

Hay Shire

Local Flood Plan



HAY SHIRE FLOOD EMERGENCY SUB PLAN

**A Sub-Plan of the Hay Shire Local Emergency Management Plan
(EMPLAN)**

Volume 1 of the Hay Shire Local Flood Plan



AUTHORISATION

The Hay Shire Flood Emergency Sub Plan is a sub plan of the Hay Shire 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

 WENDY MITCHELL

NSW SES Local Controller, Hay

Date: 25/03/14

Approved

 AARON ORENOWSKI

Chair, Local Emergency Management Committee

Date: 25/03/14

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DISTRIBUTION LIST

Recipient	Number of copies
NSW SES Local Controller, Hay	1
NSW SES Unit, Hay	1
NSW SES Murrumbidgee Region Headquarters	1
NSW SES State Headquarters	1
Hay Shire Council, Local Emergency Operations Controller	1
NSW Police Force, Deniliquin Local Area Command	1
NSW Public Works	1
Hay Shire Council, Local Emergency Management Committee Members	4
Hay Shire Council, Local Emergency Management Officer	1
Hay Shire Council, Local Emergency Operations Centre	1
Hay Shire Council, Mayor	1
Hay Shire Council, General Manager	1
Hay Shire Council, Technical Services Department	1
Fire and Rescue NSW, Hay	1
Rural Fire Service, Murrumbidgee Irrigation Area District	1
Ambulance Service of NSW, Hay	1
Office of Environment and Heritage including National Parks and Wildlife Service	2
Evacuation Centres	1 each
Hay Hospital	1 each
South West Area Health Service	1
Schools	1 each
Caravan Parks	1 each
Council Library	1 each
Department of Education and Communities	1
Essential Energy	1
Telstra	1
Department of Primary Industries	1
Roads and Maritime Services	1

VERSION HISTORY

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

Description	Date
Hay Shire Local Flood Plan	June 2007 (amended October 2012)

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

The NSW SES Local Controller, Hay
NSW State Emergency Service
PO Box 25,
HAY, NSW, 2711

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

Amendment Number	Description	Updated by	Date

Document Issue: V28112012

LIST OF ABBREVIATIONS

The following abbreviations have been used in this plan:

AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AIIMS	Australasian Inter-service Incident Management System
ARI	Average Recurrence Interval (Years)
ASNSW	Ambulance Service of NSW
AWRC	Australian Water Resources Council
BUREAU	Australian Government Bureau of Meteorology
CBR	Chemical, Biological and Radiation
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
HSC	Hay Shire Council
IAP	Incident Action Plan
IFF	Imminent Failure Flood
LEMC	Local Emergency Management Committee
LEOCON	Local Emergency Operations Controller
LGA	Local Government Area
NSW SES	NSW State Emergency Service
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
SEOCN	State Emergency Operations Controller
SERCON	State Emergency Recovery Controller
SEWS	Standard Emergency Warning Signal

GLOSSARY

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

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

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

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

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

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

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

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

Dam Safety Emergency Plan (DSEP). A DSEP outlines the required actions of owners and their personnel at dams in response to a range of possible emergency situations.

The NSW Dam Safety Committee requires a quality controlled DSEP, with associated dambreak warning procedures to be prepared for prescribed dams where persons may be at risk downstream, if the dam failed.

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

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 a 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 Hay 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* (NSW) and the *State Emergency Service Act 1989* (NSW). It has been approved by the NSW SES Hay Local Controller and the NSW SES Murrumbidgee Region Controller as a NSW SES plan and endorsed by the Hay 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 Hay Shire Council area which includes the town of Hay, the villages of Maude and Booligal and a large area of rural land.
- 1.3.2 The Hay Shire Council area includes:
- a. A reach of the Murrumbidgee River from about 40 kilometres upstream of Hay to a similar distance downstream of Maude, together with a number of short tributaries and anabranches (Gum, Coonoon, Budgee, Shallow Gum, Pimpara, Five Mile, Uara, Fiddlers, Nimmie and Pollen creeks).
 - b. A reach of the Lachlan River from about 30 kilometres upstream of Booligal to the Great Cumbung Swamp, and including parts of the effluent Merrowie and Merrimajeel Creeks and the lower portions of the Mirrool and Cabbage Garden (Bouyareel) creeks.
- 1.3.3 The council area and its principal rivers and creeks are shown in Attachment 2.
- 1.3.4 The council area is in the NSW SES Murrumbidgee Region and for emergency management purposes is part of the Riverina Murray 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 Hay 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 Local Controller, Hay.** The NSW SES Local Controller is responsible for dealing with floods as detailed in the State Flood Plan, and will:

Preparedness

- a. Maintain a Local Headquarters 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 Hay Shire Council.
- e. Coordinate a public education program.
- f. Identify and monitor people and/or communities at risk of flooding.
- g. Ensure that the currency of this plan is maintained.

