responsibilities and functions in emergencies.

Essential Services. Those services, often provided by local government authorities, that are considered essential to the life of organised communities. Such services include power, lighting, water, gas, sewerage and sanitation clearance.

Evacuation. The temporary movement of people from a dangerous or potentially dangerous place to a safe location, and their eventual return. It is a safety strategy which uses distance to separate people from the danger created by the hazard.

Evacuation Order. Notification to the community, authorised by the NSW SES, when the intent of an Incident Controller is to instruct a community to immediately evacuate in response to an imminent threat.

Evacuation Warning. Notification to the community, authorised by the NSW SES, when the intent of an Incident Controller is to warn a community of the need to prepare for a possible evacuation.

Flash Flooding. Flooding which is sudden and often unexpected because it is caused by sudden local or nearby heavy rainfall. It is sometimes defined as flooding which occurs within six hours of the rain that causes it.

Flood. Relatively high water level which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences, including Tsunami.

Flood Classifications. Locally defined flood levels used in flood warnings to give an indication of the severity of flooding (minor, moderate or major) expected. These levels are used by the State Emergency Service and the Australian Government Bureau of Meteorology in flood bulletins and flood warnings.

Flood Intelligence. The product of collecting, collating, analysing and interpreting flood-related data to produce meaningful information (intelligence) to allow for the timely preparation, planning and warning for and response to a flood.

Flood Fringe. The remaining area of flood prone land after floodway and flood storage have been defined.

Flood Liable Land (also referred to as Flood Prone Land). Land susceptible to flooding by the Probable Maximum Flood (PMF) event. This term also describes the maximum extent of a **floodplain** which is an area of a river valley, adjacent to the river channel, which is subject to inundation in floods up to this event.

Flood of Record. Maximum observed historical flood.

Floodplain. Area of land which is subject to inundation by floods up to and including the probable maximum flood event, that is, flood prone land (2).

Floodplain Management Plan. A plan developed in accordance with the principles and guidelines in the New South Wales Floodplain Development Manual. Such a plan usually includes both written and diagrammatic information describing how particular areas of flood prone land can be used and managed to achieve defined objectives.

Flood Plan. A response strategy plan that deals specifically with flooding and is a sub-plan of an Emergency Management Plan. Flood plans describe agreed roles, responsibilities, functions, strategies and management arrangements for the

conduct of flood operations and for preparing for them. A flood plan contains information and arrangements for all floods whereas an IAP is for a specific flood/event.

Flood Rescue. The rescue or retrieval of persons trapped by floodwaters.

Flood Storage Areas. Those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. The extent and behaviour of flood storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation.

Floodway. An area where a significant volume of water flows during floods. Such areas are often aligned with obvious naturally-defined channels and are areas that, if partially blocked, would cause a significant redistribution of flood flow which may in turn adversely affect other areas. They are often, but not necessarily, the areas of deeper flow or the areas where higher velocities occur.

Flood Watch. A Flood Watch is a notification of the potential for a flood to occur as a result of a developing weather situation and consists of short generalised statements about the developing weather including forecast rainfall totals, description of catchment conditions and indicates streams at risk. The Bureau will also attempt to estimate the magnitude of likely flooding in terms of the adopted flood classifications. Flood Watches are normally issued 24 to 36 hours in advance of likely flooding. Flood watches are issued on a catchment wide basis.

Flood Warning. A Flood Warning is a gauge specific forecast of actual or imminent flooding. Flood Warnings specify the river valley, the locations expected to be flooded, the likely severity of flooding and when it will occur.

Functional Area. A category of services involved in the preparations for an emergency, including the following:

- Agriculture and Animal Services;
- Energy and Utility Services;
- Engineering Services;
- Environmental Services;
- Health Services;
- Public Information Services;
- Telecommunication Services;
- Transport Services; and
- Welfare Services.

Geographic Information System (GIS). A geographic information system (GIS) integrates hardware, software, and data for capturing, managing, analysing, and displaying all forms of geographically referenced information.

Incident Controller. The individual responsible for the management of all incident control activities across a whole incident (3).

Incident Action Plan (IAP). An action plan for managing a specific event. Information from the Local Flood Plan is used to develop the flood IAP.

Indirect Effect. Indirect effects are generally a consequence of infrastructure damage or interruption of services and can affect communities distant from the actual flood footprint i.e. floodplain. Indirect effects can also refer to indirect losses due to disruption of economic activity, both in areas which are inundated or isolated. Indirect effects are one of the three primary sources of risk in the context of flooding (the other two are inundation and isolation).

Inundation. See definition for Flood.

Isolation. Properties and/or communities where flooding cuts access to essential services or means of supply. Isolation is one of the three primary sources of risk in the context of flooding (the other two are inundation and indirect effects).

Liaison Officer (LO). A person, nominated or appointed by an organisation or functional area, to represent that organisation or functional area at a control centre, emergency operations centre, or coordination centre. A liaison officer maintains communications with and conveys directions/requests to their organisation or functional area, and provides advice on the status, capabilities, actions and requirements of their organisation or functional area (3).

Local Emergency Management Committee (LEMC). The LEMC is responsible for the preparation of plans in relation to the prevention of, preparation for, response to and recovery from emergencies in the local government area for which it is constituted. In the exercise of its functions, the Committee is responsible to the Region Emergency Management Committee (REMC) and may communicate with the REMC for matters associated with Functional Areas that are not represented at the local Level.

Local Overland Flooding. Inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.

Major Flooding. Flooding which causes inundation of extensive rural areas, with properties, villages and towns isolated and/or appreciable urban areas flooded.

Minor Flooding. Flooding which causes inconvenience such as closing of minor roads and the submergence of low-level bridges. The lower limit of this class of flooding, on the reference gauge, is the initial flood level at which landholders and/or townspeople begin to be affected in a significant manner that necessitates the issuing of a public flood warning by the Australian Government Bureau of Meteorology.

Moderate Flooding. Flooding which inundates low-lying areas, requiring removal of stock and/or evacuation of some houses. Main traffic routes may be covered.

Moveable Dwellings. Any tent, or any caravan or other van or other portable device (whether on wheels or not), used for human habitation; or a manufactured home; or any conveyance, structure or thing of a class or description prescribed by the (Local Government) regulations (4).

Operations Commander. The individual commanding an operational area. An Operations Command may be established for an area with multiple incident management teams functioning, and can cross local government and NSW SES Region boundaries.

Peak Height. The highest level reached, at a nominated gauging station, during a particular flood event.

Prescribed Dam. "Prescribed" dams are those listed in Schedule 1 of the Dams Safety Act 1978. The NSW Dam Safety Committee will prescribe those dams with the potential for a failure which could have a significant adverse effect on community interests.

Probable Maximum Flood (PMF). The largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation. The PMF defines the maximum extent of flood prone land, that is, the floodplain. It is difficult to define a meaningful Annual Exceedance Probability for the PMF, but it is commonly assumed to be of the order of 10^4 to 10^7 (once in 10,000 to 10,000,000 years).

Riverine Flooding. Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam. Riverine flooding generally excludes watercourses constructed with pipes or artificial channels considered as stormwater channels (1).

Runoff. The amount of rainfall which ends up as stream flow, also known as ‘rainfall excess’ since it is the amount remaining after accounting for other processes such as evaporation and infiltration.

Stage Height. A level reached, at a nominated gauging station, during the development of a particular flood event.

Stream Gauging Station. A place on a river or stream at which the stage height is routinely measured, either daily or continuously, and where the discharge is measured from time to time so as to develop a relationship between stage and discharge or rating curve.

Total Flood Warning System. A flood warning system is made up of components which must be integrated if the system is to operate effectively. Components of the total flood warning system include monitoring rainfall and river flows, prediction, interpretation of the likely impacts, construction and dissemination of warning messages, response by agencies and community members, and review of the warning system after flood events (5).

PART 1 - INTRODUCTION

1.1 PURPOSE

1.1.1 This plan covers preparedness measures, the conduct of response operations and the coordination of immediate recovery measures from flooding within the Lismore City LGA. It covers operations for all levels of flooding within the council area.

1.2 AUTHORITY

1.2.1 This plan is issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) and the *State Emergency Service Act 1989* (NSW). It has been approved by the NSW SES Lismore City Local Controller and the NSW SES Richmond-Tweed Region Controller as a NSW SES plan and endorsed by the Lismore City Local Emergency Management Committee as a sub plan of the Local EMPLAN.

1.3 AREA COVERED BY THE PLAN

1.3.1 The area covered by the plan is the Lismore City LGA which includes:

a. The urban areas of Lismore,

b. The rural villages of:

- Bexhill;
- Clunes;
- Dunoon;
- Elthan;
- Modanville;
- Nimbin;
- The Channon and
- Wyrallah.

1.3.2 The council area and its principal rivers and creeks are shown in Attachment 3.

1.3.3 The council area is in the NSW SES Richmond-Tweed Region and for emergency management purposes is part of the Northern Rivers Emergency Management Region.

1.4 DESCRIPTION OF FLOODING AND ITS EFFECTS

1.4.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in the Lismore City LGA.

1.5 RESPONSIBILITIES

1.5.1 The general responsibilities of emergency service organisations and supporting services (functional areas) are listed in the State Emergency Management Plan (EMPLAN). Some specific responsibilities are expanded upon in the following paragraphs. The extent of their implementation will depend on the severity of the flooding.

1.5.2 **NSW SES Lismore City Local Controller.** The NSW SES Lismore City Local Controller will;

Preparedness

a. Maintain a Local Headquarters at 61 Brunswick St, Lismore in accordance with the NSW SES Controllers' Guide and the NSW SES Operations Manual.

b. Ensure that NSW SES members are trained to undertake operations in accordance with current service policy, guidelines and procedures.

c. Work in collaboration with the NSW SES Richmond Tweed Region Headquarters to develop, identify and assist in delivering flood warning services to the community.

d. Participate in floodplain risk management initiatives organised by the Lismore City Council.

e. Coordinate a community engagement and capacity building program regarding local flood issues and associated risks to assist communities in building resilience to floods.

f. Identify and monitor people and/or communities at risk of flooding.

g. Ensure that the currency of this plan is maintained.

1.5.3 **NSW SES Lismore City Unit Controller**

a. Assist the NSW SES Lismore City Local Controller with flood preparedness activities, including;

- Flood planning.
- Training of unit members.
- The development of flood intelligence.
- The development of warning services.
- Floodplain risk management initiatives.
- Community engagement and capacity building.

b. Conduct flood operations within the Lismore City LGA as directed by the NSW SES Incident Controller.

c. Submit Situation Reports to the Incident Controller and agencies assisting within the local area.

1.5.4 NSW SES Incident Controller.

a. A NSW SES Incident Controller will be appointed to control the incident in accordance with NSW SES policy and procedures.

Response

b. The Incident Controller will;

- Control flood and storm response operations. This includes;
  - Directing the activities of the NSW SES units operating within the council area which may form part of a defined area of operation in larger scale, wide spread events.
  - Coordinating the activities of supporting agencies and organisations and ensuring that liaison is established with them.
  - Contribute to preparation and implementation of the IAP.
  - Direct the conduct of flood rescue operations
- Coordinate the provision of information services in relation to;
  - Flood heights and flood behaviour.
  - Advice on methods of limiting property damage.
  - Confirmation of evacuation warnings and evacuation orders.
- Coordinate the evacuation of people and/or communities.
- Provide immediate welfare support for evacuated people.
- Coordinate the provision of emergency food and medical supplies to isolated people and/or communities.
- Where time and resources allow, coordinate operations to assist the community to protect property. This may include;
  - Arranging resources for sandbagging operations.
  - Lifting or moving household furniture.
  - Lifting or moving commercial stock and equipment.
- Assist the Lismore City Council to organise temporary repairs or improvements to levees.
- Where possible, arrange for support (for example, accommodation and meals) for emergency service organisation members and volunteers assisting them.
- Ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.
- If NSW SES resources are available, assist with emergency fodder supply operations conducted by Agriculture and Animal Services.
- If NSW SES resources are available, assist the NSW Police Force, RMS and Council with road closure and traffic control operations.

- Exercise financial delegations relating to the use of emergency orders as set out in NSW SES policies, guidelines and procedures.
- Coordinate the collection of flood information for development of intelligence.
- Submit Situation Reports to the NSW SES Incident Controller and agencies assisting within the council area. These should contain information on;
  - Critical Road conditions and closures.
  - Current flood behaviour.
  - Current operational activities.
  - Likely future flood behaviour.
  - Likely future operational activities.
  - Probable resource needs.
- Keep the Local Emergency Operations Controller advised of the flood situation and the operational response.
- Issue the 'All Clear' when flood operations have been completed.

Recovery

c. Assist the transition to recovery process by collecting and coordinating the provision of pertinent recovery information.

d. Ensure that appropriate After Action Reviews are held after floods.

e. Provide appropriate representation to the recovery committee for the duration of the response phase of an event and as agreed during the recovery phase.

1.5.5 NSW SES Lismore City Unit Members

a. Carry out flood response tasks. These may include;

- The management of the NSW SES Lismore City Local and Unit Headquarters Operations Centres.
- Assist in the collection of flood information for the development of intelligence.
- Flood rescue.
- Evacuation.
- Providing immediate welfare for evacuated people.
- Delivery of warnings and information.
- Resupply.
- Levee monitoring.
- Sandbagging.
- Lifting and/or moving household furniture and commercial stock.

- Animal rescue.
- Assisting in repairing or improving levees.
- Assisting with road closure and traffic control operations.
- Assisting with emergency fodder supply operations.

b. Assist with preparedness activities.

c. Undertake training in flood and storm response operations.

1.5.6 Lismore City Local Emergency Operations Controller (LEOCON)

a. Monitor flood operations.

b. Request and coordinate support to the NSW SES Incident Controller if requested to do so.

1.5.7 Lismore City Local Emergency Management Officer

a. Provide executive support to the LEMC and LEOCON in accordance with the Lismore City Local Emergency Management Plan.

b. At the request of the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.

1.5.8 Lismore City Council

Preparedness

a. Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual.

b. Establish and maintain floodplain risk management committees and ensure that key agencies are represented on such committees.

c. Provide levee studies, flood studies, floodplain management studies to the NSW SES.

d. Maintain a plant and equipment resource list for the council area.

e. Work with NSW SES on the development and implementation of a community engagement and capacity building program.

Response

f. At the request of the NSW SES Incident Controller, deploy personnel and resources for flood related activities.

g. Close and reopen council roads (and other roads nominated by agreement with the RMS) and advise the NSW SES Incident Controller and the Police.

h. Provide information on the status of roads.

i. Provide filled sandbags to urban and village areas in which flooding is expected.

j. Assist with the removal of caravans from caravan parks.

k. Provide back-up radio communications.

l. In the event of evacuations, assist with making facilities available for the domestic pets and companion animals of evacuees.

Recovery

m. Provide for the management of health hazards associated with flooding. This includes removing debris and waste.

n. Ensure premises are fit and safe for reoccupation and assess any need for demolition.

o. Arrange for storage of evacuees' furniture as required.

1.5.9 **Community Members**

Preparedness

a. Understanding the potential risk and impact of flooding;

b. Preparing homes and property to reduce the impact of flooding;

c. Understanding warnings and other triggers for action and the safest actions to take in a flood;

d. Households, institutions and businesses developing plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours;

e. Having an emergency kit;

f. Being involved in local emergency planning processes.

1.5.10 **Agriculture and Animal Services Functional Area**

a. When requested by NSW SES;

- Activate the Agriculture and Animal Services Supporting Plan as required and coordinate the provision of required services which may include;
  - Co-ordinate response for all animals including pets, livestock and wildlife.
  - Supply and delivery of emergency fodder.
  - Emergency water replacement in certain circumstances.
  - Coordinate the management of livestock and farm animals.
  - Advice on dealing with dead and injured farm animals.
  - Financial, welfare and damage assessment assistance to flood affected farmers.
  - Co-ordinate the establishment of animal shelter facilities for the domestic pets and companion animals of evacuees.

1.5.11 The **New South Wales Ambulance**

a. Assist with the evacuation of at risk communities (in particular elderly and/or infirm people).

b. Deploy ambulance resources to appropriate locations if access is expected to be lost.

c. Assist the NSW SES with flood rescue operations.

1.5.12 **Australian Government Bureau of Meteorology (The Bureau)**

a. Provide Flood Watches for the Richmond/Wilsons River Basin.

b. Provide Flood Warnings, incorporating height-time predictions, for

- Lismore Rowing Club gauge (AWRC no. 203904);
- Coraki (AWRC no. 203403); and
- Bungawalbyn (AWRC no. 203908).

c. Provide severe weather warnings when flash flooding is likely to occur.

1.5.13 **Caravan Park Proprietors:** The caravan park proprietors of the Lismore Lake Caravan Park (formerly The Black Bass), Lismore Tourist Park, Lismore Palms Caravan Park and Road Runner Caravan Park will:

a. Prepare a flood emergency plan for the Caravan Park.

b. Ensure that owners and occupiers movable dwellings are aware that the caravan park is flood liable by;

- Providing a written notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and designate the location of flood liable land within the park.
- Displaying this notice and the emergency arrangements for the Caravan Park prominently in the park.

c. Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should:

- Provide the manager of the caravan park with a contact address and telephone number in case of an emergency.
- Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed, and are maintained in proper working order) (6).

d. Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to;

- Ensure that they have spare batteries for their radios.
- Listen to a local radio station for updated flood information.
- Prepare for evacuation and movable dwelling relocation.

e. Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs.

f. Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers.

g. Secure any movable dwellings that are not able to be relocated to prevent floatation.

h. Inform the NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks.

1.5.14 **Child Care Centres and Preschools**

a. Childcare Centres are to be contacted by the NSW SES in the event of possible flooding or isolation.

b. When notified the child care centres and preschools should;

- Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures.
- Assist with coordinating the evacuation of preschools and child care centres.

1.5.15 **Citizens' Radio Emergency Service Teams (CREST) / Wireless Institute Civil Emergency Network (WICEN)**

a. Provide communications assistance.

1.5.16 **Energy and Utility Services Functional Area**

a. When requested by NSW SES;

- Implement the Energy and Utilities Services Functional Area Supporting Plan.
- Where required, coordinate energy and utility services emergency management planning, preparation, response and recovery, including the restoration of services following a flood event.
- Coordinate advice to the NSW SES of any need to disconnect electricity, gas, water or wastewater services.
- Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.
- Identify interdependencies between flooding and utility services due to secondary impacts of flooding and advise the NSW SES.
- Assist the NSW SES with advisory notices relating to hazards from utility services during flooding.
- Coordinate with utilities on restoration of services, including advisory notices relating to estimated time for restoration and

mandatory safety checks prior to reconnection. Advise the NSW SES and the relevant recovery committee and coordinator of the timetable for restoration.

b. Local utility service distribution providers (electricity, gas, water, waste water): Country Energy (electricity):

- Provide advice to the NSW SES Incident Controller of any need to disconnect power/gas/water/waste water supplies or of any timetable for reconnection.
- Advise the NSW SES of any hazards from utility services during flooding.
- Advise the public with regard to electrical hazards during flooding and to the availability or otherwise of the electricity supply.
- Clear or make safe any hazard caused by power lines or electricity distribution equipment.
- Reconnect customers' electrical/ gas/ water/waste water installations, when certified safe to do so and as conditions allow.
- Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.

1.5.17 **Engineering Services Functional Area**

a. When requested by NSW SES;

- Provide engineering advice regarding the integrity of damaged structures.
- Assist the NSW SES with damage assessment.
- Acquire and/or provide specialist technical engineering expertise.
- Assist the NSW SES and councils with the assessment and operation of flood protection levees when requested.
- Assist with property protection, including the construction or repair of levees.
- Coordinate the restoration of critical public facilities.

b. When requested by the Recovery Coordinator:

- Establish Recovery Centres by the procurement and fit-out of suitable properties.

1.5.18 **Environmental Services Functional Area**

a. When requested by NSW SES;

- Implement the Environmental Services Functional Area (Enviroplan) Supporting Plan if required.

1.5.19 Fire and Rescue NSW, Region North Zone 2

a. FRNSW responsibilities are primarily confined to the FRNSW Fire District. Any deployment of FRNSW resources to assist NSW SES in flood events rests with the respective FRNSW Commander which must be a Senior Officer.

b. The FRNSW Commander will assess the capability of FRNSW to assist NSW SES in the following tasks:

- Assist the NSW SES with the warning and/or evacuation of at risk communities.
- Assist the NSW SES with the monitoring / reconnaissance of flood prone areas.
- Assist the NSW SES with the resupply of isolated communities and/or properties.
- Assist the NSW SES with property protection tasks including sandbagging.
- Provide resources for pumping flood water out of buildings and from low-lying areas.
- Assist with clean-up operations, including the hosing out of flood affected properties.
- Coordinate the deployment of fire resources to communities within Fire and Rescue NSW fire districts if access is expected to be lost in consultation with the NSW SES.

c. FRNSW will use its best endeavours to deploy appliances and or resources into locations where access is expected to be lost.

