NSW STATE EMERGENCY SERVICE

Inverell Shire

Local Flood Plan

FloodSafe

INVERELL SHIRE FLOOD EMERGENCY SUB PLAN

A Sub-Plan of the Inverell Shire Council Local Emergency Management Plan (EMPLAN)

Volume 1 of the Inverell Shire Local Flood Plan

AUTHORISATION

The Inverell Flood Emergency Sub Plan is a sub plan of the Inverell Shire Council 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 Inverell Local Controller

Date: 7th Feb 2013

Approved

Chair, Local Emergency Management Committee

Date: 7 Feb 2013

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DISTRIBUTION LIST

Recipient	Number of copies
NSW SES Inverell Local Controller	1
NSW SES Ashford, Yetman and Inverell Unit Controllers	1
NSW SES Ashford, Yetman and Inverell Units	1
NSW SES North West Region Headquarters	1
NSW SES State Headquarters	1
Inverell Shire Council, Local Emergency Operations Controller	1
NSW Police Force, New England Local Area Command	1
Inverell Shire Council, Local Emergency Management Committee Members	4
Inverell Shire Council, Local Emergency Management Officer	1
Inverell Shire Council, Local Emergency Operations Centre	1
Inverell Shire Council, Mayor	1
Inverell Shire Council, General Manager	1
Inverell Shire Council, Technical Services Department	1
Fire and Rescue NSW, Inverell	1
Rural Fire Service, Northern Tablelands Team	1
Ambulance Service of NSW, Inverell and Ashford	1
Volunteer Rescue Association, Inverell Rescue Squad	1
Office of Environment and Heritage	1
Evacuation Centres	1 each
Hospitals	1
Schools	1 each
Caravan Parks	1 each
Council Libraries	1 each
Total	

VERSION HISTORY

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

Description	Date
Inverell Local Flood Plan endorsed	**Feb 2008**

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

The Inverell Local Controller
NSW State Emergency Service
418 Frome St, MOREE NSW 2400

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

Amendment Number	Description	Updated by	Date

Document Issue: V28112012

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
CBR	Chemical, Biological or Radiation
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
NOW	NSW Office of Water
GIS	Geographic Information System
GRN	Government Radio Network
IAP	Incident Action Plan
IFF	Imminent Failure Flood
LEMC	Local Emergency Management Committee
LEOCON	Local Emergency Management Controller
LGA	Local Government Area
OEH	Office of Environment and Heritage (previously DECCW)

MHL	Manly Hydraulics Laboratory
PMF	Probable Maximum Flood
PMR	Private Mobile Radio
PMP	Probable Maximum Precipitation
RFS	Rural Fire Service
RMS	Roads and Maritime Services
SEOCON	State Emergency Operations Controller
SERCON	State Emergency Recovery Controller
NSW SES	NSW State Emergency Service
SEWS	Standard Emergency Warning Signal
VRA	Volunteer Rescue Association
WICEN	Wireless Institute Civil Emergency Network

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).

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.

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 ie 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.

EMPLAN (Emergency Management Plan). The object of a EMPLAN is to ensure the coordinated response by all agencies having responsibilities and functions in emergencies.

Emergency Alert. A national telephony based alerting system available for use by emergency service agencies to send SMS and voice messages to landlines and/or mobile telephones (by billing address) in times of emergency.

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 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 a 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 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).

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.

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).

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.

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 Inverell Shire Council area. 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 and the State Emergency Service Act 1989. It has been approved by the NSW SES Inverell Local Controller and the NSW SES North West Region Controller as a NSW SES plan and endorsed by the Inverell Shire Council 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 Inverell Shire Council area which includes:

a. The towns and villages of Inverell, Ashford, Bonshaw, Bukkulla, Cherry Tree Hill, Delungra, Elsmore, Gilgai, Graman, Little Plain, Mt Russell, Nullamanna, Oakwood, Sapphire, Stannifer, Wallangra and Yetman.

b. The Goonoowiggal Reserve.

c. The Kwiambal National Park.

d. Large areas of rural land.

e. Lake Pindari and Lake Copeton.

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 North West Region and for emergency management purposes is part of the New England 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 Inverell Shire Council area.

1.5 RESPONSIBILITIES

1.5.1 The general responsibilities of emergency service organisations and supporting services (functional areas) are listed in the Local and State

Emergency Management Plans (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 Inverell Local Controller.** The NSW SES Inverell Local Controller is responsible for dealing with floods as detailed in the State Flood Plan, and will:

Preparedness

a. Maintain a Local Headquarters at 52 Burtenshaw Road (EOC), Inverell 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 policy as laid down in the NSW SES Controllers' Guide and the NSW SES Operations Manual.

c. Coordinate the development and operation of a flood warning service for the community.

d. Participate in floodplain risk management initiatives organised by the Inverell Shire Council.

e. Coordinate a public education program.

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

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

Response

h. Appoint an appropriate Local Incident Controller to undertake response roles. The Incident Controller will:

i. Control flood and storm response operations. This includes:

- Directing the activities of the NSW SES units operating within the council area.
- Coordinating the activities of supporting agencies and organisations and ensuring that liaison is established with them.
- Contribute to preparation of Region IAP.

j. Provide an information service in relation to:

- Flood heights and flood behaviour.
- Road conditions and closures as advised by Inverell Shire Council.
- Advice on methods of limiting property damage.
- Confirmation of evacuation warnings and evacuation orders.

k. Direct the conduct of flood rescue operations.

l. Direct the evacuation of people and/or communities.

m. Provide immediate welfare support for evacuated people.

n. Coordinate the provision of emergency food and medical supplies to isolated people and/or communities.

o. Coordinate operations to protect property, for example by:

- Arranging resources for sandbagging operations.
- Lifting or moving household furniture.
- Lifting or moving commercial stock and equipment.

p. Arrange for support (for example, accommodation and meals) for emergency service organisation members and volunteers assisting them.

q. Ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.

r. If NSW SES resources are available, assist with emergency fodder supply operations conducted by Agriculture and Animal Services.

s. If NSW SES resources are available, assist the NSW Police Force, RMS and Council with road closure and traffic control operations.

t. Exercise financial delegations relating to the use of emergency orders as laid down in the NSW SES Controllers' Guide.

u. Coordinate the collection of flood information for development of intelligence.

v. Submit Situation Reports to the NSW SES North West Region Headquarters and agencies assisting within the council area. These will contain information on:

- Road conditions and closures.
- Current flood behaviour.
- Current operational activities.
- Likely future flood behaviour.
- Likely future operational activities.
- Probable resource needs.

w. Keep the Local Emergency Operations Controller advised of the flood situation and the operational response.

x. Issue the 'All Clear' when flood operations have been completed.

Recovery

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

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

1.5.3 **NSW SES Inverell, Ashford and Yetman Unit Controllers:**

a. Assist the NSW SES Inverell 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.
- Public education.

b. Conduct flood operations within the Inverell Shire Council area as directed by the NSW SES Inverell Local Incident Controller.

c. Submit Situation Reports to the NSW SES Inverell Local Headquarters for distribution to the NSW SES North West Region Headquarters and agencies assisting within the local area.

1.5.4 **NSW SES Inverell, Ashford, and Yetman Unit Members:**

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

- The management of the NSW SES Inverell 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.
- Sandbagging.
- Lifting and/or moving household furniture and commercial stock.
- Animal rescue.
- 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.

1.5.5 **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:
  - Supply and delivery of emergency fodder.
  - 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.
  - Operation of animal shelter compound facilities for the domestic pets and companion animals of evacuees.

b. Forests NSW:

- Close and evacuate at risk camping grounds in Forests NSW managed areas.

1.5.6 The **Ambulance Service of NSW**:

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.

1.5.7 **Australian Government Bureau of Meteorology (The Bureau):**

a. Provide Flood Watches for the Border Rivers Basin.

b. Provide Flood Warnings, incorporating height-time predictions, for Ashford (416006), Inverell (416009), and Yetman (416058) gauges.

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

1.5.8 **Caravan Park Proprietor(s)**:

a. Prepare a Flood Management Plan for the Caravan Park.

b. Install flood depth indicators and road alignment markers within their caravan parks.

c. Ensure that owners and occupiers of caravans are 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.
- Displaying this notice prominently in each van.

d. Ensure that owners and occupiers of caravans are aware that if they are expecting to be absent from their vans for extended periods, they must:

- Provide the manager with a key; in a sealed envelope; to the van.
- 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 (ie: tyres inflated, jacks wound up, personal effects secured and annexes and lines for water, sewer, electricity and gas readily detachable).

e. Ensure that occupiers are informed of Flood Warnings and Flood Watches. 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 van relocation.

f. Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and van relocation when flooding occurs. Owners of vans which are incapable of being relocated, should ensure they are securely anchored to their site to avoid being swept away.

g. Coordinate the evacuation of people and the relocation of moveable vans when floods are rising and their return when flood waters have subsided. Vans will be towed back to the caravan park(s) by van owners or by vehicles and drivers arranged by the park managers.

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

1.5.9 **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.

1.5.10 **Office of Environment and Heritage**:

a. Provide specialist policy, engineering and scientific advice to councils and the NSW SES on flood related matters including assistance with:

- The identification of flood problems.
- The preparation of Floodplain Risk Management Plans and associated studies.
- The implementation of floodplain risk management plans. This involves floodplain management projects which include flood mitigation works, flood warning, strategic land use planning and upgrade of evacuation routes.
- The exercising of Local Flood Plans.

b. Provide specialist advice flood related matters as follows:

- Provide the NSW SES with access to relevant studies regarding flooding, including Flood Studies and Floodplain Risk Management Studies.
- Coordinate the collection of post event flood data, in consultation with the NSW SES.
- 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.

c. **National Parks and Wildlife Service**

- Close and evacuate at risk camping grounds in National Parks managed areas.

1.5.11 **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 Providers (electricity, gas, water, waste water) Essential Energy:

- Provide advice to the NSW SES Inverell Local 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 electrical reticulation equipment.
- Inspect, test and reconnect customers' electrical/ gas/ water/waste water installations as conditions allow.
- Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.

1.5.12 **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.
- Establish recovery centre facilities.

1.5.13 **Environmental Services Functional Area**:

a. When requested by NSW SES:

- Implement the Environmental Services Functional Area (Enviroplan) Supporting Plan if required.
- Activate the Hazmat/CBR Emergency Sub Plan if required.

1.5.14 **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.
- Assist the NSW SES with the warning and evacuation of hospitals.

1.5.15 **Fire and Rescue NSW, Inverell:**

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

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

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

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

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

1.5.16 **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.

1.5.17 **NSW Police Force, New England 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.

1.5.18 **NSW Rural Fire Service (RFS Northern Tablelands Team):**

a. Provide personnel in rural areas and villages to:

- inform the NSW SES Inverell Local 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.

1.5.19 **Private Companies, Inverell Bus Service, Symes' Bus Service, and McCosker's Bus Service**:

a. Assist with the provision of:

- Bus transport and drivers for evacuation, resupply or commuting purposes.

1.5.20 **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.

1.5.21 **School Administration Offices (including Catholic Education Office Diocese of Armidale, Department of Education & Communities Regional Directors Office, Tamworth 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.

1.5.22 **Service and Sporting Clubs, Rotary, Lions and Apex:**

a. Assist with:

- Delivery of evacuation warnings.
- Lifting and/or moving household furniture and commercial stock.
- Sandbagging.
- Relocation of caravans.
- Operation of the Inverell Town Flood Advice System to disseminate warnings and advice to business and residents within Inverell.

1.5.23 **Telecommunication Services Functional Area**:

a. When requested by NSW SES:

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

1.5.24 **Transport Services Functional Area:**

a. When requested by NSW SES:

- Assist with the coordination of transport for evacuation purposes.
- Assist with the resupply of isolated communities and/or properties

1.5.25 **Roads and Maritime Services** will:

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

1.5.26 **Welfare Services Functional Area:**

a. When requested by NSW SES;

- Establish and manage evacuation centres, and provide disaster welfare services from recovery centres.
- Administer the Personal Hardship and Distress component of the NSW Disaster Relief Scheme established to provide financial assistance to people affected by emergencies.

1.5.27 **Volunteer Rescue Association (VRA), Inverell:**

a. Assist the NSW SES Inverell Local Controller with flood operations, where equipment and training are suitable.

1.5.28 **Inverell Shire Council Local Emergency Operations Controller (LEOCON):**

a. Monitor flood operations.

b. Coordinate support to the NSW SES Inverell Local Controller if requested to do so.

1.5.29 **Inverell Shire Council Local Emergency Management Officer:**

a. Provide executive support to the LEMC and LEOCON in accordance with the Inverell Shire Council Local Emergency Management Plan.

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

1.5.30 **Inverell Shire Council:**

Preparedness

a. Establish and maintain a floodplain risk management committee and ensure that key agencies are represented on such a committee.

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

c. Maintain a Dam Safety Emergency Plan for the Lake Inverell dam and provide copies to the NSW SES.

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

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

f. Contribute to the development and implementation of a public education program.

Response

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

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

i. Provide information on the status of roads.

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

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

l. Provide back-up radio communications.

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

Recovery

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

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

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

1.5.31 **Lake Inverell Dam (Inverell Shire Council):**

a. Maintain and operate the Dam Failure Warning System for Lake Inverell Dam.

b. Contribute to the development and implementation of a public education program on flooding within the council area.

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 in Inverell Shire Council managed areas.

1.5.32 **Pindari Dam (State Water Corporation):**

a. Maintain and operate the Dam Failure Warning System for Pindari Dam.

b. Contribute to the development and implementation of a public education program on flooding within the council area.

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 in State Water Corporation managed areas.

1.5.33 **Glenlyon Dam (Sun Water):**

a. Maintain and operate the Dam Failure Warning System for Glenlyon Dam.

b. Contribute to the development and implementation of a public education program on flooding within the council area.

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 in Sun Water managed areas.

1.5.34 **NSW SES Flood Contact Network (Bonshaw, Wallangra, and Gilgai):**

a. Provide flood information to the NSW SES Inverell Local Controller.

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

1.6 CROSS-BORDER ASSISTANCE ARRANGEMENTS

1.6.1 A local cross-border mutual assistance arrangement exists in which the Inverell, Ashford and Yetman NSW SES Units and the Texas SES (QLD) Unit will

deploy resources to support each other (arrangements by the Shires involved with advice to NSW SES North West Region Headquarters).

1.6.2 By local arrangement with NSW SES Controllers in neighbouring council areas, flood operations will be conducted under the control of the NSW SES Inverell Shire Local Controller:

a. In the whole of Lake Copeton.

b. Along the Macintyre River and Ottleys Creek in Gwydir Shire.

PART 2 - PREPAREDNESS

2.1 MAINTENANCE OF THIS PLAN

2.1.1 The NSW SES Inverell 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 Inverell 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 North West 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 system for areas affected by flooding. This requires:

a. An identification of the potential clients of flood warning information at different levels of flooding (ie. 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 .

2.4.2 Council and the Bureau have installed hardware and software to monitor water levels in the Border Rivers catchment. Data gathered informs Flood Warnings issued by the Bureau and is provided to the NSW SES.

2.5 PUBLIC EDUCATION

a. The NSW SES Inverell Local Controller, with the assistance of the Inverell Shire Council, the NSW SES North West Region Headquarters and NSW SES State Headquarters, is responsible for ensuring that the residents of the council area are aware of the flood threat in their vicinity and how to protect themselves from it.

2.5.2 Specific strategies to be employed include:

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

b. Talks and displays orientated to 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.

d. Reminders about the meaning of the depth indicators and 1991 flood level markers which are located on poles in and around the Inverell CBD.

e. Promote and participate in Flood Awareness Week (usually immediately prior to the main summer storm season).

