NSW STATE EMERGENCY SERVICE

Bland Shire

Local Flood Plan

FloodSafe

BLAND SHIRE FLOOD EMERGENCY SUB PLAN

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

Volume 1 of the Bland Shire Local Flood Plan

AUTHORISATION

The Bland Shire Flood Emergency Sub Plan is a sub plan of the 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 West Wyalong Local Controller

Date: 17-07-13.

Approved

Chair, Local Emergency Management Committee

Date: 17/7/13.

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NSW SES West Wyalong Local Controller	1
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Fire and Rescue NSW, West Wyalong	1
Rural Fire Service, Bland Temora Zone	1
Ambulance Service of NSW, West Wyalong	1
Office of Environment and Heritage	1
Evacuation Centres	1 each
Hospitals	1 each
Schools	1 each
Caravan Parks	1 each
Council Libraries	1 each
	1
Total	

VERSION HISTORY

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

Description	Date

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

West Wyalong Local Controller
NSW State Emergency Service
55 Matthews Street, Parkes NSW 2870

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

Amendment Number	Description	Updated by	Date

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 Operations Controller
LGA	Local Government Area
MHL	Manly Hydraulics Laboratory
OEH	Office of Environment and Heritage (previously DECCW)

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
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.

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

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

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

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

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

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

Emergency Alert. 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.

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

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

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

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

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

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

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

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

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

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

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

Flood of record. Maximum observed historical flood.

Floodplain 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 Bland 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 West Wyalong Local Controller and the NSW SES Lachlan Region Controller as a NSW SES plan and endorsed by the Bland 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 Bland Shire Council area which includes: Barmedman, Tallimba, Ungarie, Weethalle, West Wyalong, Wyalong, Kikoria, Naradhan and Mirrool.

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 Lachlan Region and for emergency management purposes is part of the South West 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 Bland 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 West Wyalong Local Controller.** The NSW SES West Wyalong Local Controller is responsible for dealing with floods as detailed in the State Flood Plan, and will:

Preparedness

a. Maintain a Local Headquarters at 221 Neeld Wyalong 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 Bland 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:

- 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.
- Provide an information service in relation to:
  - Flood heights and flood behaviour.
  - Advice on methods of limiting property damage.
  - Confirmation of evacuation warnings and evacuation orders.
- Direct the conduct of flood rescue operations.
- Direct the evacuation of people and/or communities.
- Provide immediate welfare support for evacuated people.
- Coordinate the provision of emergency food and medical supplies to isolated people and/or communities.
- 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.

- Arrange for support (for example, accommodation and meals) for emergency service organisation members and volunteers assisting them.
- Ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.
- If NSW SES resources are available, assist with emergency fodder supply operations conducted by Agriculture and Animal Services.
- If NSW SES resources are available, assist the NSW Police Force, RMS and Council with road closure and traffic control operations.
- Exercise financial delegations relating to the use of emergency orders as laid down in the NSW SES Controllers' Guide.
- Coordinate the collection of flood information for development of intelligence.
- Submit Situation Reports to the NSW SES Lachlan 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.
- Keep the Local Emergency Operations Controller advised of the flood situation and the operational response.
- Issue the 'All Clear' when flood operations have been completed.

Recovery

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

j. 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 West Wyalong Unit Members:**

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

- The management of the West Wyalong NSW SES Local 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.

1.5.4 **Agriculture and Animal Services Functional Area:**

a. When requested by 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. Forestry Corporation of NSW

- Close and evacuate at risk camping grounds in Forestry Corporation of NSW managed areas.

1.5.5 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.

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

a. Provide Flood Watches for the Lachlan River and Murrumbidgee River Basin.

b. Provide Flood Warnings, incorporating height-time predictions. Note: Bland Shire has no monitored flood gauges; therefore no flood warnings will be issues for Bland Shire.

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

1.5.7 **Child Care Centres and Preschools**:

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

- **Bland Shire Children's Services Unit**
  - Services include Bland District Pre-school.
  - Ungarie Pre-school, Bland and Temora Family Day Care.
  - Mobile Resource Unit.
  - Toy Library and Vacation Care.
- **Little Wattle Park Street Childcare Centre**
  - 50 Park Street West Wyalong NSW 2671.

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.

1.5.8 **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 (through a contract with MHL as described in the Response section of this plan).

c. **National Parks and Wildlife Service**

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

1.5.9 **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):

- Provide advice to the NSW SES West Wyalong 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.

1.5.10 **Engineering Services Functional Area**:

a. When requested by 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.

1.5.11 **Environmental Services Functional Area**:

a. When requested by SES:

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

1.5.12 **Health Services Functional Area**:

a. When requested by 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.

1.5.13 **Fire and Rescue NSW, West Wyalong**

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.

1.5.14 **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.

1.5.15 **NSW Police Force, Griffith 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.

1.5.16 **NSW Rural Fire Service (RFS Bland Temora Zone):**

a. Provide personnel in rural areas and villages to:

- Inform the NSW SES West Wyalong 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.

1.5.17 **Public Information Services Functional Area:**

a. When requested by SES:

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

1.5.18 **John Holland Country Regional Network and the Australian Rail Track Corporation** will close and reopen railway lines affected by flood waters and advise the SES.

1.5.19 **Roads and Maritime Services** will:

a. Close and reopen RMS roads affected by flood waters and advise the NSW SES of their status.

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

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

d. Manage traffic.

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

1.5.20 **School Administration Offices (including Catholic Education Office Canberra/Goulburn Diocese, Department of Education & Communities Riverina Region 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.

1.5.21 **Telecommunication Services Functional Area**:

a. When requested by 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.

1.5.22 **Transport Services Functional Area:**

a. When requested by SES:

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

1.5.23 **Welfare Services Functional Area:**

a. When requested by 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.

1.5.24 **Bland Shire Council Local Emergency Operations Controller (LEOCON):**

a. Monitor flood operations.

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

1.5.25 **Bland Shire Council Local Emergency Management Officer:**

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

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

1.5.26 **Bland Shire Council:**

Preparedness

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

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

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

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

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

Response

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

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

h. Provide information on the status of roads.

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

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

k. Provide back-up radio communications.

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

Recovery

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

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

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

1.5.27 Owners of Prescribed Dams within or upstream of Bland:

Table 1: Dams and dam owners within or upstream of Bland

Dam	Owner
Cowal Gold Mine Reserve D9	**Barrick Gold Australia - Cowal Gold Mine**
Cowal Northern Tailings Dam	**Barrick Gold Australia - Cowal Gold Mine**
Cowal Southern Tailings Dam	**Barrick Gold Australia - Cowal Gold Mine**

a. Maintain and operate the Dam Failure Warning System for their Dams.

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.

1.5.28 **Flood Warning Network:**

a. Provide flood information to the NSW SES West Wyalong Local Controller.

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

PART 2 - PREPAREDNESS

2.1 MAINTENANCE OF THIS PLAN

2.1.1 The NSW SES West Wyalong 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 West Wyalong Local Controller will ensure that:

a. 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 Lachlan 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 (i.e. who would be affected in floods of differing severities).

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

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

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

2.5 PUBLIC EDUCATION

2.5.1 The NSW SES West Wyalong Local Controller, with the assistance of the Bland Shire Council, the NSW SES Lachlan 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.

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 West Wyalong Unit. The NSW SES West Wyalong 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 West Wyalong Local Controller is responsible for maintaining the condition and state of readiness of NSW SES equipment and the NSW SES West Wyalong Local Headquarters.

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 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, city or suburb may be one sector or split into several sectors and divisions.

3.3 START OF RESPONSE OPERATIONS

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

3.3.2 Response operations will begin:

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

b. On receipt of a dam failure alert.

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

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

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

a. NSW SES Lachlan Region Headquarters.

b. NSW SES West Wyalong Local Controller.

c. NSW SES West Wyalong Unit.

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

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

f. Bland Shire Council Mayor.

g. Other agencies listed in this plan will be advised by the Local Emergency Management Officer on the request of the NSW SES West Wyalong 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 West Wyalong Operations Centre is located at 221 Neeld Street, Wyalong.

3.5.2 Supporting EOCs are located at:

a. The Bland Shire Council Emergency Operations Centre is located at Council Depot, Chauvel Street West Wyalong.

b. The NSW SES will operate and After Hours Duty Officer (AHDO) system whenever flood operations are not being conducted.

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 West Wyalong 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 West Wyalong Local Incident Controller.

b. Advise the NSW SES West Wyalong Local Incident Controller on resource availability for their service.

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 West Wyalong Local Headquarters collates information on the current situation in the Bland Shire Council LGA and incorporates in Situation Reports.

3.8.3 The NSW SES Lachlan 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 West Wyalong 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:

- Ungarie - flooding from Euglo/Humbug Creek.

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/; however there is no specific flood information for the Bland Shire Council LGA as there is no rainfall / river gauge system within the LGA to provide information to the Bureau.

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

e. **NSW SES Lachlan 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).

f. **Bland Shire Council.** The Bland Shire Council provides information on the Bland Shire road closures and conditions and other flood related information through regular updates on their website and contacts.

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

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

b. Griffith Police Local Area Command.

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

d. NSW SES Lachlan Region Headquarters.

e. NSW SES West Wyalong 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 West Wyalong Local Headquarters provides advice to the NSW SES Lachlan Region Headquarters on current and expected impacts of flooding in the Bland Shire Council LGA.

3.9.2 The NSW SES Lachlan 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 West Wyalong Local Incident Controller will ensure that the NSW SES Lachlan Region Incident Controller is regularly briefed on the progress of operations.

3.9.4 NSW SES West Wyalong 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.

3.9.8 **SES Livestock and Equipment Warnings**. Following heavy rain or when there are indications of significant creek or river rises), the NSW SES West Wyalong Local Incident Controller will advise the NSW SES Lachlan Region Headquarters which will issue NSW SES Livestock and Equipment Warnings.

3.9.9 **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.

3.9.10 **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.

3.9.11 **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.

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

3.9.13 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.

Table 2: Dam Failure Alert Levels

Alert Level	Example Defining Condition	SES Response	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	SES Evacuation Warning
Red	Failure imminent or occurred	Implements notification flowchart. Evacuation of downstream populations	SES Evacuation Order

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.

3.9.14 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).

3.9.15 **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.

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

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

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

3.9.19 **Bland Shire Council** will provide information on the status of local roads.

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

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

b. The NSW SES Lachlan 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 SES maintains the following information for the Bland 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 GRN.

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

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

3.12.5 Back-up communications are provided as follows:

a. Bland Council VHF radios.

b. RFS radios (council frequency VHF or UHF CB).

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 West Wyalong 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 West Wyalong 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 roads in its capacity as an agent of the RMS.

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 NSW Police Force by erecting road closure signs and barriers.

3.14.5 In flood events, the NSW SES West Wyalong 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 NSW Police Force, RMS or Council officers closing or re-opening roads or bridges affected by flooding are to advise the NSW SES West Wyalong Local Headquarters, which will then provide a road information service to local emergency services and the NSW SES Lachlan Region Headquarters. All such information will also be passed to the NSW Police Force, 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 and a small amount of the Pallet Barrier System.

3.17 MANAGING FLOOD RESCUE OPERATIONS

Strategy

3.17.1 Rescue of people from floods.

Actions

3.17.2 The NSW SES West Wyalong Local Incident Controller controls flood rescue in Bland 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 Lachlan 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 SES. Small-scale evacuations will be controlled by the NSW SES West Wyalong Local Incident Controller. Should the scale of evacuation operations be beyond the capabilities of local resources control may be escalated to the NSW SES Lachlan Region Incident Controller.

Decision to evacuate

3.18.4 In most cases the decision to evacuate rests with the NSW SES West Wyalong 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 Lachlan 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 West Wyalong Unit members,

b. RFS Bland Temora Zone members via the RFS Fire Control Officer,

c. Local Police Force officers.

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

a. SES members from the NSW SES Lachlan Region and surrounding NSW SES Regions.

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

c. RFS personnel arranged via the RFS Liaison Officer located at NSW SES Lachlan 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 Lachlan Region Incident Controller will mobilise the required number of buses for Sectors via the Transport Services Functional Area Coordination Centre, if required.

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. Bland Shire Council Local Emergency Operations Centre.

c. Bland Shire Council.

d. Griffith Police Local Area Command.

e. Bland Temora Zone Rural Fire Service Control Centre.

f. Radio Stations.

g. Other local agencies and specified individuals.

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

a. The NSW SES State Operations Centre.

b. The NSW SES West Wyalong Local Incident Controller.

c. 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 stations.

Table 3: Local radio stations and frequency

Station	Location	Frequency	Modulation
2WG	Wagga Wagga	1152	AM
2RG	Griffith	963	AM
ABC Radio	Wagga Wagga	893	FM

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 (e.g. 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;

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 Communities, 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 Lachlan Region Incident Controller will discuss the temporary closure of appropriate schools with the Regional Director, Riverina 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 Bland Shire Council LGA, school principals may close some schools affected by flooding in the early stages of flooding.