1.5.20 Health Services Functional Area

a. When requested by NSW SES;

- Activate Healthplan if required.
- Ensure that appropriate business continuity plans are developed for essential health infrastructure and are activated during floods.
- Provide medical support to the NSW SES.
- Establish health surveillance in affected areas.
- Assess potential public health risks that either acutely endanger the health of human populations or are thought to have longer term consequences.
- Provide environmental health advice.
- Provide public health warnings and advice to affected communities.

- Provide psychological counselling support to the community and emergency response workers impacted, via NSW Health Mental Health Division.
- Assist the NSW SES with the warning and coordination of evacuation of public hospitals, private hospitals and residential aged care facilities.
- Undertake vulnerable persons assessment for mental health and drug and alcohol dependant persons, dialysis, community health clients and oxygen dependant persons in the community, known to the health service.

1.5.21 **NSW Office of Water**

a. Collect and maintain flood data including data relating to flood heights, velocities and discharges.

b. Provide the Bureau of Meteorology and NSW SES real-time or near real-time access to river height gauges and height data for the development of official flood warnings.

c. Provide flow rating charts for river height gauges.

d. Manage (with technical support from OEH) the approval process under the Water Act 1912 and Water Management Act 2000 for flood control works (earthworks, embankments and levees which can affect the distribution of floodwaters) including;

- Assessment and approval of flood control works (including flood mitigation works) in rural areas designated under the Acts.
- Use of floodplain management plans prepared by OEH in rural areas designated under the Acts to assess flood control work approvals.
- Giving the NSW SES access to relevant studies regarding flooding and studies supporting floodplain management plans prepared by OEH including flood studies, floodplain risk management studies and flood behaviour investigations.

1.5.22 **NSW Police Force, Richmond Local Area Command (LAC)**

a. Assist the NSW SES with the delivery of evacuation warnings and evacuation orders.

b. Assist the NSW SES with the conduct of evacuation operations.

c. Conduct road and traffic control operations in conjunction with council and/or RMS.

d. Coordinate the registration of evacuees.

e. Secure evacuated areas.

1.5.23 **NSW Rural Fire Service, Northern Rivers Zone**

a. Provide personnel in rural areas and villages to;

- Inform the NSW SES Incident Controller about flood conditions and response needs in their own communities, and
- Disseminate flood information.

b. Provide personnel and high-clearance vehicles for flood related activities.

c. Assist the NSW SES with the delivery of evacuation warnings and evacuation orders.

d. Assist the NSW SES with the conduct of evacuations.

e. Provide equipment for pumping flood water out of buildings and from low-lying areas.

f. Assist with the removal of caravans.

g. Provide back-up radio communications.

h. Assist with clean-up operations, including the hosing of flood affected properties.

i. Deploy fire resources to appropriate locations if access is expected to be lost.

1.5.24 **Office of Environment and Heritage**

a. Assist the NSW SES gain access to relevant studies regarding flooding, including Flood Studies and Floodplain Risk Management Studies undertaken under the Floodplain Management Program.

b. Assist the NSW SES in obtaining required outputs (Section 3.1.4) from Flood Studies and Floodplain Risk Management Studies under the Floodplain Management Program which assist the NSW SES in effective emergency response planning and incorporating information into the NSW Floods Database.

c. Coordinate the collection of post event flood data, in consultation with the NSW SES.

d. Provide specialist advice to the NSW SES on flood related matters on;

- The identification of flood risks.
- The operation of the Hunter Valley Flood Mitigation Scheme.

e. Collect and maintain flood data relating to flood heights, velocities and discharges in coastal areas of NSW (through a contract with MHL as discussed separately).

f. Provide data to the Bureau of Meteorology and NSW SES real-time or near real-time access to river height gauges and height data for the development of official flood warnings (through a contract with MHL as described in the Response section of this plan).

g. Assist the NSW SES in the exercising of this Flood Sub Plan.

h. **NSW National Parks and Wildlife Service**

- Close and reopen Parks and Wildlife Service roads when affected by flood waters and advise the NSW SES of its status.
- Facilitate the safe reliable access of emergency resources on National Parks and Wildlife Service managed roads.
- Assist the NSW SES with identification of road infrastructure at risk of flooding.
- Manage traffic on Parks and Wildlife Service roads.
- Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means.

1.5.25 **Owners of Prescribed Dams within or upstream of Lismore City**

Dam	Owner
Rocky Creek Dam	Rous Water

a. Maintain and operate the Dam Failure Warning System for their Dam(s).

b. Contribute to the development and implementation of community engagement and capacity building programs on flooding.

c. Consult with NSW SES on the determination of dam failure alert levels and notification arrangements when developing Dam Safety Emergency Plans.

d. Maintain a Dam Safety Emergency Plan and provide copies to the NSW SES.

e. Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence.

f. Close and evacuate at risk camping grounds/recreational areas within their managed areas.

1.5.26 **Private Companies, Northern Rivers Buslines**:

a. Assist with the provision of;

- Bus transport and drivers for evacuation, resupply or commuting purposes.
- Trucks and drivers to relocate furniture.
- Warehousing facilities to store furniture.
- Sand for sandbagging.
- Space for evacuation centres.

1.5.27 **Public Information Services Functional Area**

a. When requested by NSW SES;

- Assist the NSW SES in the establishment and operation of a Joint Media Information Centre.

1.5.28 **Roads and Maritime Services**

a. Manage traffic on state roads, state highways and waterways affected by flood waters and advise the NSW SES of their status.

b. Facilitate the safe reliable access of emergency resources on RMS managed roads.

c. Assist the NSW SES with identification of road infrastructure at risk of flooding.

d. Assist in Traffic management associated with evacuations where necessary.

e. Enter state road closure information into the Live Traffic site.

f. Assist the NSW SES and local councils with the communication of warnings and information provision to the public through variable message signs.

g. Cooperate with the North Coast Transport Services Functional Area Coordinator.

1.5.29 **School Administration Offices (including Catholic Education Office Lismore, Department of Education Goonellabah Office, and Private Schools)**

a. Liaise with the NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures (or where required, for students to be moved to a suitable location until normal school closing time).

b. Pass information to school bus drivers/companies and/or other schools on expected or actual impacts of flooding.

c. Assist with coordinating the evacuation of schools when flooding or isolation is expected to occur.

d. Provide space in schools for evacuation centres where necessary.

1.5.30 **North Coast TAFE, Lismore Campus**. The Institute Director is to be contacted by the NSW SES in the event of imminent flooding. Once contacted, the Institute Director is to:

a. Liaise with the NSW SES Incident Controller and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures.

b. Pass information to school bus drivers and/or companies on expected or actual impacts of flooding.

1.5.31 **Telecommunication Services Functional Area**

a. When requested by NSW SES;

- Coordinate the restoration of telephone facilities damaged by flooding.
- Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.

1.5.32 **The North Coast Transport Services Functional Area Coordinator (TSFAC)**

a. The TSFAC will assist NSW SES, emergency services and other functional areas through the provision of traffic and transport operations as consistent with the roles of Transport organisations, including;

- The movement of emergency equipment and personnel.
- The movement of emergency supplies and goods, including water, fuel and food.
- The evacuation of people and animals.
- Assistance for medical transport.
- Transportation of animals and infectious material/dangerous goods.
- Maintaining and operating a transport route advisory service to the NSW SES, emergency services organisations and other Functional Areas and members of the community.
- Coordinate the provision of traffic and transport operations as consistent with the roles of Transport organisations.

1.5.33 **Welfare Services Functional Area**

a. When requested by NSW SES;

- Establish and manage evacuation centres, and participate in recovery activities.

1.5.34 **Ngulingah Local Aboriginal Land Council, Bundjalung Tribal Society and Lismore Aboriginal Health Centre**

a. Act as the point of contact between the NSW SES and the Bundjalung indigenous community.

b. Inform the NSW SES Lismore City Local Controller about flood conditions and response needs.

c. Disseminate flood information, including flood and evacuation warnings, to the Bundjalung indigenous community.

1.5.35 **NSW SES Flood Wardens, South Lismore and North Lismore Network:**

a. Provide flood information to the NSW SES Lismore City Local Controller.

b. Distribute flood warnings and flood information provided by the NSW SES Lismore City Local Controller.

PART 2 - PREPAREDNESS

2.1 MAINTENANCE OF THIS PLAN

2.1.1 The NSW SES Lismore City Local Controller will maintain the currency of this plan by;

a. Ensuring that all agencies, organisations and officers mentioned in it are aware of their roles and responsibilities.

b. Conducting exercises to test arrangements.

c. Reviewing the contents of the plan;

- After each flood operation.
- When significant changes in land-use or community characteristics occur.
- When new information from flood studies become available.
- When flood control or mitigation works are implemented or altered.
- When there are changes that alter agreed plan arrangements.

2.1.2 The plan is to be reviewed no less frequently than every five years.

2.2 FLOODPLAIN RISK MANAGEMENT

2.2.1 The NSW SES Lismore City Local Controller will ensure that;

a. NSW SES participates in local floodplain risk management committee activities when those committees are formed, in accordance with the protocols outlined in the NSW SES Controllers' Guide.

b. The NSW SES Richmond-Tweed Region Headquarters is informed of involvement in floodplain risk management activities.

2.3 DEVELOPMENT OF FLOOD INTELLIGENCE

2.3.1 Flood intelligence describes flood behaviour and its effects on the community.

2.3.2 The NSW SES maintains a centralised flood intelligence system.

2.4 DEVELOPMENT OF WARNING SYSTEMS

2.4.1 The NSW SES may establish a total flood warning systems for areas affected by flooding. This requires;

a. An identification of the potential clients of flood warning information at different levels of flooding (i.e. who would be affected in floods of differing severities).

b. Available information about the estimated impacts of flooding at different heights.

c. Identification of required actions and the amounts of time needed to carry them out.

d. Appropriate means of disseminating warnings to different clients and at different flood levels.

2.5 COMMUNITY RESILIENCE

2.5.1 The community needs to be as prepared as emergency agencies for the impact of all hazards (5), including flooding.

2.5.2 As the combat agency, NSW SES has the primary responsibility for the collation, assessment and public dissemination of information relating to flooding (3). To do this, NSW SES will require assistance from other agencies, particularly local government councils, dam owners, and the Bureau in the development and delivery of materials.

2.5.3 The NSW SES Lismore City Local Controller, with the assistance of the Lismore City Council, the NSW SES Richmond-Tweed Region Headquarters and NSW SES State Headquarters, is responsible for the collation, assessment and public dissemination of information relating to flooding (3).

2.5.4 A range of tailored strategies to be employed with NSW communities include:

a. Dissemination of flood-related brochures and booklets in flood liable areas.

b. Talks and displays orientated to at-risk groups, community organisations, businesses and schools.

c. Publicity given to this plan and to flood-orientated NSW SES activities through local media outlets, including articles in local newspapers about the flood threat and appropriate responses.

2.6 TRAINING

2.6.1 Throughout this document there are references to functions that must be carried out by the members of the NSW SES Lismore City Unit(s). The NSW SES Lismore City Local Controller is responsible for ensuring that the members are;

a. Familiar with the contents of this plan.

b. Trained in the skills necessary to carry out the tasks allocated to the NSW SES.

2.7 RESOURCES

2.7.1 The NSW SES Lismore City Local Controller is responsible for maintaining the condition and state of readiness of NSW SES equipment and the NSW SES Lismore City Local Headquarters.

2.7.2 The NSW SES Lismore City Unit Controller has similar responsibilities in relation to the Lismore City Unit Headquarters and equipment.

PART 3 - RESPONSE

CONTROL

3.1 CONTROL ARRANGEMENTS

3.1.1 The NSW SES is the legislated Combat Agency for floods and is responsible for the control of flood operations. This includes the coordination of other agencies and organisations for flood management tasks.

3.1.2 The Local EMPLAN will operate to provide support as requested by the NSW SES Incident Controller.

3.2 OPERATIONAL MANAGEMENT

3.2.1 NSW SES utilises the Australasian Inter-service Incident Management System (AIIMS), which is based on five principles;

a. Flexibility;

b. Functional management;

c. Management by objectives;

d. Unity of Command; and

e. Span of control.

3.2.2 AIIMS provides for different incident levels based on the complexity of management.

3.2.3 The Local Government Area may be divided into sectors and divisions to manage the flood event (divisions are usually a group of sectors).

3.2.4 Sectors and divisions may be based on floodplain classifications, geographical, physical or functional boundaries. A town, city or suburb may be one sector or split into several sectors and divisions.

3.3 START OF RESPONSE OPERATIONS

3.3.1 This plan is always active to ensure that preparedness actions detailed in this plan are completed.

3.3.2 Response operations will begin;

a. On receipt of a Bureau of Meteorology Preliminary Flood Warning, Flood Warning, Flood Watch, Severe Thunderstorm Warning or a Severe Weather Warning for flash flooding.

b. On receipt of a dam failure alert.

c. When other evidence leads to an expectation of flooding within the council area.

3.3.3 Contact with the Bureau of Meteorology to discuss the development of flood warnings will normally be through the NSW SES Richmond-Tweed Region Headquarters and/or NSW SES State Headquarters.

3.3.4 The following persons and organisations will be advised of the start of response operations regardless of the location and severity of the flooding anticipated:

a. NSW SES Richmond-Tweed Region Headquarters.

b. NSW SES Lismore City Lismore City Controller(s).

c. NSW SES Lismore City Lismore City Unit.

d. Lismore City Local Emergency Operations Controller (for transmission to the NSW Police Force).

e. Lismore City Local Emergency Management Officer (for transmission to appropriate council officers and departments).

f. Lismore City Council Mayor.

g. Other agencies listed in this plan will be advised by the Local Emergency Management Officer on the request of the NSW SES Incident Controller and as appropriate to the location and nature of the threat.

3.4 RESPONSE STRATEGIES

3.4.1 The main response strategies for NSW SES flood operations include;

a. Information Provision and Warning

- Provision of warnings, information and advice to communities.
- Inform the community regarding the potential impacts of a flood and what actions to undertake in preparation for flooding.
- Provide timely and accurate information to the community.

b. Property protection

- Protect the property of residents and businesses at risk of flood damage.
- Assistance with property protection by way of sandbagging and the lifting or transporting of furniture, personal effects, commercial stock and caravans.
- Assistance with the protection of essential infrastructure.

c. Evacuation

- Evacuation is a risk management strategy that may be used to mitigate the effects of an emergency on a community. It involves the movement of people to a safer location and their return. For an evacuation to be effective it must be appropriately planned and implemented (7).

d. Flood Rescue

- The rescue or safe retrieval of persons or animals trapped by floodwaters.

e. Resupply

- Minimise disruption upon the community by resupplying areas which have become isolated as a consequence of flooding.
- Ensure supplies are maintained to property owners by coordinating the resupply of properties which have become isolated as a consequence of flooding.

3.4.2 The NSW SES Incident Controller will select the appropriate response strategy to deal with the expected impact of the flood in each sector and/or community. The impact may vary so a number of different strategies may need to be selected and implemented across the whole operational area. The available strategies for each sector and/or community are maintained by the NSW SES.

3.4.3 Supporting agency strategies may include;

a. Protect the community from incidents involving fire and hazardous materials.

b. Maintain the welfare of communities and individuals affected by the impact of a flood.

c. Minimise disruption to the community by ensuring supply of essential energy and utility services.

d. Ensure coordinated health services are available to and accessible by the flood affected communities.

e. Maintain the welfare of animals affected by the impact of a flood.

3.5 OPERATIONS CENTRES

3.5.1 The NSW SES Lismore Incident Control Centre is located at 61 Brunswick St, Lismore.

3.5.2 NSW SES holds addresses of supporting Emergency Operations Centres.

3.6 LIAISON

3.6.1 Any agency with responsibilities identified in this plan may be requested by the NSW SES to provide liaison (including a liaison officer where necessary) to the NSW SES Lismore Incident Control Centre, or designated Emergency Operations Centre.

3.6.2 In accordance with NSW EMPLAN, Liaison Officers will;

a. Maintain communication with and convey directions/requests to their organisation or functional area;

b. Provide advice on the status, resource availability, capabilities, actions and requirements of their organisation or functional area, and

c. Where appropriate, have the authority to deploy the resources of their parent organisation at the request of the NSW SES Incident Controller.

3.7 END OF RESPONSE OPERATIONS

3.7.1 When the immediate danger to life and property has passed the NSW SES Operations Commander or the NSW SES Incident Controller will issue an 'All Clear' message signifying that response operations have been completed. The message will be distributed through the same media outlets as earlier evacuation messages. The NSW SES Incident Controller will also advise details of recovery coordination arrangements, arrangements made for clean-up operations prior to evacuees being allowed to return to their homes, and stand-down instructions for agencies not required for recovery operations.

PLANNING

3.8 COLLATING SITUATIONAL INFORMATION

Strategy

3.8.1 The NSW SES maintains and records situational awareness of current impacts and response activities.

Actions

3.8.2 The NSW SES Lismore Incident Management Team collates information on the current situation in the Lismore City LGA and incorporates in Situation Reports.

3.8.3 Sources of situational information during times of flooding are;

a. **Agency Situation Reports**. Agencies and functional areas provide regular situation reports (SITREPs) to the NSW SES.

b. **Active Reconnaissance**. The NSW SES Incident Controller is responsible for coordinating the reconnaissance of impact areas, recording and communicating observations. Reconnaissance can be performed on the ground and using remote sensing (more commonly aerial). The NSW SES monitors the following problem areas:

- Browns Creek (The Basin).
- Hollingworth Bridge.
- South Lismore levee.
- North Lismore.
- Central Lismore levee.
- South Lismore.

c. The **Bureau of Meteorology's Flood Warning Centre** provides river height and rainfall information, data is available on the website http://www.bom.gov.au/nsw/flood/.

d. **Manly Hydraulics Laboratory (a business unit within NSW Public Works)** automated river watch system funded by the Office of Environment and Heritage. This system provides river height and rainfall readings for a number of gauges in the Lismore City LGA. Recent data from this system is available on the Manly Hydraulic Laboratory website: http://www.mhl.nsw.gov.au. A history of area floods is also available upon request via the website.

e. **NSW Office of Water**. This office advises flow rates and rates of rise for the Wilsons River. Daily river reports containing information on gauge heights and river flows are available from the website: http://waterinfo.nsw.gov.au/.

f. **Rocky Creek Dam Storage Monitoring System.** This system provides information on the Rocky Creek Dam.

g. **NSW SES Incident Control**. The NSW SES Incident Controller provides information on flooding and its consequences.

h. **Lismore City Council**. Council provides an SMS service, which provides Bureau Flood Warning products to registered members.

3.8.4 During flood operations sources of information on roads closed by flooding include;

a. Lismore City Council (www.northernrivers.myroadinfo.com.au)

b. Richmond Police Local Area Command.

c. Transport NSW (www.livetraffic.com or 132 701).

d. NSW SES Richmond-Tweed Region Headquarters.

e. NSW SES Lismore City Local Headquarters.

3.8.5 Situational information relating to consequences of flooding should be used to verify and validate NSW SES Flood Intelligence records.

3.9 PROVISION OF FLOOD INFORMATION AND WARNINGS

Strategy

3.9.1 The NSW SES Richmond-Tweed Incident Controller authorises the issuing of NSW SES Flood Bulletins, Evacuation Warnings and Evacuation Orders to media outlets and agencies.

Actions

3.9.2 The **NSW SES Incident Controller** will ensure that all supporting Operations Centres, the LEOCON and LEMO are regularly briefed on the progress of operations.

3.9.3 **Bureau of Meteorology Severe Thunderstorm Warning**. These are issued direct to the media by the Bureau when severe thunderstorms are expected to produce dangerous or damaging conditions, including flash flooding. Severe thunderstorms are usually smaller in scale than events covered by Flood Watches and Severe Weather Warnings.

3.9.4 **Bureau of Meteorology Severe Weather Warnings for Flash Flooding**. These are issued direct to the media by the Bureau and provide a warning of the possibility for flash flooding as a result of intense rainfall. These warnings are issued when severe weather is expected to affect land based communities with 6 to 24 hours. Severe Weather Warnings may also include other conditions such as Damaging Winds.

3.9.5 **Bureau of Meteorology Flood Watches**. Flood Watches are issued by the Bureau to advise people of the potential for flooding in a catchment area based on predicted or actual rainfall. Flood Watches will be included in NSW SES Flood Bulletins issued by the NSW SES Incident Controller.

3.9.6 **Bureau of Meteorology Flood Warnings.** The NSW SES Incident Control Centre formulates NSW SES Flood Bulletins in response to Bureau Flood Watches and Warnings. These utilise existing flood intelligence as well as reports as to the current impacts of flooding in the LGA.