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 Inverell, Ashford and Yetman Units. The NSW SES Inverell 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 Inverell Local Controller is responsible for maintaining the condition and state of readiness of NSW SES equipment and the NSW SES Inverell Local Headquarters.

2.7.2 The NSW SES Inverell, Ashford and Yetman Unit Controllers have similar responsibilities in relation to the Inverell, Ashford and Yetman 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 Local Incident Controller.

3.2 OPERATIONAL MANAGEMENT

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

a. functional management;

b. management by objectives; and

c. 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 or village 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.

d. (At Inverell) when upstream gauges reach specific heights triggering warnings by telephone to key NSW SES personnel.

3.3.3 Contact with the Bureau of Meteorology to discuss the development of flood warnings will normally be through the NSW SES North West Region Headquarters and/or NSW SES State Headquarters and/or the NSW SES Inverell Local 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 North West Region Headquarters.

b. NSW SES Inverell Local Controller.

c. NSW SES Inverell, Ashford, and Yetman Unit Controllers.

d. NSW SES Inverell, Ashford, and Yetman Units.

e. Inverell Shire Council Local Emergency Operations Controller (for transmission to the NSW Police Force Local Area Command Headquarters).

f. Inverell Shire Council Local Emergency Management Officer (for transmission to appropriate council officers and departments).

g. Inverell Shire Council Mayor.

h. Other agencies listed in this plan will be advised by the Local Emergency Mangement Officer on the request of the NSW SES Inverell Local 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

- 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.

d. Rescue

- The rescue or retrieval of persons trapped by floodwaters.

e. Resupply

- Minimise disruption upon the community by resupplying towns and villages 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 Local 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 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 Inverell Operations Centre is located at 52 Burtenshaw Road (EOC), Inverell.

3.5.2 The NSW SES Ashford Operations Centre is located at the Inverell Council Depot, Albury Street, Ashford.

3.5.3 The NSW SES Yetman Operations Centre is located at MacIntyre Street, Yetman.

3.5.4 Supporting EOCs are located at:

a. The Inverell Shire Council Emergency Operations Centre is located at 52 Burtenshaw Road, Inverell.

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 Inverell Operations Centre.

3.6.2 Liaison officers are to:

a. have the authority to deploy the resources of their parent organisations at the request of the NSW SES Inverell Local Incident Controller,

b. advise the NSW SES Inverell Local Incident Controller on resource availability for their service, and

c. be able to provide communications to their own organisations.

3.7 END OF RESPONSE OPERATIONS

3.7.1 When the immediate danger to life and property has passed the NSW SES Region Incident Controller or the NSW SES Local 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 relevant 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 Inverell Local Headquarters collates information on the current situation in the Inverell Shire Council LGA and incorporates in Situation Reports.

3.8.3 The NSW SES North West Region Headquarters collates Region-wide information for inclusion in Region NSW SES Situation Reports.

3.8.4 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 Inverell Local 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:

- Gwydir Highway (B 76)
- Bruxner Highway (new name is Way formerly SH 16)
- Inverell-Bundarra Road (TR 73)
- Inverell-Yetman Road (MR 187)
- Inverell-Bonshaw Road (MR 137)
- Yetman-Warialda Road (TR 63)
- Delungra-Bingara-Graman Road (MR 134)
- Inverell-Guyra Road (MR 135)
- Texas Bridge-Bruxner Highway (new name is Way) (MR 138)

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

e. **Glenlyon Dam Storage Monitoring System.** This system provides information on Glenlyon Dam.

f. **Pindari Dam Storage Monitoring System.** This system provides information on Pindari Dam.

g. **NSW SES North West Region Headquarters**. The Region Headquarters provides information on flooding and its consequences, including those in nearby council areas (this information is documented in Bulletins and Situation Reports).

h. **Inverell Shire Council.** The Council provides information on road conditions and closures.

3.8.5 During flood operations sources of information on roads closed by flooding include:

a. Inverell Shire Council (website and/or telephone service)

b. Inverell Police Local Area Command

c. Roads and Maritime Services (website and/or telephone service)

d. NSW SES North West Region Headquarters

e. NSW SES Inverell Local Headquarters.

3.8.6 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 Inverell Local Headquarters provides advice to the NSW SES North West Region Headquarters on current and expected impacts of flooding in the Inverell Shire Council LGA.

3.9.2 The NSW SES North West Region Headquarters issues NSW SES Flood Bulletins, NSW SES Livestock and Equipment Warnings, Evacuation Warnings and Evacuation Orders to media outlets and agencies on behalf of all NSW SES units in the Region.

Actions

3.9.3 The NSW SES Inverell Local Incident Controller will ensure that the NSW SES North West Region Incident Controller is regularly briefed on the progress of operations.

3.9.4 NSW SES Inverell Local Headquarters operations staff will be briefed regularly so that they can provide information in response to inquiries received in person or by other means such as phone or fax.

3.9.5 **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.

3.9.6 **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.

3.9.7 **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 North West Region Headquarters.

3.9.8 **Bureau of Meteorology Flood Warnings.** The NSW SES North West Region Headquarters will send a copy of Bureau Flood Warnings to the NSW SES Inverell Local Controller and Ashford, Inverell and Yetman Units. On receipt

the NSW SES Local Incident Controller will provide the NSW SES North West Region Headquarters with information on the estimated impacts of flooding at the predicted heights for inclusion in NSW SES Region Flood Bulletins.

3.9.9 **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 Inverell Local Incident Controller will advise the NSW SES North West Region Headquarters which will issue NSW SES Livestock and Equipment Warnings.

3.9.10 **NSW SES Local Flood Advices**. The NSW SES Local 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.

3.9.11 **NSW SES Flood Bulletins**. The NSW SES North West Region Headquarters 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.

3.9.12 **NSW SES Evacuation Warnings and Evacuation Orders**. These are usually issued to the media by the NSW SES Region Incident Controller on behalf of the NSW SES Local Incident Controller.

3.9.13 **Special Warnings.** Schools Flood Advice System. The Inverell Shire NSW SES Local Headquarters will provide a direct telephone service to advise school principals and directors of pre-schools which may be affected by flooding or whose school bus routes may be cut.

3.9.14 **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 Communications Centre, who in turn distribute the warning to the NSW SES Region Headquarters and NSW SES Unit Headquarters.

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

3.9.16 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.

3.9.17 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).

3.9.18 **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.

3.9.19 **The Public Information and Inquiry Centre (PIIC)** (operated by the NSW Police Force) will answer calls from the public regarding registered evacuees.

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

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

3.9.22 **Inverell Shire Council** will provide information on the status of roads.

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

a. As part of Situation Reports, the NSW SES Inverell Local Incident Controller provides road status reports for main roads in the council area to the NSW SES North West Region Headquarters.

b. The NSW SES North West Region Headquarters distributes information on main roads to NSW SES units, media outlets and agencies as part of NSW SES Flood Bulletins.

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 Region Headquarters, which may allocate aircraft to units if applicable.

3.10.3 NSW SES maintains the following information for the Inverell Shire 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.

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.

3.11.3 Requests for 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 SES PMR.

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. RFS PMR (Private Mobile Radio).

b. Inverell Shire Council and RFS VHF (Very High Frequency) radio systems.

c. UHF radio system.

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 Inverell Local 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 Inverell Local 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.

3.14.2 The council closes and re-opens its own roads and acting as agent for the RMS, closes and reopens regional roads and the Gwydir Highway and Bruxner Way (formerly Bruxner Highway)..

3.14.3 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.

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

3.14.5 In flood events, the NSW SES Inverell Local 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).

3.14.6 Police, RMS or Council officers closing or re-opening roads or bridges affected by flooding are to advise the NSW SES Inverell Local Headquarters, which will then provide a road information service to local emergency services, the public and the NSW SES North West Region Headquarters. All such information will also be passed to the Police, RMS and the Council.

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 the arrangement of emergency accommodation.

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 limited in the Inverell Shire Council Area due to the large number of properties that can be affected and the depth of floodwaters arising from major flooding in the Border Rivers Basin.

3.17 MANAGING FLOOD RESCUE OPERATIONS

Strategy

3.17.1 Rescue of people from floods.

Actions

3.17.2 The NSW SES Inverell Local Incident Controller controls flood rescue in Inverell Shire Council local government area.

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

3.17.4 Additional flood boats and crews can be requested through the NSW SES North West Region Headquarters.

3.17.5 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. Small-scale evacuations will be controlled by the NSW SES Inverell Local Incident Controller. Should the scale of evacuation operations be beyond the capabilities of local resources control may be escalated to the NSW SES North West Region Incident Controller.

Decision to evacuate

3.18.4 In most cases the decision to evacuate rests with the NSW SES Inverell Local Incident Controller who exercises his/her authority in accordance with Section 22(1) of The State Emergency Service Act 1989. However, the decision to evacuate will usually be made after consultation with the NSW SES North West Region Incident Controller and the Local Emergency Operations Controller.

3.18.5 In events that require large scale evacuations, the decision to evacuate may be escalated to the Region or the State Incident Controller.

3.18.6 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-motivated evacuation.

Mobilisation

3.18.7 The NSW SES Local Incident Controller will mobilise the following to provide personnel for doorknock teams for designated Sectors/locations:

a. NSW SES Inverell, Ashford and Yetman Unit members,

b. RFS Northern Tablelands Team members via the RFS Fire Control Officer,

c. Local Police Force officers

3.18.8 The NSW SES North West Region Incident Controller will mobilise any additional personnel required to assist with doorknock teams using:

a. NSW SES members from the NSW SES North West Region and surrounding NSW SES Regions

b. FRNSW personnel arranged via the FRNSW Liaison Officer located at NSW SES North West Region Headquarters

c. RFS personnel arranged via the RFS Liaison Officer located at NSW SES North West Region Headquarters

3.18.9 The NSW SES Local Incident Controller will request the Chairperson of the LEMC to provide Council personnel to assist with traffic coordination within Sector(s)/Community.

3.18.10 The NSW SES Local Incident Controller will arrange liaison officers for Sector Command Centres.

3.18.11 The NSW SES North West Region Operations Controller will mobilise the required number of buses for Sectors via the Transport Services Functional Area Coordination Centre.

Delivery of Evacuation Warnings and Evacuation Orders

3.18.12 The NSW SES will advise the community of the requirements to evacuate. The NSW SES will issue an **Evacuation Warning** when the intent of an NSW SES Incident Controller is to warn the community of the need to prepare for a possible evacuation.

3.18.13 The NSW SES will issue an **Evacuation Order** when the intent of the NSW SES Incident Controller is to instruct a community to immediately evacuate in response to an imminent threat.

3.18.14 The NSW SES Local Incident Controller will distribute Evacuation Warnings and Evacuation Orders to:

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

b. Inverell Shire Council Local Emergency Operations Centre.

c. Inverell Shire Council.

d. Inverell Police Local Area Command.

e. Inverell Shire Rural Fire Service Control Centre.

f. Radio Stations.

g. Other local agencies and specified individuals.

3.18.15 The NSW SES North West Region Incident Controller will distribute Evacuation Warnings and Evacuation Orders to:

a. The NSW SES State Operations Centre.

b. The NSW SES Inverell Local Incident Controller.

c. Metropolitan media outlets via the Joint Media Information Centre.

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

e. Relevant media outlets and agencies.

3.18.16 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.

f. Direct access to Radio Station 2NZ, GEMFM, ABC New England North West and ABC Southern Downs.

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

3.18.18 Sector Command Centres, where established, will distribute Evacuation Orders via Emergency Service personnel in doorknock teams to areas under threat of inundation.

3.18.19 Doorknock teams will work at the direction of:

a. The Sector Commander if a Sector Command Centre is established.

b. The relevant Division Commander where a Sector Command Centre has not been established.

c. The Local Incident Controller.

3.18.20 Field teams conducting doorknocks will record and report back the following information to their Sector Commander/Division Commander/Local 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.

3.18.21 Refusal to evacuate. Field teams cannot afford to 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

3.18.22 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.

3.18.23 The most desirable method of evacuation is via road using private transport. This may be supplemented by buses for car-less people. However, other means of evacuation may also be used if available and as necessary (eg by foot, rail, air).

3.18.24 Evacuees who require emergency accommodation or 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.

3.18.25 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.

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

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

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

3.18.29 Note that in the Inverell Shire Council LGA, school principals may close some schools affected by flooding in the early stages of flooding.

3.18.30 **Caravan parks**. When an evacuation order is given occupiers of non-movable vans should:

a. Secure their vans by tying them down to prevent flotation.

b. Isolate power to their vans.

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

d. Lift the other contents of their vans as high as possible within the van.

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

3.18.31 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 and NSW SES personnel will assist if required and may be able to provide additional vehicles.

3.18.32 Caravan park managers will ensure that their caravan park is capable of being evacuated within the allocated time of 2 hours.

3.18.33 Advise the NSW SES Inverell Local 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.

3.18.34 Check that no people remain in non-removable vans that are likely to be inundated.

3.18.35 Inform the NSW SES Inverell Local Controller when the evacuation of the caravan park has been completed.

3.18.36 Provide the NSW SES Inverell Local Controller with a register of people that have been evacuated.

3.18.37 **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. 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 boats. Agriculture and Animal Services will make separate arrangements for the evacuation and care of companion animals.

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

3.18.39 **Security:** The NSW Police Force will provide security for evacuated areas.

3.18.40 The NSW SES Local Incident Controller is to provide the following reports to the NSW SES North West Region Headquarters:

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

3.18.41 **Evacuation centres / assembly areas.** The usual purpose of evacuation centres or assembly areas is to meet the immediate needs of disaster affected people following evacuation from an emergency situation, not to provide them with accommodation. 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 NSW SES Inverell Local Incident Controller, but managed as soon as possible by Welfare Services.

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

a. Inverell:

- From the CBD to Holy Trinity and/or Macintyre High School
- From the Ross Hill Area to Inverell High School.
- From the Edward Street Area to Inverell High School.
- From Belgravia to Holy Trinity School.
- From the South Inverell area to the South Inverell Community Centre.

b. Ashford:

- Ashford Hotel.
- In very severe floods, the Ashford Central School or the Town Hall.

c. Yetman:

- Yetman Memorial Hall.
- Inverness property 1 kilometre from Yetman. This property contains three dwellings and a concrete-floored shed. In severe floods most of the village population could be accommodated here and supplied from outside for up to three days. Access to Inverness is available across the Richard Coventry Bridge east of Yetman to a flood height of 12.0 metres.
- Evacuation to Texas, via the Richard Coventry Bridge and the Bruxner Way (formerly Bruxner Highway). The Inglewood Shire and the NSW SES Inverell would organise accommodation.

3.18.43 **Registration:** The NSW Police Force will ensure that evacuees are registered on arrival at the designated evacuation centres.

3.18.44 **Animal shelter compounds:** Animal shelter compounds will be set up for the domestic pets and companion animals of evacuees if required. Facilities will be managed by Agriculture and Animal Services.

Return

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

3.18.46 The NSW SES Local 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-coordinator (electrical 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 Inverell Shire Council LEOCON,

g. the Inverell Shire Council,

h. NSW SES Region Incident Controller,

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

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

3.18.48 The return will be controlled by the NSW SES Local 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 Local 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 towns and villages 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 Local 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 Inverell Local 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 Police and 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 Inverell 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 Incident 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.