3.18.30 **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.

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

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

3.18.33 The NSW SES Local Incident Controller is to provide the following reports to the NSW SES Lachlan Region Headquarters:

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

b. Progress reports (by Sectors) during evacuations;

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

Shelter

3.18.34 **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 West Wyalong Local Incident Controller, but managed as soon as possible by Welfare Services.

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

a. Primary Evacuation Centre: Sporting Complex – Perserverance Street, West Wyalong

b. Masonic Hall – Cnr England & Court Street, West Wyalong

c. West Wyalong Showground – By-Pass Road, West Wyalong

d. Weethalle Hall – Mid Western Hwy, Weethalle

e. Barmedman Hall – Main Street, Barmedman

f. Naradhan residents will be relocated to Lake Cargelligo

g. Ungarie residents will be relocated to West Wyalong

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

3.18.37 **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

3.18.38 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.

3.18.39 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 Bland Shire Council LEOCON.

g. The Bland Shire Council.

h. SES Region Incident Controller.

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

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

3.18.41 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 West Wyalong 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 West Wyalong 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.

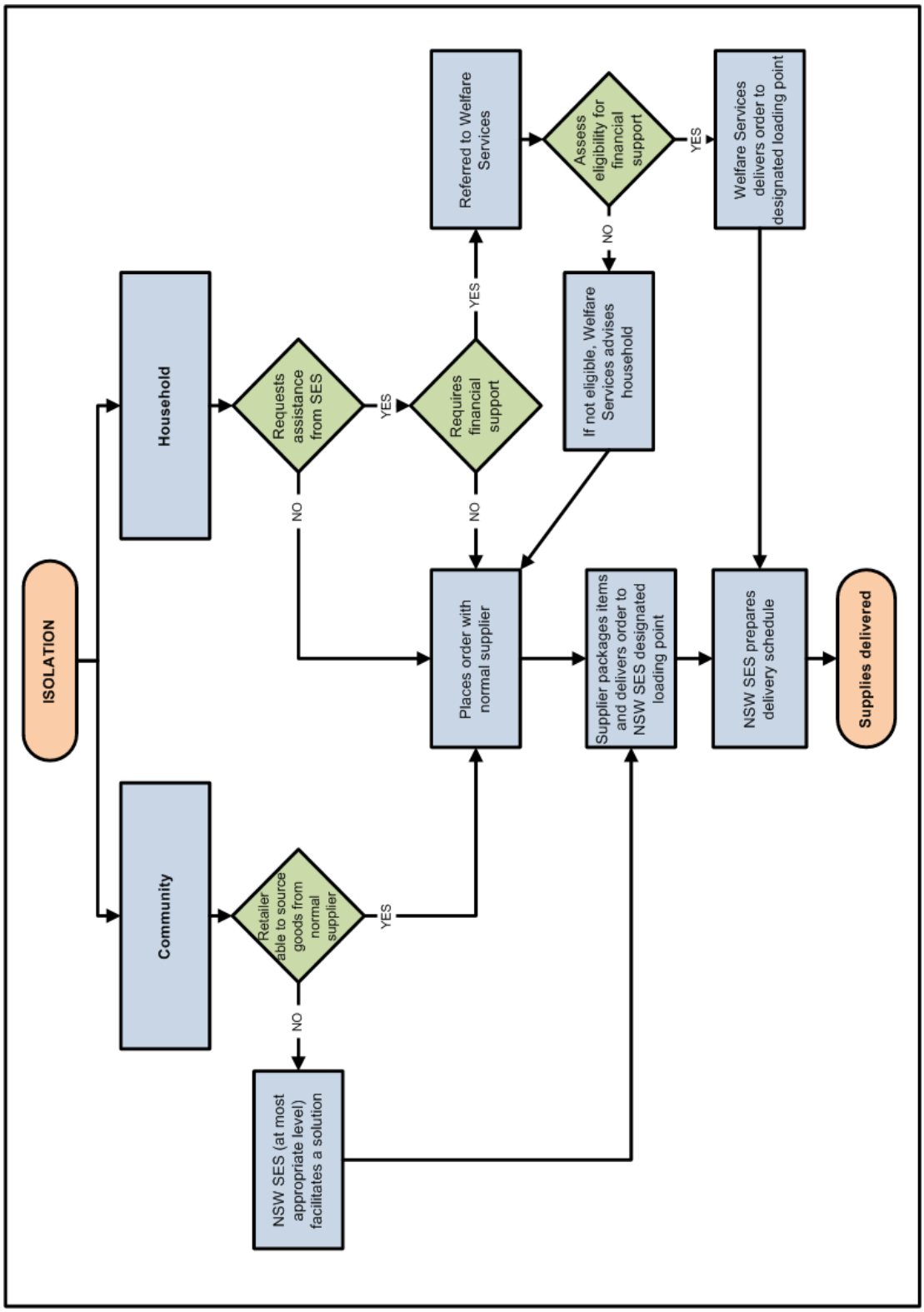
4.3 ARRANGEMENTS FOR DEBRIEFS / AFTER ACTION REVIEWS

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

4.3.2 The NSW SES West Wyalong 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.

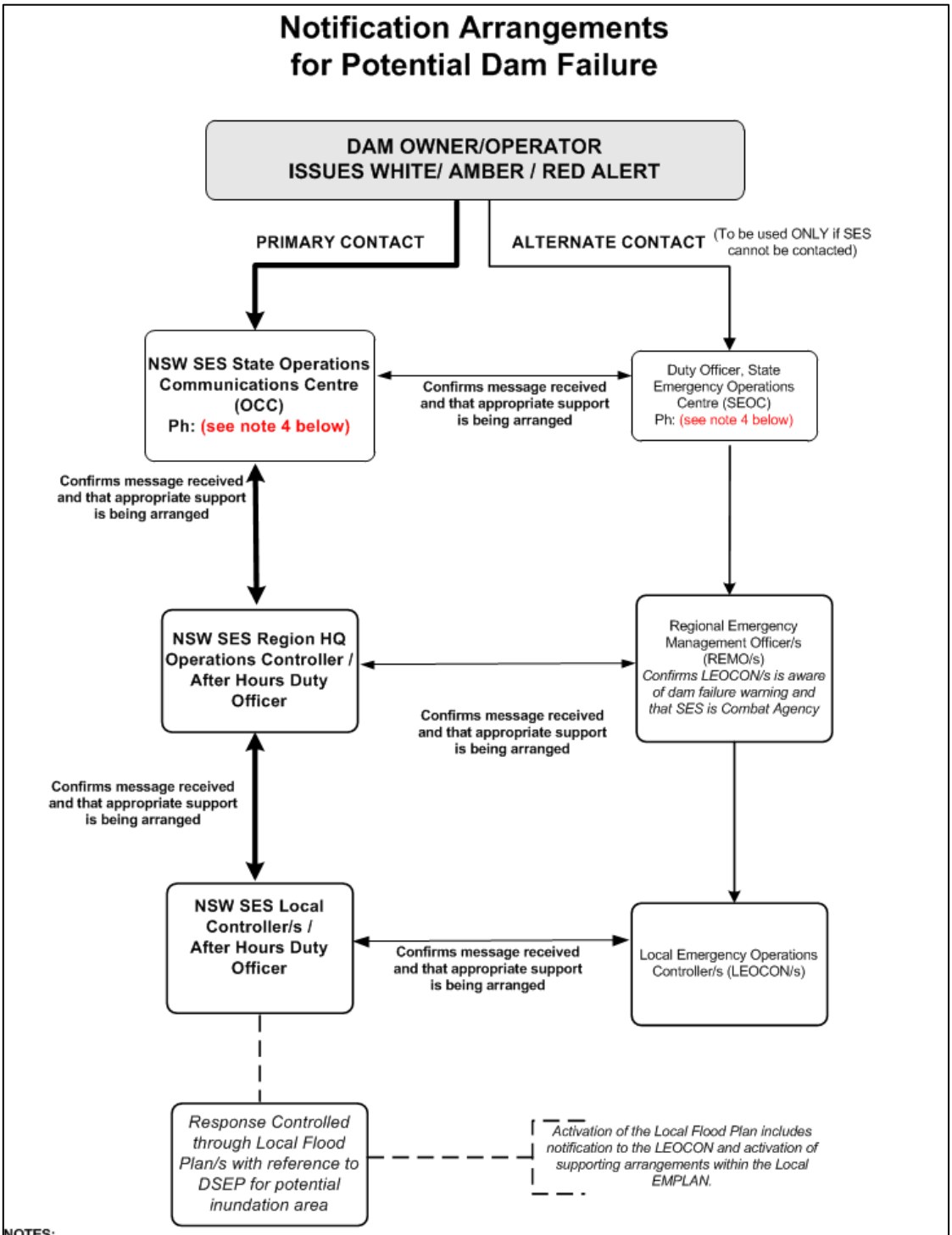
4.3.3 Follow-up to ensure the satisfactory completion of these actions will be undertaken by the Bland Shire Council Local Emergency Management Committee.

ATTACHMENT 1 - RESUPPLY FLOWCHART



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

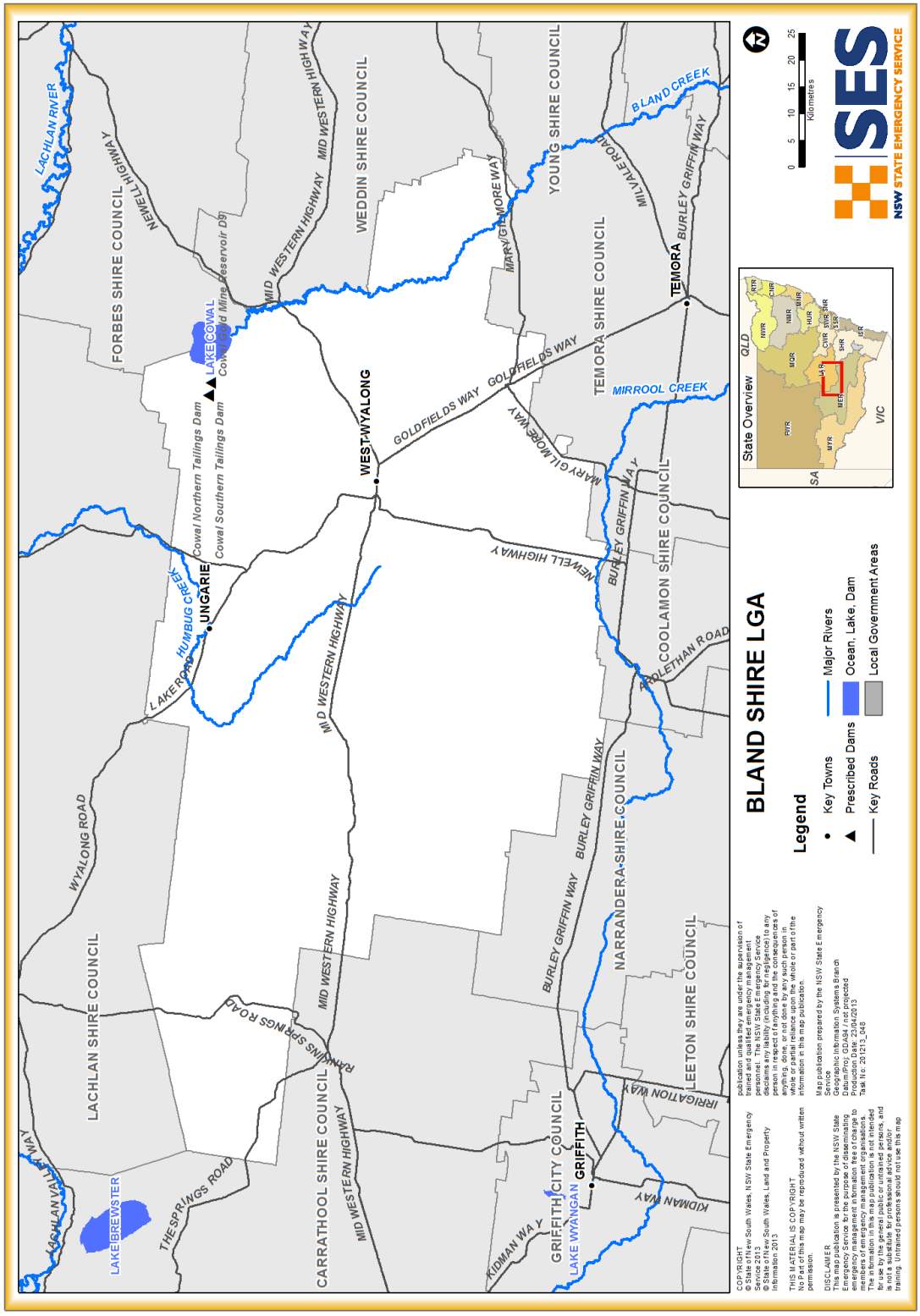
ATTACHMENT 2 - DAM FAILURE ALERT NOTIFICATION ARRANGEMENTS FLOWCHART



NOTES:

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

ATTACHMENT 3 - BLAND SHIRE COUNCIL LGA MAP



Map publication prepared by the NSW State Emergency Service
Geographic Information Systems Branch
Datum/Proj: GDA94 / not projected
Production Date: 23/04/2013
Task No: 20121_048

NSW STATE EMERGENCY SERVICE

HAZARD AND RISK IN BLAND SHIRE

Volume 2 of the Bland Shire Local Flood Plan

Last Update: August 2017

FloodSafe

AUTHORISATION

The Hazard and Risk in Bland Shire has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process. The information contained herein has been compiled from the latest available technical studies.