3.9.7 **NSW SES Livestock and Equipment Warnings**. Following heavy rain or when there are indications of significant creek or river rises (even to levels below Minor Flood heights), the NSW SES Incident Controller will advise the NSW SES Richmond-Tweed Region Headquarters which will issue NSW SES Livestock and Equipment Warnings.

3.9.8 **NSW SES Local Flood Advices**. The NSW SES Incident Controller may issue Local Flood Advices for locations not covered by Bureau Flood Warnings. They may be provided verbally in response to phone inquiries but will normally be incorporated into NSW SES Region Flood Bulletins.

3.9.9 **NSW SES Flood Bulletins**. The NSW SES Incident Control Centre will regularly issue NSW SES Flood Bulletins which describe information on the estimated impacts of flooding at the predicted heights (using information from Bureau Flood Warnings and NSW SES Local Flood Advices) to NSW SES units, media outlets and agencies on behalf of all NSW SES units in the Region

3.9.10 **NSW SES Evacuation Warnings and Evacuation Orders**. These are usually issued to the media by the NSW SES Incident Controller.

3.9.11 **Special Warnings.** Council provides an SMS service, which provides Bureau Flood Warning products to registered members.

3.9.12 **Dam Failure Alerts**. Dam failure alerts are issued to NSW SES by the dam owner, in accordance with arrangements in the Dam Safety Emergency Plan (DSEP), the system involves the Dam Owner notifying NSW SES State Headquarters Operations Centre, who in turn distribute the warning to the NSW SES Region Headquarters and NSW SES Unit Headquarters.

3.9.13 A flow chart illustrating the notification arrangements for potential dam failure is shown in Attachment 2.

3.9.14 Dam failure alert levels are set in consultation with the NSW SES and are used to trigger appropriate response actions. The conditions that define each of the alert levels are listed in the relevant DSEP. Responses escalate as the alert level migrates from white to amber to red. Table 1 briefly outlines example defining conditions and appropriate NSW SES responses associated with each alert.

Alert Level	Example Defining Condition	NSW SES Response	NSW SES Warning Product
White	May be a structural anomaly. May be increased monitoring in response to a heavy rainfall event	Implements notification flowchart. Check operational readiness.	This is a preliminary alert to assist the NSW SES in its preparation. This is not a public alert.
Amber	Failure possible if storage level continues to rise or structural anomaly not fixed	Implements notification flowchart. Warn downstream population at risk to prepare to evacuate	NSW SES Evacuation Warning
Red	Failure imminent or occurred	Implements notification flowchart. Evacuation of downstream populations	NSW SES Evacuation Order

Table 1: Dam Failure Alert Levels

Note: Some DSEPs will have alert levels that proceed directly from White to Red. This is the case if adequate time does not exist between the three alert levels to evacuate the downstream population at risk. The decision to omit the Amber Alert level, and the general setting of Alert levels should be undertaken in consultation with the NSW SES.

3.9.15 The NSW SES / Dam Owner will disseminate warnings to the population at risk of dam failure (these arrangements are specific to each dam, are negotiated between the Dam Owner and NSW SES, and are documented in the DSEP).

3.9.16 **Standard Emergency Warning Signal (SEWS).** This signal may be played over radio and television stations to alert communities to Evacuation Warnings, Evacuation Orders, Special Warnings or Dam-Failure Warnings. Approval to use the signal is associated with who approves the warning/order message.

3.9.17 **The Public Information and Inquiry Centre (PIIC)** (operated by the NSW Police Force) will answer calls from the public regarding registered evacuees and provide authorised emergency information to the public.

3.9.18 **The Disaster Welfare Assistance line** is a central support and contact point for disaster affected people inquiring about welfare services advice and

assistance. This normally operates during business hours, but can be extended when required.

3.9.19 **The RMS Transport Information Line** will provide advice to callers on the status of roads. The RMS website also lists road closure information.

3.9.20 **Lismore City Council** will provide information on the status of roads.

3.9.21 Collation and dissemination of road information is actioned as follows:

a. As part of Situation Reports, the NSW SES Incident Controller provides road status reports for main roads in the council area if they have significant impact on the community.

b. NSW SES personnel may provide road status information to Lismore City Council if they are in a position to do so.

OPERATIONS

3.10 AIRCRAFT MANAGEMENT

3.10.1 Aircraft can be used for a variety of purposes during flood operations including evacuation, rescue, resupply, reconnaissance and emergency travel.

3.10.2 Air support operations will be conducted under the control of the NSW SES Incident Controller.

3.10.3 NSW SES maintains the following information for the Lismore City Council area;

a. Locations of suitable helicopter landing points.

b. Locations of suitable airports and records detailing aircraft size and type that can land at airports.

c. Intelligence on when access to these locations is expected to be lost.

3.11 ASSISTANCE FOR ANIMALS

3.11.1 Matters relating to the welfare of livestock, companion animals and wildlife are to be referred to Agriculture and Animal Services Functional Area.

3.11.2 Requests for emergency supply and/or delivery of fodder to stranded livestock, or for livestock rescue, are to be referred to Agriculture and Animal Services Functional Area.

3.11.3 Requests for domestic animal rescue should be referred to the NSW SES.

3.12 COMMUNICATION SYSTEMS

3.12.1 The primary means of communications between fixed locations is by telephone, email and facsimile.

3.12.2 The primary means of communication to and between deployed NSW SES resources is by GRN.

3.12.3 All liaison officers will provide their own communication links back to their parent agencies.

3.12.4 All other organisations will provide communications as necessary to their deployed field teams.

3.12.5 Back-up communications are provided as follows:

a. NSW Rural Fire Service,

b. Lismore City Council,

3.13 PRELIMINARY DEPLOYMENTS

3.13.1 When flooding is expected to be severe enough to cut road access to towns, within towns and/or rural communities, the NSW SES Incident Controller will ensure that resources are in place for the distribution of foodstuffs and medical supplies to the areas that could become isolated.

3.13.2 When access between locations is expected to be cut, the NSW SES Incident Controller will advise appropriate agencies so that resources (including sandbags, fire fighting appliances, ambulances, etc.) are deployed to ensure that operational capability is maintained.

3.14 ROAD AND TRAFFIC CONTROL

3.14.1 A number of roads within the council area are affected by flooding. NSW SES maintains details of these roads.

a. The council closes and re-opens its own roads. Bruxner Highway;

b. Main Road No 65, Lismore to Bangalow road,

c. Main Road No 141, Stoney Chute Road,

d. Main Road No 142, Nimbin Road,

e. Main Road No 146, Eltham Road,

f. Main Road No 147, Wyrallah Road,

g. Main Road No 306, Dunoon Road,

h. Main Road No 544, Kyogle Road and,

i. Main Road No 555, Rous Road.

3.14.2 The NSW Police Force has the authority to close and re-open roads but will normally only do so (if the Council or the RMS have not already acted) if public safety requires such action.

3.14.3 When resources permit, the NSW SES assists Council, RMS or the Police by erecting road closure signs and barriers.

3.14.4 In flood events, the NSW SES Incident Controller may direct the imposition of traffic control measures. The entry into flood affected areas will be controlled in accordance with the provisions of the State Emergency Service

Act, 1989 (Part 5, Sections 19, 20, 21 and 22) and the State Emergency Rescue Management Act, 1989 (Part 4, Sections 60KA, 60L and 61).

3.14.5 Police, RMS or Council officers closing or re-opening roads or bridges affected by flooding are to advise the NSW SES Incident Controller.

3.15 STRANDED TRAVELLERS

3.15.1 Flood waters can strand travellers. Travellers seeking assistance will be referred to the Welfare Services Functional Area for welfare services assistance.

3.16 MANAGING PROPERTY PROTECTION OPERATIONS

Strategy

3.16.1 Protect the property of residents and businesses at risk of flood damage.

Actions

3.16.2 The NSW SES is the responsible agency for the coordination of operations to protect property.

3.16.3 Property may be protected from floods by;

a. Lifting or moving of household furniture.

b. Lifting or moving commercial stock and equipment.

c. Sandbagging to minimise entry of water into buildings.

3.16.4 The NSW SES maintains stocks of sandbags.

3.16.5 Property protection options are however very limited in the Lismore City LGA due to the large number of properties that can be affected and the depth of floodwaters arising from severe flooding on the Wilsons River and Leycester Creek.

3.17 MANAGING FLOOD RESCUE OPERATIONS

Strategy

3.17.1 Rescue of people and domestic animals from floods.

Actions

3.17.2 The NSW SES Incident Controller controls flood rescue in Lismore City LGA during a flood emergency.

3.17.3 Flood rescues, may be carried out by accredited units in accordance with appropriate standards.

3.17.4 There may be some residual population which did not evacuate during the early stages of flooding and which require rescue.

3.18 MANAGING EVACUATION OPERATIONS

Strategy

3.18.1 When there is a risk to public safety, evacuation is the primary strategy. Circumstances may include;

a. Evacuation of people when their homes or businesses are likely to flood.

b. Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access.

c. Evacuation of people where essential energy and utility services are likely to fail, have failed or where buildings have been made uninhabitable.

Actions

3.18.2 The evacuation operation will have the following stages:

a. Decision to evacuate.

b. Mobilisation (mobilisation may begin prior to the decision to evacuate).

c. Evacuation Warning delivery.

d. Evacuation Order delivery.

e. Withdrawal.

f. Shelter.

g. Return.

3.18.3 During floods evacuations will be controlled by the NSW SES Incident Controller.

Decision to evacuate

3.18.4 In most cases the decision to evacuate rests with the NSW SES Incident Controller who exercises his/her authority in accordance with Section 22(1) of The State Emergency Service Act 1989. However, overall accountability sits with the NSW SES Commissioner as the State Controller.

3.18.5 The decision to evacuate will usually be made by the Incident Controller after consultation with the incident management chain of command to obtain approval and release of the final product in accordance within the *NSW SES Communication and Dissemination of Evacuation Decisions SOP*.

3.18.6 In the event of a life threatening situation where immediate evacuation is required, the Incident Controller may enact an evacuation without the aforementioned consultation. However this information must be communicated as soon as possible via the incident management chain of command.

3.18.7 Having confirmed the decision to evacuate, the relevant key external stakeholders as detailed within *the Communication and Dissemination of*

Evacuation Decisions SOP are to be notified of the decision to evacuate in an expedient manner.

3.18.8 Some people will make their own decision to evacuate earlier and move to alternate accommodation, using their own transport. This is referred to as self-managed evacuation (8).

Mobilisation

3.18.9 The NSW SES Incident Controller will request the following personnel for doorknock teams for designated Sectors/locations:

a. NSW SES Lismore City Unit members.

b. NSW RFS members via the NSW RFS Northern Rivers Fire Control Centre.

c. Local Police Force officers via the local area command.

3.18.10 The NSW SES Incident Controller will coordinate requests for any additional resources.

3.18.11 The NSW SES Incident Controller will request the LEOCON to provide personnel to assist with traffic coordination within Sector(s)/Community.

3.18.12 The NSW SES Incident Controller will arrange liaison officers for Sector Command Centres as required.

3.18.13 The NSW SES Incident Controller will request transport for Sectors via the Transport Services Functional Area.

Delivery of Evacuation Warnings and Evacuation Orders

3.18.14 The NSW SES will advise the community of the requirements to evacuate. The NSW SES will issue an **Evacuation Warning** when the community needs to prepare for a possible evacuation.

3.18.15 The NSW SES will issue an **Evacuation Order** to instruct a community to immediately evacuate in response to an imminent threat.

3.18.16 The NSW SES Incident Controller will distribute Evacuation Warnings and Evacuation Orders to;

a. Sector/Division Command Centres (where established).

b. Lismore City Local Emergency Operations Centre.

c. Lismore City Council.

d. Richmond Police Local Area Command.

e. Northern Ricers Rural Fire Service Control Centre.

f. Radio Stations.

g. Other local agencies and specified individuals.

3.18.17 The NSW SES Incident Controller will distribute Evacuation Warnings and Evacuation Orders to;

a. The NSW SES State Operations Centre.

b. Affected communities via dial-out warning systems where installed or applicable.

c. Relevant media outlets and agencies.

3.18.18 Evacuation Warnings and Evacuation Orders may be delivered through;

a. Radio and television stations.

b. Doorknocking by emergency service personnel.

c. Public address systems (fixed or mobile).

d. Telephony-based systems (including Emergency Alert).

e. Two-way Radio.

3.18.19 The Standard Emergency Warning Signal (SEWS) may be used to precede all Evacuation Orders broadcast on Radio Stations.

3.18.20 The NSW SES, may distribute Evacuation Orders via Emergency Service personnel in doorknock teams to areas under threat of inundation.

a. Doorknock teams will work at the direction of the Incident Controller.

3.18.21 Field teams conducting doorknocks will record and report back the following information to their Sector Commander/Division Commander/ Incident Controller;

a. Addresses and locations of houses doorknocked and/or evacuated.

b. The number of occupants.

c. Details of support required (such as transport, medical evacuation, assistance to secure house and/or property and raise or move belongings).

d. Details of residents who refuse to comply with the Evacuation Order.

3.18.22 Refusal to evacuate. Field teams should not waste time dealing with people who are reluctant or refuse to comply with any Evacuation Order. These cases are to be referred to the NSW Police Force.

Withdrawal

3.18.23 Evacuations will generally be carried out in stages starting from the lowest areas, low flood islands and low trapped perimeters; and progressively from higher areas.

3.18.24 The most desirable method of evacuation is via road using private transport. This may be supplemented by buses for people without suitable transport. However, other means of evacuation may also be used if available and as necessary (e.g. by foot, rail, air).

3.18.25 Evacuees who require disaster welfare assistance will be directed to designated evacuation centres. Evacuees who have made their own accommodation arrangements will not be directed to evacuation centres. It is not possible to determine in advance how many will fall into this category.

3.18.26 **Assembly areas:** An assembly area is a designated location used for the assembly of emergency-affected persons before they move to temporary accommodation or a nominated evacuation centre. As such these areas do not provide welfare assistance nor are they used for long term sheltering or provision of meals.

3.18.27 Evacuees will:

a. Move under local traffic arrangements from the relevant Sectors/Community via managed evacuation routes;

b. Continue along the suburban/regional/rural road network to allocated Evacuation Centres.

3.18.28 **Health Services**. The Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes).

3.18.29 **Schools.** School administration offices (Department of Education, Catholic Education Office and Private Schools) will coordinate the evacuation of schools if not already closed.

3.18.30 If there is sufficient time between the start of response operations and the evacuation of communities, the NSW SES Incident Controller will discuss the temporary closure of appropriate schools with the Regional Director, Department of Education. This will enable pupils to stay at home or be returned home so they can be evacuated (if required) with their families.

3.18.31 Note that in the Lismore City LGA, school principals may close some schools affected by flooding in the early stages of flooding.

3.18.32 **Caravan parks**. When an evacuation order is given occupiers of movable dwellings should:

a. Isolate power to moveable dwellings.

b. Collect personal papers, medicines, a change of clothing, toiletries and bedclothes.

c. Lift the other contents in any remaining dwellings as high as possible.

d. Move to friends, relatives or a designated evacuation centre if they have their own transport, or move to the caravan office to await transport.

e. If undertaking self-managed evacuation, register their movements with the caravan park management upon leaving the park.

3.18.33 Where possible, dwellings that can be moved will be relocated by their owners. Park managers will arrange for the relocation of movable dwellings as required. Council and NSW SES personnel may assist if required.

3.18.34 Caravan park managers will ensure that their caravan park is capable of being evacuated in a timely and safe manner.

3.18.35 Advise the NSW SES Incident Controller of:

a. The number of people requiring transport.

b. Details of any medical evacuations required.

c. Whether additional assistance is required to effect the evacuation.

3.18.36 Check that all residents and visitors are accounted for.

3.18.37 Inform the NSW SES Incident Controller when the evacuation of the caravan park has been completed.

3.18.38 Provide the NSW SES Incident Controller with a register of people that have been evacuated.

3.18.39 **Assistance Animals, Pets and Companion Animals of Evacuees:** Assistance animals (guide dogs, hearing assistance animals, etc.) will remain in the care of their owners throughout the evacuation. This includes transport and access into evacuation centres etc.

Where possible owners should take their companion animals with them when they are asked to evacuate. Due to safety restrictions, it may not be possible to allow companion animals to accompany their owners when being transported via aircraft or flood rescue boat. In such circumstances Agriculture and Animal Services will coordinate separate arrangements for evacuation and care of companion animals.

3.18.40 **Transport and storage:** Transport and storage of furniture from flood threatened properties will be arranged as time and resources permit.

3.18.41 **Security:** The NSW Police Force will coordinate the provision of overall security for evacuated areas.

3.18.42 The NSW SES Sector Commander is to provide the following reports to the NSW SES Incident Controller:

a. Advice of commencement of the evacuation of each Sector;

b. Half-hourly progress reports (by Sectors) during evacuations;

c. Advice of completion of the evacuation of each Sector.

Shelter

3.18.43 **Evacuation Centres:** Evacuees will be advised to go to friends or relatives, or else be taken to the nearest accessible evacuation centre, which may initially be established at the direction of the NSW SES Incident Controller, but managed as soon as possible by Welfare Services.

3.18.44 The following locations are suitable for use as flood evacuation centres:

a. Southern Cross University

3.18.45 **Registration:** The NSW Police Force will facilitate the requirement of Disaster Victim Registration for people evacuated to designated evacuation centres.

3.18.46 **Animal Shelter:** Facilities to hold and care for companion animals of evacuees will be coordinated by Agriculture and Animal Services if required. If required,

Agriculture and Animal Services will also coordinate refuge areas for livestock (e.g. horses) where feasible.

Return

3.18.47 The NSW SES Incident Controller will advise when return to evacuated areas is safe after flood waters have receded and reliable access is available.

3.18.48 The NSW SES Incident Controller will determine when it is safe for evacuees to return to their homes in consultation with:

a. The Recovery Coordinating Committee (if established)

b. Welfare Services Functional Area Coordinator (welfare of evacuees)

c. Engineering Services Functional Area Co-ordinator (safety of buildings, structural integrity of levees/dams)

d. Health Service Functional Area Coordinator (public health)

e. Transport Services Functional Areas Coordinator (arrangement of transport)

f. The Lismore City LEOCON

g. The Lismore City Council

h. NSW SES Operations Commander

i. Other appropriate agencies/functional areas as required (mitigation and advice regarding identified risks resulting from the flood event).

3.18.49 Once it is considered safe to do so, the NSW SES Incident Controller will authorise the return of evacuees.

3.18.50 The return will be controlled by the NSW SES Incident Controller and may be conducted, at their request, by the Recovery Coordinator.

3.19 MANAGING RESUPPLY OPERATIONS

3.19.1 The NSW SES is responsible for the coordination of the resupply of isolated communities and properties.

3.19.2 If isolation is expected to occur, residents should be encouraged to consider their needs and suitability for an unknown period of isolation.

3.19.3 If properties/communities are going to remain in locations expected to become isolated, households/retailers should be encouraged to stock up on essential supplies.

3.19.4 Where practicable, once supplies are delivered to the NSW SES designated loading point, the NSW SES Incident Controller will arrange for the delivery of essential foodstuffs, fuels or urgent medical supplies required by an isolated property or community.

3.19.5 All reasonable effects will be made to deliver supplies, however where necessary the NSW SES will prioritise the delivery of items.

Resupply of Isolated Towns and Villages

Strategy

3.19.6 Minimise disruption upon the community by resupplying areas which have become isolated as a consequence of flooding.

Actions

3.19.7 The NSW SES is responsible for the coordination of the resupply of isolated communities.

3.19.8 If flood predictions indicate that areas are likely to become isolated, the NSW SES Incident Controller should advise retailers that they should stock up.

3.19.9 When isolation occurs, retailers will be expected to place orders with suppliers where they have a line of credit and to instruct those suppliers to package their goods and deliver them to loading points designated by the NSW SES.

3.19.10 The NSW SES is prepared to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables.

3.19.11 The NSW SES will assist hospitals with resupply of linen and other consumables where able.

Resupply of Isolated Properties

Strategy

3.19.12 Ensure supplies are maintained to properties by coordinating the resupply of properties which have become isolated as a consequence of flooding.

Actions

3.19.13 The resupply of isolated properties is a common requirement during floods and coordination can be difficult because requests can emanate from a variety of sources. Isolated properties may call their suppliers direct, place their orders through their own social networks or contact the NSW SES.

3.19.14 The principles to be applied when planning for the resupply of isolated properties are;

a. The NSW SES will coordinate resupply and establish a schedule.

b. Some isolated households will not have the ability to purchase essential grocery items due to financial hardship. If an isolated household seeks resupply from the NSW SES and claims to be, or is considered to be, in dire circumstances, he/she is to be referred to Welfare Services for assessment of eligibility. Where financial eligibility criteria are met, Welfare Services will assist with the purchase of essential grocery items. Welfare Services will deliver the essential grocery items to the NSW SES designated loading point for transport.

c. Local suppliers will liaise with the NSW SES regarding delivery of resupply items to the designated loading point.

d. Local suppliers are responsible for packaging resupply items for delivery.