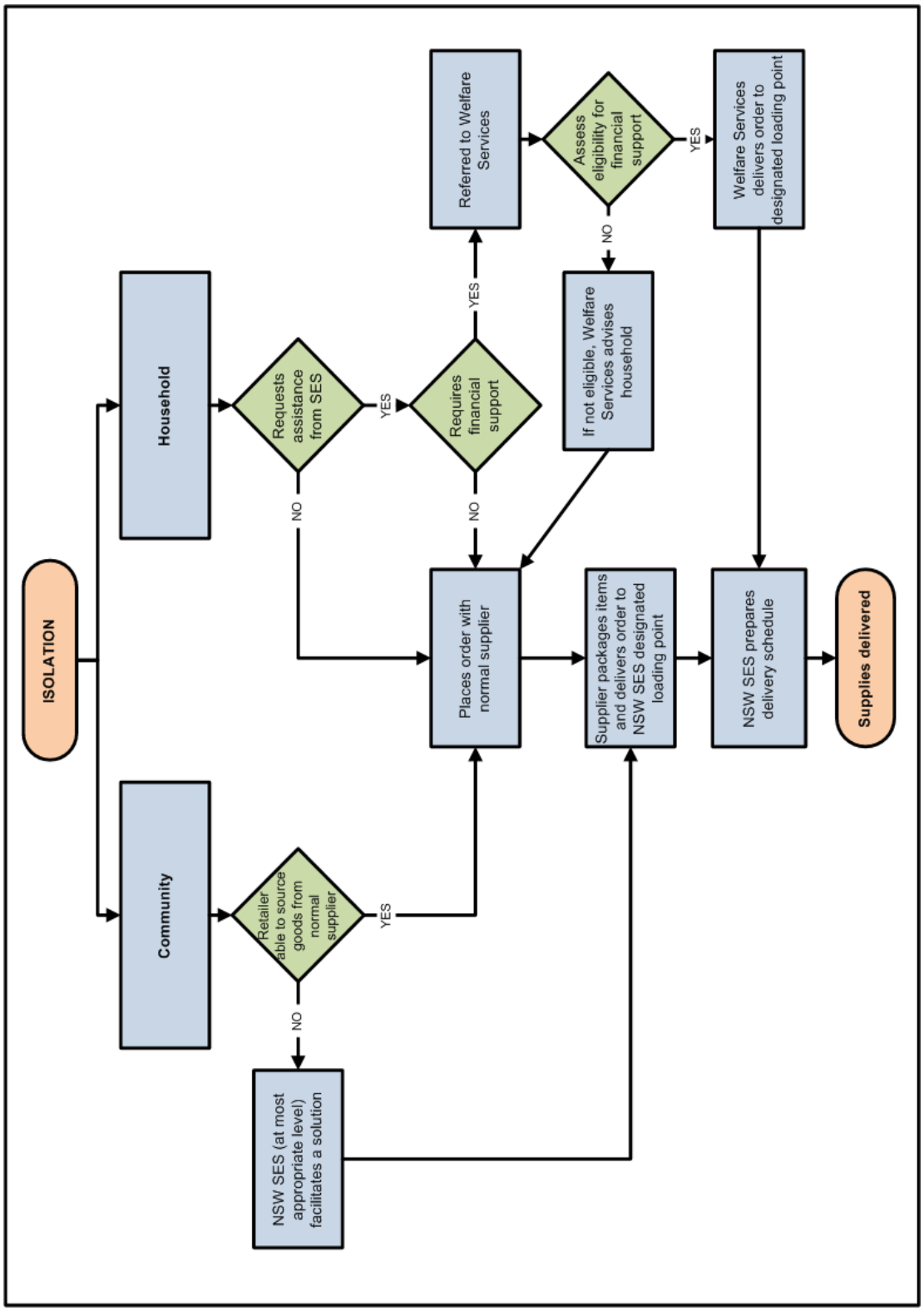
4.3 ARRANGEMENTS FOR DEBRIEFS / AFTER ACTION REVIEWS

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

4.3.2 The NSW SES Inverell 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.

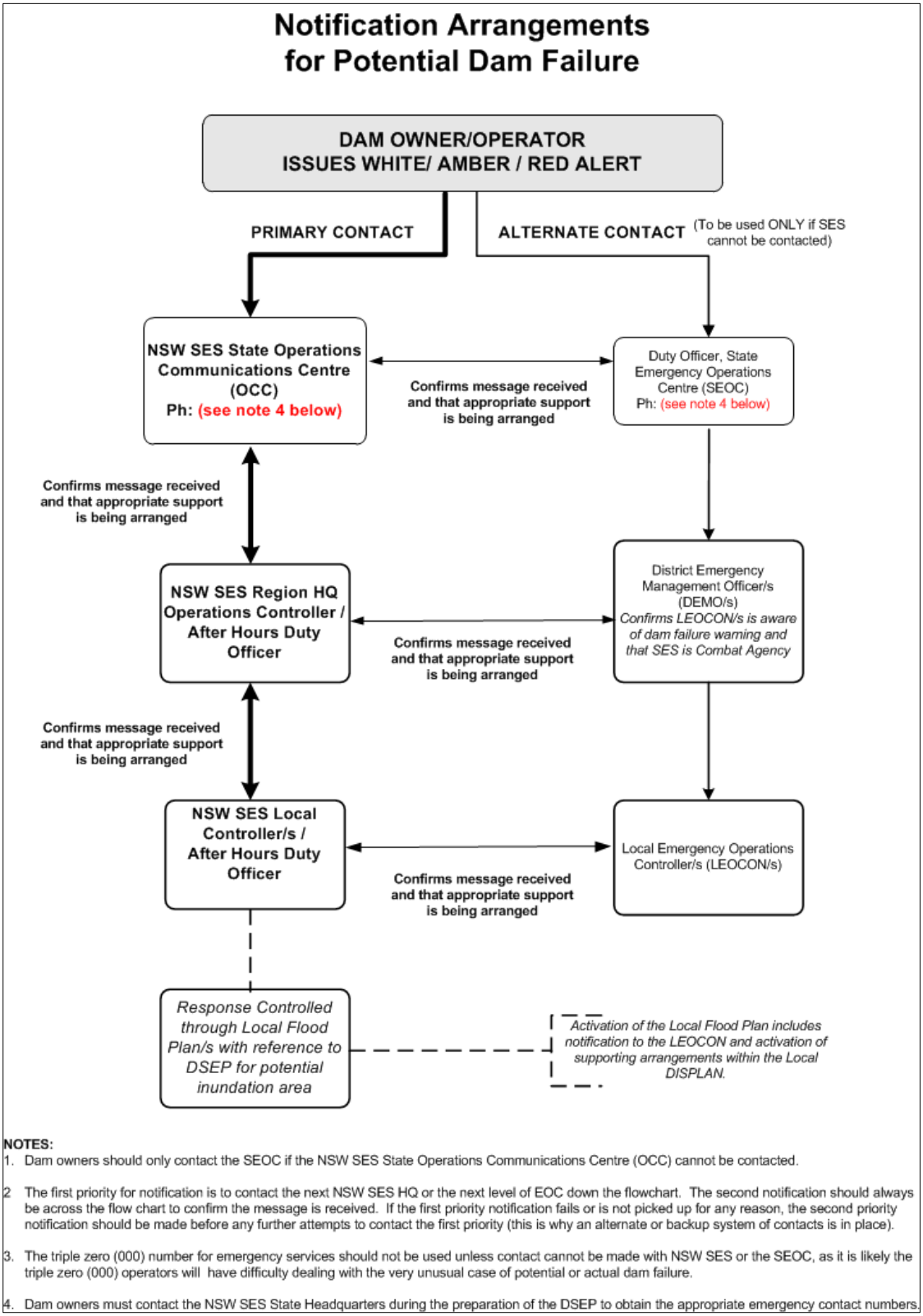
4.3.3 Follow-up to ensure the satisfactory completion of these actions will be undertaken by the Inverell Shire Council Local Emergency Management Committee.

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 NSW SES State Operations Communications Centre (OCC) cannot be contacted.
2. The first priority for notification is to contact the next NSW 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 NSW 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 NSW SES State Headquarters during the preparation of the DSEP to obtain the appropriate emergency contact numbers.

ATTACHMENT 3 - INVERELL SHIRE LGA MAP

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NSW STATE EMERGENCY SERVICE

HAZARD AND RISK IN INVERELL SHIRE

Volume 2 of the Inverell Shire Local Flood Plan

Last Update: February 2008

FloodSafe

ANNEX A - THE FLOOD THREAT

Landforms and River Systems

1. Most of the Inverell Shire is drained by the Macintyre River and its tributaries, including the Dumaresq River and the Severn River. These three main streams all rise on the western slopes of the Great Dividing Range outside the shire and flow in predominantly westerly and north-westerly directions to the point where the Dumaresq River and the Macintyre River meet.

2. A small area in the south-west of the shire is drained by tributaries of the Gwydir River. Some of these creeks, including Copes Creek, drain to Lake Copeton which straddles the boundary with Gwydir Shire.

3. The **Macintyre River** rises in the Maybole area south of Glen Innes and flows in a westerly direction towards the town in Inverell. From here it takes a more northerly direction and is joined by Swanbrook Creek some 6.5 kilometres north of the town. The most important tributaries in this upper section are the Queera, Paradise, Kings and Middle Creeks. About 19 kilometres north of Wallangra the river is joined by the Severn River and then flows in a north-westerly direction past Yetman to Goondiwindi. In this section the river is joined by Trigamon Creek upstream of Yetman, Ottleys Creek and the Dumaresq River.

4. The **Severn River** rises to the north-east of Glen Innes and generally flows to the north-west until it joins the Macintyre River. Its main tributaries are Beardy Waters, Furracabad, Wellingrove and Frazers creeks. River flows from the upper portion of the catchment are regulated to some extent by Pindari Dam, which is situated 25 kilometres upstream of Ashford.

5. The **Dumaresq River** rises in the Stanthorpe area and flows in a south-westerly direction to Maiden Head where it is joined by the Beardy River. Thereafter it flows towards the north-west to its junction with the Macintyre. Other important tributaries are Tenterfield Creek, the Deepwater and Mole rivers, Pike Creek and Macintyre Brook.

Storage Dams – Glenlyon Dam, Pindari Dam

6. **Pindari Dam** is a water storage dam on the Severn River, about 22km upstream of Ashford. It supplies water to the Border Rivers area, including Ashford, Yetman, Boggabilla and Goondiwindi. Pindari Dam was enlarged in 1992-95 and now has a storage capacity of 312,000Ml. State Water's Dam Safety Emergency Plan states Pindari Dam is unlikely to fail as a result of an extreme inflow flood. The current spillway has a capacity that is in excess of the PMP Design Flood. Calculations show the dam has sufficient freeboard such that overtopping is unlikely during the PMP event. However, there would be unprecedented flooding downstream due to spillway discharge and flow in the Severn River due to the PMP.

7. **Glenlyon Dam** is a water storage dam on Pike Creek, a Queensland tributary of the Dumaresq River. Dam-break studies indicate that the dam could be overtopped and fail during floods larger than 68 percent of the volume of the PMF. Such a flood is thought to be likely to occur only once in about 65,000 years, on average. The possibility must therefore be regarded as extremely remote.

8. In the event of a Glenlyon Dam failure, the dam failure flood wave could take between 5 and 14 hours to reach Bonshaw depending on pre-existing conditions and the mode of failure. Peak flood levels could vary from 309.6m (AHD) up to 314.4m (AHD) depending on pre-existing flood conditions and the mode of failure.

9. The following information is provided to give an idea of the severity of the flooding being considered in the event of a Glenlyon Dam failure:

   a. The general floodplain height at Bonshaw is about 305.9 metres (AHD).

   b. The minimum Dam Crest Flood (DCF) for Glenlyon Dam would have about twice the flow rate of the record 1976 flood at Bonshaw. It would be about 308.7 metres (AHD) or 2.6 metres above the general floodplain level. Therefore Bonshaw would probably need to be evacuated before this level of flooding was reached.

   c. In this extremely remote event, the maximum flood level could rise to 314.4 metres (AHD) or 8.5 metres above the general floodplain level in the vicinity of Bonville. The flooding would be of catastrophic proportions all the way along the Dumaresq River and well past the point at which it meets the Macintyre River. Some back-up flooding would also occur up the Macintyre River towards Yetman.

Weather Systems and Flooding

10. Flooding has occurred in all months of the year, but it is experienced more often in summer than in the other seasons.

    This is especially the case with the more serious events as is shown by the fact that the record floods at Inverell, Ashford and Yetman all occurred between December and February. Occasionally, serious floods do occur in winter, but winter rainfalls are usually sporadic and unreliable.

    An indication of the summer dominance of flooding is that of the ten worst floods ever recorded at Inverell, eight occurred between December and March. The others were in April and July. There is a secondary flood season, generally of smaller events, in June and July.

11. Floods peaking at above 3.0 metres at Inverell have occurred in the following numbers in the various months of the year:

Month	Number	Month	Number
January	13	July	7
February	9	August	0
March	4	September	2
April	1	October	3
May	3	November	5
June	6	December	2

The heavy rain which produces floods in the Inverell Shire comes from a number of different weather systems. Explanations follow.

12. **Monsoonal low-pressure systems** which penetrate from northern Australia during the summer and early autumn months. These systems are indicated on weather maps as elongated low-pressure troughs stretching into New South Wales from the Northern Territory or Western Australia. These systems are associated with north-westerly cloud bands. The serious floods of the February months in 1955, 1976 and 1991 at Inverell, Ashford and Yetman were all of this origin as was the flooding at Ashford and Yetman in November 2000.

13. **Rain depressions originating as tropical cyclones** in the Gulf of Carpentaria occasionally penetrate as far south as Darling Downs and northern New South Wales to produce flooding. The floods of January 1996 at Ashford and Yetman were the result of such a system which had originated as Tropical Cyclone Barry and had brought torrential rain to the Darling Downs in Queensland.

14. **Sequences of fronts** crossing the northern part of New South Wales from west to east, usually in the winter and spring months. The individual fronts are not usually associated with very heavy falls but the cumulative effect of a series of them may produce flooding. Generally, floods of this origin are not severe, though floods exceeding 'major flood' thresholds have been experienced between May and November at Inverell, Ashford and Yetman. These floods were probably produced by the passage of frontal systems.

15. **East Coast low-pressure systems** which travel along the coast, usually in a southerly direction and during the cooler months, may direct moisture-laden winds onto the Great Dividing Range. Floods originating to the east of Inverell Shire, over the Severn and Tenterfield shires, may result. Flooding of this origin is uncommon in the Inverell Shire, however.

16. **High-intensity, short-duration convective thunderstorms** occur frequently over the shire, especially during the summer months. The rain from such storms lasts only for minutes and may cause minor creeks and town drainage systems to surcharge. Local flooding of low-lying areas can result, but generally no significant rises in main streams occur from thunderstorm activity.

In 1976, however, thunderstorm activity over an already wet upper Macintyre River catchment produced a serious flood at Inverell.

Characteristics of Flooding

Areas Affected

17. Flooding in the southern and eastern parts of the shire is generally confined to the main stream areas and their adjacent alluvial flats which are not extensive. Flood flows in these areas can be fast and dangerous. The extent of the alluvial flats and hence of areas liable to flood inundation increase in a downstream direction in each valley. The Macintyre River below Yetman and the Dumaresq River below about Texas are comparatively slow-moving streams. On these reaches, large areas of plains county are inundated.

Flood Warning and Flow Travel Times

18. On the many small creeks of the shire, flooding can occur soon after heavy rains have fallen. Much of the shire is subject, therefore, to flash flooding. At Inverell, up to about six hours notice of flooding is available. This time is greatly extended on the lower reaches of the Macintyre River, especially at and downstream of Yetman, and on Dumaresq River below about Texas.

19. River flow times during floods vary considerably from event to event, but the following are indicative:

Locations	Travel Time
Inverell to Wallangra	15 – 22 hours
Pindari Dam to Ashford	5 – 7 hours
Wallangra to Bedwell Downs	7 – 9 hours
Bedwell Downs to Yetman	6 – 8 hours
Inverell to Yetman	26-39 hours
Yetman to Boggabilla (Moree Plains Shire)	22-28 hours
Boggabilla to Goondiwindi	6 hours
Goondiwindi to Mungindi	6-26 days

Note: these times could be significantly reduced during very severe flood events.