Approved

Manager Emergency Risk Management

Date: 2-8-17

Approved

NSW SES Lachlan Region Controller

Date: 31.07.17

Tabled at LEMC Date: 16 August 2017

CONTENTS

LIST OF TABLES

VERSION LIST

The following table lists all previously approved versions of this Volume.

Description	Date
Bland Shire Local Flood Plan – Annexes A and B	August 2007
Bland Shire Local Flood Plan – Volume 2	August 2016

AMENDMENT LIST

Suggestions for amendments to this Volume should be forwarded to:

The West Wyalong Local Controller

NSW State Emergency Service

55 Matthews Street, PARKES NSW 2870

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

Amendment Number	Description	Updated by	Date

Document Issue: Version 3-02052016

1 THE FLOOD THREAT

1.1 OVERVIEW

Lachlan River Valley and Murrumbidgee River Valley

a. Bland Local Government Area (LGA) is located on the northern fringes of the Riverina, New South Wales. The Bland Shire LGA covers 8,482 square kilometers.

1.2 LANDFORMS AND RIVER SYSTEMS

a. The Bland LGA falls within two river basins, the Lachlan River Basin (412) (Annex 1) and the Murrumbidgee River Basin (410) (Annex 2). However, neither of these two rivers actually traverse the Bland LGA (Map 1 and 2).

b. The main tributaries of these river systems in the Bland LGA are Barmedman Creek, Warralonga Cowal which flows into Lake Cowal, Bland Creek, Back Creek, Wallaroi and Humbug Creek in the Lachlan River Basin. These creeks generally flow north west. Narriah Creek, Mirrool Creek and Sandy Creek are in the Murrumbidgee River Basin, travelling generally south west.

1.3 STORAGE DAMS

a. Dam locations are shown on the River Basin Map.

Table 1: Prescribed Dams in Bland Shire LGA; summary of information about each storage.

Cowal Gold Mine Reservoir	
Owner / Operator	Evolution Mining
Description of Dam	800MLWater storage for gold mine
Location	Off stream to the west of Lake Cowal
Communities Downstream	No known consequences on communities in the Bland Shire
Monitoring System	n/a
Warning System	n/a
Other	n/a

Cowal Northern Tailings	
Owner / Operator	Evolution Mining
Description of Dam	14500 ML Storage of tailings from gold mine
Location	Off stream to the west of Lake Cowal
Communities Downstream	No known consequences on communities in the Bland Shire
Monitoring System	n/a
Warning System	n/a
Other	n/a

Cowal Southern Tailings	
Owner / Operator	Evolution Mining
Description of Dam	1535 ML Storage of tailings from gold mine
Location	Off stream to the west of Lake Cowal
Communities Downstream	No known consequences on communities in the Bland Shire
Monitoring System	n/a
Warning System	n/a
Other	n/a

b. These dams and the reservoir are in the most north western part of the Bland Shire LGA.

1.4 WEATHER SYSTEMS AND FLOODING

Lachlan River Valley

a. High monthly rainfalls over the Lachlan catchment are usually generated from either of two meteorological conditions. In warmer months of the year, during spring and summer, heavy falls occur over the upper catchment areas when a depression forms to the north of the valley. These depressions result in a moist northerly airstream west of the Divide, usually forming in a trough extending from the north of the continent southwards. In the vicinity of the depression intense short-period rainfalls may occur (2).

b. In the cooler months of the year, during autumn and winter, high monthly rainfalls may result when a series of well-developed troughs associated with southern depressions cross the region causing several substantial falls in one month.

c. It is the latter of the above two meteorological conditions that usually has greater influence on flooding within the Lachlan Valley. By nature of its direction of movement, from west to east, the depression usually results in significant rainfall over the entire valley, saturating the downstream catchments and creating increased river flows before the occurrence of the intense rainfall over the upper catchment areas. As a result, the Lachlan River and its tributaries will be already experiencing substantially higher flows when the discharges from the upper catchments pass through Wyangala Dam (2).

Murrumbidgee River Valley

d. The average annual rainfall varies considerably over the basin. The average annual rainfall over the flood plain is 500 millimetres whereas on the Snowy Mountains the rainfall ranges from 1,000-1,500 millimetres. May to October tend to be the wettest months. Heavy rain may occur at any time of the year, but more particularly in the colder months. Falls of 125 millimetres in 24 hours have been recorded at many stations on the catchment area.

e. Floods along the Murrumbidgee are generally caused by two types of atmospheric conditions. Firstly, there is the flood which results from extensive rains caused by large inland depressions which form in the tropical regions of Australia in summer. The other form in the Antarctic region during the winter and early spring months, and move in a north easterly direction over the catchment (3).

1.5 CHARACTERISTICS OF FLOODING

a. From Burrinjuck Dam, the Murrumbidgee River broadens and flows through the flood plain in a westerly direction for a distance of 1185 kilometres, finally entering the Murray River about 33 kilometres south west of Balranald. It is in this section of the valley where most of the flood affected centres are situated (1).

b. The Lachlan River flows from Forbes in a westerly direction to Condobolin. On this reach the course is characterised by extensive meanders and swampy depressions. South of this section is Lake Cowal which is fed by a catchment of about 9,800 square kilometres which, during wet years, fills and overflows down its escape to the Lachlan River and tributaries. About 60 kilometres downstream from Condobolin the river turns south westerly and flows through flat country for about 800 kilometres before joining the Murrumbidgee River approximately 35 kilometres downstream of Maude (1).

c. Flooding in the Bland LGA is predominantly from creek systems that start in or flow through the LGA.

d. The creeks within Bland LGA include:

   i. Humbug Creek also known as Euglo Creek near Ungarie;

   ii. Bland Creek also known as Yeo Creek which is on the LGA north eastern boundary and flows north into Lake Cowal;

   iii. Barmedman Creek (also known as Back Creek in the Marsden vicinity) which flows in a north-easterly direction to the south and east of Barmedman; and

   iv. Mirrool Creek which flows west along the southern LGA border (1).

e. The town of Ungarie is situated on Humbug Creek which rises to the west of West Wyalong and flows northward to meet Wallaroi Creek south of Condobolin (4). Ungarie can experience flooding from Humbug Creek and a nearby (unnamed) tributary which runs through town and joins Humbug Creek on its right bank (4). Flooding usually results from rainfall in the Humbug Creek catchment. The country is quite flat and at Ungarie the width of floodwaters in a major flood can be greater than one kilometre (5).

1.6 FLOOD HISTORY

Ungarie

a. Major floods were experienced in January / February 1928, January 1962, January 1984 and more recently in December 2007, March 2011 and March 2012 and again in June and September 2016 (1) (4).

January 1962 Flood

b. While the 1962 flood resulted in deeper floodwaters, the 1928 flood was regarded as the biggest flood by local residents as it lasted for 5 days whereas the 1962 flood lasted for 2.5 days The 2012 is now considered the flood of record (4) (1).

c. The deeper flood waters in 1962 appear to have resulted from local run off from the unnamed tributary which runs through the town coinciding with floodwater from Humbug Creek. For this reason local residents consider the 1928 flood event to have been a bigger flood on Humbug Creek (5).

d. In 1962 water was 0.5 metres deep in Caroon Street adjacent to the Railway and 2-3 metres deep in Wollongough Street near Humbug Street. A total of 71 commercial and residential properties were flood affected and approximately 25 buildings had water above floor levels (5).

e. During the 1962 flood Lake Cargelligo to West Wyalong Road (MR 231) was under water for about one kilometre to the east and west of the town. The lowest part of

the road on the eastern side of the town has since been built up. The railway embankment remained above the flood level with floodwaters from Humbug Creek backing up through culverts under the embankment into the residential area to the south (5).

January 1984 Flood

f. In January 1984 two thirds of Ungarie was flooded after 100 millimetres of rain fell in 24 hours. As a result resupply was required and the sewerage system failed (1).

December 2007 Flood

g. In 2007 (21 December) a severe storm impacted the area with the Humbug Creek rising and impacting 15 properties in Eugalo Street. Residents were placed on standby to evacuate and properties were sandbagged to minimise inundation. No further rain was experienced, the creek levels dropped and evacuations were not necessary.; however significant infrastructure damage (roads and railway tracks) was reported and a Natural Disaster was declared for the Bland Shire (6).

March 2011 Flood

h. The flooding that was experienced in March 2011 was a result of widespread heavy rain that fell across the Humbug Creek catchment, the majority of which occurred on the rain day of 22 March 2011, approximately 36 hours prior to the arrival of the flood peak. Two-day rainfall totals for the rain days of 21 and 22 March 2011 generally ranged between 75 and 95 millimetres (4).

March 2012 Flood

i. The flooding experienced in March 2012 was a result of widespread heavy rain that fell across the Humbug Creek catchment, the majority of which occurred on the rain day of 29 February 2012, approximately four days prior to the arrival of the flood peak. Two-day rainfall totals for the rain days of 29 February and 1 March 2012 generally ranged between 80 and 100 millimetres, with a maximum of 144.4 millimetres recorded at the Ungarie Post Office (4). This resulted in 17 residents and businesses flooded over floor on Caroon, Euglo, Wilga, Wollongough (4), Mackrell Street and Herbert Streets for two to four days, with those to the south of the railway inundated for two days. A section of the Cootamundra-Lake Cargelligo railway line near the eastern end of the village failed during the March 2012 flood. The resulting flood wave caused a rapid rise in above-floor inundation in several properties located along Robert and Herbert Streets (4).

June 2016 Flood

j. Heavy rainfall in the upper catchment of the Humbug Creek on Sunday 19th June 2016 resulted in flooding of Ungarie on 20th June. 51 millimetres of rainfall was recorded at the Yalgogrin North BoM gauge to 9.00 am on Monday 20th June and an additional 14 millimetres had fallen in the previous three days. This was on top of a wet May with 74.2 millimetres recorded at the gauge (7). The road bridge on Crown

Camp Road in Ungarie was overtopped by floodwaters (8). Floodwaters inundated a number of properties in Ungarie mostly over ground but some homes and businesses experienced over floor flooding (8). The Ungarie Central School was closed for the week because of flooding in Ungarie and at least one rural property required resupply because of inundation of rural roads (8). Part of the sewerage system failed during the event (8). An evacuation order was issued with six commercial properties in Wollongough Street and various levels of flooding (10 millimetres to 1 metre) to 22 residential properties in Euglo, Wollongough, Caroon, Roberts and Herbert Streets.

k. The West Wyalong to Lake Cargelligo and the Kikiora Roads at Ungarie were closed for a number of days due to water over road, but the community was not isolated as alternative routes were available.

l. An indication of water height for the Humbug Creek is through the use of a mail box with five bell shapes as a post at the rural property "Hillside", 10.8 kilometres north west of Ungarie. In the June 2016 flood the water was measured at 4.25 bells.

September 2016 Flood

m. Heavy rainfall of around 40-70 millimetres fell in the already wet Humbug Creek catchment on Sunday 9th September 2016. This resulted in flooding of Ungarie between 10th and 25th September. The flood peaked at Ungarie on the 23rd of September at a height of 1.525 metres on the bridge (8).

n. There were no reports of livestock losses, however there were large amounts of pasture and crop losses and welfare drops were made to livestock (8).

o. Many businesses in Ungarie were severely affected by the loss of trade, the sewer system failed and the school was closed due to the flooded bridge for five and a half days. The local show was cancelled and council elections postponed (8).

p. Much of the road infrastructure was severely damaged and there were at least three residential, three businesses, five vacant houses and four not-for-profit buidlings inundated above floor. In addition to this, 27 properties were flooded including sheds, carports and garages, 12 farm houses isolated, four houses saved by sandbags and 170 people inconvenienced by sewer system failure (8).

Alleena

q. In January 1984 100 millimetres of rain fell in 24 hours resulting in four evacuations (1). There is no other flood history for this locality.

Barmedman

r. Flooding was experienced in 1990; the extent and effects are unknown (1).

s. 85 millimetres of rainfall was recorded at Barmedman Post Office over March 21 – 22 2011 and 156 millimetres over the period February 29 – March 5 2012 (9).

t. 122.5 millimetres of rain was recorded at Barmedman Post Office during the month of June 2016 causing localised flooding to rural roads and properties.