3.19.15 A flowchart illustrating the Resupply process is shown in Attachment 1. Please note that the flowchart outlines the resupply process but does not encompass all potential situations and/or outcomes.

PART 4 - RECOVERY

4.1 RECOVERY COORDINATION AT THE LOCAL LEVEL

4.1.1 The NSW SES Incident Controller will ensure that planning for long-term recovery operations begins at the earliest opportunity, initially through briefing the Local Emergency Management Committee (LEMC). As soon as possible the LEMC will meet to discuss recovery implications including the need for a Local Recovery Committee. The LEMC will consider any impact assessment in determining the need for recovery arrangements. This is conveyed in the first instance to the State Emergency Operations Controller (SEOCON) for confirmation with the State Emergency Recovery Controller (SERCON).

4.1.2 Once the need for recovery has been identified, the SERCON, in consultation with the SEOCON, may recommend the appointment of a Local Recovery Coordinator and nominate an appropriate candidate to the Minister for Emergency Services.

4.1.3 The SERCON may send a representative to the LEMC and subsequent recovery meetings to provide expert recovery advice and guidance.

4.1.4 The NSW SES Lismore City Local Controller and Local Emergency Operations Controller (LEOCON) attend recovery meetings to provide an overview of the emergency response operation.

4.1.5 The NSW SES Region Controller, the Regional Emergency Management Officer and appropriate Regional Functional Area Coordinators will be invited to the initial local meeting and to subsequent meetings as required.

4.1.6 The recovery committee will:

a. Develop and maintain a Recovery Action Plan with an agreed exit strategy.

b. Monitor and coordinate the activities of agencies with responsibility for the delivery of services during recovery.

c. Ensure that relevant stakeholders, especially the communities affected, are involved in the development and implementation of recovery objectives and strategies and are informed of progress made.

d. Provide the SERCON with an end of recovery report.

e. Ensure the recovery is in line with the National Principles of Disaster Recovery and the NSW tenets.

4.2 RECOVERY COORDINATION AT THE REGION AND STATE LEVEL

4.2.1 In the event that an emergency affects several local areas, a Region Emergency Management Committee (REMC) will meet to discuss recovery implications including the need for a Region Recovery Committee. This is

conveyed in the first instance to the SEOCON for confirmation with the SERCON.

4.2.2 In the event of an emergency which affects multiple regions, or is of state or national consequence, or where complex, long term recovery and reconstruction is required, it may be necessary to establish a State Recovery Committee and the appointment of a State Recovery Coordinator.

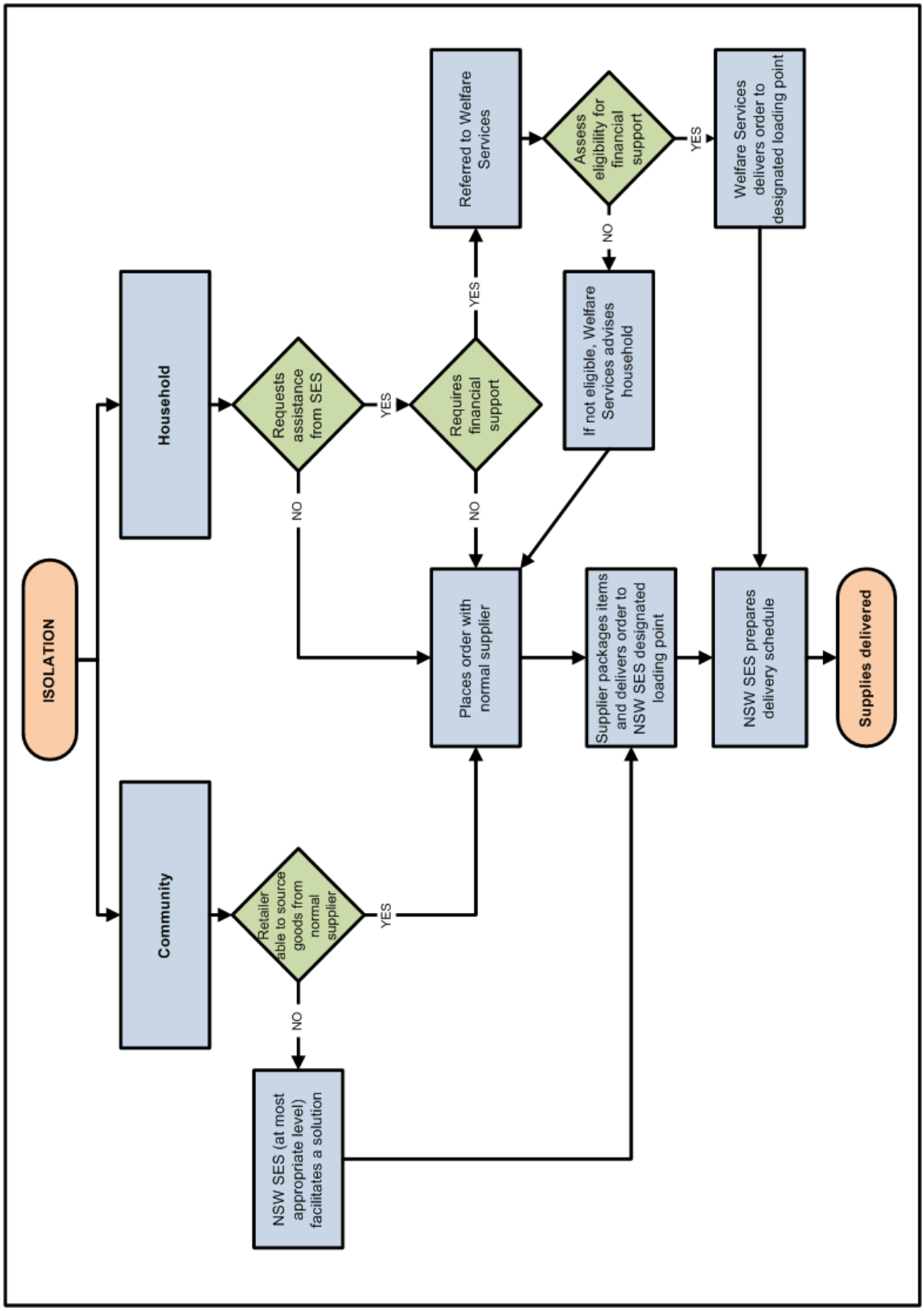
4.3 ARRANGEMENTS FOR DEBRIEFS / AFTER ACTION REVIEWS

4.3.1 As soon as possible after flooding has abated, the NSW SES Lismore City Local Controller will advise participating organisations of details of response operation after action review arrangements.

4.3.2 The NSW SES Lismore City Local Controller will ensure that adequate arrangements are in place to record details of the after action review and each item requiring further action is delegated to an organisation or individual to implement.

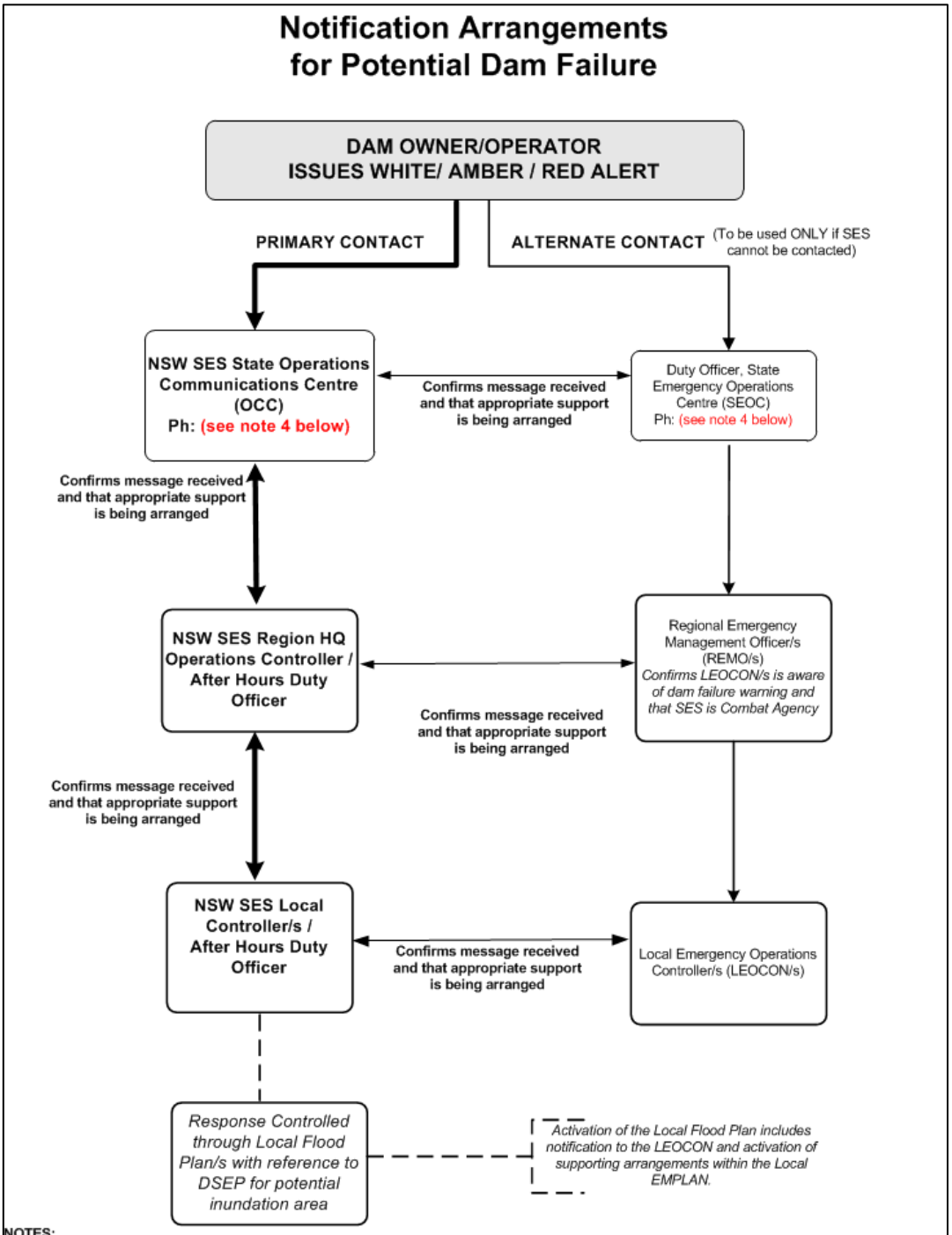
4.3.3 Follow-up to ensure the satisfactory completion of these actions will be undertaken by the Lismore City Local Emergency Management Committee.

ATTACHMENT 1 - RESUPPLY FLOWCHART



Please Note: **The chart outlines the resupply process, but does not encompass all potential situations and outcomes.**

ATTACHMENT 2 - DAM FAILURE ALERT NOTIFICATION ARRANGEMENTS FLOWCHART



NOTES:

1. Dam owners should only contact the SEOC if the SES State Operations Communications Centre (OCC) cannot be contacted.
2. The first priority for notification is to contact the next SES HQ or the next level of EOC down the flowchart. The second notification should always be across the flow chart to confirm the message is received. If the first priority notification fails or is not picked up for any reason, the second priority notification should be made before any further attempts to contact the first priority (this is why an alternate or backup system of contacts is in place).
3. The triple zero (000) number for emergency services should not be used unless contact cannot be made with SES or the SEOC, as it is likely the triple zero (000) operators will have difficulty dealing with the very unusual case of potential or actual dam failure.
4. Dam owners must contact the SES State Headquarters during the preparation of the DSEP to obtain the appropriate emergency contact numbers.

ATTACHMENT 3 - LISMORE CITY LGA MAP

LIST OF REFERENCES

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6. **NSW Government.** *Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings Regulation.* 2005.

7. **Emergency Management Australia.** *Evacuation Planning: Australian Emergency Management Handbook Series Handbook 4.* s.l. : Attorney-General's Department, 2013.

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NSW STATE EMERGENCY SERVICE

HAZARD AND RISK IN LISMORE CITY

Volume 2 of the Lismore City Local Flood Plan

Last Update: November 2006

FloodSafe

ANNEX A - THE FLOOD THREAT

The River Basin

1. Lismore City is in the Richmond River basin, approximately 700 kilometres north of Sydney. The Richmond River basin consists of two distinct river catchments: the Wilsons River Catchment on the north east of the basin (north of Lismore), and the larger Richmond River catchment on the western and southern sections of the river basin (Map 1).

2. **The Wilsons River Catchment**.

   a. Lismore is located at the southern end of the catchment at the confluence of Wilsons River and Leycester Creek. The total catchment area at Lismore is approximately 1,400 square kilometres (the Leycester Creek sub-catchment has an area of 900 square kilometres, and the Wilsons sub-catchment an area of 500 square kilometres).

   b. These two tributaries themselves have several contributing arms, each of approximately the same stream length and catchment area, as shown in Map 1. The Wilsons River and Coopers Creek drain the eastern section of the catchment. Leycester Creek, and its tributaries Terania Creek, Goolmangar Creek and Back Creek, drain the central and western sections. This catchment configuration, combined with the steep terrain of the catchment, results in a rapid concentration of rainfall run-off at Lismore; often with coincident peak flows from the upstream catchments.

   c. The Leycester Creek floodplain is approximately 2 to 2.5 metres higher than the Wilsons River floodplain. This causes the Wilsons River to act as a natural retention basin. During the very early rising stages of a flood it is not uncommon for floodwaters from the Leycester Creek to backup into the Wilsons River.

3. **The Richmond River Catchment**.

a. **The Upper Richmond.** The Richmond River flows in a north-south direction from its source in the McPherson Range on the Queensland-New South Wales border. The first major tributary, Eden Creek, joins the river between Kyogle and Casino. The river continues through Casino, and the village of Tatham, to its confluence with the Wilsons River at Coraki. The River upstream of Coraki is known as the Upper Richmond and drains an area of approximately 1,800 square kilometres.

b. **The Mid Richmond.** The river continues southwards downstream of Coraki until it meets Bungawalbyn Creek. At this point the river winds in an easterly direction to Woodburn. Downstream of Woodburn the river turns to flow in a north-easterly direction passing Broadwater, Wardell and finally Ballina before reaching the ocean. There is a natural constriction in the river and floodplain at the township of Broadwater. The constriction acts to hold floodwaters in the extensive floodplain 'basin' between Broadwater, Woodburn and Coraki. This floodplain 'basin' is known as the Mid Richmond.

Storage Dams

4. Rocky Creek Dam is located approximately 20 kilometres north of Lismore, on the headwaters of Rocky Creek, a tributary of Terania Creek. It is the water supply dam for Lismore, Byron, Ballina and Richmond Valley Shire Councils. It is not considered deficient.

Weather Systems

5. Flooding at Lismore shows strong seasonality, with the majority of recorded floods occurring between February and September. This seasonality of flooding is the result of two distinct weather patterns; tropical cyclones and intense depressions close to the coast.

6. In the early months of the year, tropical cyclones originating near the equator may move south. While it is rare for a cyclone to enter north-eastern New South Wales, those that approach southern Queensland or which travel southwards past the coast of northern New South Wales may bring rain of

sufficient intensity and duration to cause flooding. There are also occasions when a heavy rain area advances well ahead of the cyclone which may be 200 to 300 kilometres away.

7. The most frequent origin of flooding rain events is the development of intense depressions close to the coast. Generally, these systems maintain a supply of deep moisture as they move southwards in proximity to the coast.

8. These depressions may develop at any time but the flood rain events are most likely during that part of the year when sea surface temperatures are high and the air is humid. As tropical cyclones can also be expected at this time, most flood events in the Wilsons and Richmond River catchments occur in the first half of the year with a peak period from February to April.

9. Floods in the Wilsons River catchment can originate from either:

   a. Short intense rainfall bursts in the upper part of the catchments above Lismore, or

   b. Longer duration heavy rainfall in the upper part of the catchments above Lismore.

10. Floods in the Mid Richmond River basin, originate from one or more sources:

   a. Rainfall over the Richmond River, Wilsons River or Bungawalbyn Catchments; and

   b. Localised rainfall that is unable to drain because of relatively flat topography, high embankments and/or constrictions caused by flood drainage structures.

The Flood History

11. **Introduction**. It is difficult to present a complete historical picture of flooding throughout the basin due to the variability of records. However, over 100 floods have occurred in this valley since 1846 and the selected details of major flood gauge heights, in the following table, give an indication of the problem.

YEAR	LISMORE (m AHD)	CORAKI	WOODBURN	BROADWATER
1893		6.95		
July 1921				
Feb 1931				
June 1945	11.23	6.72	4.57	3.76
June 1948		6.68	4.71	4.04
Feb 1954	12.15	6.96	5.27	4.58
Jan 1956				
Feb 1956	11.23	6.28	3.94	
July 1962	11.30	6.67	4.51	3.44
May 1963	10.74	6.83	4.16	
July 1965	10.39	6.65		
Mar 1967	10.21	6.67		2.95
Oct 1972	10.03	6.76		
Mar 1974	12.15	7.01	4.88	4.11
Mar 1975	11.51	6.54		
Feb/Mar 1976	10.08	6.54		
Mar 1978	10.06			
Apr 1984	9.78	6.62		
Mar 1987	10.36	5.76		
May 1987	10.66	6.04		
Apr 1988		6.68	4.60	3.23
Apr 1989	12.1	6.88		
Feb 2001	10.4	6.62		
Jun 2005	10.3	5.08		

12. **February 1954**. The flood of February 1954 was produced by extremely heavy rainfalls in the Wilsons River catchment, with a pronounced concentration in Terania Creek. Rainfall data for the storm event that caused this flood show maximum rainfalls in the upper Terania Creek area in the order of 760mm for

the 48 hours to 0900hrs on 21 February 1954 (Lismore Flood Plain Management Study, 1980).

13. Recorded rainfalls were significantly less than this to the west, east and south of the Terania Creek catchment, indicating that very heavy rain in this specific area, supplemented by moderately heavy falls in other parts of the Wilsons catchment, are enough to cause major flooding.

14. **March 1974.** The flood of March 1974 was caused by very heavy rainfall that had a relatively uniform distribution across the whole Wilsons River catchment, but again, with heaviest falls in the Terania Creek catchment. A flood of this magnitude is expected to occur once every 70 seventy years on average.

15. **April 1989.** The flood of April 1989 resulted from heavy rainfall in the total Leycester Creek catchment and the headwaters of the Wilsons River catchment. The heaviest falls were again centred on the Terania Creek catchment.

16. **February 2001**. The flood of February 2001 occurred after a 12 year period in which Lismore did not experience a major flood.

    The river peaked at 10.4m AHD on the Rowing Club gauge. Most of North Lismore, the CBD and low-lying residential areas of central Lismore were inundated, with water up to 3 metres deep in the lowest parts of the CBD. As the Hollingworth Creek floodgates were closed, there was also a small area of back-up flooding inside the levee in South Lismore (Map 3). The Casino road and the Bruxner Highway (south) were closed by a flood runner flowing on the western side of the South Lismore levee. All other major roads out of Lismore were also closed.

17. **June 2005.** The flood of June, 2005 peaked at 10.3 metres AHD at the Rowing Club gauge, flooding North Lismore and surrounding rural areas. Central Lismore and South Lismore were protected from mainstream riverine flooding by their respective levees. However, some properties in Central Lismore were inundated due to localised flooding in the basin area. At the peak of the flood the river level was surveyed as being 0.3 metres below the Browns Creek Spillway.

Flood Behaviour Above Lismore

18. **Upper Wilsons River.** (Wilsons River and Leycester Creek upstream of their confluence, and their tributaries). Flooding in this area rises and falls quickly and is generally contained within the stream banks, although small areas of low-lying farmland and a number of local roads are inundated. Floodwaters concentrate at the junction of the Wilsons and Leycester Creek.

Flood Behaviour at Lismore

19. Lismore is located at the confluence of the Wilsons River and Leycester Creek and is subject to flooding from both of these streams. The effects of flooding in Lismore can vary depending upon the magnitude and synchronisation of flows in these streams. The most severe flooding in Lismore has occurred when high flows in both streams have coincided.

20. Warning lead times of flooding at Lismore can be short. The average rate of rise for recorded floods (1974, 1998) and design floods up to the 1% AEP flood indicates an average rate of rise of around 0.5 metres per hour. In rarer floods the rate of rise can be as high as 1 metre per hour and localised or short-term rates can be up to 1.5 metres per hour. In a major flood, there may be as little as 4-6 hours prior notice.

21. Modelling has shown that from the time 5m AHD is reached at the Rowing Club gauge that a minimum of 5 hours maybe available before the Rowing Club gauge reaches 10m AHD. In the 1974 flood the time between reaching 5m AHD and 10m AHD on the Rowing Club gauge was approximately 9 hours.