Flood History

20. Flood records at Inverell and Yetman go back to the nineteenth century, though there is some uncertainty before about 1950. At Ashford and other locations the record is shorter. The Table on page A-9 summarises the flood history at six locations, but it should be noted that there is anecdotal evidence of a flood at

Inverell in about 1830 which might have been up to two metres higher than the worst floods recorded since.

21. The Table on page A-9 highlights the irregularity of serious flooding on the shire's rivers. Several floods may occur in a short period of time, as was the case between 1864 and 1890 at Inverell, when there were six events which exceeded the 5.0 metre level, but from 1890 to 1954 there were only two such events. Yetman saw four serious floods in a very short period between 1953 and 1956 after a long period of little flooding.

22. The occurrence of lesser flooding also shows great variability. There were five separate events during the 1970s at Inverell which exceeded the current 'minor flood' threshold of 3.0 metres, but no flood in the 17 years since February 1991 has done so.

Severe Floods at Inverell

23. The town of Inverell is highly susceptible to flooding from the Macintyre River, with ten floods having exceeded the current 'major flood' level of 5.0 metres at the Ross Hill Bridge gauge since 1864. Such floods enter the Central Business District (CBD). The worst of them was in 1872 when the peak level is estimated to have been about 6.3 metres. It is believed, however, that the peak flow in this event was less than in the disastrous flood of February 1991.

The 1991 Flood

24. The rainfall which caused the 1991 flood, which peaked at 6.00 metres, started around 5pm on February 6. Heavy rain then fell fairly uniformly across the entire Macintyre River catchment upstream of Inverell. Some 110-130mm of rain fell in the 20-hour period up to 1pm on February 7 with most (70-90mm) during the period from 6am to 1pm hours on the 7th. By 1pm the river had reached a height of about 2 metres at the Ross Hill Bridge gauge. Water started to flow into the CBD some 2 hours later.

25. The following description of the 1991 flood's behaviour is taken from an examination of flood damage carried out by Water Studies. The first overflow occurred near the Tingha Bridge, inundating the Inverell Caravan Park. As river levels rose further, to a gauge height of approximately 5.1 metres on the Ross Hill Bridge gauge, the next overflow occurred near the Suspension Bridge which was washed away. These waters flooded Sweaney St and the surrounding area between Mansfield and Lawrence streets, and flowed in an easterly direction at considerable speed towards the hollow at the intersection of Oliver and Wood streets. The third overflow occurred at Ross Hill Bridge around 4pm when the gauge height was 5.2 metres. This water flowed at considerable speed in a north-easterly direction down Byron and Sweeney streets. Shortly after, at a gauge height of about 5.3 metres, the river overflowed at a fourth location about 200 metres upstream of Ross Hill Bridge. These waters crossed Campbell St and then flowed simultaneously down Evans and Rivers streets.

26. In addition, in the northern part of town a major overflow was observed to have occurred across Kamilaroi Park just upstream of the Ring St Bridge. This water flowed in a north-easterly direction to meet up with waters flowing down Byron, Oliver, Evans and River streets.

27. There was also significant local flooding unrelated to that in the river itself. In the northern part of the town, where a number of minor unnamed tributaries enter the Macintyre River, flooding occurred on the morning and early afternoon of February 7 due to the overloading of the urban drainage systems. Properties in this vicinity, especially near the hollow at the intersection of Wood and Oliver Streets, were inundated by local flood waters prior to the arrival of Macintyre River overflows. This area and the low-lying area to the north of Ring St sustained the greatest depths of flooding when the river broke its banks.

Comparison of the 1955 and 1991 Floods

28. Prior to the February 1991 flood, the 1955 flood was the largest flood seen in Inverell by present residents. Floods in the intervening period were much smaller and caused relatively little damage.

29. The 1955 and 1991 peak flood levels at Ross Hill Bridge at the southern end of the town were virtually the same. However, at the northern end of Inverell, the 1991 flood levels were more than a metre higher than the 1955 levels. The reasons for this difference in behaviour are difficult to determine, but a number of factors should be considered:

    a. The Macintyre River underwent significant changes in the vicinity of the Ross Hill Bridge after 1955 as a consequence of stream clearing, changing bed levels and structural changes associated with bridge, weir, and river bank construction, upgrading and raising.

    b. Black Gully (Spring Creek) contributed to different degrees to flood levels at Ross Hill Bridge in the two floods. In the 1955 event it is believed that Black Gully peaked at the same time as the Macintyre River, producing higher than expected flood levels at the southern end of town. However, in the 1991 event Black Gully peaked well before the Macintyre and had little impact on the recorded levels at the bridge.

    c. In 1991, the fences throughout the parklands and the industrial complex in the northern part of Inverell caused major obstructions to flow resulting from the collection of debris. The major fences included the fences around the swimming pool, Varley Oval, the tennis courts, behind the Technical College, Rugby Park, upstream of Swanbrook Rd and around Kamilaroi Park. Whilst some of the fences failed during the event they still caused obstructions to flow.

    d. In the reach between the O'Connor St Bridge and the Ring St Bridge dense growth, consisting of privet, elms and willows, covered the entire reach both in channel and on banks in the period leading up to and during the February 1991 event. This dense vegetation is believed to have caused the significant breakout of flood waters through

Kamilaroi Park. This reach, with the exception of a small pocket, was cleared after the 1991 flood.

e. In the reach downstream of the Ring St Bridge, two vegetation chokes were present during the February 1991 event. The choke opposite the Public Works Depot was later removed.

Design Flood Levels

30. At Inverell the levels estimated to be reached at the Ross Hill Bridge gauge in floods of specified Annual Exceedence Probability (AEP) and Average Recurrence Interval (ARI) (in years) are as follows:

Height (metres)	AEP (%)	ARI (Years)
5.4	5	20
5.7	2	50
5.9	1	100
6.1	0.5	200
6.3	0.2	500

31. The AEP value for a particular height is the percent chance of a flood of that height being reached or exceeded in a particular year. For example, there is a 1% chance of a flood of 5.9 metres or more occurring at Inverell each year. Such a flood is expected to be experienced, on average, once in a 100-year period. In a particular 100-year period, however, it could occur several times or not at all.

32. The 1976 flood at Inverell roughly approximated the 5% flood there. This means that flooding to at least this level can be expected, on average, once in 20 years.

33. The 1955 and 1991 floods appear to have been slightly higher than the 1% event. The uneven occurrence of such floods is illustrated by the fact that these two events happened only 36 years apart. Future flooding to a similar gauge height could occur at any time, as is true of flooding to other heights.

34. The heights which could be reached in larger and rarer floods than these are noted below in the section on Extreme Flooding.

35. Design flood levels have not been assessed for Ashford, Yetman or other locations within the shire. Where there is a century or more of flood records, however, as at Yetman, the flood of record is sometimes taken as a approximation of the 1% AEP event. In Yetman's case the record flood reached a gauge height of 12.8 metres.

Flood Mitigation Systems

36. There are few formal flood mitigation structures within the Inverell Shire. Pindari Dam has some capacity to mitigate floods on the Severn River but Copeton Dam is not designed to mitigate flooding within the Inverell Shire. Contour banking in rural areas helps delay the entry of flood waters into creeks and rivers in the hilly southern and eastern parts of the shire, however.

Extreme Flooding

37. Worse floods than have been seen in the Inverell Shire must be regarded as inevitable. They will occur when particularly severe weather conditions of the sorts described above are experienced. An indication that flooding much worse than that experienced at Inverell in 1955 and 1991 could occur is provided by the following estimates of depth at the Ross Hill Bridge gauge.

38. **Probable Maximum Flood (PMF):** 8-10 metres above the 1991 level (order of accuracy + 2 metres). Such a flood has an AEP of 0.0001% and corresponds to the once-in-1,000,000-years event.

39. **Half PMF:** 5-6 metres above the 1991 level (order of accuracy + 2 metres). Such a flood has an AEP of 0.001% and corresponds to the once-in-100,000-years event.

40. **A flood with three times the peak flow volume of the 1% AEP flood** is estimated to reach a level of 8.1 metres. Such a flood would be expected to occur, on average, only once in several thousand years.

41. Floods much greater than were experienced in record events at other locations within the shire are possible. At these locations, calculations of the heights which would be reached by PMF and near-PMF events have not been made.

Peak Gauge Heights of Significant Floods in the Inverell Shire, 1864-2000

	DUMARESQ RIVER		SEVERN RIVER	MACINTYRE RIVER		
	Roseneath	Bonshaw Weir	Ashford	Inverell	Wallangra	Yetman
1864 (Feb)				6.00		
1872 (Dec)				6.30		
1879(Apr, Mar)				5.99, 5.50		
1890 (Jan)				5.85		
1890 (Mar)						12.80
1916 (Mar)				5.06		
1921 (July)				5.50		
1933 (Oct)						10.36
1950	7.39		7.47		3.73	
1950 (Jul)	5.04, 5.46		7.47		6.15	
1953 (Feb)						10.77
1954	6.40		6.10		4.34	
1955 (Feb)				6.02	7.42	11.23
1956 (Feb)	8.84		8.03	5.44	5.28	11.10
1956 (Jun)	5.47				5.11	9.86
1962 (Jan)	4.88				4.67	
1963 (May)						9.53
1966 (Nov)	5.06		7.44		4.69	10.41
1970 (Sept)			6.88		6.02	
1970 (Dec)						9.70
1975	6.07				4.92	
1976 (Feb)	10.44	7.87	9.56	5.44	8.64	11.70
1978 (Jan)			8.11			10.35
1983 (May)	4.79	5.38	6.85		6.13	10.57
1984 (Jan)	4.95	5.59			5.58	
1988 (Jan)	5.33	5.49				
1991 (Feb)			5.95	6.00		10.40
2000 (Nov)		4.06	8.85		7.32	10.99

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

Community Profile

Census Description	LGA	Ashford	Gilgai	Inverell
Total Persons	15040	476	271	9537
Total Dwellings	6557	230	100	4091
Total persons aged 65 years and over	2379	98	41	1597
Total persons aged below 15 years	3448	108	74	2170
Total persons of indigenous origin	734	66	23	547
Total persons using Internet	3264	48	37	2027
Single parent families	674	21	17	498
Persons living alone	1442	50	24	1038
Total persons who do not speak English well	16	3	0	7
Total persons who lived at a different address 5 years ago	5448	167	79	3682
Households without vehicles	584	8	8	372
Total persons residing in caravans, cabins or houseboats	110	3	0	72
Mean household size	2.5	2.3	3.1	2.4

Table B-1: Census of Housing and Population data (2001)

Specific Risk Areas

1. Large areas of the Inverell Shire are affected by flooding, whether by the nuisance of isolation or by the more severe consequences which result from inundation. The problems are many. They range from the closure of roads and bridges and the disruption of farming operations even in relatively frequent low-level events to catastrophic effects in rare, very severe floods. These may include substantial stock losses on farms, the inundation of numerous houses and commercial premises in towns and villages, and damage to infrastructure and private property.

Ashford

2. Ashford is located on the banks of Frazers Creek about 2.5 kilometres south-west of the confluence of the creek and the Severn River. Flooding can result from Frazers Creek directly or from back-up flow up the creek from the Severn River. Low-lying areas in Inverell, Albury, Bukkula, Frome, Bala, Ely, David, Frazier, Duff and Martyn streets are subject to occasional flooding. During the highest flood in living memory (the 1976 event), a caravan park and about 20 houses were flooded. At least one dwelling suffered over-floor flooding and was evacuated in the much lower 1991 flood.

3. The table following notes the principal effects of flooding from the Severn River in Ashford and its vicinity at various heights on the gauge north of 3-Mile Bridge. The heights must be taken as approximate. Note that severe flooding in Ashford can occur solely from Frazers Creek, to which this table does not apply. A flood from the creek caused overfloor flooding of 13 dwellings in Ashford in November 2000. Flooding a metre higher could inundate an additional 30 dwellings and the Ashford SES/RFS headquarters.

Height (metres)	Effect
3.1	News Crossing (3-Mile Bridge) over the Severn River closed.
4.0	Widespread shallow inundation of low level farmlands on both banks of the Severn River; beginnings of property isolation.
5.5	Water begins to enter low-lying houses in Ashford by backwater flooding.
6.0	Inundation of caravan park from backwater flooding.
8.3	Water begins to enter farm houses and outbuildings along the Severn River.

Bonshaw

4. Bonshaw is unaffected by frequent, low-level floods but was partially inundated from the Dumaresq River in 1976. Little damage to buildings occurred in the event. The village was cut off from all road access, however.

5. In an extreme flood, including a flood resulting from the failure of Glenlyon Dam, there would be catastrophic flooding of the entire village of Bonshaw.

Yetman

6. Flood waters from the Macintyre River enter Yetman during floods with an AEP of about 10%. Seven or eight floods since 1890 have entered the village and caused real concern, the worst of them (1890 and 1976) covering the whole village to a depth of more than a metre. Only about ten of approximately 60 houses have floor levels which are above the level reached in 1976. In serious floods such as this one the duration of inundation is likely to be for several days.

7. The table below lists the principal known effects of flooding at the approximate heights noted. The heights relate to the gauge on the bridge over the Macintyre River.

Height (metres)	Effect
2.5	Holdfast Crossing and local fords closed.
6.7	Bruxner Highway and Old Bruxner Highway closed; no direct access available between Yetman and Boggabilla.
7.0-7.6	Extensive rural flooding; farm properties isolated.
9.1	Yetman isolated from road access to the south.
10.4	Flood waters enter the village from the lagoon on the western side.
11.0	24 houses and 2 churches inundated by depths up to 0.5m; caravan park inundated.
11.3	Police station and school inundated.
11.7	Most houses in village inundated over floor levels in 1976.

Inverell

8. Apart from the caravan park, which is inundated even in minor floods, the town of Inverell experiences no inundation until the river breaks its banks at a height of about 5.0 metres at the Ross Hill Bridge gauge. When this height is reached, flooding occurs quickly in and around the Central Business District and along a narrow strip of land at the foot of Ross Hill on the left bank. Progressively greater heights see increased depth of flooding in the lower lying areas and the inundation of additional areas in Belgravia to the east of the business area.

9. Severe floods have very serious consequences in Inverell (2001 population about 9500). In 1991, a total of 233 residential properties and 375 commercial ones were damaged by flood water. Even considerably lower floods are very damaging to the CBD and nearby areas.

10. The table below indicates the approximate heights (measured at the Ross Hill Bridge) at which significant effects occur within the town.

Height (metres)	Effect
2.0	Water closes O'Conner St low level bridge
3.0	Water closes the Ring St bridge
4.0	Water enters the Inverell Caravan Park.
4.8	Flooding begins in the Sweaney St area between Mansfield St and Lawrence St.
5.0	Overbank flow begins in the Captain Cook Dr and Ross Hill Bridge areas and water flows down CBD streets. Homes and shops are flooded.
6.0	Water is 1-2 metres deep in parts of the CBD and numerous commercial, residential and public buildings are flooded in Belgravia, the Ashford Rd and Edward St areas, South Inverell and the lower areas of Ross Hill.

11. The town's flood liable areas are described below.

12. **Central Business District**. This area includes properties on the right bank of the river extending from the Tingha Road Bridge to Arthur St and as far east as Rivers St. Once the river bank is overtopped, the lower parts of this area can fill with fast-flowing water in as little as 20 to 30 minutes. During an extreme flood the area from the right bank up to and including Oliver St would be categorised as a floodway. All commercial premises plus the Catherine Campbell Centre in Campbell St, the Jack and Jill Pre-School in Rivers St, the Inverell Pre-School in Campbell St and the TAFE College would require special attention in terms of warning, actions to protect property and facilities and the evacuation of people.