West Wyalong

u. On the 7th November, 2005 very heavy rain from 9 pm to midnight caused flooding. Flash flooding occurred within West Wyalong with a small number of properties along Kurrajong Street experienced minor inundation as a result of the storm water drains overflowing. Flash flooding occurred on town roads during rainfall and dissipated soon after (1).

v. 76 milimetres of rainfall was recorded at West Wyalong Post Office over March 21 – 22 2011 and 135 millimetres over the period February 29 – March 5 2012 (9). In March 2012 large areas of farmland were under water east of West Wyalong on or near Barmedman (or Back) Creek (11).

x. In 2016 flooding occurred along the Newell Highway between Kalmns Lane and the Midwestern Highway intersections for several days. A number of roads in Bland Shire and adjoining LGAs were closed by Councils during this event also. A request for assistance was received for flood threatening on “Warralong” situated on Quandialla Road near Back Creek.

1.7 FLOOD MITIGATION SYSTEMS

a. There is a complex drainage system that runs from the west to east (The Green Corridoor) of West Wyalong to divert storm water into the wetalands between West Wyalong and Wyalong. A drainage system has been installed near the Ungarie water tower to alleviate flood waters south of the railway line. There are no other known flood mitigation levees or flood mitigation systems within the Bland Shire LGA.

1.8 EXTREME FLOODING

a. Extreme flooding across the Bland Shire LGA is likely to cause significant damage to farmland, farm infrastructure, roads and railway lines resulting in widespread disruption to normal business and daily activities. Because the LGA is very flat extreme flooding from a significant rainfall event could be expected to be widespread across the LGA and surrounding areas for a long period of time.

2 EFFECTS ON THE COMMUNITY

2.1 COMMUNITY PROFILE

Table 2: Census of Housing and Population data (2011) (10)

Census Description	Bland LGA	Barmedman	Ungarie	West Wyalong
Total Persons	**5,865**	**212**	**322**	**2643**
Aged 0-4 yrs	460	8	24	212
Aged 5-14 yrs	826	36	42	322
Aged 65 + yrs	1,124	47	74	630
Of Indigenous Origin	238	12	17	121
Who do not speak English well	0	0	0	0
Have a need for assistance (profound/severe disability)	290	20	22	147
Living alone (Total)	642	23	48	357
Living alone (Aged 65+)	283	14	20	171
Residing in caravans, cabins or houseboats or improvised dwellings	11	0	0	13
Occupied Private Dwellings (Households)	**2,262**	**91**	**301**	**1,077**
No Motor Vehicle	141	7	14	101
Caravan, cabin, houseboat or improvised dwell	12	0	0	6
Rented via State or Housing Authority	45	0	3	37
Rented via Housing Co-Op or Community Church Group	16	0	4	15
No Internet Connection	722	36	47	368
Unoccupied Private Dwellings	**503**	**18**	**30**	**177**
Average persons per occup dwelling	**2.4**	**2.4**	**2.5**	**2.4**
Average vehicles per occup dwelling	**1.9**	**1.9**	**1.8**	**1.7**

SPECIFIC RISK AREAS - FLOOD

Lachlan River Valley

2.2 UNGARIE

2.2.1 Community Overview

a. The town of Ungarie is located about 42 kilometres north west of West Wyalong between West Wyalong and Lake Cargelligo on the Girral - Lake Cargelligo Road (MR231). It is situated on Humbug Creek, which rises to the west of West Wyalong and flows northward to meet Wallaroi Creek south of Condobolin (4).

b. The population in 2011 was about 322 persons, with a mean age of 45 years. There are about 170 private dwellings in the town (10). Demographics are summarised in table 2 (10).

2.2.2 Characteristics of flooding

a. Ungarie is situated on Humbug Creek (also known as Euglo Creek) and can experience flooding from this creek, its tributary, Youngara Creek and a nearby (unnamed) tributary as well as overland flow. The catchment for the unnamed creek is approximately 90 square kilometres.

b. Flooding usually results from storms in the Humbug Creek catchment.

c. The surrounding country is flat, therefore during major floods floodwaters can be one kilometre in width (4) (9).

2.2.3 Flood Behaviour

a. Flooding at Ungarie can be characterised as a relatively slow moving flood wave which takes about 48 hours to travel from “Merringreen” and 24 hours from “Gleneen” in the upper Humbug Creek catchment to the township (4).

b. Floodwaters originating from the greater Humbug Creek catchment flow into the town from the west on the northern side of the Cootamundra-Lake Cargelligo Railway. At the outset of the flood event the floodwater is contained within the Humbug Creek channel and enters the town area about 1.5 kilometres to the north. Once the capacity of the channel is exceeded floodwaters spread across the floodplain (9).

c. The Humbug Creek catchment is traversed by a number of major road and rail infrastructure including the Cootamundra-Lake Cargelligo Railway; Ungarie-Naradhan Railway; Girral-Lake Cargelligo Road; Naradhan Road and Kikiora Road. These road and particularly rail alignments form raised embankments across the floodplain and have the potential to redistribute and attenuate floodwaters during major flood events (9).

d. The Cootamundra-Lake Cargelligo Railway acts as a levee and prevents the further spread of floodwaters from the southern side of the railway. The width of the floodplain inundation on the northern side of the railway upstream of the town is up to 1.5 kilometres. There is also a flow path alignment nested within the floodplain between Humbug Creek and the railway that conveys floodwaters before joining the Humbug Creek upstream of the township (9). Floodwater can back up through the adjacent railway culverts from the direction of Humbug Creek and lead to property inundation (4).

e. Flooding from Humbug Creek is aggravated by flows in the unnamed tributary creek which contributed to the high flood levels south of the railway line in the 1962 flood. The tributary creek outlet has since been reconstructed as a large drain passing under the railway embankment and extending to Humbug Creek. This work has reportedly alleviated local flooding south of the railway line. It is likely that it will also have a small beneficial effect in major floods by reducing the backwater effect on the tributary creek. However floodwaters will still back up from Humbug Creek in major floods (5).

f. Floods generally last up to five to seven days (e.g. 1928 and 2016) (4).

2.2.4 Classification of Floodplain

a. Based on historical flooding (4), Ungarie township can be classified as a Rising Road Access with road access to Condobolin remaining open.

2.2.5 Inundation

a. There are no telemetered flood gauges in the Bland LGA. However, there is a depth indicator at the Mackrell Street bridge in Ungarie that is generally monitored by locals for flood water heights. In 2016, it reached 1.6 metres at this location. There is also reliable information from the recent flood events of 2011, 2012 and 2016 as the water level depths have been recorded and the flood heights marked and recorded at strategic locations (two rural properties “Merringreen” and “Gleneen” and one building in town).

b. Based on flood history, significant flooding can be expected to occur in Ungarie when more than about 50-75 millimetres of rain falls on the Humbug Creek catchment over either a 24 to 48 hour period (4).This includes the **public school, some business** properties and generally around **25 residential properties**. 71 commercial and 15 residential properties may be flooded and approximately 25 buildings may have water above floor levels (5) in the area bound by and including Euglo, Lynda and Mackrell Streets including Caroon, Herbert, Wilga and Wollongough Streets (4). A grain store, with a small private levee, is also at risk of inundation with rainfalls in this range, as is the golf course clubhouse on Crown Camp Road (4). Properties located on the northern side of the railway can remain inundated for a period of 2

and 4 days, whilst those to the south of the railway may remain inundated for a period of up to 2 days (4).

c. In March 2012, a section of the Cootamundra-Lake Cargelligo railway line near the eastern end of the village failed, causing a rapid rise in above-floor inundation in several properties located along Robert and Herbert streets (4).

Table 3: Residences in Ungarie impacted by over ground or over floor flooding in 2012, by street (4)

Street	Range of Over Floor Depths (m)	No. Properties with Over floor Flooding	No. Properties with Over-ground Flooding
Caroon Street	0.3 – 1.0m	2	
Condamine Street	0.02	1	2
Crown Camp Road	0.09 – 0.16m	2	3
Euglo Street	0.59m	1	4
Herbert Street	0.21 – 0.83m	1	1
Kikiora Road			1
Lynda Street	0.33m	1	2
Muriel Street			1
Robert Street	0.27m	1	3
Ungarie Street	0.21m	1	1
Wollongough Street	0.09 – 1.0m	11	14

2.2.6 Isolation

a. The village of Ungarie has not become isolated by floodwaters in any of the most recent flood events.

b. At least one rural property requires resupply, and 12 rural farm houses are at risk of isolation because of inundation of rural roads, for example in 2016.

2.2.7 Flood Mitigation Systems

a. There are no formal flood mitigation systems in Ungarie, however the grain storage has a private levee bank and a drainage system has been installed near the Ungarie water tower to alleviate flood waters south of the railway line.

2.2.8 Dams

a. There are no dams on Humbug Creek or the unnamed creek that would impact on Ungarie.

2.2.9 At Risk Facilities

a. The facilities that are at risk of flooding and/or isolation are listed in Annex 3, and include the Ungarie Central School, the Sports Club and the grain storage facility (4).

b. Itinerant caravan campers generally use the showgrounds for overnight camping.

c. There are anecdotal reports that the sewerage plant has experienced inundation in the past and failed, with failure occurring in 2010, 2012 and 2016, although full effects are unknown due to limited information (1).

2.2.10 Other Considerations

a. The Ungarie Local Show is held early September each year as well as a number of significant sporting events throughout the year.

2.3 ALLEENA

2.3.1 Community Overview

a. Alleena is a rural farmland locality 20 kilometres south of West Wyalong on the Newell Highway.

b. It is part of the Census collection area of Mirrool, which has a total population of 234 persons and 106 private dwellings. Alleena itself has a population of approximately 80 people. The area is zoned farming land and has no residential properties other than farm houses (11).

2.3.2 Characteristics of Flooding

a. This area is subject to widespread farmland flooding from unnamed creeks that flow predominantly in a north-easterly direction (1).

2.3.3 Inundation

a. In 1984, when 100 millimetres of rain fell, four dwellings experienced inundation resulting in relocation of residents (4) (1). In 2016, there was a significant amount of rural farmland inundation (8).

2.3.4 Isolation

a. There is no known risk of isolation.

2.3.5 Flood Mitigation Systems

a. There are no known flood mitigation levees in this area.

2.3.6 Dams

a. No prescribed dams have been identified.

2.3.7 At Risk Facilities

a. There are no known facilities at risk in this area.

2.3.8 Other Considerations

a. No other information is currently available.

2.4 BARMEDMAN

2.4.1 Community Overview

a. Barmedman is a rural village on the Goldfields Way in central New South Wales situated 30 km north of Temora on the road to West Wyalong.

b. There are about 400 persons in Barmedman, with a median age of 43 years. Demographic characteristics are summarised in table 2 (10).

2.4.2 Characteristics of Flooding

a. Barmedman is situated about 4 kilometres northwest of Barmedman Creek and may experience flooding from this creek and a nearby tributary (1).

2.4.3 Flood Behaviour

a. This area is prone to flash flooding, which is generally shallow, but can be over a metres.

2.4.4 Inundation

a. Flooding was experienced in 1990 (1); the extent and effects are unknown.

b. Flash flooding can occur in the middle of the town. This occurred in 2016, with significant amounts of water on the roads, particularly on the Star Street and Goldfields Way; however no inundation occurred (8).

2.4.5 Isolation

a. No information is currently available. In 2016, the localised flooding resulted in a number of roads being cut for a few days between West Wyalong and Barmedman (Goldfields Way, Quandialla Road and Waarbilla Road), however this did not result in isolation (8).

2.4.6 Flood Mitigation Systems

a. There are no known flood mitigation levees in this area.

2.4.7 Dams

a. No prescribed dams have been identified.

2.4.8 At Risk Facilities

a. There are no known facilities at risk in this area.

2.4.9 Other Considerations

a. No other information is currently available.

2.5 WEST WYALONG

2.5.1 Community Overview

a. West Wyalong is located at the junction of the Newell and Mid-Western Highways on the northern fringes of the Riverina, NSW and 483 km from Sydney. The twin townships of West Wyalong and Wyalong have a joint population of 3,950 and serve the role of the major service centre for the Bland Shire (1).

b. See Weddin Shire Local Flood Plan for Quandialla (which may require flood response operations from NSW SES West Wyalong Unit, in Bland Shire LGA).

2.5.2 Characteristics of Flooding

a. West Wyalong can experience flash flooding in times of extreme rainfall resulting in minor inundation of properties and town roads along the storm water drain system, e.g. 2005 and 2016 (1). Flash flooding occurred on town roads during rainfall and dissipated soon after (4).

2.5.3 Flood Behaviour

a. Kurrajong Street, to the north of Main Street, is a floodway. This area is known as the "green corridor" walkway which runs west-east through the town to the westlands. Flooding in the town is fast flowing and can be very deep in the causeways (including Camp Street, Grenfell Street, Church Street, Monash Street and Operator Street) (8).