Response

- h. Appoint an appropriate Local Incident Controller to undertake response roles. The Incident Controller will:
- i. Control flood and storm response operations. This includes:
 - Directing the activities of the NSW SES units operating within the council area.
 - Coordinating the activities of supporting agencies and organisations and ensuring that liaison is established with them.
 - Contribute to preparation of Region Incident Action Plans (IAP).
- j. Provide an information service in relation to:
 - Flood heights and flood behaviour.
 - Road conditions and closures.
 - Advice on methods of limiting property damage.
 - Confirmation of evacuation warnings and evacuation orders.
- k. Direct the conduct of flood rescue operations.

- l. Direct the evacuation of people and/or communities.
- m. Provide immediate welfare support for evacuated people.
- n. Coordinate the provision of emergency food and medical supplies to isolated people and/or communities.
- o. Coordinate operations to protect property, for example by:
 - Arranging resources for sandbagging operations.
 - Lifting or moving household furniture.
 - Lifting or moving commercial stock and equipment.
- p. Assist the Hay Shire Council to organise temporary repairs or improvements to levees.
- q. Arrange for support (for example, accommodation and meals) for emergency service organisation members and volunteers assisting them.
- r. Ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.
- s. If NSW SES resources are available, assist with emergency fodder supply operations conducted by Agriculture and Animal Services.
- t. If NSW SES resources are available, assist the NSW Police Force, RMS and Council with road closure and traffic control operations.
- u. Exercise financial delegations relating to the use of emergency orders as laid down in the NSW SES Controllers' Guide.
- v. Coordinate the collection of flood information for development of intelligence.
- w. Submit Situation Reports to the NSW SES Murrumbidgee 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.
- x. Keep the Local Emergency Operations Controller advised of the flood situation and the operational response.
- y. Issue the 'All Clear' when flood operations have been completed.

Recovery

- z. Ensure that appropriate After Action Reviews are held after floods.

- aa. 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 Hay Unit Members:**

- a. Carry out flood response tasks. These may include:
 - The management of the NSW SES Local Operations Centre.
 - Assist in the collection of flood information for the development of intelligence.
 - Flood rescue.
 - Evacuation.
 - Providing immediate welfare for evacuated people.
 - Delivery of warnings and information.
 - Resupply.
 - Levee monitoring (by experienced/trained members).
 - Sandbagging.
 - Lifting and/or moving household furniture and commercial stock.
 - Animal rescue.
 - Assisting in repairing or improving levees.
 - Assisting with road closure and traffic control operations.
 - Assisting with emergency fodder supply operations.
- b. Assist with preparedness activities.
- c. Undertake training in flood and storm response operations.

1.5.4 **Hay Shire Council Local Emergency Operations Controller (LEOCON):**

- a. Monitor flood operations.
- b. Coordinate support to the NSW SES Local Incident Controller if requested to do so.

1.5.5 **Hay Shire Council Local Emergency Management Officer:**

- a. Provide executive support to the LEMC and LEOCON in accordance with the Hay Shire Council Local Emergency Management Plan.
- b. At the request of the NSW SES Local Controller, advise appropriate agencies and officers of the start of response operations.

1.5.6 **Hay 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 and plans to the NSW SES.
- c. Maintain a plant and equipment resource list for the council area.
- d. Contribute to the development and implementation of a public education program.

Response

- e. At the request of the Local NSW SES Controller, deploy personnel and resources for flood related activities.
- f. Close and reopen council roads (and other roads nominated by agreement with the RMS) and advise the NSW SES Local Incident Controller and the Police.
- g. Provide information on the status of roads.
- h. Provide filled sandbags to urban and village areas in which flooding is expected.
- i. Deploy personal and resources for levee maintenance, repair or improvement tasks, where necessary.
- j. Ensure all levee floodgates operate properly.
- k. Assist with the removal of caravans from caravan parks.
- l. Provide back-up radio communications.
- m. In the event of evacuations, assist with making facilities available for the domestic pets and companion animals of evacuees.