22. Lismore consists of three main flood sectors:

    a. Central Lismore

    b. North Lismore and

    c. South Lismore.

23. The characteristic of flooding in these areas is described in the following sections.

Flood Behaviour Central Lismore

24. The majority of Central Lismore is protected by a levee to a level below the 10% AEP flood. A small section of Central Lismore is located outside the levee. This part includes properties in lower northern section of Molesworth St near Simes Bridge, Coleman St and Brunswick St. Initial flooding in this area begins at approximately 5 metres AHD on the Rowing Club gauge.

25. Central Lismore is susceptible to flooding in the Lismore Basin area as a result of stormwater flooding occurring independent of riverine flooding. Pumping stations are operated to reduce the impact of this flooding.

26. Flooding in Central Lismore will begin once the Browns Creek spillway begins to overtop. The gauge height at which the Browns Creek spillway overtops varies depending upon the flood gradient between the Browns Creek spillway and the Rowing Club gauge. Typically overtopping will commence at approximately 10.6 to 10.7 m (AHD) on the Rowing Club gauge. However, in extremely rare events this may be as low as 10.4m AHD on the Rowing Club gauge if Leycester Creek and Wilsons River peaks occur concurrently and are accompanied by fast rates of rise. As the river levels continue to rise floodwaters will overtop the levee at Gasworks Creek Spillway and Spinks Park Spillway. In a very large flood the entire levee system may be overtopped.

27. The following paragraphs describe the results of simulated levee over-topping floods and their pattern of flooding in Central Lismore.

28. **Consequences of over-topping in a Peak Height 11.3m AHD at the Rowing Club gauge flood (5% (AEP) Design Flood).** Initial flooding once the Browns Creek spillway is over-topped is restricted to the Browns Ck floodway, before floodwaters begin to flow down Molesworth and Woodlark Streets into the basin area. Water velocities will quickly become dangerously fast and deep in floodway areas (may move quicker than 3 metres per second). Within a short period of time the northern CBD evacuation route (Keens St to Leycester St)

closes in close proximity to Browns Ck. Floodwaters move through the CBD in a southward direction.

29. Approximately three hours after over-topping floodwaters over-top the Gas Works Creek spillway resulting in additional flooding of the southern portion of the CBD and flooding of the southern evacuation route (Ballina St).

30. At the peak of the flood (11.3m AHD on the Rowing Club gauge) floodwaters are contained to the Browns Ck floodway, Molesworth St (between the floodway and Spinks Park), Woodlark St, Keen St (between Orion St and Magellan St), Magellan St (west of Keen St), Ballina St (between Molesworth and Magellan Streets), and Dawson St.

31. After the flood peaks, water continues to enter the CBD and basin area until the river falls below its initial over-topping level at the Browns Creek spillway. In the Lismore Basin floodwaters extend from Leycester St in the north to Ewing St in the south, to Ballina St in the southeast and Diadem St in the east. Floodwater leaves via Gasworks Creek hence the majority of the flow is towards this area.

32. **Consequences of over-topping in a Peak Height 11.8m AHD at the Rowing Club gauge flood (2% (AEP) Design Flood).** Initially the pattern of flooding will be similar to that described for the 11.3m AHD peak height (Rowing Club gauge) event.

33. Approximately 2 hours after initial over-topping floodwaters continue to flow down the floodway, along Molesworth St and down Woodlark, Magellan, Conway and Carrington Streets. Fast deep flowing floodwaters can be expected in these areas. Floodwaters begin to enter the CBD via the Gasworks Creek spillway resulting in additional flooding of the southern portion of the CBD and flooding of the southern evacuation route (Ballina St).

34. At the peak of the flood (11.8m AHD Rowing Club Gauge) the Lismore CBD would be completely inundated with flood depths ranging from 1 to 2 metres throughout the CBD. Floodwaters would be very dangerous with velocities exceeding 1 metre per second in the CBD. Under these conditions it would be

unsuitable for any persons or vehicles to travel through the CBD, structural damage to buildings would be likely and risk to life would exist.

35. After the flood peaks water continues to enter the CBD and basin area until the river falls below its initial over-topping level at the Browns Creek spillway. In the Lismore Basin floodwaters extend from Leycester St in the north to Dalley St in the south and Hunter St in the east. Floodwater leaves via Gasworks Creek hence the majority of the flow is towards this area.

36. **Consequence of over-topping in a Peak Height 12.4m AHD at the Rowing Club gauge flood (1% (AEP) Design Flood)** Initially flooding will follow the same pattern as less severe events once the Browns Creek spillway is over-topped. However, consequences can be expected to occur more rapidly and floodwaters more dangerous.

37. Approximately two hours after over-topping water is flowing down most CBD street floodwaters begin to over-top the levee at Gas Works Creek. Water levels continue to rise within the CBD and Lismore Basin areas and floodwaters would be very dangerous. The southern CBD evacuation route (Ballina St) will close.

38. Between three and four hours after over-topping, floodwaters overtop the Spinks Park spillway and flow down Magellan St and Molesworth St and northwards along Dawson St towards Magellan St and the Lismore Basin.

39. At the flood peak of 12.4m AHD (Rowing Club gauge) the CBD is completely inundated, with depths greater than 2 metres throughout the CBD. In the most hazardous parts of the CBD, Woodlark and Keen Streets (between Magellan and Conway Streets), velocities could reach approximately two metres per second. Structural damage to buildings in these areas would be likely.

40. After the flood peaked water would continue to enter the CBD and basin area until the river fell below its initial over-topping level at the Browns Creek spillway. In the Lismore Basin floodwaters would extend from Leycester St in the north to Dalley St in the south and Hunter St in the east. Floodwater would

leave via Gasworks Creek hence the majority of the flow would be towards this area.

Flood Behaviour South Lismore

41. Flooding begins with early filling very low-lying areas north of Casino St and east of Ostrom St and in Hollingworth Ck. Water backs up Hollingworth Ck, spreading out along its length and to the west. A floodgate on the creek is closed to restrict this backflow, but water flowing down Hollingworth Creek then begins to backup inside the levee. In the early stages of a flood, water flows down the airport floodway and is kept out of South Lismore by the South Lismore levee.

42. The South Lismore levee is typically overtopped by flows from Leycester Creek in the vicinity of the northwest corner adjacent to the bowling club, resulting in flows into the northern portion of South Lismore. If floodwaters continue to rise the levee will be overtopped at Caniaba Street. Just south of Hollingworth Creek on the western side and all of South Lismore will be rapidly inundated.

43. The over-topping height of the South Lismore levee is dependent upon flows in Leycester Creek. If only Leycester Creek is in flood the level on the Rowing Club gauge when the South Lismore levee overtops is very low, between 7.6 and 8.6 m AHD. This is because part of the Leycester Creek flow is diverted up the Wilsons River and fills the floodplains north-east of the Lismore CBD. The portion of flood discharge is reduced and the gauge reading is low when the South Lismore levee overtops. This scenario occurred in 1989 when a 1 in 100 year flood occurred in Leycester Creek and an insignificant flood occurred on the Wilsons River. When the Wilsons River is also in flood the potential for flow diversion up the Wilsons River is reduced and hence the South Lismore levee will over-top at a greater height between 10.0 and 10.2 m AHD on the Rowing Club gauge.

44. If only the Wilsons River is in flood the situation could arise where South Lismore floods from the eastern side near the river bend west of Union St due to a backwater effect at the confluence of Leycester Creek and the Wilsons River.

This is the opposite of mainstream Leycester flooding where the levee overtops at the northwest corner. In this instance the gauge will still read between 10 and 10.2 m AHD on the Rowing Club gauge when northwest corner overtops.

Flood Behaviour North Lismore

45. Flooding begins in North Lismore when the Wilsons River backs up at Slater Creek and inundates the low-lying areas which extend from the Showground past McKenzie Park to the Wilsons River. These initial effects may begin to occur as low as 4.3 metres AHD on the Rowing Club gauge. Inundation continues to increase in these areas as river levels rise, until the Wilsons River and Leycester Creek begin to over-top their banks, and threaten nearby properties and cut road most roads by approximately 9.3 metres AHD on the Rowing Club gauge.

46. Floodwaters from the Wilsons River then begin to inundate the floodplain to the east of North Lismore and move westward into developed areas following low-lying land between Bridge St and Bray St. Floodwaters from Leycester Creek first flow northwards between Tweed St and Bouyan St, quickly cutting Bouyan St and Terania St west. Rising water soon closes all evacuation routes to Central Lismore and inundates the entire area.

47. Dominant flows from the Wilsons River can result in fast rates of rise in North Lismore.

Flood Behaviour Downstream of Lismore

48. The Wilsons River floodplain narrows just South of Lismore near Gundurimba. This constriction is approximately one kilometre along the length of the river. The floodplain then becomes progressively wider until it merges with the Richmond River above Coraki. In this area between the two rivers, the complex pattern of flooding once again varies with the relative flows in each river. It is made more complex by flows joining the river from Pelican Creek.

49. During lower levels of flooding, water movement east of the Wilsons River is restricted by flood control structures such as the Tuckurimba levee. However,

once these are overtopped, floodwaters move eastward and fill up low-lying areas including the Tuckean Swamp.

Flood Behaviour Mid Richmond River (Downstream of Coraki)

50. It is possible to have a flood in one of the streams (Wilsons River, Richmond River, or Bungawalbyn Creek) and not have a major flood in the Mid Richmond River. Conversely, flooding can occur as a result of heavy rain in any of the catchments. When significant rainfall occurs in all three catchment areas, flooding is usually extensive.

    a. Floodwaters which have flowed out of the Lower Wilsons River and filled the Tuckean Swamp and surrounding areas, are joined by water from the Mid Richmond River (over-bank flows break out of the Richmond at O'Connor's Levee at Buckendoon and flow northwards). These combined floodwaters eventually flow back into the Richmond River at Broadwater.

    b. At Woodburn, floodwaters from the Richmond River can flow through flood mitigation works on the Tuckombil Canal and into the Evans River, entering the Pacific Ocean at Evans Head. The Tuckombil Canal also takes floodwaters from the catchment of the relatively short Rocky Mouth Creek.

Indicative Peak Flow Travel Times

51. Indicative timings for flood peak are as follows:

a.	Nashua to Lismore	6 to 12 hours.
b.	Nimbin to Lismore	8 to 17 hours.
c.	The Channon to Lismore	6 to 17 hours.
d.	Bentley to Lismore	4 to 15 hours.
e.	Lismore to Coraki	10 to 20 hours.

f. Coraki to Bungawalbyn Junction Approximately 3 hours.

g. Coraki to Woodburn 5 to 10 hours.

h. Coraki to Broadwater 10 to 20 hours.

Design Floods

52. The following table details the heights of these respective design events at the Rowing Club gauge.

Design Event	**Flood Level m AHD (Rowing Club gauge)**
10% AEP	10.8
5% AEP	11.3
1% AEP	12.4
PMF	15.9

Pumping Stations

53. **Pumping Stations.** Lismore City Council maintains and operates a series of pumps throughout the floodplain to assist in the minimisation of inundation.

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

Community Profile

1. The Lismore City Council area has a population of approximately 41,500 people. Flooding can affect up to 3,500 businesses and residences in North, Central and South Lismore, with up to 5,150 residents requiring evacuation. The majority of dwellings in the flood liable areas are elevated and it has been estimated that approximately 60 percent have floor levels above the height of the 1954 flood. Only six percent of these dwellings however, have floor levels above the PMF. Furthermore, the structural integrity of these elevated dwellings is endangered by rapid floodwater flows, and by debris.

2. Table 1 summarises the community statistics for the Lismore Council area.

Census Description	Result (2001 Census)
Total persons	41,500
Total persons aged 65 years and over	5,251
Total persons aged below 15 years	9069
Total persons of indigenous origin	1379
Single parent families	2218
Total persons who do not speak English well	184
Dwellings without vehicles	1378
Total number of dwellings	17,004

Table 1 Lismore community profile, source 2001 Census

3. It is significant that almost 13% percent of the population within the higher risk area is aged above 65 years. Elderly people are often frail and unable to respond quickly without assistance. Some of them may also be socially isolated, resulting in them being unaware of evacuation warnings or unable to decide on a course of action. Areas with particularly high proportions of elderly residents should be targeted for doorknocking and the provision of transport.

4. The community is flood aware due to the relatively high frequency of floods in the Lismore area.

5. There are approximately 1.2 vehicles per dwelling in Lismore.

Lismore General

6. The Lismore urban area is extremely flood liable and may become subject to large scale evacuation operations. Lismore and Goonellabah can also become isolated, potentially requiring resupply.

7. Lismore has frequently flooded since its settlement and consequently the community has a large amount of flood experience.

8. In addition to inundation and isolation Lismore residents and businesses may also suffer from infrastructure service interruptions such as loss of power, water sewerage and telecommunications. Such infrastructure loss may affect residents and businesses living outside the footprint of the floodplain.

9. A large number of residential properties located in Lismore have raised floor levels. Many of these properties, however, can still experience over-floor flooding. Even when floodwaters are unlikely to flood buildings above their floor level they cannot be considered safe refuges because of likely water, supply, electricity, sewerage and telephone system failure.

10. Major floods close all roads out of Lismore. The locations at which main roads and highways are closed are indicated in Map N. As road closures usually last for only a few days, large-scale resupply of Lismore is not usually needed. During major flooding, the airport is also closed and rail services are suspended. People such as tourists, commercial travellers and school children may become

stranded in Lismore during floods, and their welfare has to be considered along with that of evacuees.

11. Lismore has three flood sectors Central Lismore, South Lismore and North Lismore. These sectors are described in the following sections.

Central Lismore

12. The large majority of Central Lismore is protected by a levee and is flooded once the levee over-tops at the Browns Creek spillway. A small portion of Central Lismore located in the northwest corner is located outside the levee. Floodwaters begin to enter this area at approximately 5 metres AHD on the Rowing Club gauge.

13. Central Lismore comprises the central business district of Lismore and a large residential area. There are approximately 1080 businesses and 1020 residences at risk of flooding.

14. In addition the following institutions and infrastructure located in Central Lismore are at-risk of flooding.

    a. Trinity College Catholic School, Brunswick St (note this school is located outside the levee and is affected by floods greater than 7.0 metres AHD on the Rowing Club gauge)

    b. Lismore Tourist Park, Dawson St (Caravan Park) (note this park can be affected by localised stormwater flooding ponding in the Lismore Basin area).

    c. Lismore Palms Caravan Park, Brunswick St (note this is located outside the levee and is affected by floods greater than 7.15 metres AHD on the Rowing Club gauge)

    d. West Pac Helicopter Base (note this site is located outside the levee)

    e. Albert Park Public School, Keen St

    f. Lismore TAFE College, Conway St

g. Lismore Police Station, Molesworth St

h. Lismore Fire Station (NSWFB), Molesworth St

i. Lismore Ambulance Station, Keen St

j. Rural Fire Service Fire Control Centre, Wyrallah Rd (can become isolated)

k. Lismore Pre-School Kindergarten, Brewster St

l. Lismore After School Hours Care, Pound St

m. Lismore Challenge Foundation, 47 Caldwell Ave, East Lismore

South Lismore

15. South Lismore can be described as a low flood island protected by a levee and is flooded once the levee over-tops. South Lismore comprises a large residential area, industrial estate and some small businesses. Approximately 2300 people live in South Lismore. There are approximately 400 businesses and 800 residences at risk of flooding.

16. In addition the following institutions and infrastructure located in South Lismore is at-risk of flooding.

a. Possums Early Education Centre, Wilson St

b. Lismore South Public School, Phyllis and Wilson Streets

c. Lismore Lakes Van Park, Bruxner Hwy

d. Lismore Airport, Bruxner Hwy

e. Road Runner Caravan Park, Caniba Rd

f. Country Energy Depot Union Street, South Lismore

North Lismore

17. North Lismore can be described as low flood island and is not protected by a levee and is frequently flooded requiring the evacuation of residents. North Lismore comprises a residential area and a small number of businesses. Approximately 850 people live in North Lismore. There are approximately 350 businesses and residences at risk of flooding. Flooding begins to occur at approximately 4.3 metres AHD on the Rowing Club gauge. As the flood rises, Slaters Creek closes Bridge Street near McKenzie park and floodwaters from Leycester Creek flow northwards, over a low saddle in the vicinity of the Lake Street and Tweed Street intersection, just west of the railway line. This isolates North Lismore from South Lismore, and progressively inundates the entire residential area of North Lismore.

18. Parts of North Lismore can become isolated at low flood levels and the decision to evacuate properties in North Lismore must be made early to ensure persons are not trapped.

19. In addition the following institutions and infrastructure located in North Lismore is at-risk of flooding.

    a. Richmond River High School, Alexandra Parade

    b. Lismore Racecourse

    c. Lismore Showground

Mid Richmond General

20. Towns on the Lower River are all situated on the natural levee adjacent to the river and thus are acutely flood liable. Floods cut many roads on the floodplain and even minor flooding can disrupt the lower river ferry service at Broadwater. Up to 100 residences and commercial premises in Wyrallah and North Woodburn can be affected by flooding.

North Woodburn

21. North Woodburn (Pop 100) is situated at the junction of Rocky Mouth Creek and Richmond River. North Woodburn would be almost entirely inundated by

up to 1.5m during the 1 % AEP Flood. About 90 % of the village was inundated in the March 1974 event (5.2m on Woodburn Gauge). Flood response operations for North Woodburn are addressed in the Richmond Valley Local Flood Plan.

Lower Richmond Area

22. The Lower Richmond area includes the Broadwater West, Dungarubba, Kilgin, Swan Bay, East Coraki and Tuckean areas. These areas are effected by riverbank/levee overtopping with the effects varying with the source of the floodwaters, i.e., from Richmond River, Bungawalbyn Creek or Wilsons River. Floodwaters enter this large basin from levee overtopping at Baxter Lane, Tuckurimba, Swan Bay Road and Kilgin Road. Flood response operations for Broadwater West, Swan Bay, East Coraki and Tuckean areas are addressed in the Richmond Valley Local Flood Plan.

Tuckurimba Levee

23. Floodwaters from the Wilsons River break over the riverbank at the Western end of Baxter Lane at 6.18m (Tuckurimba Gauge). This flow causes minor inundation of the farmland basin through Tuckean. Once this water reaches 5.68m, the Tuckurimba levee will overtop and moderate to major flooding will occur. The extent of flooding will be dependent on the duration of overflow.

Other Rural Areas

24. A large amount of rural land is susceptible to inundation, requiring the movement of livestock and equipment to higher ground. Both rural properties and communities can be isolated by flooding, requiring resupply. These rural communities can include:

    a. Nimbin

    b. The Channon and Dunoon

    c. Goolmangar

d. Wyrallah

e. Gundarimba

f. Caniaba

g. Bexhill and Clunes

NSW STATE EMERGENCY SERVICE

SES RESPONSE ARRANGEMENTS FOR LISMORE CITY

Volume 3 of the Lismore City Local Flood Plan

Last Update: November 2006

FloodSafe

ANNEX C - GAUGES MONITORED BY THE LISMORE CITY SES

Station	AWRC No	Stream	Flood Classification			Type
			Min	Mod	Maj	
NASHUA	203902	WILSONS RIVER				ALERT
REPENTANCE	203002	COOPERS CREEK				ALERT
CORNDALE	203999	COOPERS CREEK				ALERT
ELTHAM	203014	WILSONS RIVER				ALERT
WOODLAWN	203402	WILSONS RIVER				ALERT
NIMBIN	203901	GOOLMANGAR CREEK				ALERT
THE CHANNON	203906	TERANIA CREEK				ALERT
ROCK VALLEY	203010	LEYCESTER CREEK				ALERT
BENTLEY	203009	BACK CREEK				ALERT
TUNCESTER	203443	LEYCESTER CREEK				ALERT
LISMORE	**203904**	**WILSONS RIVER**	**4.2**	**7.2**	**9.7**	**ALERT**
JIGGI ROAD	10189	GOOLMANGAR CREEK				MANUAL
WYRALLAH	203428	WILSONS RIVER				MANUAL
TUCKURIMBA	203429	WILISONS RIVER				MANUAL
CORAKI	**203403**	**RICHMOND**	**3.4**	**5**	**5.7**	**TELEMETRIC**
BUNGAWALBYN JUNCTION	**203908**	**RICHMOND**	**3.0**	**4.5**	**5.0**	**MANUAL**

Note:

1. The Bureau of Meteorology provides flood warnings for the gauges marked in bold.

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

The Richmond Tweed SES Region Headquarters distributes SES Flood Bulletins and other flood related information (including Flood Warnings) to the following regional media outlets:

Television Stations

Station	Location
PRIME	LISMORE
NBN	LISMORE
ABC	ULTIMO
CHANNEL TEN	GOONELLABAH

Radio Stations

Station	Location
ABC REGIONAL RADIO	LISMORE
2NCR FM	LISMORE
2LM	GOONELLABAH
RADIO ZZZ	GOONELLABAH
RADIO 97	TWEED HEADS
BYRON BAY COMMUNITY RADIO	BYRON BAY
COW FM	CASINO
RADIO 88.9	CORAKI
PARADISE FM	BALLINA
NIM FM	NIMBIN

Newspapers

Name	Location
NORTHERN STAR	GOONELLABAH
DAILY NEWS	TWEED HEADS

Other Agencies:

All other agencies and organisations listed with responsibilities under this plan.