2.5.4 Inundation

a. At least a few properties (yards) on the corner of Monash and Kurrajong Street are prone to flooding (as occurred in 2016) (8).

2.5.5 Isolation

a. No areas identified as known to be at risk of isolation.

2.5.6 Flood Mitigation Systems

a. There are no known flood mitigation levees in this area.

2.5.7 Dams

a. No dams other than farm dams, a small park dam in McCann Park and stock dams identified. Effects of these failing are unknown but unlikely to be significant due to their small size. There are wetlands to the east of the town, which store a lot of water between Wyalong and West Wyalong (8).

2.5.8 At Risk Facilities

a. No identified facilities within West Wyalong.

2.5.9 Other Considerations

a. No significant events that could be flood affected.

ROAD CLOSURES AND ISOLATED COMMUNITIES

2.6 ROAD CLOSURES

a. Table 4 lists roads liable to flooding in the Bland Shire LGA.

Table 4: Roads liable to flooding in Bland Shire LGA.

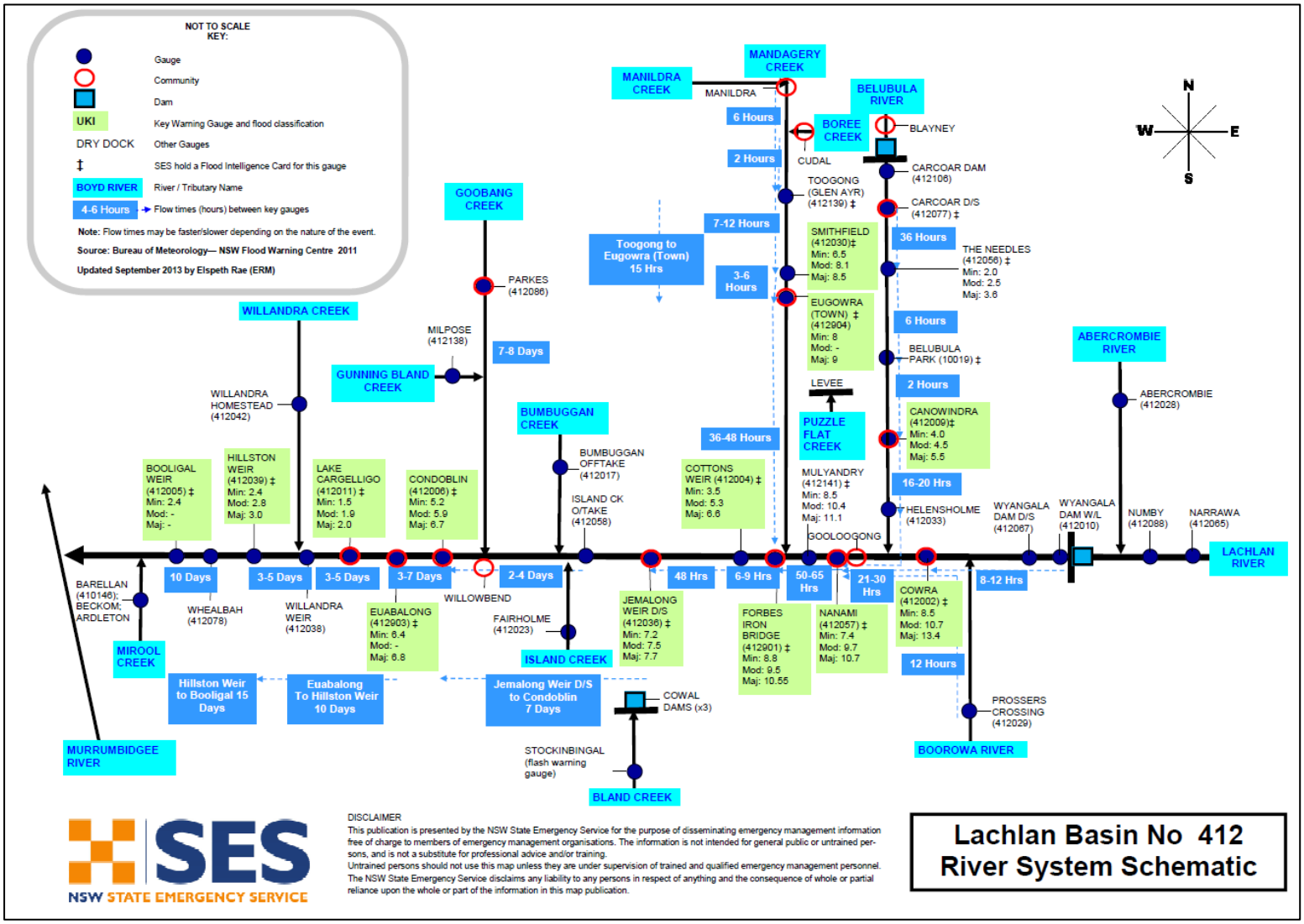
Road	Closure location	Consequence of closure	Alternate Route	Gauge
West Wyalong-Condobolin Road	Ditchfields Lane at Tee Tree Creek, 5km north of West Wyalong near Wamboyne Road, as well as large expanses of road towards Ungarie	May be closed for up to 12 hours following very heavy rainfall (12). Restricts access between Ungarie and West Wyalong	None	Rainfall in the order of 100mm over two days is likely to result in this closure.
Goldfields Way	Four locations where concrete causeways had been constructed across the road. Extensive road and culvert constructions have been undertaken to combat this threat.	Restricts access between West Wyalong and Barmedman	Potential alternate route via Alleena	n/a
Quandialla Road	Around Williams Crossing Bridge	Restricts access between West Wyalong and Quandialla	Potential alternate route via Barmedman or Grenfell	n/a
Newell Highway	Between Marsden and Wyalong in an area known as Mallee Plains extends some 5 km to 16 km east of Wyalong. Extensive road and culvert constructions have been undertaken to combat this threat.	Restricts access between Marsden (on the boundary of Weddin Shire LGA) and West Wyalong. The extent of the closure can vary from a few hours to some weeks.	Potential alternate route via Grenfell	n/a
Mid Western Highway	Humbug Creek and other small creeks between Yalgogrin and West Wyalong	Restricts access between Yalgogrin and West Wyalong for short periods of time	n/a	Flash flooding
Mary Gilmore Way (MR 398)	At Bland and Nurraburra Creeks (5) at Morangarell western approach – on the border of Young and Temora LGA.	Restricts access between Barmedman and Grenfell	Potential alternate route via Temora and Young	n/a

Road	Closure location	Consequence of closure	Alternate Route	Gauge
Mary Gilmore Way (MR 398)	Mirrool Creek crossing 4.2kms North of Ariah Park	Restrics access to Ariah Park township	Alternate route via Newell Highway and Burley Griffin Way	
Kikiora Road	Western side of Ungarie in several locations	Restrics access to Kikiora	Alternate route via Weethalle	n/a
Lake Road	Western side of Ungarie in several locations	Restricts access between West Wyalong and Lake Cargelligo	Potential alternate route through via Rankin Springs	n/a
Crown Camp Road	Humbug Creek Bridge in Ungarie township	Restricts access to the school, cemetery, showground, golf club and local residents	Access only to local traffic only via Bena Road	n/a
Mandamah Forest Road	At Scotts Creek crossing	Restrics access to rural properties and Ariah Park township	Alternate route via Newell Highway and Burley Griffin Way	Flash Flooding

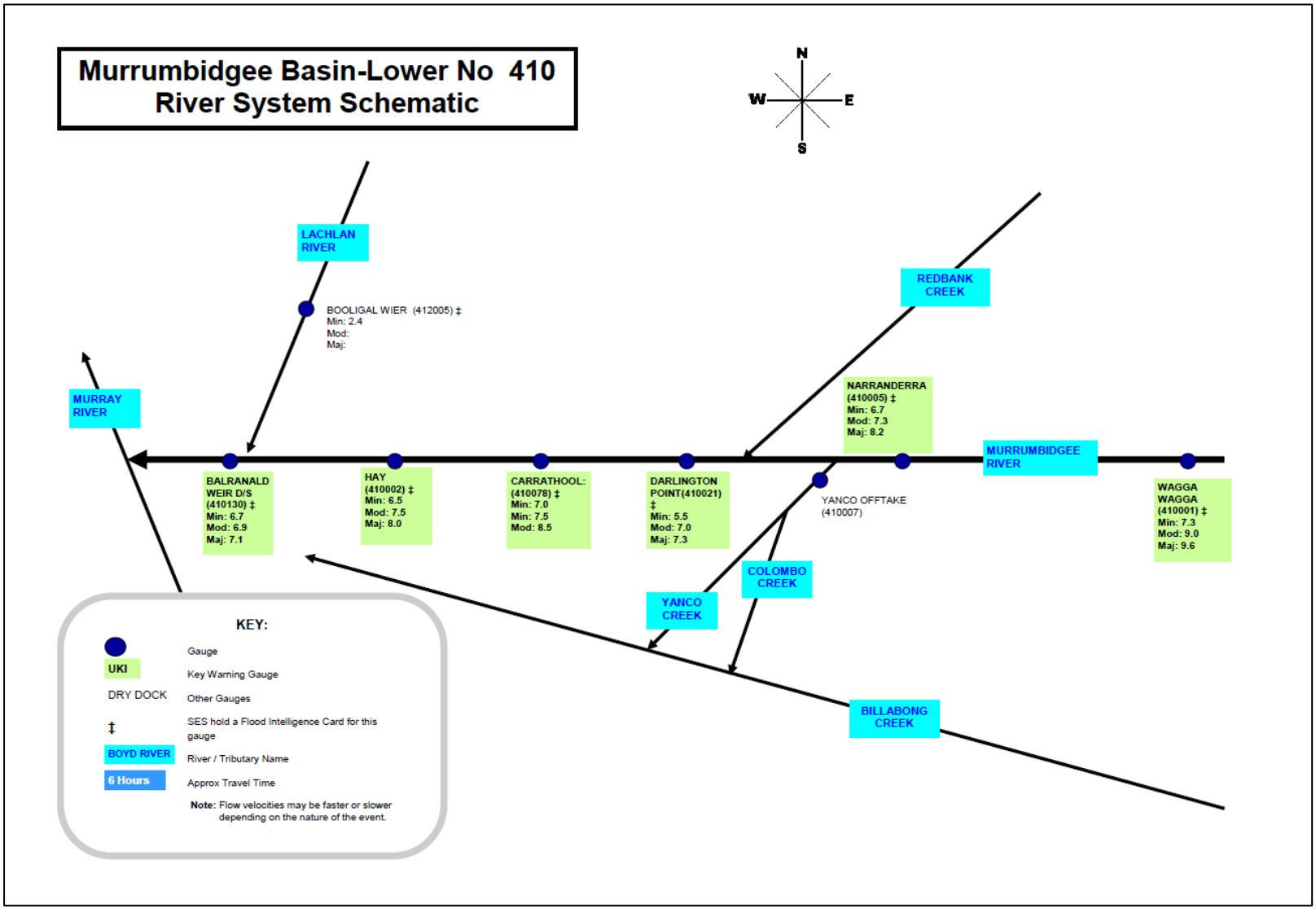
2.7 SUMMARY OF ISOLATED COMMUNITIES AND PROPERTIES

a. A number of rural farms and properties may be isolated following heavy rainfall.