Recovery

- n. Provide for the management of health hazards associated with flooding. This includes removing debris and waste.
- o. Ensure premises are fit and safe for reoccupation and assess any need for demolition.
- p. Arrange for storage of evacuees' furniture as required.

1.5.7 Agriculture and Animal Services Functional Area:

- a. When requested by NSW SES:
 - Activate the Agriculture and Animal Services Supporting Plan as required and coordinate the provision of required services which may include:
 - Supply and delivery of emergency fodder.
 - Coordinate the management of livestock and farm animals.
 - Advice on dealing with dead and injured farm animals.
 - Financial, welfare and damage assessment assistance to flood affected farmers.

- Operation of animal shelter compound facilities for the domestic pets and companion animals of evacuees.

1.5.8 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.
- d. Note: The ASNSW has limited resources to assist, particularly when evacuating to other towns, and will be engaged by NSW Health only when clinically indicated treatment is required en-route.

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

- a. Provide Flood Watches for the Murrumbidgee and Lachlan River Basins.
- b. Provide Flood Warnings, incorporating height-time predictions, for Hay (AWRC no. 410002) and Booligal Weir (AWRC no. 412005) river gauges.
- c. Provide severe weather warnings when flash flooding is likely to occur.

1.5.10 **Caravan Park Proprietors:**

- a. Prepare a Flood Management Plan for the Caravan Park.
- b. Install flood depth indicators and road alignment markers within their caravan parks.
- c. Ensure that owners and occupiers of caravans are aware that the caravan park is flood liable by:
 - Handing a printed notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and outline the evacuation and van relocation arrangements.
 - Displaying this notice prominently in each van.
- d. Ensure that owners and occupiers of caravans are aware that if they are expecting to be absent from their vans for extended periods, they must:
 - Provide the manager with a key; in a sealed envelope; to the van.
 - Provide a contact address and telephone number.
 - Inform the manager if a vehicle will be required to relocate the van during flood time.
 - Leave any mobile van in a condition allowing it to be towed in an emergency (ie: tyres inflated, jacks wound up, personal effects secured and annexes and lines for water, sewer, electricity and gas readily detachable).
- e. Ensure that occupiers are informed of Flood Warnings and Flood Watches. At this time, occupiers should be advised to:

- Ensure that they have spare batteries for their radios.
 - Listen to a local radio station for updated flood information.
 - Prepare for evacuation and van relocation.
- f. Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and van relocation when flooding occurs. Owners of vans which are incapable of being relocated should ensure they are securely anchored to their site to avoid being swept away.
- g. Coordinate the evacuation of people and the relocation of moveable vans when floods are rising and their return when flood waters have subsided. Vans will be towed back to the caravan park(s) by van owners or by vehicles and drivers arranged by the park managers.
- h. Inform the NSW SES of the progress of evacuation and/or van relocation operations and of any need for assistance in the conduct of these tasks.

1.5.11 **Child Care Centres and Preschools:**

- a. Childcare Centres are to be contacted by the NSW SES in the event of possible flooding or isolation.
- b. When notified the child care centres and preschools should:
- Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures.
 - Assist with coordinating the evacuation of preschools and child care centres.

1.5.12 **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 Incident Controller of any need to disconnect power/gas/water/waste water supplies or of any timetable for reconnection.
 - Advise the NSW SES of any hazards from utility services during flooding.
 - Advise the public with regard to electrical hazards during flooding and to the availability or otherwise of the electricity supply.
 - Clear or make safe any hazard caused by power lines or 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.

1.5.13 **Engineering Services Functional Area:**

- a. When requested by NSW SES:
- Provide engineering advice regarding the integrity of damaged structures.
 - Assist the NSW SES with damage assessment.
 - Acquire and/or provide specialist technical engineering expertise.
 - Assist the NSW SES and council 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.

1.5.14 **Environmental Services Functional Area:**

- a. When requested by NSW SES:
- Implement the Environmental Services Functional Area (Enviroplan) Supporting Plan if required.
 - Activate the Hazmat/CBR Emergency Sub Plan if required.

1.5.15 Hay Flood Wardens Network:

- a. Provide flood information on flooding in their own areas to the NSW SES Local Controller.
- b. Distribute flood and evacuation warnings within their own areas.

1.5.16 Health Services Functional Area:

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

1.5.17 Fire and Rescue NSW, Hay:

- 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.