ANNEX E - TEMPLATE EVACUATION WARNING MESSAGE FOR LISMORE

Date/Time of Issue:

Authorised By:

The Bureau of Meteorology has predicted a flood level of [ ] metres at **LISMORE** at [ ] ***(time).*** This means that [ ] ***(describe areas)*** may be inundated.

It is recommended that you prepare to evacuate/for evacuation within the next [ ] hours. If you leave it later, the roads may be congested or closed.

To prepare for evacuation, you should:

- Raise belongings by placing them on tables, beds and benches. Put electrical items on top. Some items may be able to be placed in ceilings.
- Gather medicines, personal and financial documents and mementos together to take with you.
- Listen to radio stations 2NCR FM / 2LM / ABC / RADIO ZZZ for further information and to confirm this warning.
- If possible, check to see whether your neighbours need help.
- Make arrangements for care of pets or companion animals.

If evacuation is necessary:

- Turn off the electricity, gas and water.
- Take three days' supply of clothes with you.
- If you have a car, drive to the evacuation centre at SOUTHERN CROSS UNIVERSITY via the following routes:
    - **CBD Lismore**

North – Keen Street then Leycester or High Streets.

East – Conway Street then Wyrallah Road.

- **South Lismore**

  Casino Street – Ballina Street Bridge then Conway street and Wyrallah Road.

  Warning: Hollingworth Creek Bridge can close very early in the flood.

- **North Lismore**

  Bridge Street to CBD then north through Keen Street and Leycester Street.

  Residents furthermost away from the river may have access to Dunoon Road through the showground.

- If you don't have a car, buses will operate on normal routes. Special transport can also be provided on request if necessary, telephone [ ].
- So that you can be accounted for, it is important that you register at the evacuation centre.
- After registering, you may go to the house of a friend or relative. Alternatively, accommodation will be arranged for you.
- The Police will provide security in your area while you are away.

ANNEX F - EVACUATION ARRANGEMENTS FOR LISMORE

BACKGROUND

1. Flooding affecting Lismore may require the evacuation of people from North Lismore (850 people), South Lismore (2300 people) and Central Lismore (2500 people).

2. While numerous elevated buildings on the floodplain have floor levels likely to remain above all but the most severe floods, these buildings cannot be considered safe refuges because of likely water supply, electricity, sewerage and telephone system failure; and the hazardous nature of floodwaters surrounding them. Residents of highset houses will therefore need to evacuate when severe floods are predicted so as to avoid the necessity for later operations to rescue them.

3. Flood warning time can be short. In a major flood, there may be as little as 4-6 hours prior notice.

4. Details on flooding in the Lismore City Council area are in contained in Annexes A and B of this plan.

5. There are three evacuation scenarios for Lismore:

    a. Evacuation of North Lismore only

    b. Evacuation of North and South Lismore only

    c. Evacuation of North, South and Central Lismore

ARRANGEMENTS

Control

6. During floods evacuations will be controlled by the NSW SES. Small-scale evacuations will be controlled by the Lismore City SES Local Controller. Should the evacuations operations escalate beyond the capabilities of local resources control may be handed over to the Richmond-Tweed SES Region Controller.

Operational Sectors

7. For the purpose of managing evacuations during severe floods, Lismore City Council area may be divided into the following council sectors:

    a. South Lismore Sector

        - North of Hollingworth Creek
        - South of Hollingworth Creek

    b. North Lismore Sector

    c. Central Lismore Sector

        - East of Brewster Street
        - West of Brewster Street
        - South of Ballina Street

Responsibilities

8. Lismore SES Unit

    a. Control evacuation operations.

    b. Conduct evacuations.

9. Lismore Local Emergency Operations Controller

Coordinate Support to the SES if requested to do so.

10. NSW Police

    a. Assist with the delivery of evacuation warnings.

    b. Assist with the conduct of evacuation operations.

    c. Ensure all evacuees are registered.

    d. Secure evacuated areas.

    e. Provide traffic control.

11. NSW Rural Fire Service

    a. Assist with the delivery of evacuation warnings.

    b. Assist with the conduct of evacuation operations.

12. NSW Fire Brigade

    a. Assist with the delivery of evacuation warnings.

    b. Assist with the conduct of evacuation operations.

13. Ambulance Service of NSW

    a. Assist with the evacuation of elderly and infirm residents.

14. SES Flood Wardens

    a. Assist with the delivery of evacuation warnings.

    b. Assist with the conduct of evacuations.

15. Department of Community Services

    a. Manage evacuation centres

    b. Maintain list of special needs groups and vulnerable persons.

16. Service Clubs

    a. Assist with delivery of evacuation warnings.

    b. Assist with the conduct of evacuations.

    c. Assist with the movement of household and business contents.

Decision to Evacuate.

17. Responsibility for issuing any general evacuation order during flooding rests with the Lismore City SES Local Controller who exercises his/her authority in accordance with Section 22(1) of the State Emergency Service Act 1989. However, the decision to evacuate may be taken after consultation with the Local Emergency Operations Controller and the Richmond-Tweed SES Region Controller.

18. When deciding to evacuate the following should be considered:

    a. The predicted flood level and rate of rise.

    b. The rainfall situation and rainfall predictions.

    c. The condition of levee banks.

    d. The condition of evacuation routes.

    e. Characteristics of the at risk population.

    f. Time of day.

    g. Likely duration of evacuation operations and time available to conduct evacuations.

    h. Likely duration of any isolation and preparedness of community for isolation.

    i. Condition of essential services.

    j. Risk of conducting an evacuation.

19. As far as possible, evacuations will be carried out before inundation occurs.

Evacuation Triggers.

20. The following conditions are triggers for evacuation.

    a. **Failure of Essential Services.** The failure of public utilities such as sewerage, power, telephones and water pose a significant health risk to residents on the floodplain or in flood affected areas. In the event of any or all of these systems failing or potentially failing, the need for evacuations will be discussed with the members of the LEMC.

    b. **Flooding affecting properties.** Evacuations are to occur, if it is likely properties will be flooded. Specific gauge height triggers are listed below:

    c. **Isolation of properties.** Persons who are not prepared for isolation or unsuited due to medical conditions etc, should be encouraged to evacuate.

Conduct

14. Evacuations will be controlled by the Lismore City SES Local Controller and conducted by Police, SES, NSWFB, NSW Ambulance Service, RFS and, if available under DACC arrangements, Army personnel in four phases:

    a. Phase 1 - Warning.

    b. Phase 2 – Withdrawal.

    c. Phase 3 – Shelter.

    d. Phase 4 – Return.

Phase 1 – Warning.

15. **Evacuation Warnings.**

    a. On the receipt of a flood warning predicting a height exceeding 10 metres at the Rowing Club gauge or when the high flows in Leycester Creek are predicted to have the potential to overtop the South Lismore levee, the Lismore City SES Local Controller will consult with Richmond Tweed SES Region Headquarters and the Bureau of Meteorology to determine the level of the threat.

    b. As soon as possible after the decision to evacuate is made, the Lismore City SES Local Controller will issue evacuation warnings to the at risk residents, indicating what people should do before evacuating and when actually doing so.

16. **Content of evacuation warning messages.** A template guide to the content of evacuation warning messages is in Annex E. These are disseminated by:

    a. Radio and TV stations listed in Annex D. Bulletins may be proceeded by the Standard Emergency Warning Signal (Authorisation required by Richmond Tweed SES Region Headquarters)

    b. Door-knocks by emergency service personnel

    c. Public address systems from emergency service vehicles

    d. Telephone

    e. Two-way radio

    f. Flood Sirens in South and North Lismore

    g. SES Flood Bulletins

    h. Variable Message Signs

17. **Self-motivated evacuation.** Some people will make their own decision to evacuate earlier and move to alternative accommodation using their own

transport. These evacuees will be advised, via the media, to inform the Police or SES of their evacuation and their temporary address.

Phase 2 – Withdrawal

18. **Introduction.** Withdrawal involves the actual removal of residents from dangerous or potentially dangerous areas to safer areas.

19. **Transport.** Evacuees are to be moved using their own transport where possible. The Lismore City SES Local Controller will arrange transport for those people without their own vehicles.

20. **Traffic Control**. When large scale evacuations are likely, evacuation routes are to be secured by the NSW Police and kept clear by the following means:

    a. Denying access to all traffic except for emergency vehicles (including buses and private vehicles being used for the purposes of evacuation).

    b. Keeping one lane clear at all times for use by emergency vehicles.

    c. Positioning a tow truck or similar vehicle at appropriate entry points, road blocks and exit points along the evacuation routes.

21. **Variable Message Signs.** Variable message signs will be positioned at key sites to communicate to evacuees information on evacuation routes, evacuation centres and road conditions.

22. **Large-scale evacuations.** When large scale evacuations are likely, the Lismore City SES Local Controller will liaise with the Richmond-Tweed SES Region Headquarters and request the deployment of helicopters and additional flood boats if required.

23. **Management of Evacuees' Pets.** Evacuees with their own pets will be encouraged to take their companion animals with them as they evacuate. Companion animals will be collected from their owners at evacuation centres and taken to facilities to be arranged by NSW Department of Primary Industries. Arrangements will also be made to pick-up animals that are left behind. Assistance animals (guide dogs etc.) will remain in the care of their

owners throughout the evacuation. This includes the transport and access into evacuation centres.

24. **Doorknocking.** Field teams conducting doorknocks will record and report back the following information back to the Operations Centre:

    a. Addresses and locations of houses doorknocked and/or evacuated.

    b. The number of occupants.

    c. Details of support required (such as transport, medical evacuation, assistance to secure house and/or property and raise or move belongings).

    d. Details of residents who refuse to comply with the evacuation order.

25. Key steps in planning for a doorknock are:

    a. Define the flood-affected areas that require doorknocking.

    b. Using a map of the affected area define street segments of 10-15 houses and assign a doorknocking team to each segment. Teams can be assigned one or more street segments.

    c. Assume that it will take a doorknocking team of two persons up to five minutes per property to doorknock. Rural properties will take a longer period of time.

    d. In each flood-affected area, generally plan to doorknock the lowest lying areas first and then work up to higher areas.

    e. Typed warning messages should be given to each doorknocking team for distribution to property occupants.

26. **Refusal to Evacuate.** Field teams should not waste time dealing with people who are reluctant or refuse to comply with any evacuation order. These cases should be referred to the LEOCON who will arrange for Police to ensure their evacuation.

27. **Security.** The NSW Police will provide security for evacuated areas.

Phase 3 – Shelter

28. **Evacuation Centres.** Evacuees will be advised to go to or be taken to the nearest accessible evacuation centre, which may initially be established at the direction of the Lismore City SES Local Controller but managed as soon as possible by the Department of Community Services. The evacuation centres are:

    a. Southern Cross University, Military Rd Lismore is the primary location for use as an evacuation centre. (primary)

    b. Goonellabah Community Centre, 27 Oliver Avenue Goonellabah is a suitable alternative evacuation centre once Southern Cross University is at capacity. (secondary)

    c. Goonellabah RSL Sports Club, 14 Oliver Avenue Goonellabah (alternate)

    d. Kadina High School, Kadina Street Goonellabah (alternate)

    e. Goonellabah Primary School, Cnr Bruxner Highway & Jubilee Avenue Goonellabah (alternate)

    f. Salvation Army Hall, 32 Cambridge Drive Goonellabah (alternate)

29. **Action on Arrival.** On arrival, evacuees will be:

    a. Registered.

    b. Medically checked, if necessary.

    c. Provided with their immediate welfare needs.

30. **Registration.** NSW Police will ensure that all evacuees are registered on arrival at the designated evacuation centres and details of the registrations are to be sent to the Northern Rivers Police District Headquarters by the quickest means available.

31. **Transport and storage.** Transport and storage of furniture from flood threatened properties will be arranged as time and resources permit.

32. **Safe Haven**. In the event that residents in North and South Lismore become stranded by the loss of evacuation routes they will be directed to move to the South Lismore Primary School. They will stay there until they can be safely evacuated.

Phase 4 – Return

33. Once it is considered safe to do so, the Lismore City SES Local Controller will authorise the return of evacuees to their normal or alternative place of residence. The decision will be made after consulting with appropriate agencies on safety issues (eg. the electrical safety of buildings).

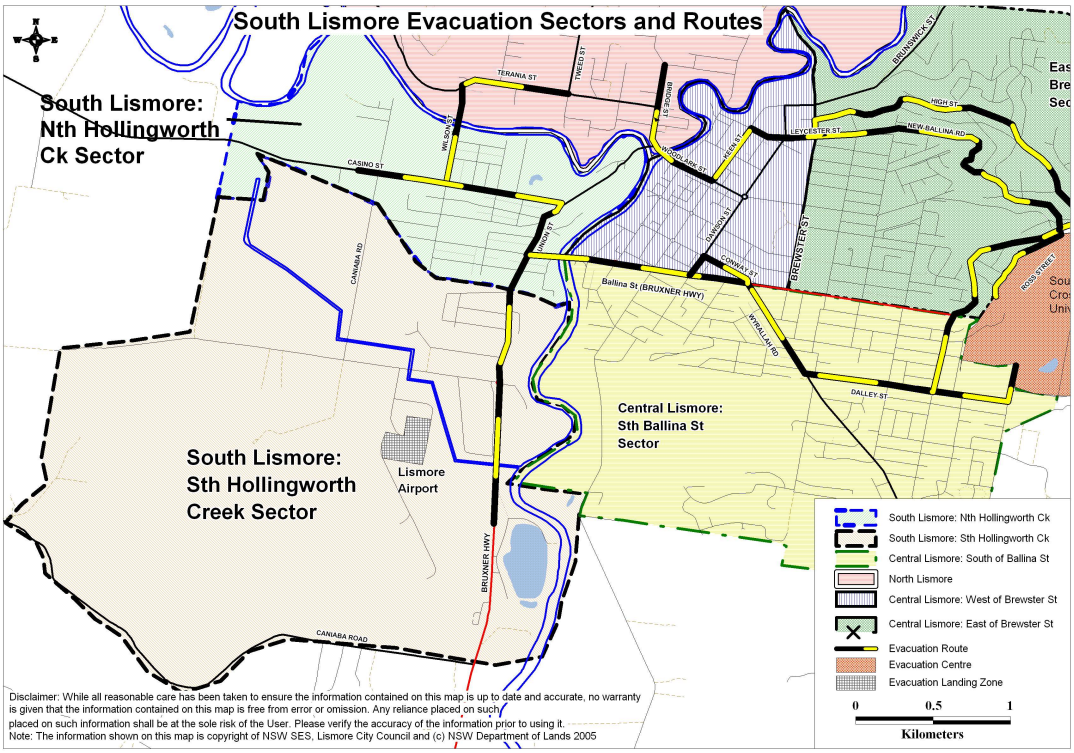
34. The return will be controlled by the Lismore City SES Local Controller and may be conducted, at his/her request, by the Department of Community Services.

ANNEX G - SOUTH LISMORE SECTOR

General

1. This sector covers South Lismore, bounded by Leycester Creek in the North, Wilsons River to the East and Caniaba Road to the South.

2. There are approximately 1200 properties requiring evacuation in a flood of similar magnitude to 1974.



Sector Control

3. The Lismore City SES Local Controller will control evacuations in this sector.

Evacuation Trigger

4. Evacuation will be required when South Lismore is likely to be inundated; typically this will be the result of the over-topping of the South Lismore levee.

5. The South Lismore levee is typically overtopped by flows from Leycester Creek in the vicinity of the northwest corner adjacent to the bowling club, resulting in flows into the northern portion of South Lismore. If floodwaters continue to rise the levee will be overtopped at Caniaba Street just south of Hollingworth Creek on the western side and all of South Lismore will be rapidly inundated.

6. The over-topping height of the South Lismore levee is dependent upon flows in Leycester Creek. If only Leycester Creek is in flood the level on the Rowing Club gauge when the South Lismore levee overtops is very low, between 7.6 and 8.6 m AHD. This is because part of the Leycester Creek flow is diverted up the Wilsons River and fills the floodplains north-east of the Lismore CBD. The portion of flood discharge is reduced and the gauge reading is low when the South Lismore levee overtops. This scenario occurred in 1989 when a 1 in 100 year flood occurred in Leycester Creek and an insignificant flood occurred on the Wilsons River. When the Wilsons River is also in flood the potential for flow diversion up the Wilsons River is reduced and hence the South Lismore levee will over-top at a greater height between 10.0 and 10.2 m AHD on the Rowing Club gauge.

7. If only the Wilsons River is in flood the situation could arise where South Lismore floods from the eastern side near the river bend west of Union St due to a backwater effect at the confluence of Leycester Creek and the Wilsons River. This is the opposite of mainstream Leycester flooding where the levee overtops at the northwest corner. In this instance the gauge will still read between 10 and 10.2 m AHD on the Rowing Club gauge when northwest corner overtops.

8. The South Lismore levee should be carefully monitored to ensure failure does not occur at heights lower than stated above.

Warning

9. In addition to those described in Annex F the following warning systems are available for South Lismore:

    a. A fixed siren will be used as an evacuation warning system when the gauge reaches the recommended height to begin evacuation.

b. Flood Wardens will assist with warning residents.

Time

10. Typically a minimum of 6 hours advanced warning time should be given of flood heights expected to overtop the South Lismore levee.

Evacuation Centres

11. **Primary Evacuation Centres.** Listed below are the first evacuation centres to be used:

    a. Southern Cross University, Military Rd Lismore is the primary location for use as an evacuation centre. (primary)

    b. Goonellabah Community Centre, 27 Oliver Avenue Goonellabah is a suitable alternative evacuation centre once Southern Cross University is at capacity. (secondary)

12. **Alternate Evacuation Centres.** Below are alternate evacuation centres that can be used once the primary and secondary centres at capacity:

    a. Goonellabah RSL Sports Club, 14 Oliver Avenue Goonellabah (alternate)

    b. Kadina High School, Kadina Street Goonellabah (alternate)

    c. Goonellabah Primary School, Cnr Bruxner Highway & Jubilee Avenue Goonellabah (alternate)

    d. Salvation Army Hall, 32 Cambridge Drive Goonellabah (alternate)

SUB SECTORS

13. Hollingworth Creek traverses the South Lismore Sector. Therefore the sector is divided into 2 sub sectors, bounded by Hollingworth Creek.

14. The sector includes:

a. North of Hollingworth Creek including the residential and partial industrial area bordered by Leycester Creek and Wilsons River

b. South of Hollingworth Creek encompassing the airport, a number of residential, commercial and industrial areas bordered by Wilsons River.

North of Hollingworth Creek Sector

15. **Evacuation Routes - Primary Evacuation Centre**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

    a. Local Streets to Wilson or Casino St, Union Street, Ballina St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

    b. Or when Ballina Street becomes cut between Dawson St and Wyrallah Rd: Local Streets to Wilson or Casino St, Union Street, Ballina St, Dawson St, Conway St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

16. **Evacuation Routes - Secondary Evacuation Centre**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

    a. Local Streets to Wilson or Casino St, Union Street, Ballina St, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah Community Centre

17. **Evacuation Routes - Alternate Evacuation Centres.** Evacuees should be encouraged to take the following routes, when the primary evacuation centres reach capacity. These routes are also shown on Map 3:

    a. Local Streets to Wilson or Casino St, Union Street, Ballina St, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah RSL Sports Club

    b. Local Streets to Wilson or Casino St, Union Street, Ballina St, Ballina Rd (Bruxner Hwy), Kadina St to Kadina High School

c. Local Streets to Wilson or Casino St, Union Street, Ballina St, Ballina Rd (Bruxner Hwy) to Goonellabah Primary School

d. Local Streets to Wilson or Casino St, Union Street, Ballina St, Ballina Rd (Bruxner Hwy), Rous Rd, Oliver Ave, Phillip St, Cambridge Drive to Salvation Army Hall.

18. **Evacuation Route Closures.** Evacuation routes within South Lismore begin to close once the South Lismore levee is overtopped. The overtopping height of this levee depends upon the scenarios discussed in point 6. Evacuation routes can close earlier due to localised flooding.

19. **Vulnerable Institutions** are listed in Annex B.

20. **Refuge Point.** The South Lismore Primary School will act as a temporary refuge. There is the capability to land helicopters.