ANNEX 1: LACHLAN RIVER BASIN SCHEMATIC



ANNEX 2: LOWER MURRUMBIDGEE RIVER BASIN SCHEMATIC

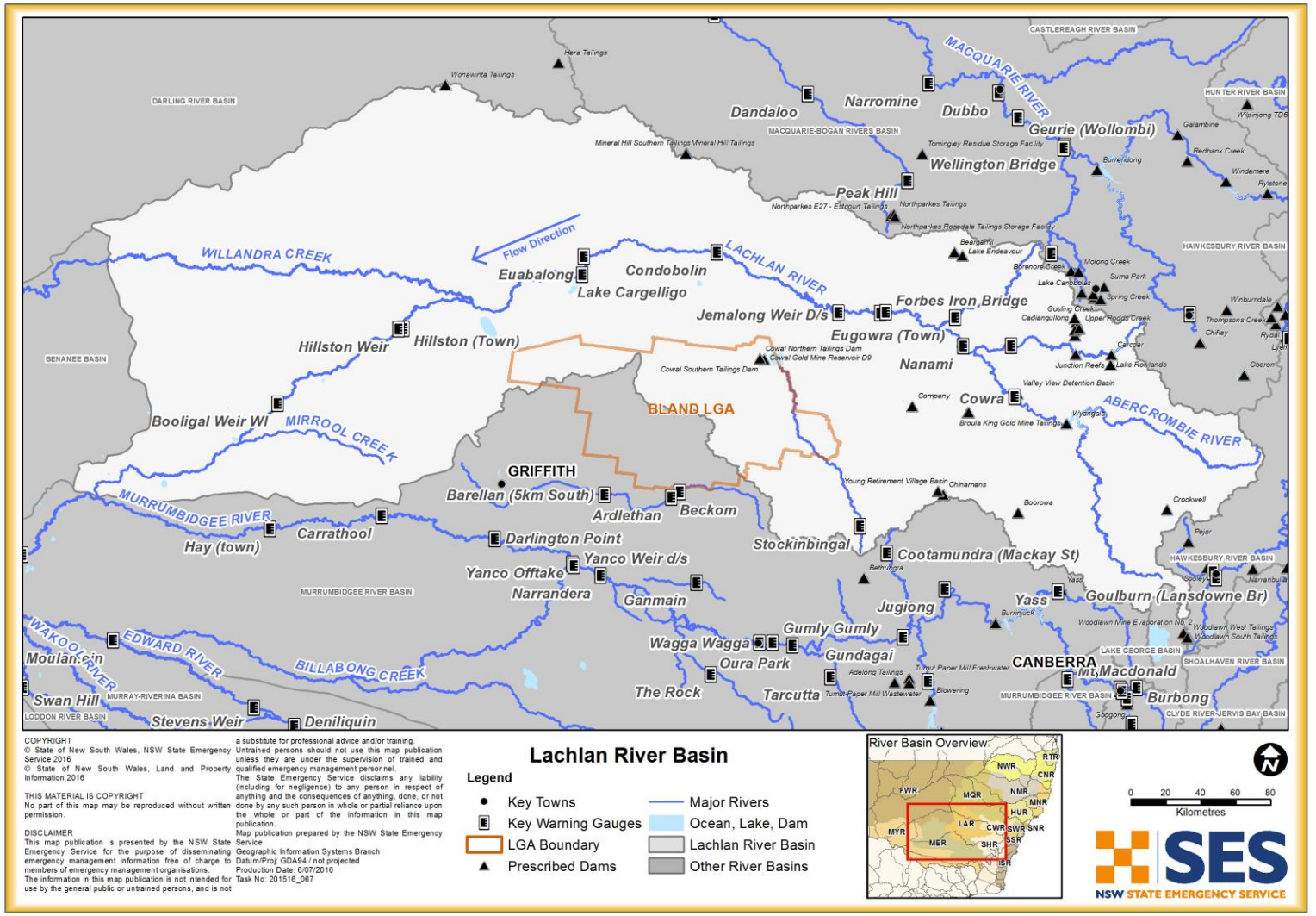


ANNEX 3: FACILITIES AT RISK OF FLOODING AND/OR ISOLATION

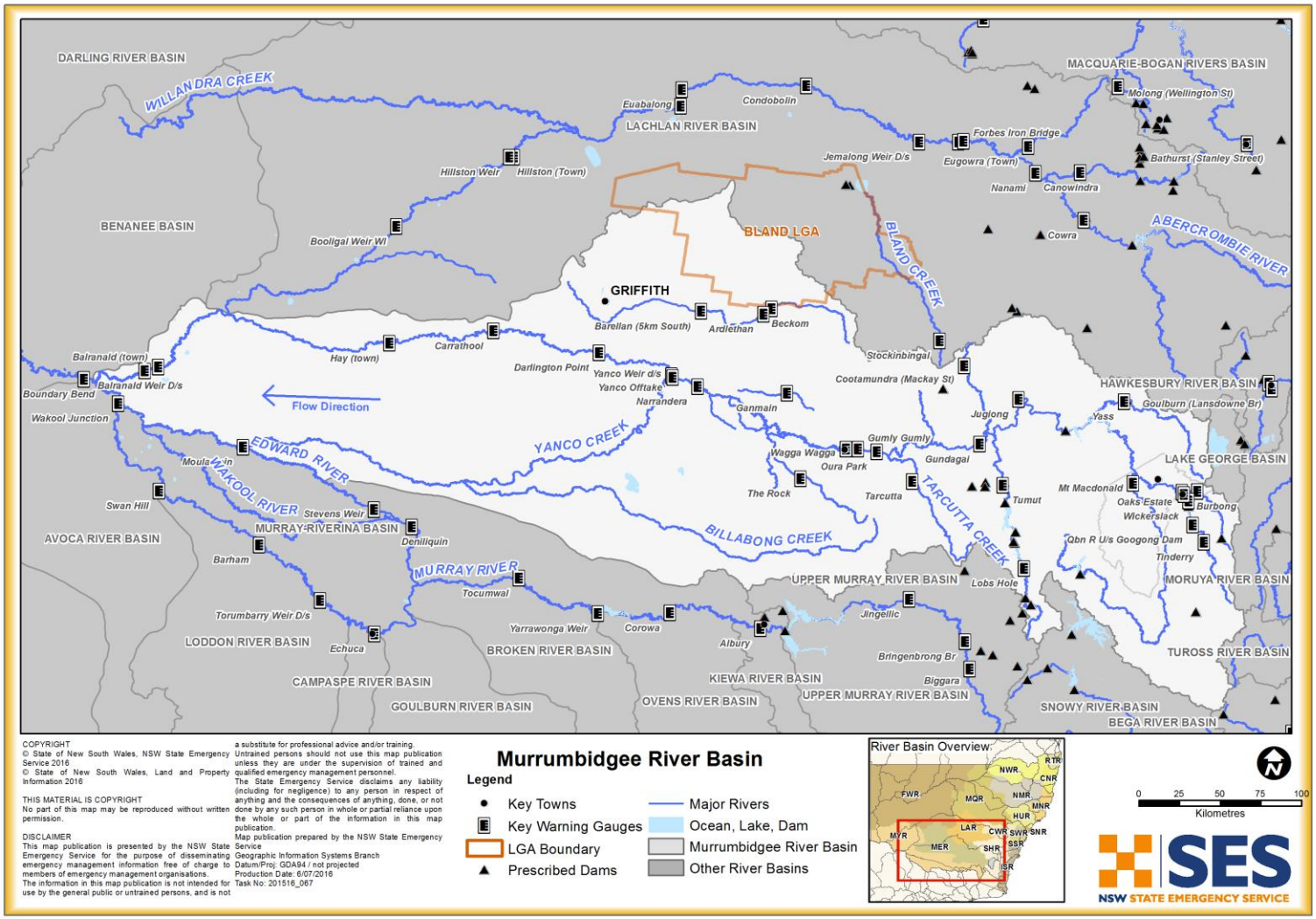
Lachlan River Valley

Facility Name	Street	Suburb	Comment
Schools			
Ungarie Central School	Crown Camp Road	Ungarie	When rainfall > 75mm over 24 – 48 hour period, school grounds may be inundated by floodwater (4). Access may be cut when floodwaters inundate the bridge across Humbug Creek on Crown Camp Road.
Child Care Centres			
Nil			
Facilities for the aged and/or infirm			
Nil			
Utilities and infrastructure			
Sewage Treatment Plant		Ungarie	There are anecdotal reports that the sewerage plant has experienced inundation in the past and failed, although full effects are unknown due to limited information (1). Part of the treatment plant / infrastructure was affected in June 2016 requiring portable toilets to be used.
Camping Ground / Caravan Parks			
Ungarie Showground	Crown Camp Road	Ungarie	When rainfall > 75mm over 24 – 48 hour period, the showground may be inundated by floodwater. This may impact on campers who use this area and sporting events.