1.5.18 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.

1.5.19 NSW Police Force, Deniliquin 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.

1.5.20 NSW Rural Fire Service (RFS Murrumbidgee Irrigation Area District):

- a. Provide personnel in rural areas and villages to:
 - inform the NSW SES Local Incident Controller about flood conditions and response needs in their own communities, and
 - disseminate flood information.
- b. Provide personnel and high-clearance vehicles for flood related activities.
- c. Assist the NSW SES with the delivery of evacuation warnings and evacuation orders.
- d. Assist the NSW SES with the conduct of evacuations.
- e. Provide equipment for pumping flood water out of buildings and from low-lying areas.
- f. Assist with the removal of caravans.
- g. Provide back-up radio communications.
- h. Assist with clean-up operations, including the hosing of flood affected properties.
- i. Deploy fire resources to appropriate locations if access is expected to be lost.

1.5.21 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 the Local Flood Plan.
- 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.
- c. **National Parks and Wildlife Service:**
 - Close and evacuate at risk camping grounds in National Parks managed areas.

1.5.22 Private Companies, Purtills Bus Company and Dwyers Bus Service:

- a. Assist with the provision of bus transport and drivers for evacuation, resupply or commuting purposes:

1.5.23 Public Information Services Functional Area:

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

1.5.24 Roads and Maritime Services will:

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

1.5.25 School Administration Offices (Catholic Education Office (Diocese of Wilcannia-Forbes) and the Department of Education & Communities Director of Schools Deniliquin Area:

- 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.

1.5.26 Telecommunication Services Functional Area:

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

1.5.27 Transport Services Functional Area:

- a. When requested by NSW SES:
 - Assist with the coordination of transport for evacuation purposes.
 - Assist with the resupply of isolated communities and/or properties.

1.5.28 Welfare Services Functional Area:

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

PART 2 - PREPAREDNESS

2.1 MAINTENANCE OF THIS PLAN

- 2.1.1 The NSW SES 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 Local Controller will ensure that:
- a. NSW SES participates in local floodplain risk management committee activities when those committees are formed, in accordance with the protocols outlined in the NSW SES Controllers Guide.
 - b. The NSW SES Murrumbidgee Region Headquarters is informed of involvement in floodplain risk management activities.

2.3 DEVELOPMENT OF FLOOD INTELLIGENCE

- 2.3.1 Flood intelligence describes flood behaviour and its effects on the community.
- 2.3.2 The NSW SES maintains a centralised flood intelligence system.

2.4 DEVELOPMENT OF WARNING SYSTEMS

- 2.4.1 The NSW SES may establish a total flood warning system for areas affected by flooding. This requires:
- a. An identification of the potential clients of flood warning information at different levels of flooding (ie. who would be affected in floods of differing severities).
 - b. Available information about the estimated impacts of flooding at different heights.

- c. Identification of required actions and the amounts of time needed to carry them out.
- d. Appropriate means of disseminating warnings to different clients and at different flood levels.

2.5 PUBLIC EDUCATION

2.5.1 The NSW SES Local Controller, with the assistance of the Hay Shire Council, the NSW SES Murrumbidgee 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 NSW SES members at Hay. The NSW SES 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 Local Controller is responsible for maintaining the condition and state of readiness of NSW SES equipment and the NSW SES Hay 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 NSW SES utilises the Australasian Inter-service Incident Management System (AIIMS), which is based on three principles:
- a. functional management;
 - b. management by objectives; and
 - c. span of control.
- 3.2.2 AIIMS provides for different incident levels based on the complexity of management.
- 3.2.3 The Local Government Area may be divided into sectors and divisions to manage the flood event (divisions are usually a group of sectors).
- 3.2.4 Sectors and divisions may be based on floodplain classifications, geographical, physical or functional boundaries. A town 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 (for the Hay town gauge (AWRC no. 410002)), 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 Murrumbidgee 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 Murrumbidgee Region Headquarters.
 - b. NSW SES Hay Local Controller.
 - c. NSW SES Hay Unit.
 - d. Hay Shire Council Local Emergency Operations Controller (for transmission to the NSW Police Force Local Area Command Headquarters).
 - e. Hay Shire Council Local Emergency Management Officer (for transmission to appropriate council officers and departments).
 - f. Hay 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 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 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 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 Hay Operations Centre is located at Dunera Way, Hay.
- 3.5.2 The Hay Shire Council Emergency Operations Centre is located at Hay Shire Offices, 134 Lachlan Street, Hay.