South of Hollingworth Creek Sector

21. **Evacuation Routes - Primary Evacuation Centres**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

a. Local Streets to Bruxner Highway, Ballina St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

b. Or when Ballina Street becomes cut between Dawson St and Wyrallah Rd: Local Streets to Bruxner Highway, Ballina St, Dawson St, Conway St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

22. Evacuation Routes - Alternate Evacuation Centres. Evacuees should be encouraged to take the following routes, when the primary evacuation centres reach capacity. These routes are also shown on Map 3:

a. Local Streets to Bruxner Highway, Ballina St, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah RSL Sports Club

b. Local Streets to Bruxner Highway, Ballina St, Ballina Rd (Bruxner Hwy), Kadina St to Kadina High School

c. Local Streets to Bruxner Highway, Ballina St, Ballina Rd (Bruxner Hwy) to Goonellabah Primary School

d. Local Streets to Bruxner Highway, Ballina St, Ballina Rd (Bruxner Hwy), Rous Rd, Oliver Ave, Phillip St, Cambridge Drive to Salvation Army Hall.

23. **Evacuation Route Closures.** Evacuation routes begin to close once the South Lismore levee is overtopped. The overtopping height of this levee depends upon the scenarios discussed in point 6. Evacuation routes can close earlier due to localised flooding.

24. **Vulnerable Institutions** are listed in Annex B.

25. **Refuge Point.** The South Lismore Primary School will act as a temporary refuge. There is the capability to land helicopters.

ANNEX H - NORTH LISMORE SECTOR

General

1. This sector covers the residential, industrial and commercial area of North Lismore.

2. Within the North Lismore sector there are 360 properties requiring evacuation in a flood of similar magnitude to 1974, inhabiting approximately 850 people.

3. Twelve percent of dwellings have no transport in the event that evacuation is required.

4. Thirteen per cent (110 of 852) of residents in North Lismore are over 65.

5. During a flood parts of the sector can become low flood island and the community will become isolated between 9.0 and 9.4 metres AHD on the Rowing Club Gauge.

Sector Control

6. The Lismore City SES Local Controller will control evacuations in this sector.

Evacuation Trigger

7. Evacuation is to proceed when the Rowing Club gauge reaches 9.0m AHD.

8. The following routes close at the heights referenced to the rowing club Gauge:

    a. Terania Street closes at the viaduct at 9.15m AHD.

    b. Bridge Street closes at 9.4m AHD.

    c. Casino Street will close when the South Lismore levee bank overtops. This occurs between 7.6m AHD and 10.2m AHD on the Rowing Club gauge depending

9. Areas around Richmond River High School become isolated quickly during a flood.

Evacuation Warnings

10. In addition to those described in Annex F:

    a. A fixed siren will be used as an evacuation warning system when the gauge reaches the recommended height to begin evacuation.

    b. Flood Wardens will assist with warning residents.

Evacuation Centres

11. **Primary Evacuation Centres.** Listed below are the first evacuation centres to be used:

    a. Southern Cross University, Military Rd Lismore is the primary location for use as an evacuation centre. (primary)

    b. Goonellabah Community Centre, 27 Oliver Avenue Goonellabah is a suitable alternative evacuation centre once Southern Cross University is at capacity. (secondary)

12. **Alternate Evacuation Centres.** Below are alternate evacuation centres that can be used once the primary and secondary centres at capacity:

    a. Goonellabah RSL Sports Club, 14 Oliver Avenue Goonellabah (alternate)

    b. Kadina High School, Kadina Street Goonellabah (alternate)

    c. Goonellabah Primary School, Cnr Bruxner Highway & Jubilee Avenue Goonellabah (alternate)

    d. Salvation Army Hall, 32 Cambridge Drive Goonellabah (alternate)

Evacuation Routes

13. **Evacuation Routes - Primary Evacuation Centres**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

    a. **Route A:** Local Streets to Wilson or Casino St, Union Street, Ballina St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

    b. **Route A2**: When Ballina Street becomes cut between Dawson St and Wyrallah Rd: Local Streets to Wilson or Casino St, Union Street, Ballina St, Dawson St, Conway St, Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

    c. **Route B:** Local Streets to Bridge St, Woodlark St, Keen St, Leycester St, High St, Bruxner Hwy, Ross St to Southern Cross University

14. **Evacuation Route Closures.** Evacuation routes from North Lismore close progressively as flood waters rise.

    a. **Route A and A2** close when the South Lismore levee is over-topped between 7.6 and 10.2 m AHD on the Rowing Club Bridge (Note this is dependent on the scenarios discussed in Annexes A and G). Access to Wilson St will be affected by the following road closures

        - Pitt St 4.35 m AHD (Rowing Club gauge)
        - Winterton Parade 6.55 m AHD (Rowing Club gauge) near Richmond River High School.
        - Alexandra Parade 6.60 m AHD (Rowing Club gauge) near southern edge of the show ground.
        - Terania St at 9.15 m AHD (Rowing Club gauge) near the railway viaduct.

    b. **Route B** closes at 9.40 m AHD (Rowing Club gauge)

Vulnerable Institutions and Facilities Affected

15. Vulnerable institutions and facilities are listed in Annex B.

Refuge Points

16. The Showground or Race Course will act as an emergency refuge. The pavilion has a dry area that can act as a flood refuge point until suitable evacuation can be arranged. There is the capability to land helicopters.

17. Residents furthermost away from the river may have access to Dunoon Road through the showground.

ANNEX I - CENTRAL LISMORE SECTOR

General

1. The Central Lismore Sector covers all of the area to the East of Wilsons River within the Lismore precinct.

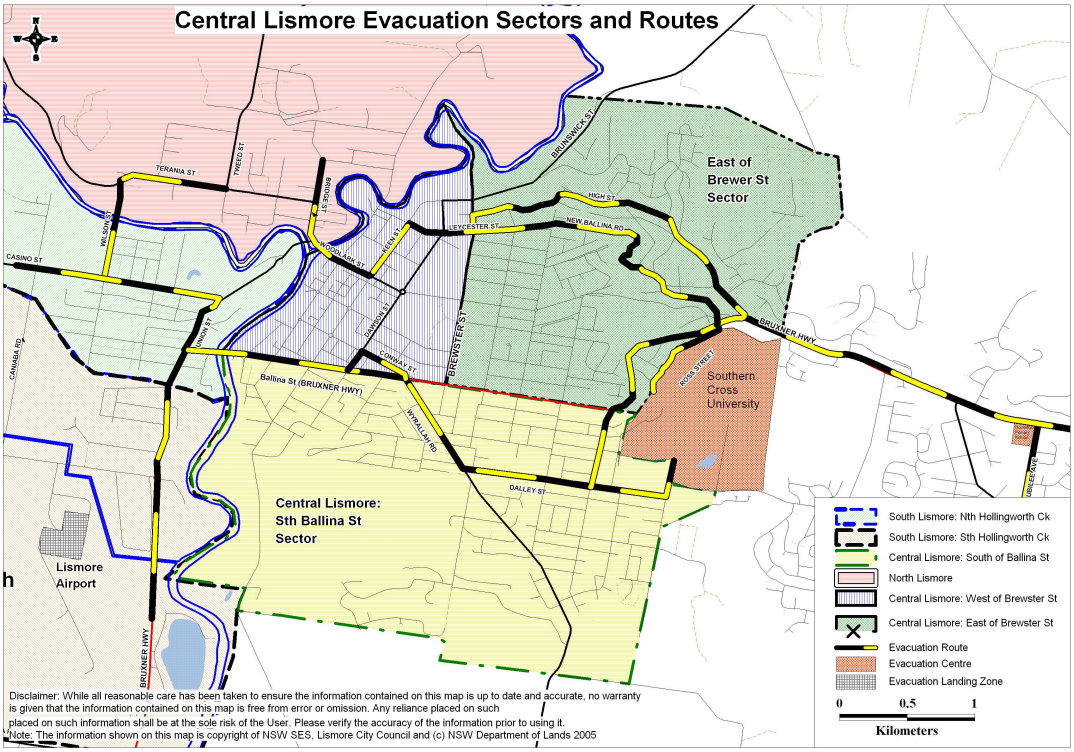
2. There are approximately 1000 residences and 1000 businesses requiring evacuation in a flood of similar magnitude to 1974.

3. During a flood, areas become completely inundated and evacuation proceeds towards higher ground.

4. With the overtopping of the Central Lismore Levee, there is a possibility that the area could be inundated for several days.

5. Once the Central Lismore levee overtops at Browns Creek and floods the Basin area the Lismore Central Business District will become a low flood island.

6. The map below shows the breakdown of the sectors of Central Lismore, as does Map 3.



Sector Control

7. **Control.** The Lismore City SES Local Controller will control evacuations in this sector.

Evacuation Triggers

8. Evacuation is to proceed when the Central Lismore levee is likely to overtop. During normal flood conditions the Central Lismore levee will overtop at the Browns Creek Spillway at 10.6 to 10.7 m AHD (Rowing Club gauge). However, during floods where peaks in Leycester Creek and the Wilsons River occur concurrently combined with a fast rate of rise over-topping could occur at this point as low as 10.4 m AHD (Rowing Club gauge).

9. The Central Lismore levee should be carefully monitored to ensure failure does not occur at heights lower than stated above.

Evacuation Strategy

10. The inundation extent of floods overtopping the Central Lismore levee will vary depending upon the magnitude of individual floods. Hence, smaller floods which overtop the Browns Creek Spillway may require evacuation only of those areas closest to the Spillway and the Lismore Basin and the Central Business District. For larger floods it will be necessary to evacuate the entire floodplain.

11. Priority for the dissemination of evacuation warnings should be given to the lowest lying areas close to Browns Creek Spillway, the Basin area, the Central Business District and the Gasworks Creek Spillway.

Time

12. It is likely that the evacuation of Central Lismore will occur concurrently with the evacuation of North and South Lismore, hence increasing congestion of evacuation routes.

13. Due to the large number of businesses in Central Lismore evacuation traffic will be much greater during business hours.

14. Typically a minimum of 6 hours advanced warning time should be given of flood heights expected to overtop the Central Lismore levee.

Evacuation Centres

15. **Primary Evacuation Centres.** Listed below are the first evacuation centres to be used:

    a. Southern Cross University, Military Rd Lismore is the primary location for use as an evacuation centre. (primary)

    b. Goonellabah Community Centre, 27 Oliver Avenue Goonellabah is a suitable alternative evacuation centre once Southern Cross University is at capacity. (secondary)

16. **Alternate Evacuation Centres.** Below are alternate evacuation centres that can be used once the primary and secondary centres at capacity:

a. Goonellabah RSL Sports Club, 14 Oliver Avenue Goonellabah (alternate)

b. Kadina High School, Kadina Street Goonellabah (alternate)

c. Goonellabah Primary School, Cnr Bruxner Highway & Jubilee Avenue Goonellabah (alternate)

d. Salvation Army Hall, 32 Cambridge Drive Goonellabah (alternate)

SUB SECTORS

17. The Central Lismore Sector is bounded by the Wilsons River in the West and includes the low-lying areas towards Goonellabah in the East. Since the area borders the main river and because the evacuation centres are located to the East, the sector is divided into 3 sub sectors with the arrangements for each detailed in the following section

18. The Central Lismore sectors include:

a. **Areas East of Brewer Street**, bounded by Wilsons River to the West and North, and Ballina Street to the South.

b. **West of Brewer Street**, bounded by Ballina Street in the South and

c. **South of Ballina Street**

East of Brewer Street Sub Sector

19. **Evacuation Routes - Primary Evacuation Centres**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

a. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Highway), Ross Rd to Southern Cross University

b. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah Community Centre

20. **Evacuation Routes - Alternate Evacuation Centres.** Evacuees should be encouraged to take the following routes, when the primary evacuation centres reach capacity. These routes are also shown on Map 3:

    a. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah RSL Sports Club

    b. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Hwy), Kadina St to Kadina High School

    c. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Hwy) to Goonellabah Primary School

    d. Local Streets to High St or New Ballina Rd, Ballina Rd (Bruxner Hwy), Rous Rd, Oliver Ave, Phillip St, Cambridge Drive to Salvation Army Hall.

21. **Evacuation Route Closures.** All evacuation routes will begin to close once the Central Lismore levee overtops at 10.4 to 10.6 m AHD (Rowing Club gauge). Evacuation routes can close earlier due to localised flooding.

22. **Refuge Point.** The hill in the North of the sector will act as a temporary refuge.

West of Brewster Street Sub Sector

23. **Evacuation Routes to Primary Evacuation Centres**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

    a. Local Streets to Woodlark St or Keen St, High St or New Ballina Rd, Ballina Rd (Bruxner Highway), Ross Rd to Southern Cross University

    b. Local Streets to High St or New Ballina St, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah Community Centre

24. Evacuation Routes to Alternate Evacuation Centres. Evacuees should be encouraged to take the following routes, when the primary evacuation centres reach capacity. These routes are also shown on Map 3:

a. Local Streets to Woodlark St or Keen St, High St or New Ballina St, Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah RSL Sports Club

b. Local Streets to Woodlark St or Keen St, High St or New Ballina St, Ballina Rd (Bruxner Hwy), Kadina St to Kadina High School

c. Local Streets to Woodlark St or Keen St, High St or New Ballina St, Ballina Rd (Bruxner Hwy) to Goonellabah Primary School

d. Local Streets to Woodlark St or Keen St, High St or New Ballina St, Ballina Rd (Bruxner Hwy), Rous Rd, Oliver Ave, Phillip St, Cambridge Drive to Salvation Army Hall.

25. **Evacuation Route Closures.** All evacuation routes will begin to close once the Central Lismore levee overtops at 10.4 to 10.6 m AHD (Rowing Club gauge). Evacuation routes can close earlier due to localised flooding.

South of Ballina St Sub Sector

26. This sector covers the business district and combined residential areas of the Lismore CBD – south of Ballina Street.

27. **Evacuation Routes to Primary Evacuation Centres**. Evacuees should be encouraged to take the following routes which are also shown on Map 3:

a. Local Streets to Bruxner Highway, Ballina St, or Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

b. Or when Ballina Street becomes cut between Dawson St and Wyrallah Rd: Local Streets to Wyrallah Rd, Dalley St, Military Rd to Southern Cross University

28. **Evacuation Routes to Alternate Evacuation Centres**. Evacuees should be encouraged to take the following routes, when the primary evacuation centres reach capacity. These routes are also shown on Map 3:

a. Local Streets to Bruxner Highway, Ballina St, or Ballina Rd (Bruxner Hwy), Kadina St, Oliver Ave to Goonellabah RSL Sports Club

b. Local Streets to Bruxner Highway, Ballina St, or Ballina Rd (Bruxner Hwy), Kadina St to Kadina High School

c. Local Streets to Bruxner Highway, Ballina St, or Ballina Rd (Bruxner Hwy) to Goonellabah Primary School

d. Local Streets to Bruxner Highway, Ballina St, or Ballina Rd (Bruxner Hwy), Rous Rd, Oliver Ave, Phillip St, Cambridge Drive to Salvation Army Hall.

29. **Evacuation Route Closures.** All evacuation routes will begin to close once the Central Lismore levee overtops at 10.4 to 10.6 m AHD (Rowing Club gauge). Evacuation routes can close earlier due to localised flooding.

ANNEX J - RESUPPLY REQUIREMENTS AND OPERATIONS

BACKGROUND

1. During periods of flooding the following towns and villages in the Lismore Council area can become isolated:

    a. Nimbin

    b. The Channon and Dunoon

    c. Goolmangar

    d. Wyrallah

    e. Gundarimba

    f. Caniaba

    g. Bexhill and Clunes

2. Individual properties in the Lismore City Council area can also become isolated requiring resupply.

3. Likely durations of isolation are described in Table 1. Note these are assumed average durations and will vary depending upon infrastructure damage and flood magnitude.

ARRANGEMENTS

Control

4. During floods resupply of isolated communities and properties will be controlled and coordinated by the NSW State Emergency Service (SES). Small-scale resupply operations will be controlled by the Lismore City SES Local Controller. Should resupply operations escalate beyond the capabilities of local

resources control may be handed over to the Richmond Tweed SES Region Controller.

Conduct

5. The SES will conduct resupply operations with assistance from the Rural Fire Service and Department of Community Services.

Responsibilities

1. Lismore City SES Local Controller

   Control and coordinate the resupply of isolated communities and properties.

2. Department of Community Services

   Provide welfare services for flood affected people.

3. NSW Rural Fire Service

   Assist the SES with the resupply of isolated properties and communities

4. Assistance from other emergency services and functional areas may be required as per DISPLAN arrangements.

Concept of Operations

5. Normal supply arrangements will be maintained for as long as practicable. The main supply routes will be kept open to essential and emergency vehicles for as long as it is safe to do so. Detailed resupply arrangements for isolated towns and villages are presented in Table 1 at the end of this Annex.

Resupply Procedures

6. **Pre-Stocking.** As part of flood warning procedures residents and storekeepers likely to become isolated will be warned to pre-stock. Residents in particular should ensure they have an adequate supply of high usage non-perishable items, pet food, fuel, water and essential medications.

7. **Resupply of Isolated Towns and Villages.** When isolation occurs, storekeepers will be expected to place orders on suppliers where they have a line of credit or make temporary payment arrangements and to instruct those suppliers to package their goods and deliver them to loading points designated by the SES. Similarly, essential services (eg. hospitals) will make arrangements to acquire their resupply needs from normal sources and have the supplies delivered to loading points designated by the SES.

8. The SES may establish a vetting committee to ensure that only essential goods are ordered. The committee will consist of representatives from the SES, Lismore City Council, Police, DoCS and the Chamber of Commerce. The committee will ensure that businesses requesting supplies are not using the flood as a means of restocking free of charge and also that load space in resupply vehicles and aircraft is optimally used.

9. Where supplies are not available within the council area, the Lismore City SES Local Controller may request them through the Richmond Tweed SES Region Headquarters.

10. **Resupply of Isolated Properties.** Isolated properties often need resupply during floods. Property owners may call their suppliers direct or place their orders with the Lismore SES, through DoCS, or through their friends. The principles to be applied when planning for the resupply of isolated properties are:

    a. DoCS will liaise with the SES concerning property holders who place orders with them. They will include people in dire circumstances who receive resupply at no cost. DoCS have a well developed system for this situation, including a standard list of approved resupply items. People not in dire circumstances are responsible for payment of their resupply items

    b. Persons not in dire circumstances are responsible for the payment of their resupply items.

c. If a property holder seeks resupply from the SES and claims to be, or is considered to be, in dire circumstances, he/she is to be referred to DoCS.

d. Local suppliers are responsible for packaging resupply items for delivery.

e. Local suppliers will liaise with the SES regarding delivery of resupply items to the designated loading point.

11. The outline of the resupply system for isolated properties is represented in Figure 1.

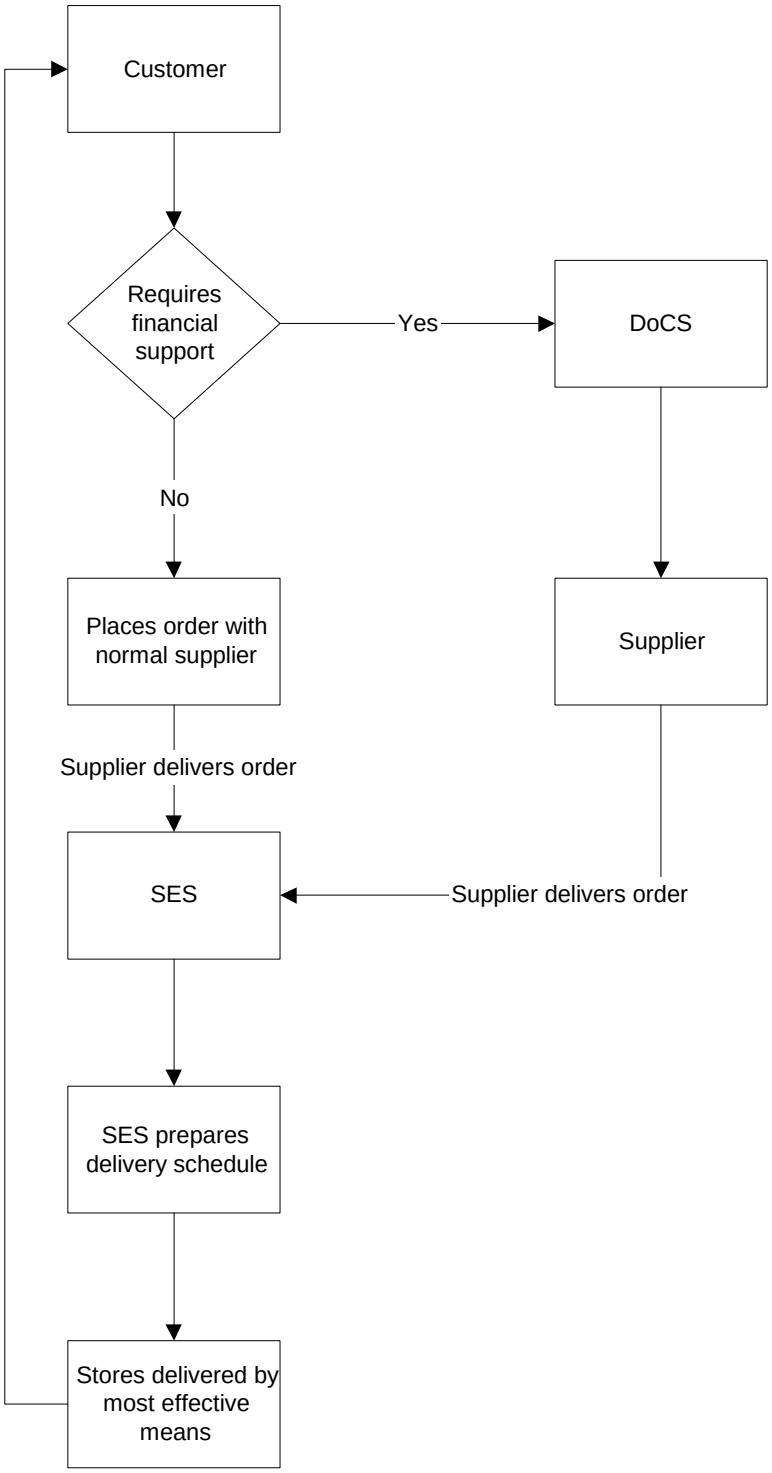


Figure 1 Outline of resupply system for isolated properties.