13. **Ashford Road Area**. Areas along and intersecting with the Ashford Rd in the northern part of Inverell are also liable to inundation. This includes land in Swanbrook, Brissett, Evans and Wyndham streets. The industrial area can be affected.

14. **Ross Hill**. A narrow strip of land along the left bank between the Ross Hill Bridge and Ring St could become part of the high hazard flood fringe, particularly along Queen St during an extreme flood event.

15. **Edward Street Area**. This area on the left bank downstream of the Ring St Bridge, including Edward St and the intersection of King and Ring streets, could become part of the high hazard flood fringe during an extreme flood event.

16. **Belgravia**. This area on the right bank extends from Rivers St away from the river towards Albion Hill. The lower parts between Rivers St and Henderson St are likely to be inundated during a 1% AEP flood with the Inverell Primary School and the Cooinda Homes for the Aged requiring special attention. During an extreme flood event this whole area would be categorised as a high hazard flood fringe area, and flooding could be experienced as far east as Henderson St and the southern ends of Granville and Chester streets.

17. **South Inverell**. This area covers all properties on the left bank of the Macintyre River between the Tingha Road Bridge and Black Gully. A significant part of this area houses the Homes for the Aged Complex and is inundated during a 1% AEP flood. During even higher flood events than this one the residential units on the river side of Macintyre Street between Cameron and Raglan streets would be within a floodway area. Extensive flooding could also occur to the south and east of the Racecourse.

Rural Areas

18. Flooding affects large areas of farmland in the low-lying northern parts of the Shire, leading to a need to move livestock and equipment before inundation occurs. Numerous minor roads are subject to closure. In the south and east of the Shire, periods of inundation are brief and roads are closed for only a few hours. In the more severe events both the Bruxner and the Gwydir highways can be closed within the shire, the Bruxner Highway for some days at a time.

Road Closures

19. Numerous roads in the Shire can be closed by flooding. In the southern and eastern areas the closures are of short duration, but in the low-lying northern areas roads may remain closed for some days. In the cases indicated in the table below there are no practical detours available.

Road	Usual Points of Closure
SH 16 Bruxner Highway	Beardy River Bridge (Shire boundary Inverell and Tenterfield Shire Councils)
TR 63 Yetman to Warialda	Yetman, causeway near SR 9, 3 Mile Creek
	Rocky Dam, 6 Mile Creek causeway
	Ottleys Creek, causeway overflow form Ottleys Creek
MR 137 Inverell to Ashford to Bonshaw	Severn River, 3 mile Bridge
	9 Mile Creek causeway
	Bukkula Creek culvert/causeway
	Frying Pan Creek at Dinton Vale
	Arrawatta Creek, near SR 223
SR 36 Ashford to Wallangra	Mcintyre River, at Wallangra Bridge
	Reedy Creek causeway
	Sandy Creek causeway
	Honeysuckle Creek causeway
MR 382 Bruxner Highway to Yellow Dam Road	Rocky Creek causeway
MR 138 Bruxner Highway to Texas	Dumaresq River overflow
SR 10	Dumaresq River, at Keetah crossing
	Campbells Creek causeway
	Sandy Creek causeway
	Dumaresq River overflow at Goondarin
SR 16	Borah Creek causeway
	Macintyre River, Keetah crossing
SR 9	Woolons Lagoon crossing
SR 12	Ottleys Creek at Blue Nobby Bridge
SR 23	Bural Creek causeway
SR 33	Reedy Creek causeway
SR 54 Ashford to Emmaville	Stevens Creek causeway
SR 48 Ashford to Pindari Dam	Oakey Creek causeway
	Dingo Creek causeway
	Duncanmara Creek causeway
	Frazers Creek, Ashford Bridge
SR 50 Bukkula to Pindari Dam	Frazers Creek crossing
SR 43	Macintyre River crossing
MR 134 Ashford to Graman	Macintyre River, at Tintott Bridge
MR 187 Inverell to Rocky Dam	Cucumber Creek culvert/causeway
	Graman Creek culvert/causeway
	Wyndhams Creek culvert/causeway
	Rob Roy Creek Bridge
	Unknown creek near Inverell Saleyard
SH 12	Dumboy Creek bridge crossing
SR 105	Warialda Creek causeway
SR 101	Warialda Creek culvert/causeway
MR 134 Delungra to Bingara	Low lying area near MR 554 intersection
SR 199 Auburn Vale Road	Black Gully Creek culvert/causeway
SR 154	Macintyre River crossing

Road	Usual Points of Closure
SR 136	Macintyre River crossing
SR 234 Kings Plains Road	Long Plain Creek crossing
	Swan Brooke Creek Bridge
SR 238 Woodstock Road	Swanbrooke Creek at Woodstock Bridge
SR 246 Elsmore Road	Macintyre River Brodies Plains crossing
SR 254	Macintyre River at Elsmore Bridge
	Middle Creek crossing

NSW STATE EMERGENCY SERVICE

SES RESPONSE ARRANGEMENTS FOR INVERELL SHIRE

Volume 3 of the Inverell Shire Local Flood Plan

Last Update: February 2008

FloodSafe

ANNEX C - GAUGES MONITORED BY THE INVERELL SES LOCAL HEADQUARTERS

Gauge Name	AWRC No	Type	Stream	Flood Classifications			Alternate Reading Arrangements
				Min	Mod	Maj	
Tenterfield Dam	416053	Automatic	Tenterfield Creek				
Clifton	416003	Automatic	Tenterfield Creek				
Farnbro (Qld)	416310	Automatic	Severn River (Qld)				
Bolivia	416023	Automatic	Deepwater River				
Donaldson	416032	Automatic	Mole River				
Clearview (Qld)	416303	Automatic	Pike Creek				
Glenlyon Dam (Qld)		Automatic	Pike Creek				
Riverton (BOM)		Automatic	Dumaresq River				
Roseneath	416011	Automatic	Dumaresq River				
Haystack	416008	Automatic	Beardy River				
Bonshaw Weir	416007	Automatic	Dumaresq River				
Oaky Creek (Qld)	416312	Automatic	Oaky Creek				
Cunningham Weir	416308	Automatic	Dumaresq River				
Beebo (Qld)	416305	Automatic	Brush Creek				
Glenarbon	416040	Automatic	Dumaresq River				
Barongarook (Qld)		Automatic	Macintyre Brook				
Terraine (Qld)		Automatic	Bracker Creek				
Coolmunda Dam (Qld)		Automatic	Macintyre Brook				
Inglewood (Qld)		Automatic	Macintyre Brook				
Woodspring (Qld)		Automatic	Canning Creek				
Inglewood Weir (Qld)		Automatic	Macintyre Brook				
Booba Sands (Qld)	416415	Automatic	Macintyre Brook				
Keetah Bridge*		Automatic	Dumaresq River				Local Reader
Bengalla (BOM)		Automatic	Dumaresq River				
Wyoming	416063	Automatic	Macintyre River				Local Reader
Paradise Station	416061	Automatic	Paradise Creek				Local Reader
Gred	416059	Automatic	Kings Creek				Local Reader
Newstead North	416062	Automatic	Kings Creek				Local Reader
Little Valley	416056	Automatic	Macintyre River				Local Reader
Elsmore Bridge	416057	Automatic	Macintyre River				Local Reader
Riverstone		Automatic	Macintyre River				Local Reader
Stannifer	416064	Automatic	Middle Creek				Local Reader
Ferndale	416055	Automatic	Middle Creek				Inverell SES
Inverell (Middle Ck Junction)	416016	Automatic	Macintyre River				Inverell SES
Inverell (Ross Hill Bridge)		Manual	Macintyre River	3.0	4.3	5.2	Inverell SES
Campbells*		Automatic	Swanbrook				
Tintott Bridge		Automatic	Macintyre River				Local Reader
Wallangra	416010	Automatic	Macintyre River				Local Reader
Fladbury	416022	Automatic	Severn River				
Strathbogie	416039	Automatic	Severn River				
Pindari Storage	416030	Automatic	Severn River				OIC Pindari Dam
Pindari Downstream	416019	Automatic	Severn River				
Wean*		Automatic	Kings Plains Creek				Local Reader
Nullamanna*		Automatic	Frazers Creek				Local Reader
Bukkulla		Automatic	Frazers Creek				
Westholme		Automatic	Frazers Creek				Ashford SES
Ashford	416006	Automatic	Severn River	2.2	4.0	6.0	Ashford SES

Gauge Name	AWRC No	Type	Stream	Flood Classifications			Alternate Reading Arrangements
				Min	Mod	Maj	
Bedwell Downs (Ridgelands)	416031	Automatic	Macintyre River				Local Reader
Yetman	416058	Automatic	Macintyre River	2.4	7.6	9.1	Yetman SES
Holdfast	416012	Automatic	Macintyre River				
Coolatai	416020	Automatic	Ottleys Creek				Local Reader
Carmya*		Automatic	Macintyre River				Local Reader
Boggabilla	416002	Automatic	Macintyre River				
Goondiwindi	416301	Automatic	Macintyre River				

* Not yet operational

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

The Inverell SES Local Controller or nominated person (in liaison with North West Region SES Headquarrters) issues SES Local Flood Bulletins to radio stations 2NZ and GEM FM.

The North West Region SES Headquarters, in consultation with Namoi Region Controller and Inverell SES Local Controller, distributes SES Flood Bulletins and other flood related information (including Flood Warnings) to the following regional media outlets:

Television Stations:

Station	Location
ABC1	Sydney
NBN TV	Tamworth
PRIME TV	Tamworth
NRTV	Lismore
QTV	Toowoomba
Sunshine TV	Maroochydore
NRTV	Coffs Harbour
QTV	Queensland
Sunshine TV	Queensland

Radio Stations:

Station	Location
2NZ (AM 1188)	Inverell
GEM FM (95.1)	Inverell
ABC New England/North West (AM648)	Tamworth
2VM (AM 1530)	Moree
NOW FM (98.3)	Moree
2TM (AM 1287)	Tamworth
2TM FM (92.9)	Tamworth
2TEN FM (107.5)	Tenterfield

Newspapers:

Name	Location
The Inverell Times	Inverell
The Moree Champion	Moree
The Northern Daily Leader	Tamworth
The Warialda Standard	Warialda

Other Agencies:

Inverell SES Local Headquarters	Inverell
Ashford SES Unit Headquarters	Ashford
Yetman SES Unit Headquarters	Yetman
New England Police District Headquarters	Armidale
Inverell Local Area Command Headquarters	Inverell
Barwon Local Area Command Headquarters	Moree
NRMA	Inverell

ANNEX E - TEMPLATE EVACUATION WARNING MESSAGE FOR [ENTER NAME OF AREA]

This template is held on computer at the Inverell SES Local Headquarters. It is designed to guide the construction of evacuation warning messages which will follow a broadcast of the Standard Emergency Warning Signal or be read over radio stations. Evacuation warning messages derived from this template may also be distributed by doorknockers to dwellings or business premises.

Evacuation Warning for [ ]

Date/Time of Issue: [ ]

Authorised By: [ ]

The Bureau of Meteorology has predicted a flood level of [ ] metres at [ ] ***(place)*** at [ ] ***(time).*** This means that the following area(s) 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 2NZ (AM 1188), GEM FM (95.1), or ABC Radio New England/North West (AM 648) 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. (note Pound facilities if appropriate).

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 [ ] ***(specify route if appropriate)***.
- 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 for your property while you are away.

ANNEX F - DETAILS OF WARNING AND EVACUATION ARRANGEMENTS IN THE INVERELL OPERATIONAL SECTOR

The Sector and the Flood Problem

1. The Inverell Sector includes:

   a. The Macintyre River and its tributaries above Bukkula.

   b. Lake Copeton

   c. Inverell township as well as Delungra, Gilgai, Stannifer, Elsmore, Nullamanna, Gum Flat, Mt Russel and Oakwood villages.

2. The most severe flood problems in the Sector are at Inverell, where the entire CBD and substantial numbers of industrial and residential properties are liable to flooding. Belgravia, the lower parts of Ross Hill, the Ashford Rd and Edward St areas and Southside are all affected. Above Inverell, small numbers of farm houses on the Elsmore Common and (in very severe events) Brodies Plains are flood liable.

3. Flood information is obtained by the Inverell SES:

   a. From BoM warnings for Inverell.

   b. From a network of automatic rain and stream gauges. The stream gauges are alarmed to set off the phones of key SES personnel when specified stream levels are reached. Data from the gauges is used to predict flood heights and the arrival of flood peaks at Inverell.

Warnings

4. Warnings of impending flooding within Inverell are provided by the Inverell Town Flood Advice System, which is a multi-mode system devised to alert the business community and residents to impending flooding and provide advice when flood waters are expected to enter the town. Normally this advice will include advice to protect property and then to evacuate. Information is provided by the following means:

   a. Announcements broadcast over radio stations 2NZ, GEM FM and ABC New England/North West. These will be preceded by the playing of the Standard Emergency Warning Signal.

   b. The Council's fixed Public Address system, which has speakers in Otho St and Byron St. The system is activated by 2NZ, and announcements are preceded by the playing of the SEWS. It is activated fortnightly for the purposes of checks and to remind the community of its purpose.

c. Mobile public address systems in police vehicles travelling through the CBD and nearby streets.

d. Faxstream to commercial and industrial premises.

e. Phone calls to commercial and industrial premises and to dwellings. These calls are made in a priority order intended to match as far as possible the order in which properties are likely to be inundated. Calls are made only to those areas likely to experience inundation in the particular flood event which is pending.

f. The Inverell Shire Council website, on which flood predictions are posted along with information on the status of roads.

g. Doorknocks conducted by SES, RFS, NSWFB, Inverell Rescue Squad, Council and Police personnel. As far as possible, doorknockers will provide written advice based on the template in Annex E. Doorknocking will start in the Sweaney St area, followed by Byron St, and will then move away from the river towards Rivers St.

5. Warning information about impending floods is expressed in terms of likely depths relative to those experienced in February 1991. People will be advised to note the flood depth indicators and 1991 flood level markers on telephone poles in and around the CBD.

Evacuations

6. If flooding in Inverell is expected:

   a. Persons in the CBD will be directed to return to their homes.

   b. Proprietors of commercial premises will be advised to prepare their premises for flooding and then return to their homes.

   c. The CBD will then be cleared.

7. Evacuations will be in the private vehicles of evacuees and their neighbours and by bus and taxi. Evacuees will be taken or advised to go to evacuation centres as follows:

   a. From the CBD to Holy Trinity and/or Macintyre High School

   b. From the Ross Hill Area to Inverell High School.

   c. From the Edward Street Area to Inverell High School.

   d. From Belgravia to Holy Trinity School.

   e. From the South Inverell area to the South Inverell Community Centre.

8. Helicopter landing points can be established at the Inverell Hospital (Swanbrook Rd), the Shire Works Centre (Burtenshaws Rd) Inverell Shire EOC

(Burtenshaws Rd) and Varley Oval. The Varley Oval site can operate only in floods up to 5.8 metres.

9. The Inverell Caravan Park located at the Tingha Rd/Gwydir Highway intersection is inundated in floods lower than those which affect the rest of Inverell. Vans are moved by their owners and Council personnel to high ground on nearby streets. The occupants of caravans and tents can be given assistance at the evacuation centre established at the Holy Trinity School or by DoCS in smaller events in which no evacuation centre is established.