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 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 Local Incident Controller,
 - b. advise the NSW SES Local Incident Controller on resource availability for their service, and
 - c. be able to provide communications to their own organisations.

3.7 END OF RESPONSE OPERATIONS

- 3.7.1 When the immediate danger to life and property has passed the NSW SES Local Incident Controller or the NSW SES Region 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 Hay Local Headquarters collates information on the current situation in the Hay Shire Council LGA and incorporates in Situation Reports.
- 3.8.3 The NSW SES Murrumbidgee 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 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 and/or the designated authority (as indicated in brackets) monitors the following problem areas:
 - The vulnerable residence located within the Hay State Forest
 - The vulnerable residence at the lower end of Hursly Street
 - Properties within Hay west of Hursley Street
 - Rural dwellings within the Irrigation area and along the Murrumbidgee River
 - Hay Town Levees (HSC)
 - Hay Town Sewerage Works (HSC)
 - Hay Town Water Works (HSC)

- Hay Airport and access roads (HSC)
 - Approaches to the town bridge (HSC)
 - Power Sub-station, Mid Western Hwy (Essential Energy)
 - Telstra Hub (Main Infrastructure East/West)
- c. The **Bureau of Meteorology's Flood Warning Centre** provides river height and rainfall information at <http://www.bom.gov.au/nsw/flood/>.
- d. **NSW Office of Water**. This office advises flow rates and rates of rise for the Murrumbidgee and Lachlan Rivers. Daily river reports containing information on gauge heights and river flows are available from the website: <http://waterinfo.nsw.gov.au/>
- e. **NSW SES Murrumbidgee 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. **Hay Shire Council**. Provides information on road closures in the Hay Council area.
- 3.8.5 During flood operations sources of information on roads closed by flooding include:
- a. Hay Shire Council (<http://www.hay.nsw.gov.au/>)
 - b. Deniliquin Police Local Area Command
 - c. Roads and Maritime Services (livetraffic.rta.nsw.gov.au and/or telephone service)
 - d. NSW SES Murrumbidgee Region Headquarters
 - e. NSW SES Hay 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 Hay Local Headquarters provides advice to the NSW SES Murrumbidgee Region Headquarters on current and expected impacts of flooding in the Hay Shire Council LGA.
- 3.9.2 The NSW SES Murrumbidgee 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 Local Incident Controller will ensure that the NSW SES Murrumbidgee Region Incident Controller is regularly briefed on the progress of operations.
- 3.9.4 NSW SES Local Headquarters operations staff will be briefed regularly so that they can provide information in response to inquiries received in person or by other means such as phone or fax.
- 3.9.5 **Bureau of Meteorology Severe Thunderstorm Warning.** These are issued direct to the media by the Bureau when severe thunderstorms are expected to produce dangerous or damaging conditions, including flash flooding. Severe thunderstorms are usually smaller in scale than events covered by Flood Watches and Severe Weather Warnings.
- 3.9.6 **Bureau of Meteorology Severe Weather Warnings for Flash Flooding.** These are issued direct to the media by the Bureau and provide a warning of the possibility for flash flooding as a result of intense rainfall. These warnings are issued when severe weather is expected to affect land based communities with 6 to 24 hours. Severe Weather Warnings may also include other conditions such as Damaging Winds.
- 3.9.7 **Bureau of Meteorology Flood Watches.** Flood Watches are issued by the Bureau to advise people of the potential for flooding in a catchment area based on predicted or actual rainfall. Flood Watches will be included in NSW SES Flood Bulletins issued by the NSW SES Murrumbidgee Region Headquarters.
- 3.9.8 **Bureau of Meteorology Flood Warnings.** The NSW SES Murrumbidgee Region Headquarters will send a copy of Bureau Flood Warnings to the NSW SES Hay Unit. On receipt the NSW SES Local Incident Controller will provide the NSW SES Murrumbidgee Region Headquarters with information on the estimated impacts of flooding at the predicted heights for inclusion in NSW SES Region Flood Bulletins.
- 3.9.9 **NSW SES Livestock and Equipment Warnings.** Following heavy rain or when there are indications of significant creek or river rises (even to levels below Minor Flood heights), the NSW SES Incident Controller will advise the NSW SES Murrumbidgee Region Headquarters which will issue NSW SES Livestock and Equipment Warnings.
- 3.9.10 **NSW SES Local Flood Advices.** The NSW SES Local Incident Controller may issue Local Flood Advices for locations not covered by Bureau Flood Warnings. They may be provided verbally in response to phone inquiries but will normally be incorporated into NSW SES Region Flood Bulletins.
- 3.9.11 **NSW SES Flood Bulletins.** The NSW SES Murrumbidgee Region Headquarters will regularly issue NSW SES Flood Bulletins which describe information on the estimated impacts of flooding at the predicted heights (using information from Bureau Flood Warnings and NSW SES Local Flood Advices) to NSW SES units, media outlets and agencies on behalf of all NSW SES units in the Region.