12. **Pharmaceutical Supplies and Prescription Medicine.** The SES can deliver completed prescriptions to isolated properties or communities. It is the responsibility of the individual to ensure that the prescription is completed.

13. **Mail Delivery.** The SES is prepared to deliver mail to isolated communities and properties but may not be able to do so according to Australia Post timetables.

14. **Personnel Movement.** Where possible, the SES will assist isolated communities and properties with the movement of people to and from isolated areas.

15. **Transport Methods.** Resupply will be conducted using high clearance vehicle, SES flood rescue boat, fixed wing or rotary wing aircraft.

16. If air resupply is necessary the Lismore City SES Local Controller will liaise with the Richmond Tweed SES Region Controller who will make arrangements for air resupply. Loading points for air resupply can be established at Casino airport.

17. The Lismore City SES Local Controller may task aircraft within the council area. However, during floods affecting more than one council area, aircraft will normally be tasked by the Richmond Tweed SES Region Controller.

18. Landing zones for air-resupply are listed in Annex N

Table 1 Resupply Arrangements for Towns and Villages

Community	Main Supply Routes	Likely Point of Closure of Supply Routes	Essential Services Requiring Resupply	Likely Duration of Isolation	Normal Supply Arrangements	Distribution Point	Notes
Nimbin (pop. 280)	Nimbin Rd, Murwillumbah Rd	Nimbin Rd is cut in the vicinity of Blake Brook Bridge approx 6 km from Lismore CBD. Murwillumbah Rd is cut in the vicinity of the Rock Valley Post Office approximately 10 km from the Lismore CBD.	Hospital	48 hours*	Supply will be by air (helicopter) from Casino	Bowling Club	Rocky Creek Dam is upstream of Nimbin

Community	Main Supply Routes	Likely Point of Closure of Supply Routes	Essential Services Requiring Resupply	Likely Duration of Isolation	Normal Supply Arrangements	Distribution Point	Notes
The Channon & Dunoon	Dunoon Rd	Dunoon Rd at Lismore Show Ground	None	36-48 hours*	Supply will be by air (helicopter) from Casino	The Channon School &/or Dunoon School	
Goolmangar (10 – 15 houses)	Dunoon Rd	Dunoon Rd at North Lismore	None	36-48 hours*	Supply will be by air (helicopter) from Casino	Memorial Hall	
Wyrallah	Wyrallah Rd, Coriki Rd, Wyrallah-Woodburn Rd	Wyrallah Rd at Lismore, Tregeagle Rd at Marom Creek, Wyrallah-Woodburn Rd close to the Coraki turnoff, Coraki Rd at Ruthven	None	24 hours	Supply will be by air (helicopter) from Casino, boat from Coraki or Boat from Lismore	Wyrallah Public School	

Community	Main Supply Routes	Likely Point of Closure of Supply Routes	Essential Services Requiring Resupply	Likely Duration of Isolation	Normal Supply Arrangements	Distribution Point	Notes
Gundurimba	Bruxner Highway, Coraki Road	Bruxner Highway at South Lismore, Coraki Road	None	2-3 days	Supply will be by air (helicopter) from Casino, or boat from Lismore	Gundurimba Hall	
Caniaba	Caniaba Rd	Caniaba Rd at numerous causeways	None	48 hours	Supply will be by air (helicopter) from Casino	Caniaba Public School	

Bexhill & Clunes	Bangalow Road	Bangalow Rd at: Boatharbour, Eltham & Binaburra	None	3 days	Boat from Lismore	Bexhill Public School	Access is maintained between Bexhill & Clunes via Bangalow Rd

ANNEX K - AVIATION MANAGEMENT

Purpose

1. During floods aviation assets can be used to perform numerous tasks including resupply, evacuation, personnel movement and reconnaissance.

Coordination of Aviation Assets

2. The Lismore City SES Local Controller may task aircraft for flood operations within the council area if other transport means are not available or not suitable. During floods affecting more than one council area, aircraft will normally be tasked centrally by the Richmond Tweed SES Region Controller.

Landing Zones

3. The following sites can be used for the landing of aircraft:

Community	Landing Zone	Aircraft Suitability	Features
Nimbin	Playing field adjacent to bowling club; Playing fields at central school GR (Nimbin 9540-4-N).	Helicopter only	
The Channon/Dunooon	The Channon Public School &/or Dunoon Public School GR (Dunoon 9540-1-S).	Helicopter only	
Goolmangar	Adjacent to the memorial hall GR (Casino 9540-3-N).	Helicopter only	
Wyrallah	Area adjacent to Wyrallah Public School GR (Wardell 9540-2-S).	Helicopter only	

Community	Landing Zone	Aircraft Suitability	Features
Gundurimba	Gundurimba Hall GR (Lismore 9540-2-N).	Helicopter only	
Caniaba	Caniaba Public School GR (Casino 9540-3-N).	Helicopter only	
Bexhill/Clunes	Bexhill Public School GR (Dunoon 9540-1-S).	Helicopter only	
Lismore	Lismore Airport GR S28'39.8" E153'15.6"	Helicopter and Fixed Wing	Can be used up to 9.5m as referenced to the Lismore gauge. Refuelling available.
Ballina	Ballina Airport	Helicopter and Fixed Wing	Refuelling available.
Goonellabah	Hepburn Park	Helicopter	
Casino	Casino Airport	Helicopter and Fixed Wing	

4. **Lismore Airport.** The conditions at the Lismore Airport are as follows

   a. Remains open for normal activity until approximately 9.5 metres on the Lismore gauge.

   b. At 9.9m AHD, the Lismore Airport becomes partially inundated (600m at the Southern End). There is still 1200m in the North end that is available for use.

c. At 10.4m AHD, the Lismore Airport is further inundated, 800m at the Southern End.

5. **Refuelling facilities** are available at Lismore and Ballina airports.

ANNEX L - ARRANGEMENTS FOR THE EVACUATION OF CARAVAN PARKS AND THE RELOCATION OF CARAVANS

General

1. The following caravan parks in Lismore are flood liable:

   a. Lismore Lake Caravan Park

   b. Lismore Palms Caravan Park

   c. Lismore Tourist Caravan Park

   d. Road Runner Caravan Park

Name	Address	Floor Level	Total Van Sites	Number of Permanent Vans	Peak Occupancy (People)	Arrangements:
Lismore Lake Caravan Park	Bruxner Highway (adjacent to Lismore Lake)	9.5m (AHD)	89 Vans 30 Cabins	60	240	Vans that can be moved will be relocated by the owner to high ground along Bruxner Highway
Lismore Palms Caravan Park	42 - 58 Brunswick Street	9.7m (AHD)	50 (13 cabins, 17 resident-occupied caravans,	20	120	Vans will be moved to Lismore Heights Bowling Club in High Street via

Name	Address	Floor Level	Total Van Sites	Number of Permanent Vans	Peak Occupancy (People)	Arrangements:
			20 tourist van sites)			Donnans Road
Lismore Tourist Caravan Park	60 Dawson Street	6.5m (AHD)	68	58	60-70	Degree of inundation in the early stages of flooding is dependant on the operation of Brown's Creek floodgate and pumping station
Road Runner Caravan Park	61 Caniaba Rd, South Lismore		121	110	150	2 Evacuation sites on Caniaba Road.

Figure 2, Lismore caravan parks at risk from flooding

Advising Procedures

2. The proprietors of flood liable caravan parks are encouraged to ensure that the owners and occupiers of caravans are:

   a. Made aware that the caravan park is flood liable by:

      - Handing a printed notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and outline the evacuation and van relocation arrangements as detailed in this Annex.

      - Displaying this notice prominently in each van.

b. Made aware that if they are expecting to be absent from their vans for extended periods, they must:

- Provide the manager with a key to the van, in a sealed envelope.
- Provide a contact address and telephone number.
- Inform the manager if a vehicle will be required to relocate the van during flood time.
- Leave any mobile van in a condition allowing it to be towed in an emergency (i.e. tyres inflated, jacks wound up, personal effects secured and annexes and lines for water, sewer, electricity and gas readily detachable).

c. Informed when a flood is rising. At this time, occupiers will be advised to:

- Ensure that they have spare batteries for their radios.
- Listen to a local radio station for updated flood information.
- Prepare for evacuation and van relocation.

3. The SES Local Controller will ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.

Evacuation of Occupants and Relocation of Vans

4. Caravan park proprietors are encouraged to install flood depth indicators and road alignment markers within their caravan parks.

5. When an evacuation order is given, due to an impending flood emergency:

a. Occupiers of non-movable vans should:

- Secure their vans by tying them down to prevent flotation;
- Isolate power to their vans;

- Collect personal papers, medicines, a change of clothing, toiletries and bedclothes;

- Lift the other contents of their vans as high as possible within the van; and

- Move to a designated evacuation centre at Southern Cross University if they have their own transport, or move to the caravan office to await transport.

b. Where possible, vans that can be moved will be relocated by their owners. Park managers will arrange for the relocation of mobile vans whose owners do not have a vehicle. Council, SES and RFS personnel will assist if required and may be able to provide additional vehicles. Vans are to be moved to the following locations:

- **Lismore Lake Caravan Park.** The park has a ground level of 9.5 metres (AHD). Vans will be relocated by the owner to high ground along the Bruxner Highway. Most of the vans are tied down and would be difficult to move.

- **Lismore Palms Caravan Park.** The park has a ground level of 9.7 metres (AHD). It has its own evacuation plan and the owner will relocate vans to Lismore Heights Bowling Club in High Street.

- **Lismore Tourist Caravan Park.** The park has a ground level of 6.5 metres (AHD), but the degree of inundation in the early stages of flooding is dependant on the operation of Brown's Creek pumping station, and the amount of local rainfall. The park manager will arrange for the relocation of the vans.

6. Occupants of vans that are being relocated should go to a designated evacuation centre if they have their own transport. Those without their own transport are to report to the caravan park office.

7. Caravan park managers will be encouraged to:

   a. Advise the Lismore City SES Local Controller of the:

   b. The Number of people requiring transport;

   c. Details of any medical evacuations required, and

   d. Whether additional assistance is required to carry out the evacuation.

   e. Check that no people remain in non-removable vans that are likely to be inundated.

   f. Inform the Lismore City SES Local Controller when the evacuation of the Caravan Park has been completed.

   g. Provide the Lismore City SES Local Controller with a register of people that have been evacuated.

Return of Occupants and Vans

8. The Lismore City SES Local Controller, using council resources as necessary, will advise when it is safe for the caravan parks to be re-occupied.

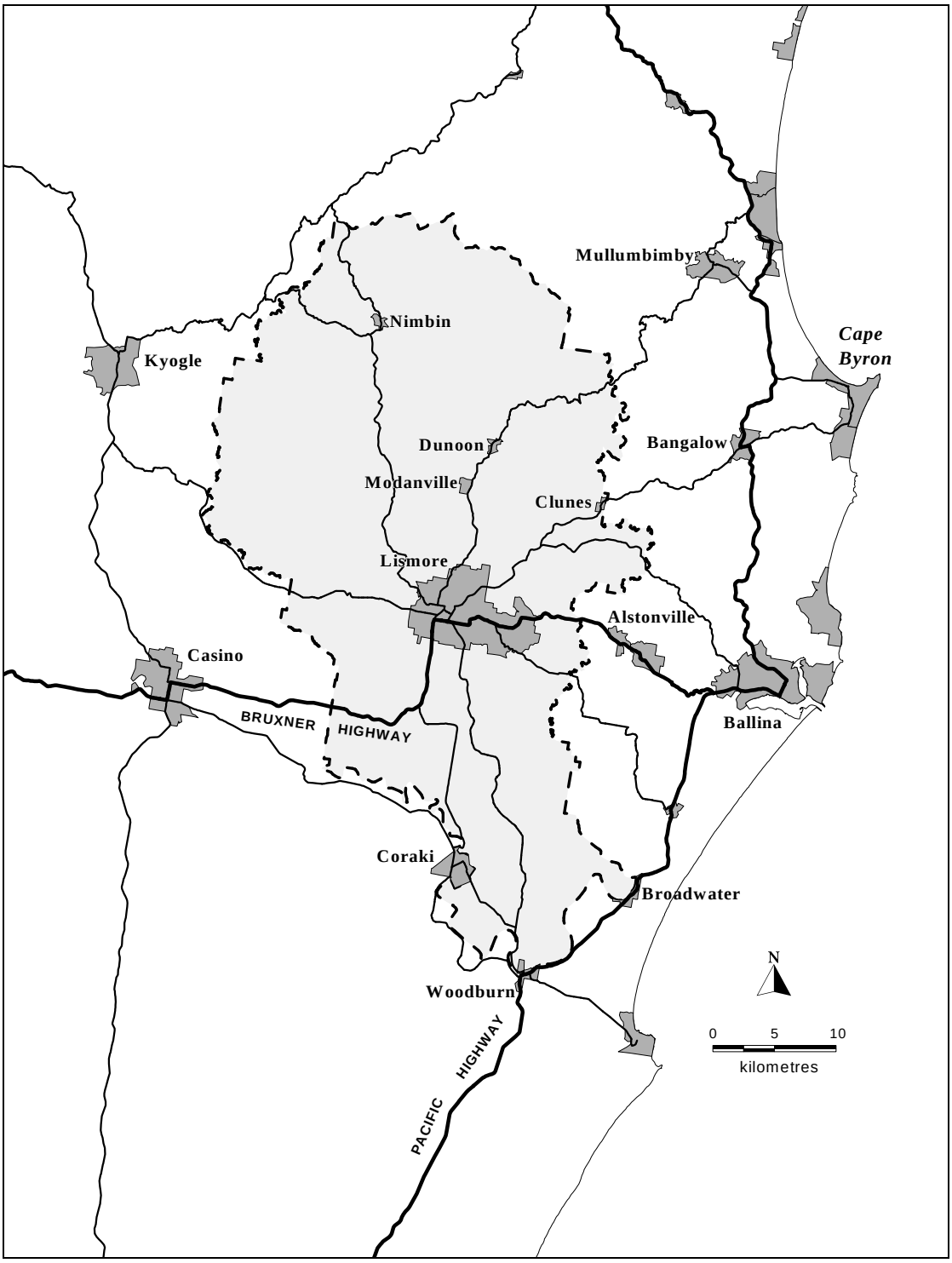
9. Vans will be towed back to the caravan parks by van owners or by vehicles and drivers arranged by the park managers. Again, council and SES personnel will assist if available.

ANNEX M - VULNERABLE SCHOOLS TABLE

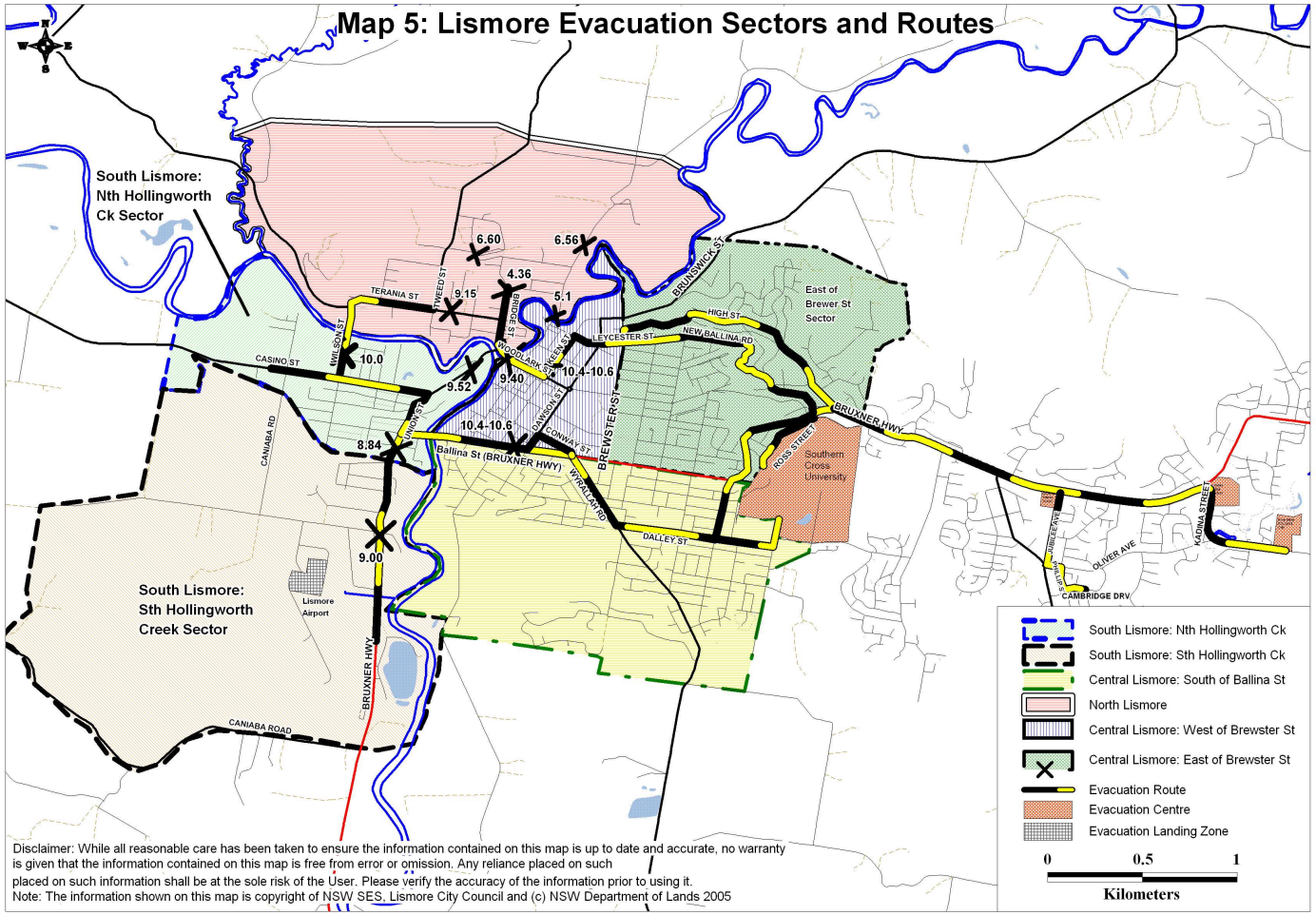
School	Address	Flood Notes	Comments
Richmond River High School	Lake St; North Lismore	Water on site at 8.27m, access becomes difficult from 5.5m onwards	
Trinity College	Dawson St; Lismore	Water on site from 7.0m onwards	
South Lismore Primary School	Wilson St; South Lismore	Water not on site until levee overtops.	This is the designated Safe Haven for South & North Lismore residents. A key for upstairs public access is held by the Lismore City SES Controller.
Our Lady Help of Christians	Rhodes St; South Lismore	Water not on site until levee overtops.	Isolated if Hollingsworth Creek Bridge is closed at 8.8m due to flood pump failure.
St. John's College	Woodlawn	Isolated when Railway Underpass (Woodlawn Road) is closed at approx. 6.2m	

MAP 1 - THE RICHMOND-WILSONS RIVER BASIN

MAP 2 - LISMORE CITY LOCAL GOVERNMENT AREA



MAP 3 - LISMORE EVACUATION SECTORS AND ROUTES



MAP 4 - GAUGE HEIGHTS OF ROAD CLOSURES; FEBRUARY 2001