10. Evacuations from farm houses outside Inverell are to the homes of neighbours.

ANNEX G - DETAILS OF WARNING, EVACUATION AND RESUPPLY ARRANGEMENTS IN THE ASHFORD OPERATIONAL SECTOR

The Sector and the Flood Problem

1. The Ashford Sector includes:

    a. The Severn River and the tributary Frazers Creek, including the villages of Ashford, Bukkulla, Graman, Bonshaw, Wallangra, numerous farm properties and Pindari Dam.

    b. The Macintyre River from Bukkulla to Bedwell Downs, including the communities of Bukkulla, Graman, Wallangra and numerous farm properties.

    c. The left (south) bank of the Dumaresq River above Texas, including the village of Bonshaw and a portion of the tributary Beardy River. A number of farm properties and non-farm dwellings are located along these rivers.

2. Flooding often restricts access from Ashford to other parts of the Sector and assistance by the SES when this occurs may be restricted to the provision of information and advice. Access to the Bonshaw area may be achieved by the Yetman and Tenterfield SES Units when Bonshaw is cut off from Ashford.

3. Much of the village of Ashford is flood liable, with more than 40 dwellings and some non-residential premises potentially being flooded in severe events and the village sometimes being cut in two. There are also a number of flood liable houses along the short reach of the Beardy River which falls within the Shire, along the Macintyre in and near Wallangra, and along the Severn River. The total number of flood liable dwellings outside Ashford itself within the Sector is between 40 and 50. Farmers' pumps and livestock are also at risk from floods.

4. Flood information is obtained by the Ashford SES:

    a. From BOM warnings for the vicinity of Ashford on the Severn River.

    b. From Pindari Dam, which provides information on inflows, outflows, the level of water in the storage and predicted peak levels downstream.

    c. From farmers who provide information on rainfalls and stream flows.

Warnings

5. Warnings to potentially flood affected people are provided via Radio 2NZ, by telephone calls to farm properties and in severe events in Ashford by doorknocking carried out by the SES, RFS, and Police. When flood-waters are expected to enter Ashford, advice is provided about raising belongings and evacuating.

Evacuations

6. Evacuations in the village of Ashford are carried out using residents' vehicles and Shire vehicles. Evacuees usually go to the houses of friends and relatives within the village or to the Ashford Hotel. In very severe floods, an evacuation centre could be set up at the Ashford Central School or the Town Hall. Most evacuations are for only one or two days.

7. In and near Ashford itself:

   a. Assistance can be provided by the SES and RFS in lifting belongings within dwellings.

   b. Caravans are moved by the SES, casual volunteers and van owners from the Council Caravan Park in Bukkulla St to flood-free streets within the village. At the summer peak, the caravan park could contain 25-30 vans, all of which are likely to be moveable. The occupants of caravans and tents can be given assistance in any evacuation centre which is established.

   c. Assistance can be provided by the SES in rescuing farm livestock and domestic pets especially in and adjacent to Ashford.

   d. A helicopter landing point can be established adjacent to the Ashford Police Station.

8. Evacuations from farm houses and in the smaller communities are to the homes of neighbours.

9. Evacuations in Bonshaw in a severe event (including any possible failure of Glenlyon Dam) may need to be managed initially by the Bonshaw RFS under the control of the Inverell Shire SES Local Controller or a police officer from Yetman. If dam failure were possible, the entire village would need to be evacuated to private homes above the assessed likely flood level which is 8.5 metres above the general floodplain level in the vicinity of Bonshaw. Further details to guide operations are in Annex A.

Resupply

10. Resupply operations are sometimes necessary for up to 2-3 days, especially to properties affected by flooding on the Beardy River in the east of the Sector but sometimes over larger areas. Food and other essentials are supplied by floodboat and Police vehicles and in some cases by helicopter.

ANNEX H - DETAILS OF WARNING, EVACUATION AND RESUPPLY ARRANGEMENTS IN THE YETMAN OPERATIONAL SECTOR

The Sector and the Flood Problem

1. The Yetman Sector includes:

   a. The Macintyre River from Bedwell Downs (25 kilometres above Yetman) to the point at which the river leaves the Shire 25 kilometres below the village. This reach includes Yetman and a large number of farm properties, including some on the left (south) bank of the river in Yallaroi Shire.

   b. Ottleys Creek downstream of Coolatai (Yallaroi Shire).

   c. The left (southern) bank of the Dumaresq River below Texas. This reach also contains numerous farm properties.

2. The Yetman SES may need to respond when Bonshaw is inaccessible from Ashford because of flooding on the Severn River and from Tenterfield as a result of flooding on the Beardy River.

3. All of the village of Yetman is flood liable and some farm houses along the river could also be inundated above floor level. Flood waters enter Yetman at a gauge height of 10.4 metres. At a height of 11.0 metres, about 24 dwellings and two churches are inundated. At greater heights progressively more dwellings are inundated including the school, the village hall, the Police Station and the store, and in severe events the whole village must be evacuated. The SES maintains a list of dwellings which can be inundated, and the approximate gauge heights at which inundation occurs.

4. Flood information is obtained by the Yetman SES:

   a. From BOM warnings for Yetman.

   b. By monitoring of the gauge on the Macintyre River at Bedwell Downs. Flows usually take 6-8 hours from Bedwell Downs to Yetman.

   c. From the Inverell and Ashford SES Units via the Inverell Shire Local Controller.

   d. By monitoring of the Dumaresq River by the RFS at Twin Rivers.

   e. From farmers who provide information on rainfalls and streamflows.

5. Operations in the Yetman area can be severely hampered by communication difficulties. Back-up repeater facilities can be organised by the North West SES Region Headquarters.

Warnings

6. Warnings to potentially flood-affected people are provided via 2NZ, by telephone calls to farm properties and in severe events in Yetman by doorknocks carried out by the SES and Police. When flood waters are expected to enter Yetman, advice is provided about raising belongings and moving cars out of the village and about potential evacuations.

Evacuations

7. There are three evacuation options when people in the village of Yetman need to be evacuated. In all cases, evacuations will be by residents' vehicles.

    a. Within the town from low-set houses to high-set ones or to the Yetman Memorial Hall. This option applies for floods expected to peak at less than 10.8 metres.

    b. To the Inverness property 1 kilometre from Yetman. This property contains three dwellings and a concrete-floored shed. In severe floods most of the village population could be accommodated here and supplied from outside for up to three days. Access to Inverness is available across the Richard Coventry Bridge east of Yetman to a flood height of 12.0 metres.

    c. To Texas, via the Richard Coventry Bridge and the Bruxner Highway. The Inglewood Shire and the Inverell SES would organise accommodation. This options is not available if there is a serious flood on the Dumaresq River.

8. In Yetman:

    a. Residents will be required to remove their vehicles from the village before a height of 10.4 metres is reached.

    b. Roads into the village will be closed at a height of 10.8 metres to prevent sightseers from gaining access.

    c. Assistance can usually be provided by the SES and the RFS to lift belongings within dwellings. There is little storage space above potential flood levels, though people can use their own vehicles to transport belongings to Inverness unless this property is required to accommodate evacuees.

    d. Caravans can be moved by the SES and van owners from the Council Caravan Park in Macintyre St to high ground across the Richard Coventry Bridge. The occupants of tents and caravans can be given assistance at the operating Evacuation Centre.

e. Helicopter landing points exist at the Yetman Recreation Ground, the Inverell Shire Depot or on the high ground to the east of the village.

9. Evacuations from farm houses along the Dumaresq and Macintyre rivers and Ottleys Creek are usually to the homes of neighbours, or to Texas or Goondiwindi.

Resupply

10. Resupply operations can be required for up to 50 farm dwellings cut off by floods on the Dumaresq and Macintyre rivers and Ottleys Creek. Resupply is carried out by truck, floodboat or (on some occasions) helicopters and in severe events could last for up to a week.

ANNEX I - ARRANGEMENTS FOR THE EVACUATION OF CARAVAN PARKS AND THE RELOCATION OF CARAVANS

General

1. Flood liable caravan parks exist in Inverell, Ashford, and Yetman.

Advising Procedures

2. Caravan Park proprietors 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; in a sealed envelope; to the van.

   - 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 Inverell 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:

   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.
   - Move to a designated evacuation centre 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. SES and other personnel will assist if required and may be able to provide additional vehicles.

6. Caravan park managers will:

   a. Ensure that their caravan park is capable of being evacuated within 2 hours.

   b. Advise the Inverell SES Local Controller of:

   - The number of people requiring transport.
   - Details of any medical evacuations required.
   - Whether additional assistance is required to effect the evacuation.

   c. Check that no people remain in non-removable vans that are likely to be inundated.

   d. Inform the Inverell SES Local Controller when the evacuation of the caravan park has been completed.

   e. Provide the Inverell SES Local Controller with a register of people that have been evacuated.

Return of Occupants and Vans

7. The Inverell SES Local Controller, using council resources as necessary, will advise when it is safe for the caravan parks to be re-occupied.

8. Vans will be towed back to the caravan parks by van owners or by vehicles and drivers arranged by the park managers. Again, SES and other personnel will assist if available.

ANNEX J - STANDING OPERATING PROCEDURES FOR ROAD CLOSURES AND RE-OPENINGS

Aim

1. These Standing Operating Procedures have been formulated to ensure that all SES and Council personnel are familiar with the procedures to be utilised when roads need to be closed and re-opened.

Method

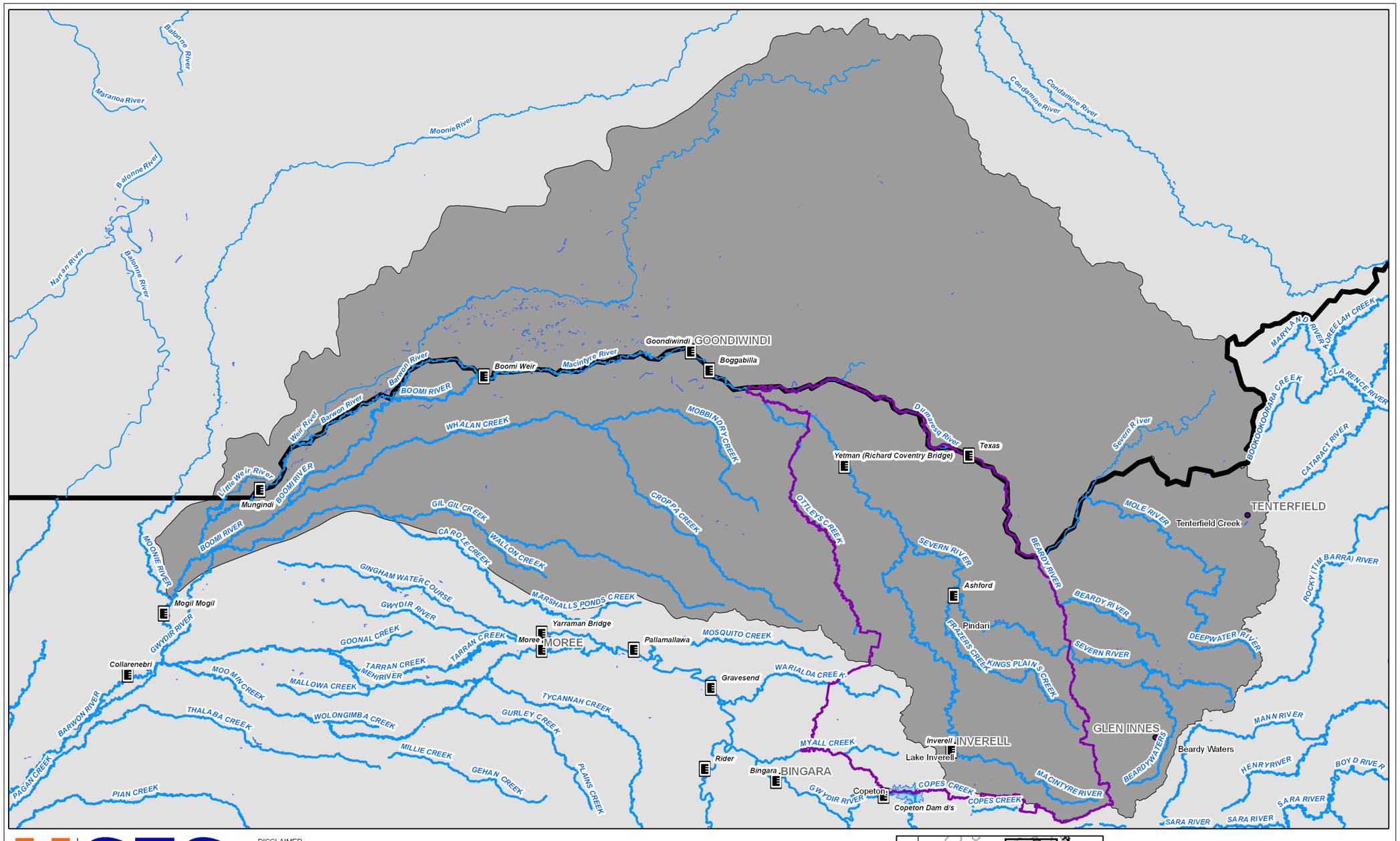
2. In the event that roads or causeways need to be closed because of floods, it is the responsibility primarily of Council staff to patrol and then formally close the affected roads and bridges. Information on closures must then be relayed to Council and the relevant SES Unit Controller for inclusion in the latest Situation Report to the Inverell Shire SES Local Headquarters.

3. Whilst Council undertakes the primary role for road closures and re-openings, SES personnel may, if resources are available, assist the Police and Council with road closures and traffic control operations (see Section 1.5.2s).

4. It is also Council's role to re-open roads and remove signs and barricades when they are opened. Information on re-openings should be immediately relayed to the relevant Unit Controller and Council for dissemination. The current information on road conditions will also be made available to the North West SES Region Headquarters. As this information may be disseminated by a pre-recorded message on an answering machine it will be necessary for all road closures and re-openings, whether carried out by Council or SES staff, to be relayed to the Unit Controller/Local Controller for inclusion in Situation Reports. The pre-recorded message will be altered at appropriate times during each day.

5. Note that the Council in conjunction with the Queensland Department of Main Roads and other local councils has implemented a consistent method of providing signage for road and bridge closures throughout the area. Council will arrange for the in situ signs to be activated by the appropriate staff and community representatives to close roads and advise the travelling public of imminent safety hazards relating to flooding.