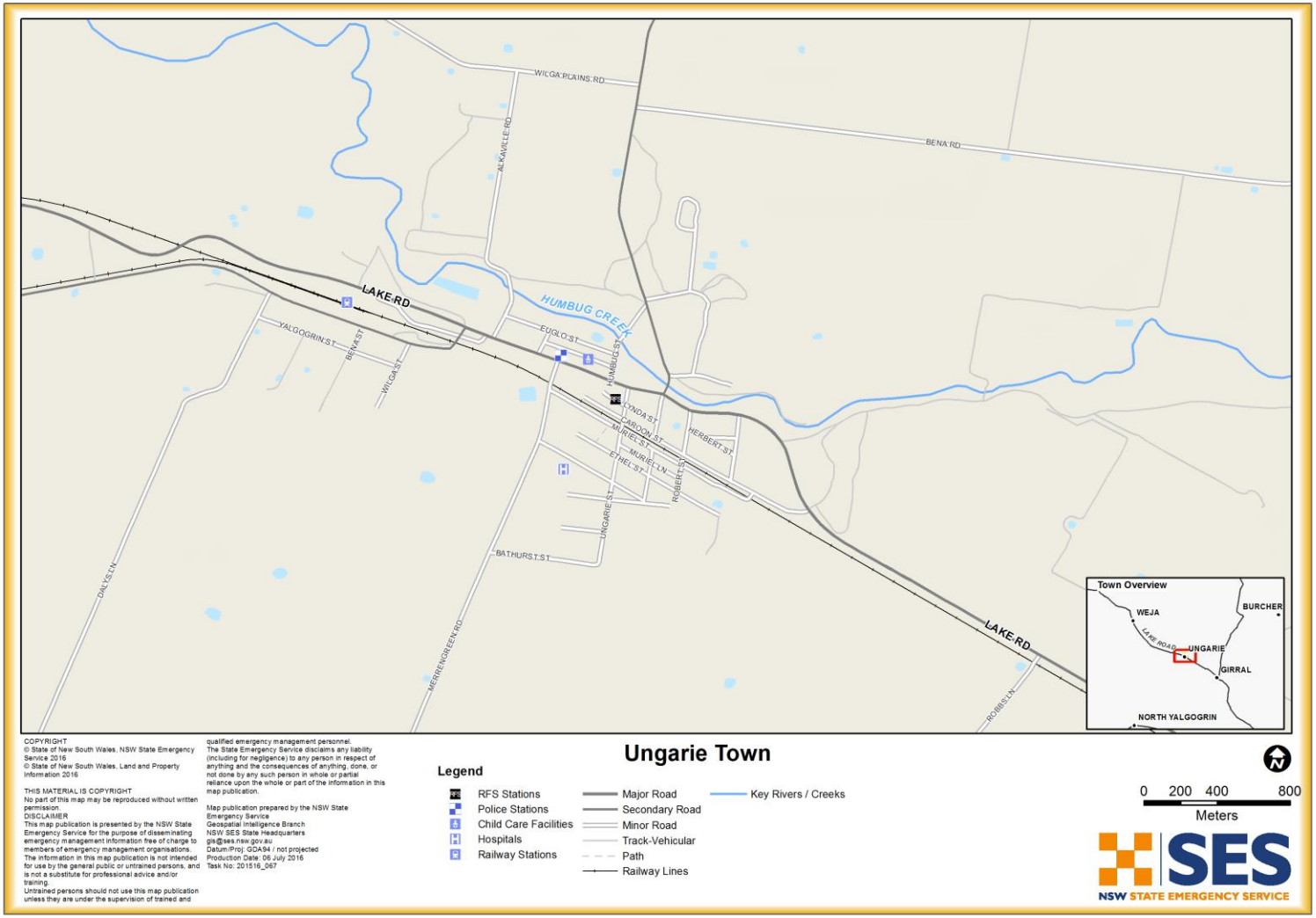
MAP 1: LACHLAN RIVER BASIN



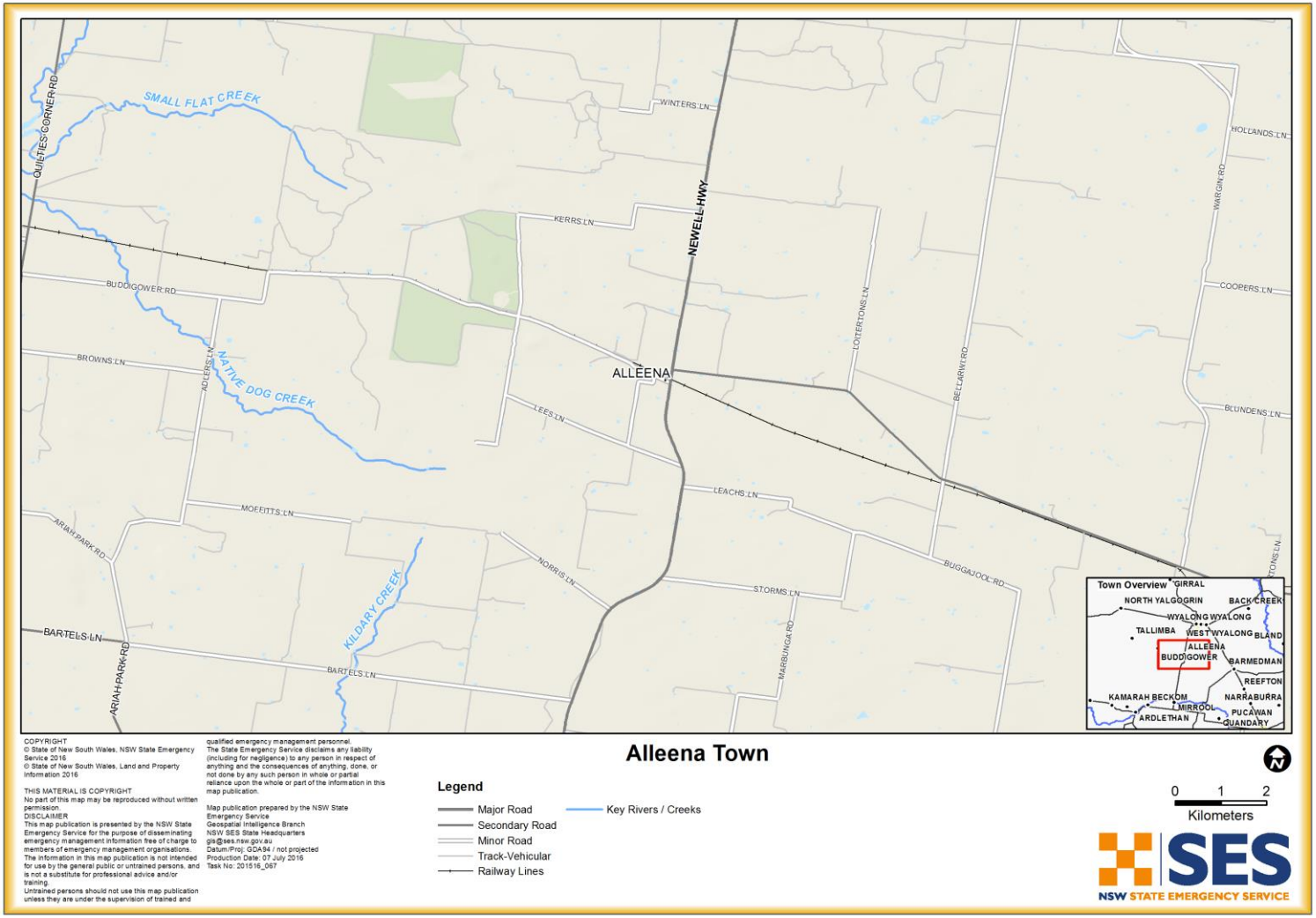
MAP 2: MURRUMBIDGEE RIVER BASIN



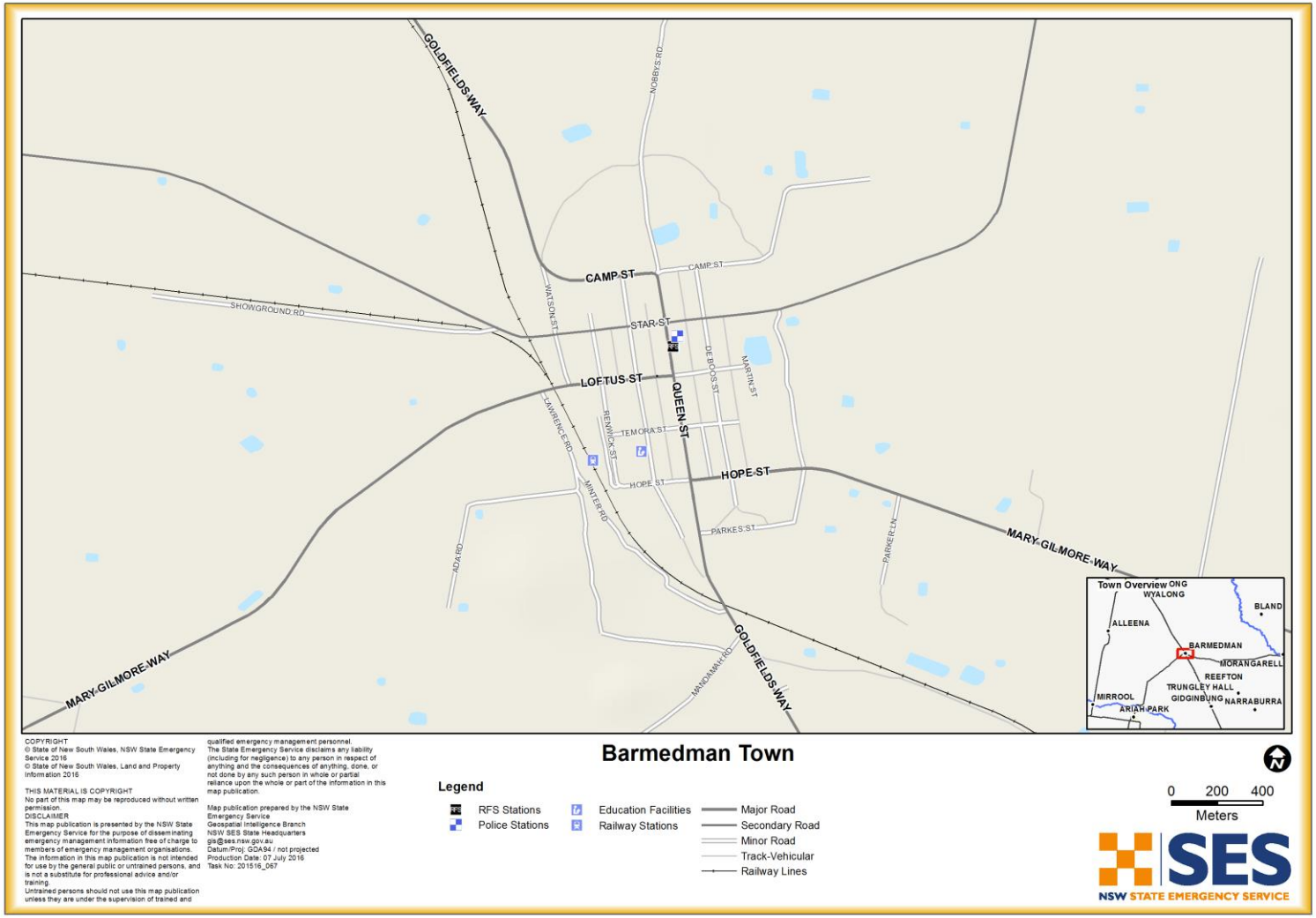
MAP 3: UNGARIE TOWN MAP



MAP 4: ALLEENA TOWN MAP

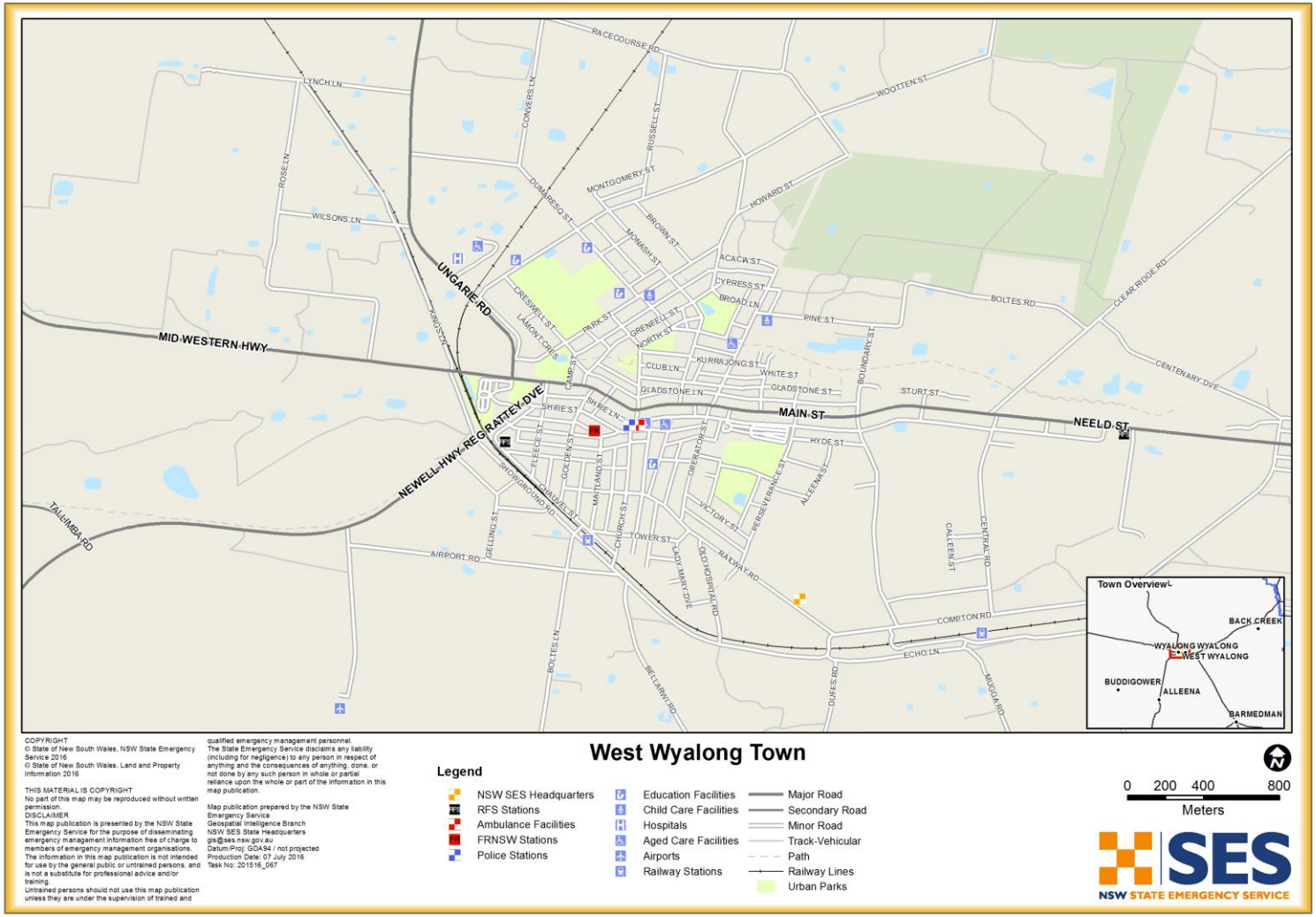


MAP 5: BARMEDMAN TOWN MAP



Map publication prepared by the NSW State Emergency Service
Geospatial Intelligence Branch
NSW SES State Headquarters
gis@ses.nsw.gov.au
Datum/Proj: GDA94 / not projected
Production Date: 07 July 2016
Task No: 201516_067

MAP 6: WEST WYALONG TOWN MAP



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NSW STATE EMERGENCY SERVICE

SES RESPONSE ARRANGEMENTS FOR BLAND SHIRE

Volume 3 of the Bland Shire Local Flood Plan

FloodSafe

CONTENTS

VERSION LIST

The following table lists all previously approved versions of this Volume.

Description	Date
Bland Shire Local Flood Plan – Annexes C and D	August 2008

AMENDMENT LIST

Suggestions for amendments to this Volume should be forwarded to:

The West Wyalong Local Controller

NSW State Emergency Service

55 Matthews Street. PARKES NSW 2870

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

Amendment Number	Description	Updated by	Date

BLAND SHIRE: FLOOD WARNING SYSTEMS AND ARRANGEMENTS

Chapter 1 of Volume 3 (NSW SES Response Arrangements for Bland Shire) of the Bland Shire Local Flood Plan

Last Update: September 2018

AUTHORISATION

Bland Shire: Flood Warning Systems and Arrangements has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process.

Approved

NSW SES Lachlan Region Controller

Date: 11 September 2018

Tabled at LEMC 17 October 2018

Document Issue: 3.1-07042014

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1. GAUGES MONITORED BY THE NSW SES BLAND SHIRE LOCAL HEADQUARTERS

Table 1: Gauges monitored by the NSW SES Bland Shire Local Headquarters

Gauge Name	Type	AWRC No.	Bureau Gauge No.	Stream	Flood level classification in metres			Special Reading Arrangements	Owner
					MIN	MOD	MAJ		
Ungarie (Mackrell Rd) ‡	Manual	41209901 (dummy AWRC No.)	na	Humbug Creek	1.0	1.5	2.0	Dummy AWRC number for recording purposes only. Depth indicator monitored by locals.	na

Notes: The Bureau of Meteorology provides flood warnings for the gauges marked with an asterisk (*).

NSW SES Local Flood Advices are provided for the gauges marked with a single cross (†).

The NSW SES holds a Flood Intelligence Card for the gauges marked with a double cross (‡).

2. DISSEMINATION OPTIONS FOR NSW SES FLOOD INFORMATION AND WARNING PRODUCTS

The NSW SES Lachlan Region Headquarters distributes NSW SES Flood Bulletins, NSW SES Evacuation Warnings and NSW SES Evacuation Orders to the following regional media outlets and agencies:

Television Stations:

Station	Location
Prime TV	Wagga
ABC TV	Sydney
MTN	Griffith

Radio Stations:

Station	Location	Frequency	Modulation
2WG	Wagga Wagga	1152	AM
2RG	Griffith	963	AM
ABC Radio	Wagga Wagga	893	FM

Newspapers:

Name	Location
West Wyalong Advocate	West Wyalong
Riverina Leader	Wagga Wagga

Other Agencies:

Agencies as listed in Volume 1 of this Local Flood Plan.