- 3.9.12 **NSW SES Evacuation Warnings and Evacuation Orders.** These are usually issued to the media by the NSW SES Region Incident Controller on behalf of the NSW SES Local Incident Controller.
- 3.9.13 **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.
- 3.9.14 **The Public Information and Inquiry Centre (PIIC)** (operated by the NSW Police Force) will answer calls from the public regarding registered evacuees.
- 3.9.15 **The Disaster Welfare Assistance line** is a central support and contact point for disaster affected people inquiring about welfare services advice and assistance.
- 3.9.16 **The RMS Transport Information Line** will provide advice to callers on the status of highways. The RMS website also lists highway closure information.
- 3.9.17 **Hay Shire Council** will provide information on the status of local roads.
- 3.9.18 Collation and dissemination of road information is actioned as follows:
- a. As part of Situation Reports, the NSW SES Local Incident Controller provides road status reports for main roads in the council area to the NSW SES Region Headquarters.
 - b. The NSW SES Murrumbidgee 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 the Hay Unit if applicable.
- 3.10.3 NSW SES maintains the following information for the Hay Shire Council area:
- a. Locations of suitable helicopter landing points.
 - b. Locations of suitable airports and records detailing aircraft size and type that can land at airports.
 - c. Intelligence on when access to these locations is expected to be lost.

3.11 ASSISTANCE FOR ANIMALS

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

- 3.11.2 Requests for emergency supply and/or delivery of fodder to stranded livestock, or for livestock rescue, are to be referred to Agriculture and Animal Services.
- 3.11.3 Requests for animal rescue should be referred to the NSW SES.

3.12 COMMUNICATION SYSTEMS

- 3.12.1 The primary means of communications between fixed locations is by telephone, email and facsimile.
- 3.12.2 The primary means of communication to and between deployed NSW SES resources is by SES Private Mobile Radio.
- 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 by the RFS UHF PMR network.

3.13 PRELIMINARY DEPLOYMENTS

- 3.13.1 When flooding is expected to be severe enough to cut road access to or within towns or rural communities (especially South Hay, Booligal or Maude), the NSW SES 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 Local Incident Controller will advise appropriate agencies so that resources (including sandbags, fire fighting appliances, ambulances, etc.) may be deployed to ensure that operational capability is maintained.
- 3.13.3 The NSW SES Local Incident Controller will ensure that appropriate resources are pre-deployed, where available, to assist Council to conduct repair or augmentation work to the Hay and South Hay Levees.

3.14 LEVEE MANAGEMENT

- 3.14.1 The management of the Hay levee system is the responsibility of Hay Shire Council. The NSW SES Local Incident Controller can coordinate assistance to Hay Shire Council if required. This may include assisting in monitoring, repairing or augmenting the levees.
- 3.14.2 If further plant, equipment or technical expertise is required this is to be requested through the Engineering Services Functional Area Coordinator.

3.15 ROAD AND TRAFFIC CONTROL.

- 3.15.1 A number of roads within the council area are affected by flooding. NSW SES maintains details of these roads.
- 3.15.2 The council closes and re-opens its own roads..
- 3.15.3 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.
- 3.15.4 When resources permit, the NSW SES assists Council, RMS or the Police by erecting road closure signs and barriers.
- 3.15.5 In flood events, the NSW SES 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).
- 3.15.6 Police, RMS or Council officers closing or re-opening roads or bridges affected by flooding are to advise the NSW SES Hay Local Headquarters, which will then provide a road information service to local emergency services, the public and the NSW SES Murrumbidgee Region Headquarters. All such information will also be passed to the Police, RMS and the Council.

3.16 STRANDED TRAVELLERS

- 3.16.1 Flood waters can strand travellers. Travellers seeking assistance will be referred to the Welfare Services Functional Area for the arrangement of emergency accommodation.