MAP 1 - BORDER RIVERS BASIN



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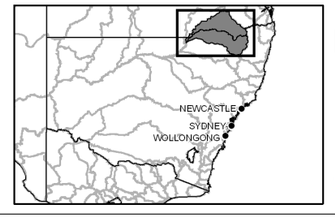
Map publication prepared by the NSW State Emergency Service
SES State Headquarters

Border Rivers Basin

0 12.5 25 50
Kilometers

Print Date: 10 October 2007

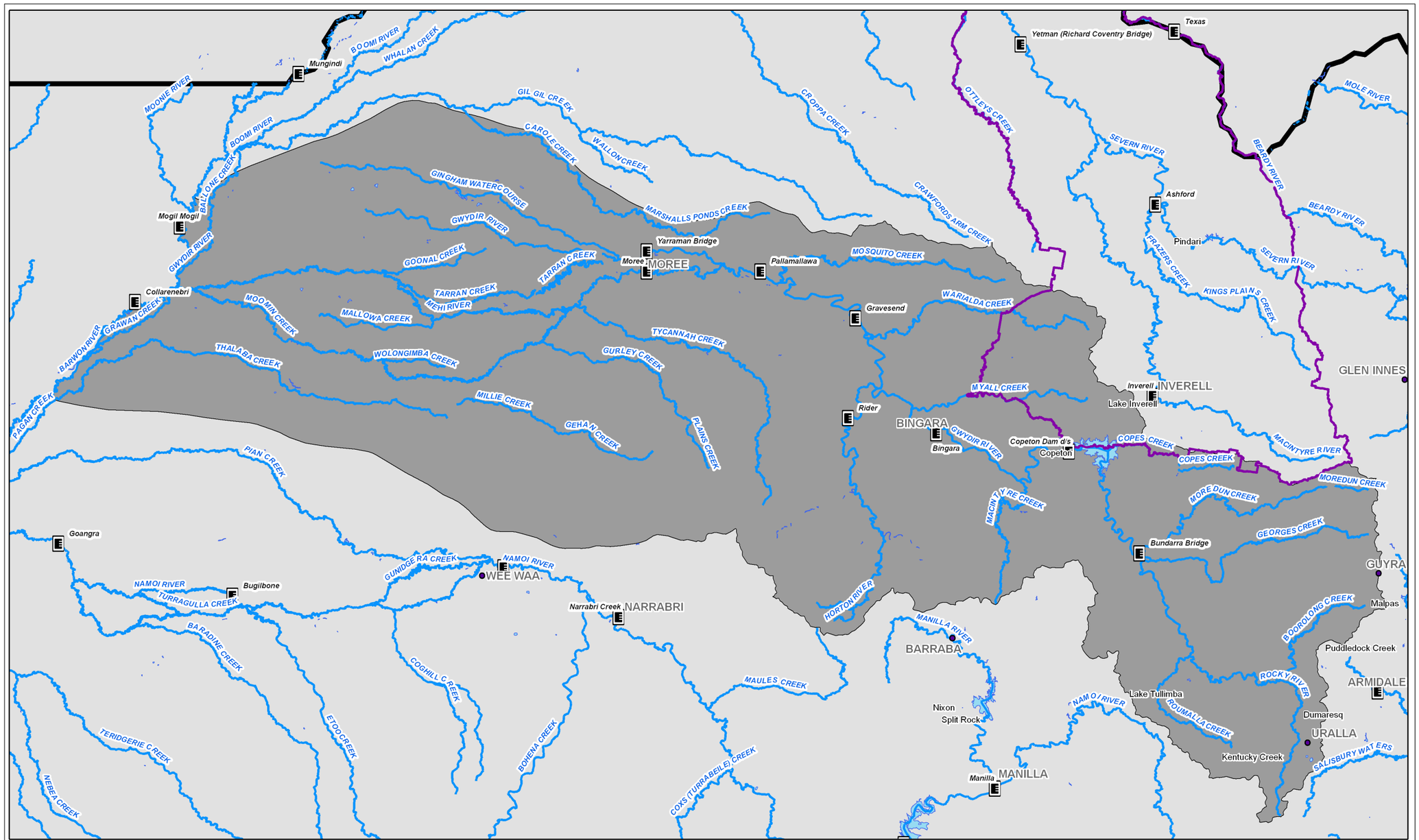
N



Legend

- Warning Gauges
- Dams
- Major Rivers
- Border Rivers Basin
- Inverell Shire LGA

MAP 2 - GWYDIR RIVER BASIN



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Map publication prepared by the NSW State Emergency Service
SES State Headquarters

Gwydir River Basin

0 12.5 25 50
Kilometers

Print Date: 10 October 2007

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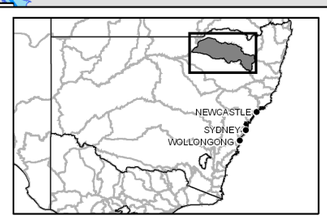
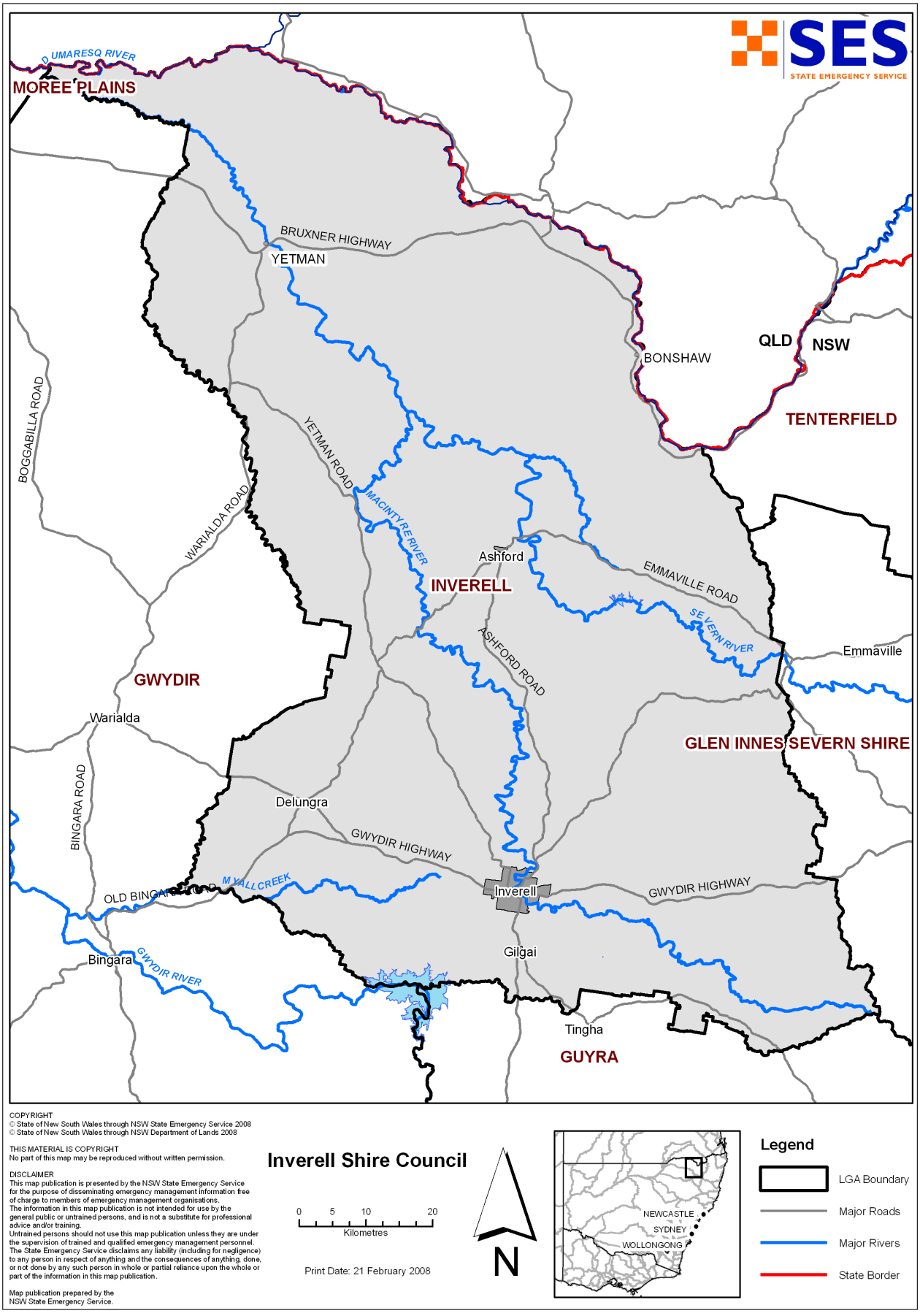