BLAND SHIRE: NSW SES LOCALITY RESPONSE ARRANGEMENTS

Chapter 2 of Volume 3 (NSW SES Response Arrangements for Bland Shire) of the Bland Shire Local Flood Plan

Last Update: September 2018

AUTHORISATION

NSW SES Locality Response Arrangements in Bland Shire has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process.

Approved

NSW SES Lachlan Region Controller

Date: 11 September 2018

Tabled at LEMC 17 October 2018

Document Issue: V3.2-07042014

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LIST OF TABLES

SECTOR OVERVIEW

Table 1: Overview of Sectors in the Bland Shire LGA.

Sector Name	Community	Sector Basis	Total properties	Properties potentially at risk
Sector 1	West Wyalong	Community	3141	>6 residential and rural properties
Sector 2	Ungarie	Community	557	>27 residential, 4 commercial and rural properties isolated

1. WEST WYALONG SECTOR COMMUNITY

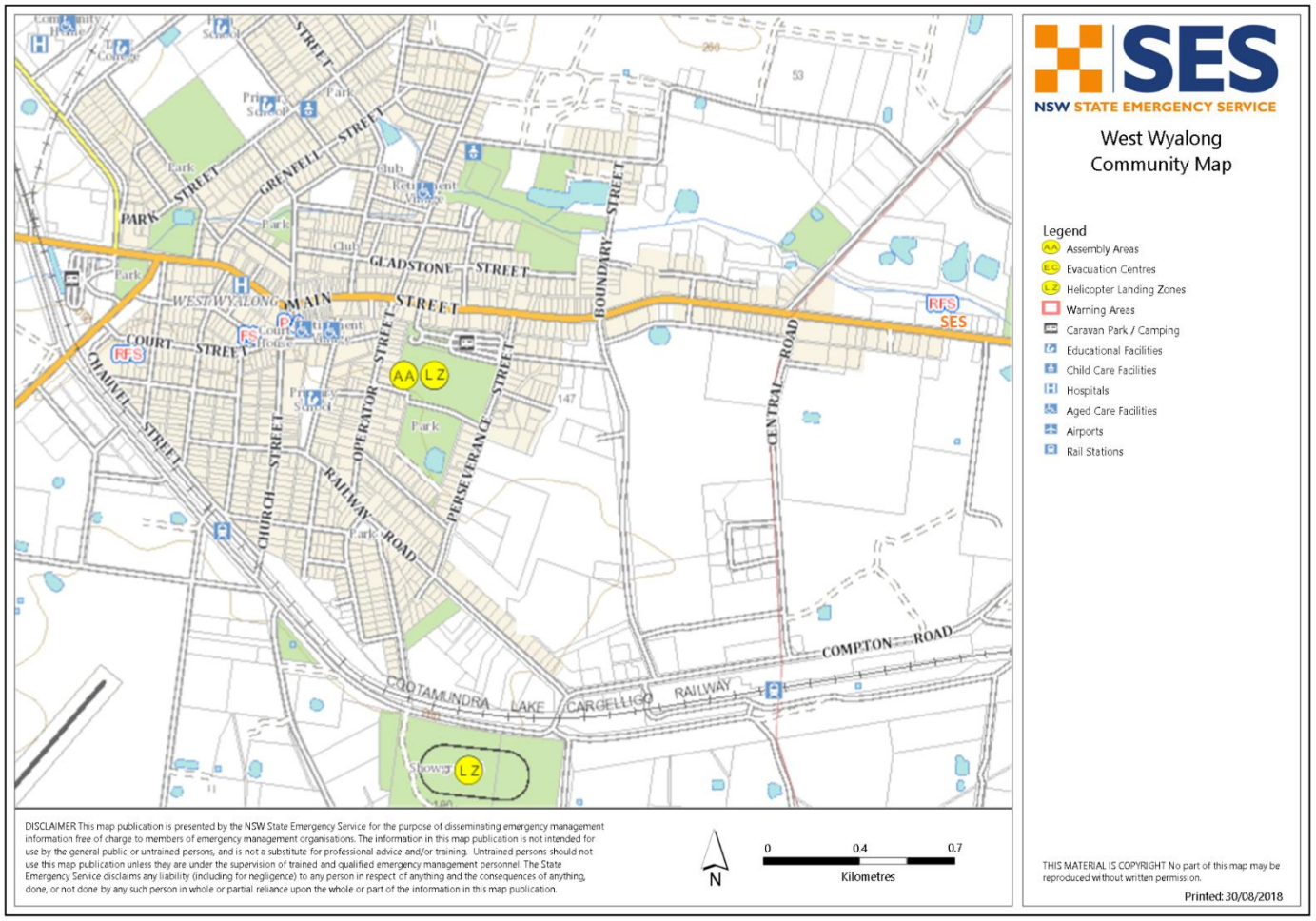
1.1. WEST WYALONG RESPONSE ARRANGEMENTS

Refer to Volume 2: Hazard and Risk in Bland Shire for more information about this Sector/Community.

Sector Description	This sector covers the community of West Wyalong Please refer to volume 2 of this Local Flood Plan for further information on this community					
Hazard	Flash Flooding					
Flood Affect Classification	Rising Road Access					
At risk properties	>6 residential and rural properties	**Total number of properties within Sector/Community**			1509	
Sector Control						
Key Warning Gauge Name	**Name**	**AWRC No.**	**Min (m)**	**Mod (m)**	**Maj (m)**	
	No Key warning gauge					
General Strategy	• Manage operational response as required • Issue of early warning of possible flash flooding • Pre-deployment of sandbags					
Key Risks / Consequences	The main risk at West Wyalong is flooding of the Newell Highway causing major traffic delays for weeks (8 weeks in 2016)					
Information and Warnings	• There are no official NSW SES bulletins or warning products issued for West Wyalong. • Warnings are provided through the Lachlan Region and Bland Shire Council Facebook pages. • Interagency Local Emergency Management Committee (LEMC) briefings as required • Bureau products will include NSW SES safety advice • Media releases					
Property Protection	***Specific property protection measures:*** The NSW SES West Wyalong Unit maintain stocks of sandbags and back-up supplies being held at the NSW SES Lachlan Region Headquarters. Supply of emergency stores such as sandbags will be processes through the NSW SES Lachlan Region Headquarters.					
	Assistance with property protection: Assistance with property protection is generally supported by the RFS.					
	Protection of essential infrastructure: There is no essential infrastructure that requires protection during an event.					
Evacuation and/or Isolation Triggers	No information currently available					

Evacuation Triggers	No information currently available
Sequencing of evacuation	No information currently available
Evacuation Routes	Due to the closure of the Newell Highway between West Wyalong and Forbes in 2016 the RMS diverted traffic from Melbourne to Brisbane via the Pacific Highway. All main roads are usually accessible to Wagga Wagga and Griffith.
Evacuation Route Closure	Closures are undertaken by Bland Shire Council or RMS as required.
Method of Evacuation	Self-evacuation as required
Evacuation Centre/Assembly Point	West Wyalong Stadium, 6 Short Street, West Wyalong. Noting that there would be no need to evacuate during a flash flood event as it effects more rural than urban properties.
Large scale evacuations	No information currently available
Rescue	Hot spots along the Newell highway and Barmedman road.
	Table 2, in Volume 2 provides information about isolated communities in the Bland Shire Council area and potential periods of isolation. A flowchart illustrating the Resupply process is shown in Volume 1 of the Local Flood Plan, Attachment 1.
Aircraft Management	***Helicopter Landing Points:*** ▪ Ron Crowe Oval (-33.9255°S,147.2098°E) ▪ West Wyalong Showground (-33.93630°S, 147.21124°E)
	Airports: ▪ West Wyalong Airport (-33.93762°S, 147.19194°E)
Other	West Wyalong Show is held annually in the first week of September and attracts large numbers to the town as well as a number of significant sporting events throughout the year.

1.2. WEST WYALONG COMMUNITY MAP



2. UNGARIE COMMUNITY

2.1. UNGARIE RESPONSE ARRANGEMENTS

Refer to Volume 2: Hazard and Risk in Bland Shire for more information about this Sector/Community.

Sector Description	Ungarie is situated on the Humbug Creek (also known as Euglo Creek) and can experience flooding from this creek, its tributary, Youngara Creek and a nearby (unnamed) tributary as well as overland flow.				
Hazard	This area is subject to widespread farmland flooding from unnamed creeks that flow predominantly in a north-easterly direction.				
Flood Affect Classification	South of Wollongough street, the properties have overland escape routes.				
At risk properties	>27 residential, 4 commercial and rural properties isolated	**Total number of properties within Community**	287		
Sector Control					
Key Warning Gauge Name	**Name**	**AWRC No.**	**Min (m)**	**Mod (m)**	**Maj (m)**
	No key electronic warning gauges, manual gauge on Humbug Creek crossing on Mackrell Street.				

General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions.
	• Issue of early warnings of flood level impacts and potential isolations.
	• Pre-deploy sandbags to assist with property protection.
	• Evacuate or at risk population:
	  ○ Self-evacuation to family and friends outside the impacted area
	  ○ Establishment of an assembly area/evacuation centre in consultation with welfare services functional area coordinator
	  ○ Medical evacuation considerations.
	• Establish resupply operations where isolation has occurred.
	• Flood rescue where evacuation has failed, or where people have driven into flood water.				

Key Risks / Consequences	Significate rural and main roads are flooded in the area, inundation of residential and commercial properties within the township of Ungarie. Closure of Ungarie Central school due to flooding across Humbug Creek bridge crossing on Mackrell street.				
Information and Warnings	NSW SES Flood Warning Equipment and Livestock Warnings Media Release such as Isolation Warnings Evacuation Warnings Evacuation Orders All clear Sequenced door knocking Media briefing Interagency Local Emergency Management Committee (LEMC) briefings				

Property Protection	***Specific property protection measures:*** The NSW SES West Wyalong unit and the Ungarie Rural Fire Service maintain stocks of sandbags with backup supplies held at the Lachlan Region Headquarters. The supply of emergency stores such as sandbags will be processed through the NSW SES Lachlan Region headquarters.
	Assistance with property protection: Assistance with property protection is generally undertaken with the support of the Ungarie Rural Fire Service and Bland Shire Council personnel.
	Protection of essential infrastructure: The Sewage System is shut down prior to inundation by Bland Shire council personnel. The levee around the grain storage may require further sandbagging for protection.
Evacuation and/or Isolation Triggers	Up to 27 houses and 3 commercial premises in Ungarie may require evacuation during an event approaching the 2012 flood level (2.55 metres on the Mackrell Street bridge gauge). During this event access to Ungarie was cut for several days.
Evacuation Triggers	Evacuation will be considered when: ▪ Information from "Merrigreen" is received in relation to the amount of water in the creek (24hrs lead time). ▪ Information from "Gleneen" is received in relation to the height of water/bricks on their verandah (8hrs lead time). ▪ Information from "Hometurn" in relation to the water along the Cootamundra-Lake Cargelligo railway line (3hrs lead time).
Sequencing of evacuation	Elderly and informed will be evacuated as a first priority.
Evacuation Routes	Wollongough street, Ungarie street, Muriel street, Caroon Street to Lake Cargelligo/West Wyalong Road.
Evacuation Route Closure	Wollongough Street is closed to all traffic at 1.5 metre (which can be influenced by localised rainfall).
Method of Evacuation	Self-evacuation is historical the predominant means of evacuation, using private vehicles, to family and friends.
Evacuation Centre/Assembly Point	Ungarie Town Hall – Wollongough Street, Ungarie
Large scale evacuations	Large scale evacuations are unlikely in Ungarie
Rescue	The Southern side of the creek along Eugalo street can become a flood hotspot therefore Level 3 Flood Rescue technicians will be placed in Ungarie until the threat subsides.
Resupply	At Ungarie, in a flood extent exceeding 2.55 metres (which can be varied depending on flood conditions and local rainfall), the village may become isolated for up to 5 days. Along the reaches of the creek and tributaries within the Bland Shire, it is expected that individual rural properties may also require resupply.
	Table 2, in Volume 2 provides information about isolated communities in the Bland Shire area and potential periods of isolation. • A flowchart illustrating the Resupply process is shown in Volume 1 of the Local Flood Plan, Attachment 1.

Aircraft Management	***Helicopter Landing Points:*** Suitable landing points are located at: ▪ Ungarie sports oval (showground) (-33.6368, 146.9804) ▪ Crn of Ungarie and Bathurst street (-33.6489, 146.9739)
	Airports: ▪ West Wyalong Airport is located 43 Kms SE of Ungarie (-33.93762°S, 147.19194°E)
Other	The Ungarie Show is held early September each year as well as a number of significant sporting events throughout the year.

2.2. UNGARIE SECTOR/COMMUNITY MAP