3.17 MANAGING PROPERTY PROTECTION OPERATIONS

Strategy

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

Actions

- 3.17.2 The NSW SES is the responsible agency for the coordination of operations to protect property.
- 3.17.3 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.
- 3.17.4 The NSW SES maintains stocks of sandbags.

3.18 MANAGING FLOOD RESCUE OPERATIONS

Strategy

3.18.1 Rescue of people from floods.

Actions

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

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

3.18.4 Additional flood boats and crews can be requested through the NSW SES Murrumbidgee Region Headquarters.

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

3.19 MANAGING EVACUATION OPERATIONS

Strategy

3.19.1 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

3.19.2 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.

3.19.3 During floods evacuations will be controlled by the NSW SES. Small-scale evacuations will be controlled by the NSW SES Local Incident Controller. Should the scale of evacuation operations be beyond the capabilities of local

resources control may be escalated to the NSW SES Murrumbidgee Region Incident Controller.

Decision to evacuate

- 3.19.4 In most cases the decision to evacuate rests with the NSW SES 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 Murrumbidgee Region Incident Controller and the Local Emergency Operations Controller.
- 3.19.5 In events that require large scale evacuations, the decision to evacuate may be escalated to the Region or the State Incident Controller.
- 3.19.6 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

- 3.19.7 The NSW SES Local Incident Controller will mobilise the following to provide personnel for doorknock teams for designated Sectors/locations:
- a. NSW SES Hay Unit members,
 - b. RFS Hay and Carrathool Region members via the RFS Murrumbidgee Irrigation Area District,
 - c. Local Police Force officers.
- 3.19.8 The NSW SES Murrumbidgee Region Incident Controller will mobilise any additional personnel required to assist with doorknock teams using:
- a. NSW SES members from the NSW SES Murrumbidgee Region and surrounding NSW SES Regions
 - b. FRNSW personnel arranged via the FRNSW Liaison Officer located at NSW SES Murrumbidgee Region Headquarters
 - c. RFS personnel arranged via the RFS Liaison Officer located at NSW SES Murrumbidgee Region Headquarters
- 3.19.9 The NSW SES Local Incident Controller may request the Chairperson of the LEMC to provide Council personnel to assist with traffic coordination within Sectors.
- 3.19.10 The NSW SES Local Incident Controller will arrange liaison officers for Sector Command Centres.
- 3.19.11 The NSW SES Murrumbidgee Region Operations Controller will mobilise the required number of buses for Sectors via the Transport Services Functional Area Coordination Centre.

Delivery of Evacuation Warnings and Evacuation Orders

- 3.19.12 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 Local Incident Controller is to warn the community of the need to prepare for a possible evacuation.
- 3.19.13 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.
- 3.19.14 The NSW SES Local Incident Controller will distribute Evacuation Warnings and Evacuation Orders to:
- a. Sector Command Centres (where established).
 - b. Hay Shire Council Local Emergency Operations Centre.
 - c. Hay Shire Council.
 - d. Deniliquin Police Local Area Command.
 - e. Rural Fire Service Mid West Control Centre.
 - f. Radio Stations.
 - g. Other local agencies and specified individuals.
- 3.19.15 The NSW SES Murrumbidgee Region Incident Controller will distribute Evacuation Warnings and Evacuation Orders to:
- a. The NSW SES State Operations Centre.
 - b. The NSW SES Local Incident Controller.
 - c. Affected communities via dial-out warning systems where installed or applicable.
 - d. Relevant media outlets and agencies.
- 3.19.16 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 (ABC Riverina, 2Hay FM, 2RG, 2WG, 2QN).
- 3.19.17 The Standard Emergency Warning Signal (SEWS) may be used to precede all Evacuation Orders broadcast on Radio Stations.
- 3.19.18 Doorknock teams will work at the direction of the NSW SES Hay Incident Controller.

- 3.19.19 Field teams conducting doorknocks will record and report back the following information to the 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.
- 3.19.20 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.

Withdrawal

- 3.19.21 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.
- 3.19.22 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 and/or air).
- 3.19.23 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.
- 3.19.24 Evacuees will:
- a. Move under local traffic arrangements from the relevant Sectors via managed evacuation routes;
 - b. Continue along the road network to allocated Evacuation Centres.
- 3.19.25 **Health Services.** The Health Services Functional Area will coordinate the evacuation of the hospital, health centres, and aged care facilities (including nursing homes).
- 3.19.26 **Schools.** School administration offices (Department of Education and Communities and the Catholic Education Office) will coordinate the evacuation of schools if not already closed.
- 3.19.27 If there is sufficient time between the start of response operations and the evacuation of communities, the NSW SES Murrumbidgee Region Incident Controller will discuss the temporary closure of appropriate schools with the Director of Schools Deniliquin Area, 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.