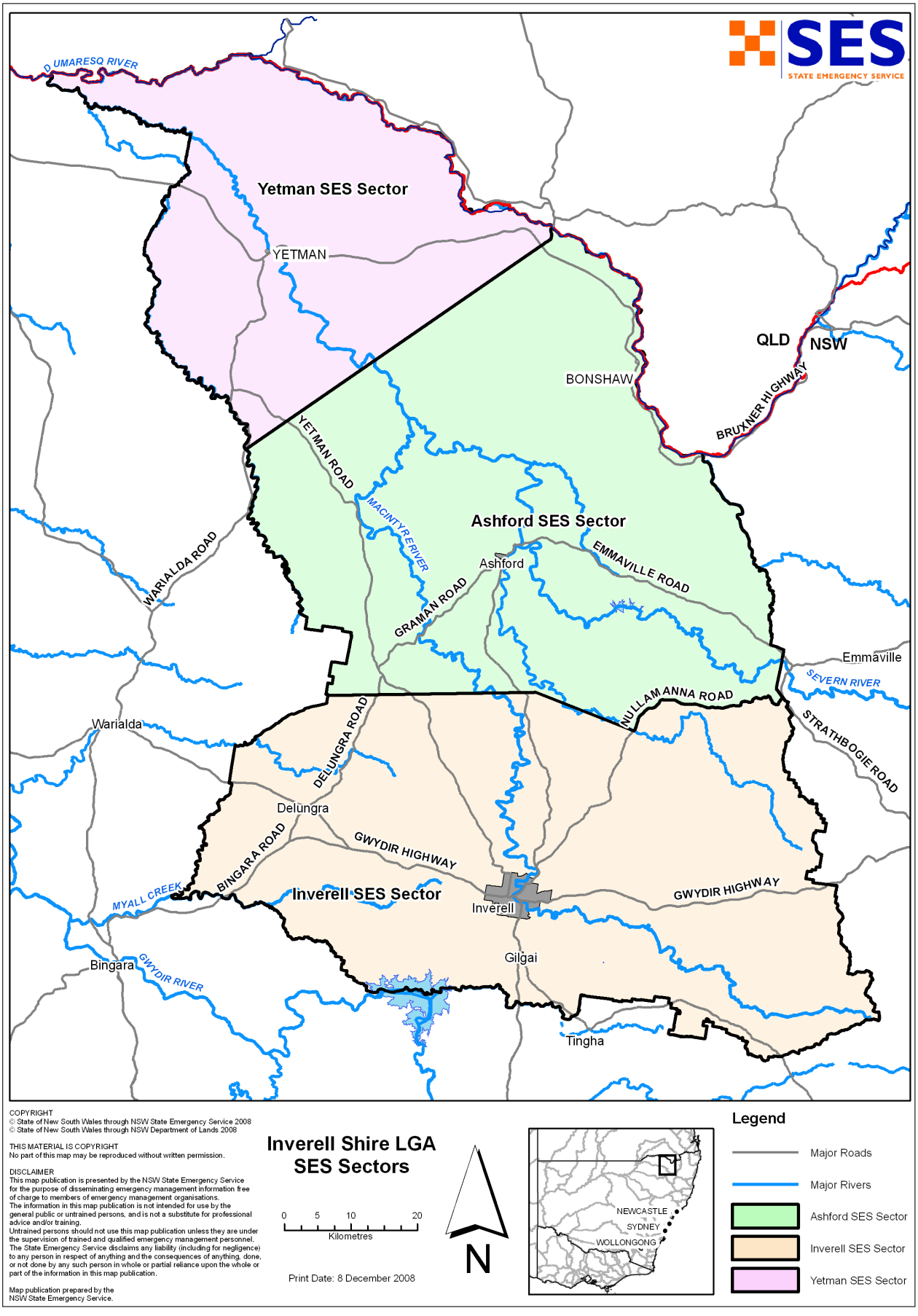
Legend

- Warning Gauges
- Dams
- Major Rivers
- Gwydir River Basin
- Inverell Shire LGA

MAP 3 - INVERELL SHIRE COUNCIL AREA

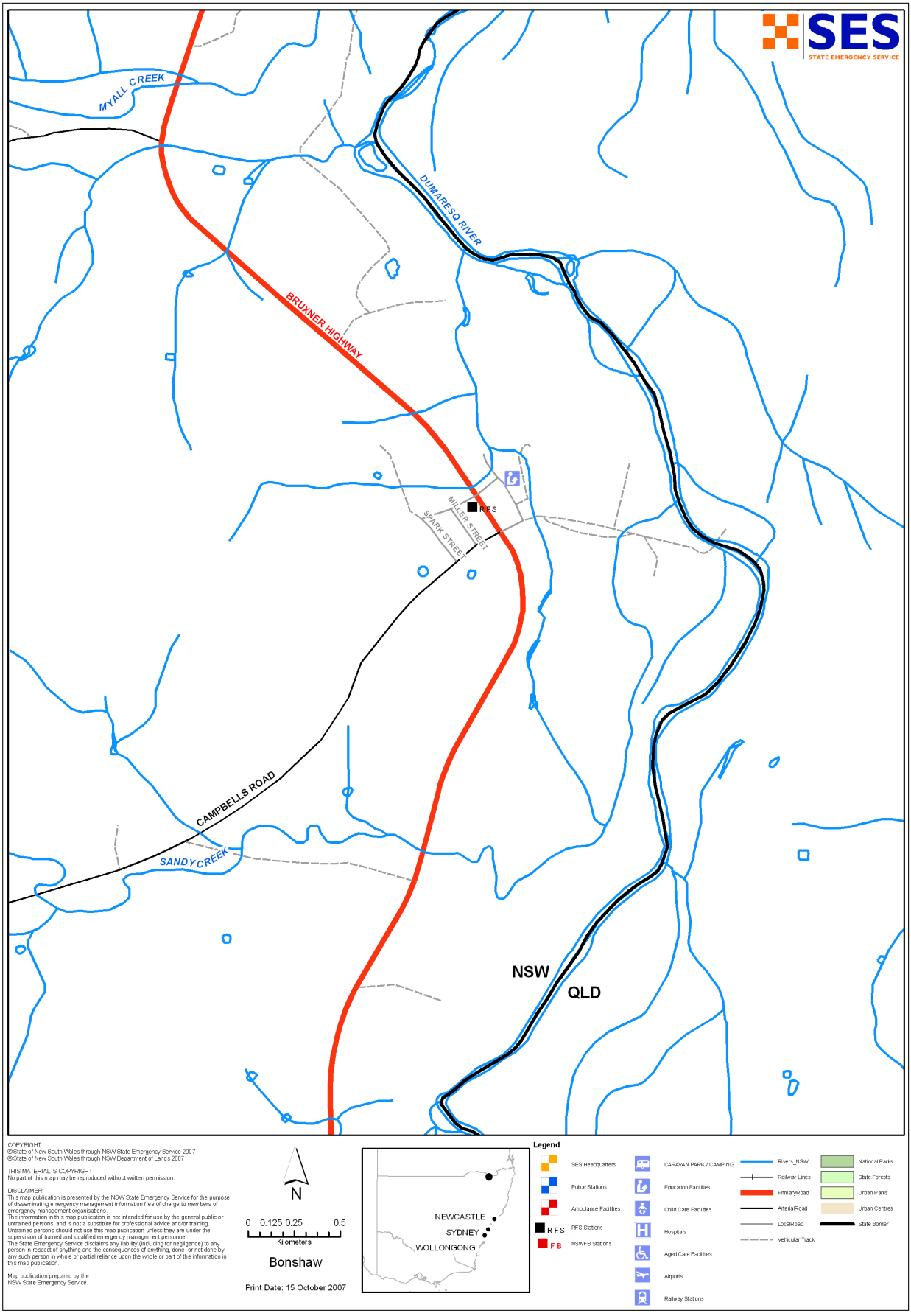


MAP 4 - INVERELL SHIRE LGA SES SECTORS

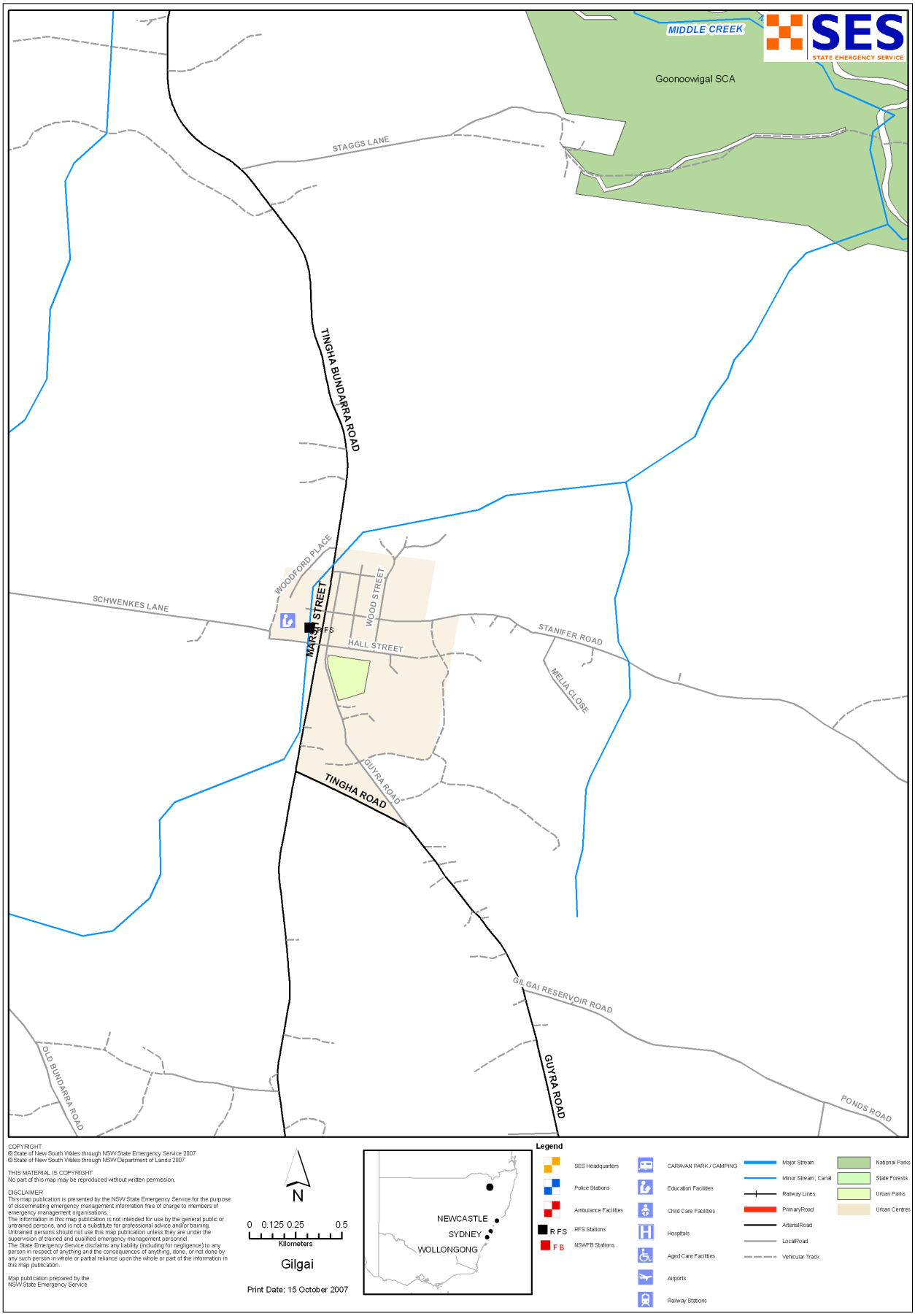


MAP 5 - ASHFORD

MAP 6 - BONSHAW



MAP 7 - GILGAI



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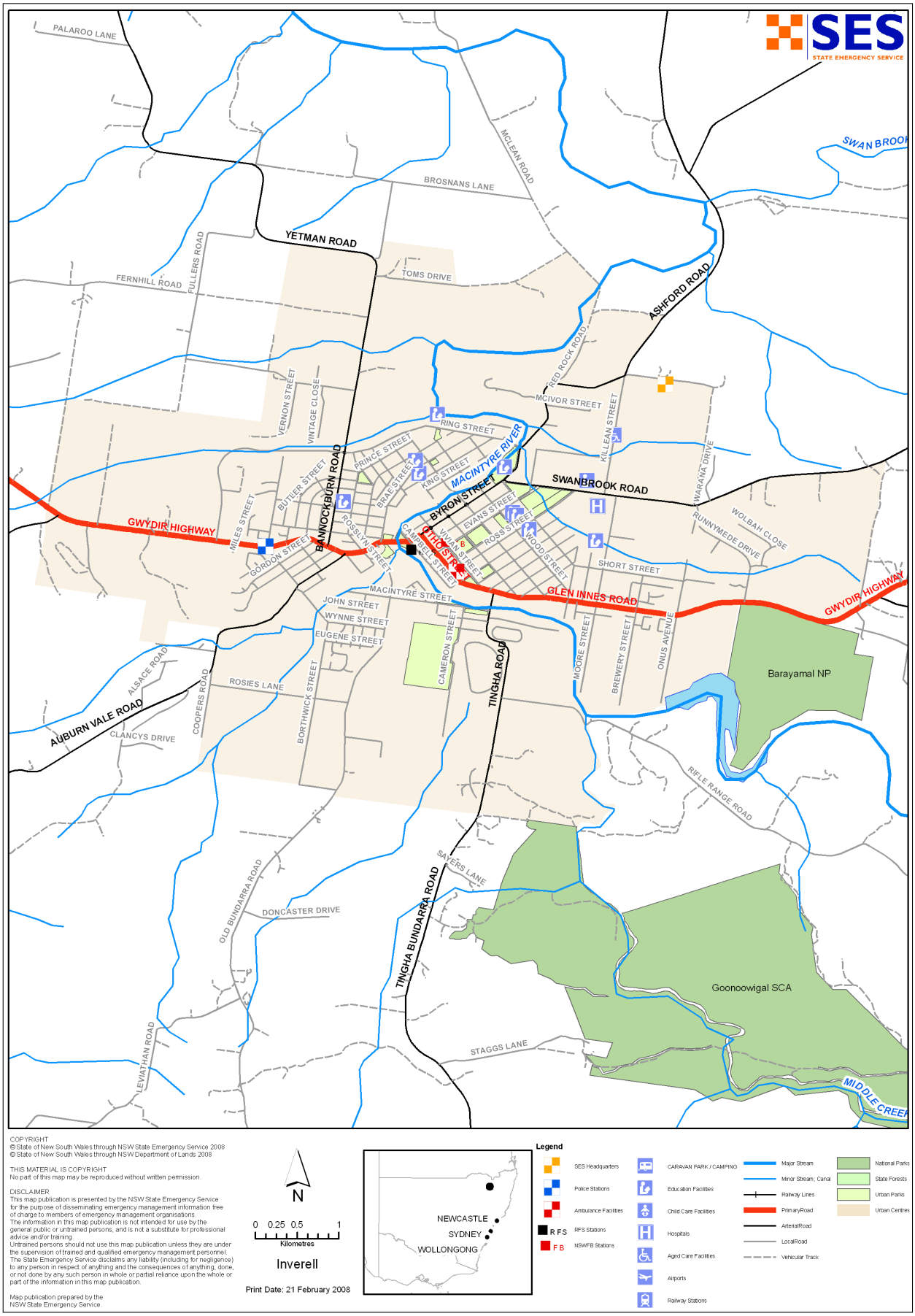
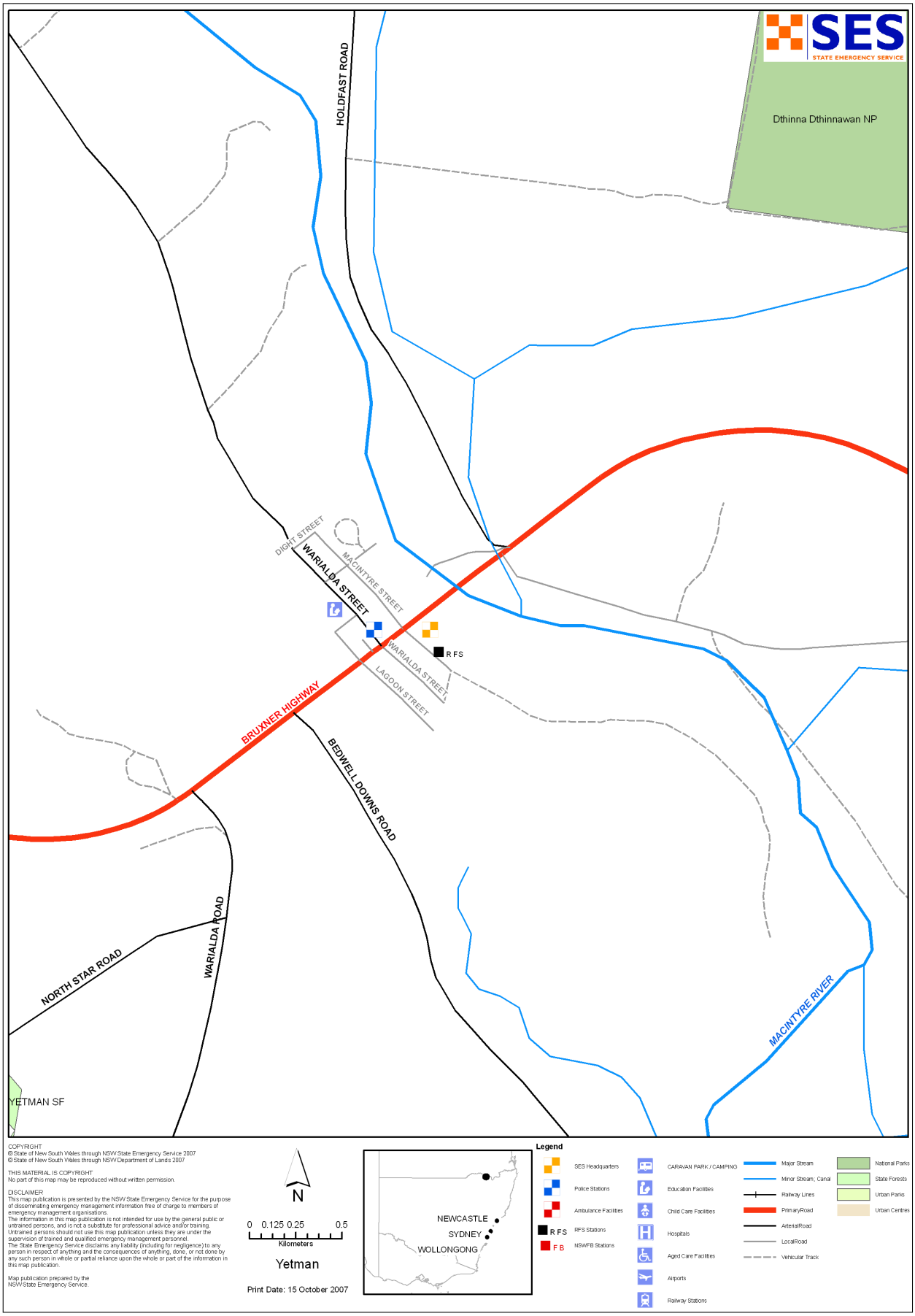
MAP 8 - INVERELL



MAP 9 - YETMAN


SES
STATE EMERGENCY SERVICE
Dthinna Dthinnawan NP
HOLDFAST ROAD
DIGHT STREET
WARIALDA STREET
MACINTYRE STREET
WARIALDA STREET
LAGOON STREET
R F S
BRUXNER HIGHWAY
BEDWELL DOWNS ROAD
NORTH STAR ROAD
WARIALDA ROAD
MACINTYRE RIVER
YETMAN SF
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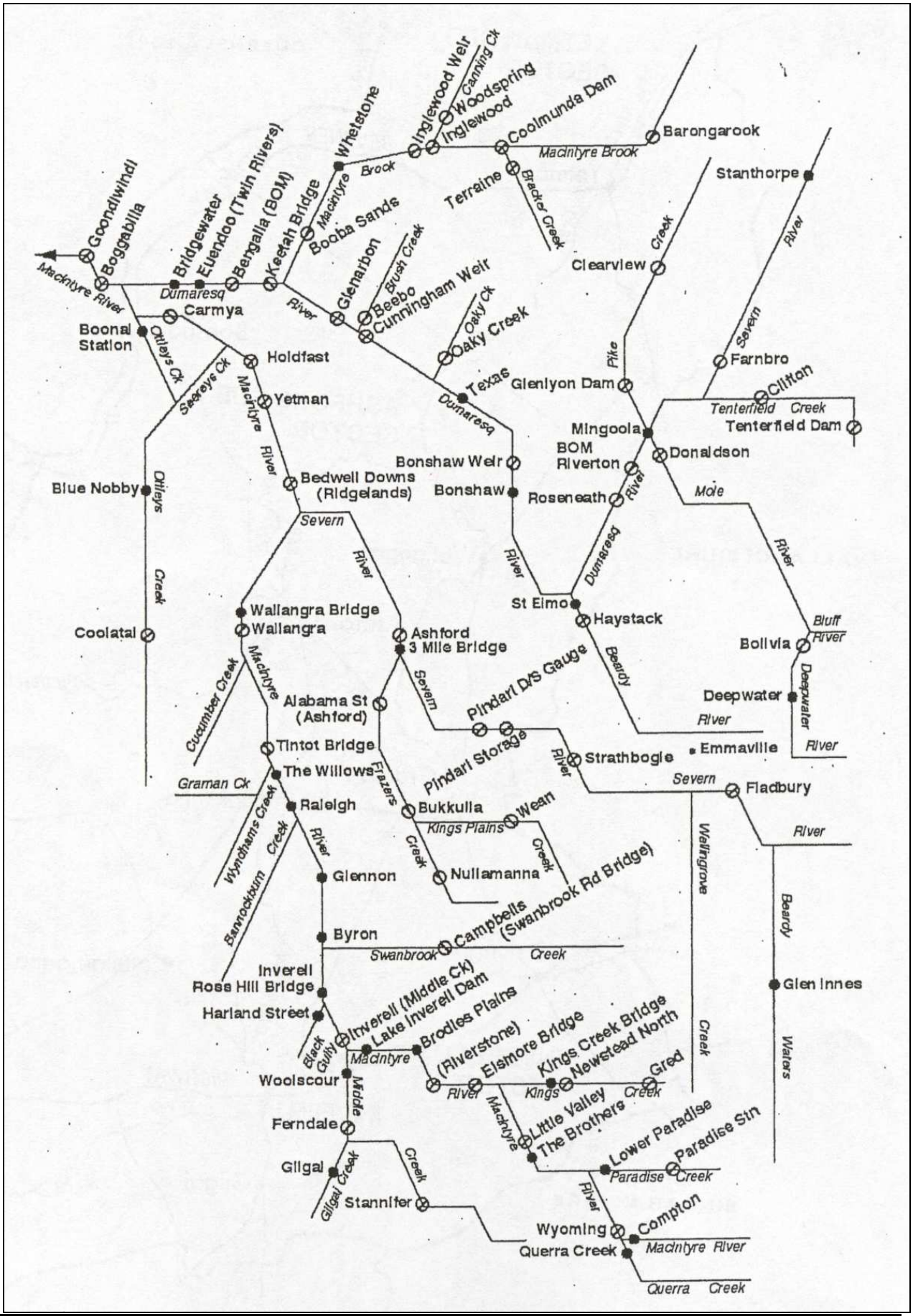
N
0 0.125 0.25 0.5
Kilometers
Yetman
Print Date: 15 October 2007
NEWCASTLE
SYDNEY
WOLLONGONG
Legend
SES Headquarters
Police Stations
Ambulance Facilities
R F S RFS Stations
F B NSWFB Stations
CARAVAN PARK / CAMPING
Education Facilities
Child Care Facilities
Hospitals
Aged Care Facilities
Airports
Railway Stations
Major Stream
Minor Stream, Canal
Railway Lines
PrimaryRoad
ArterialRoad
LocalRoad
Vehicular Track
National Parks
State Forests
Urban Parks
Urban Centres

MAP 10 - SCHEMATIC OF RIVERS AND STREAM GAUGES