- 3.19.28 **Caravan parks.** When an evacuation order is given occupiers of non-movable vans should:
- Secure their vans by tying them down to prevent flotation.
 - Isolate power to their vans.
 - Collect personal papers, medicines, a change of clothing, toiletries and bedclothes.
 - Lift the other contents of their vans as high as possible within the van.
 - Move to a designated evacuation centre if they have their own transport, or move to the caravan office to await transport.
- 3.19.29 Where possible, vans that can be moved will be relocated by their owners. Park managers will arrange for the relocation of mobile vans whose owners do not have a vehicle. NSW SES will assist if required and may be able to provide additional vehicles.
- 3.19.30 Caravan park managers will:
- ensure that their caravan park is capable of being evacuated within the allocated time.
 - advise the NSW SES Local Controller of:
 - The number of people requiring transport.
 - Details of any medical evacuations required.
 - Whether additional assistance is required to effect the evacuation.
 - Check that no people remain in non-removable vans that are likely to be inundated.
 - Inform the NSW SES Local Controller when the evacuation of the caravan park has been completed.
 - Provide the NSW SES Local Controller with a register of people that have been evacuated.
- 3.19.31 **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.
- 3.19.32 **Transport and storage:** Transport and storage of furniture from flood threatened properties will be arranged as time and resources permit.
- 3.19.33 **Security:** The NSW Police Force will provide security for evacuated areas.
- 3.19.34 The NSW SES Local Incident Controller is to provide the following reports to the NSW SES Murrumbidgee Region Headquarters:

- a. Advice of commencement of the evacuation of each Sector
- b. Progress reports during evacuations;
- c. Advice of completion of the evacuation of each Sector.

Shelter

- 3.19.35 **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 Local Incident Controller, but managed as soon as possible by Welfare Services.
- 3.19.36 The following locations are suitable for use as flood evacuation centres:
- a. **Hay.** An assembly point will be nominated (possibly Hay Showgrounds) for transportation to nominated location, possibly Deniliquin or Griffith.
 - b. **Maude.** Assemble at Maude Hotel for transportation to nominated location.
 - c. **Booligal.** Assemble at Booligal Hotel for transportation to nominated location.
- 3.19.37 **Registration:** The NSW Police Force will ensure that evacuees are registered on arrival at the designated evacuation centres.
- 3.19.38 **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

- 3.19.39 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.
- 3.19.40 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 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 Hay Shire Council LEOCON,
 - g. the Hay Shire Council,

- h. NSW SES Region Incident Controller,
 - i. Other appropriate agencies/functional areas as required (mitigation and advice regarding identified risks resulting from the flood event).
- 3.19.41 Once it is considered safe to do so, the NSW SES Incident Controller will authorise the return of evacuees.
- 3.19.42 The return will be controlled by the NSW SES Incident Controller and may be conducted, at their request, by the Recovery Coordinator.

3.20 MANAGING RESUPPLY OPERATIONS

- 3.20.1 The NSW SES is responsible for the coordination of the resupply of isolated communities and properties.
- 3.20.2 If isolation is expected to occur, residents should be encouraged to consider their needs and suitability for an unknown period of isolation.
- 3.20.3 If properties/communities are going to remain in locations expected to become isolated, households/retailers should be encouraged to stock up on essential supplies.
- 3.20.4 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.
- 3.20.5 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

- 3.20.6 Minimise disruption upon the community by resupplying towns and villages which have become isolated as a consequence of flooding.

Actions

- 3.20.7 The NSW SES is responsible for the coordination of the resupply of isolated communities.
- 3.20.8 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.
- 3.20.9 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.
- 3.20.10 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.
- 3.20.11 The NSW SES will assist the hospital with resupply of linen and other consumables where able.

Resupply of Isolated Properties

Strategy

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

Actions

- 3.20.13 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.
- 3.20.14 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.
- 3.20.15 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 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 (SEOCN) 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 SEOCN, 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 Local Controller and Local Emergency Operations Controller (LEOCN) 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

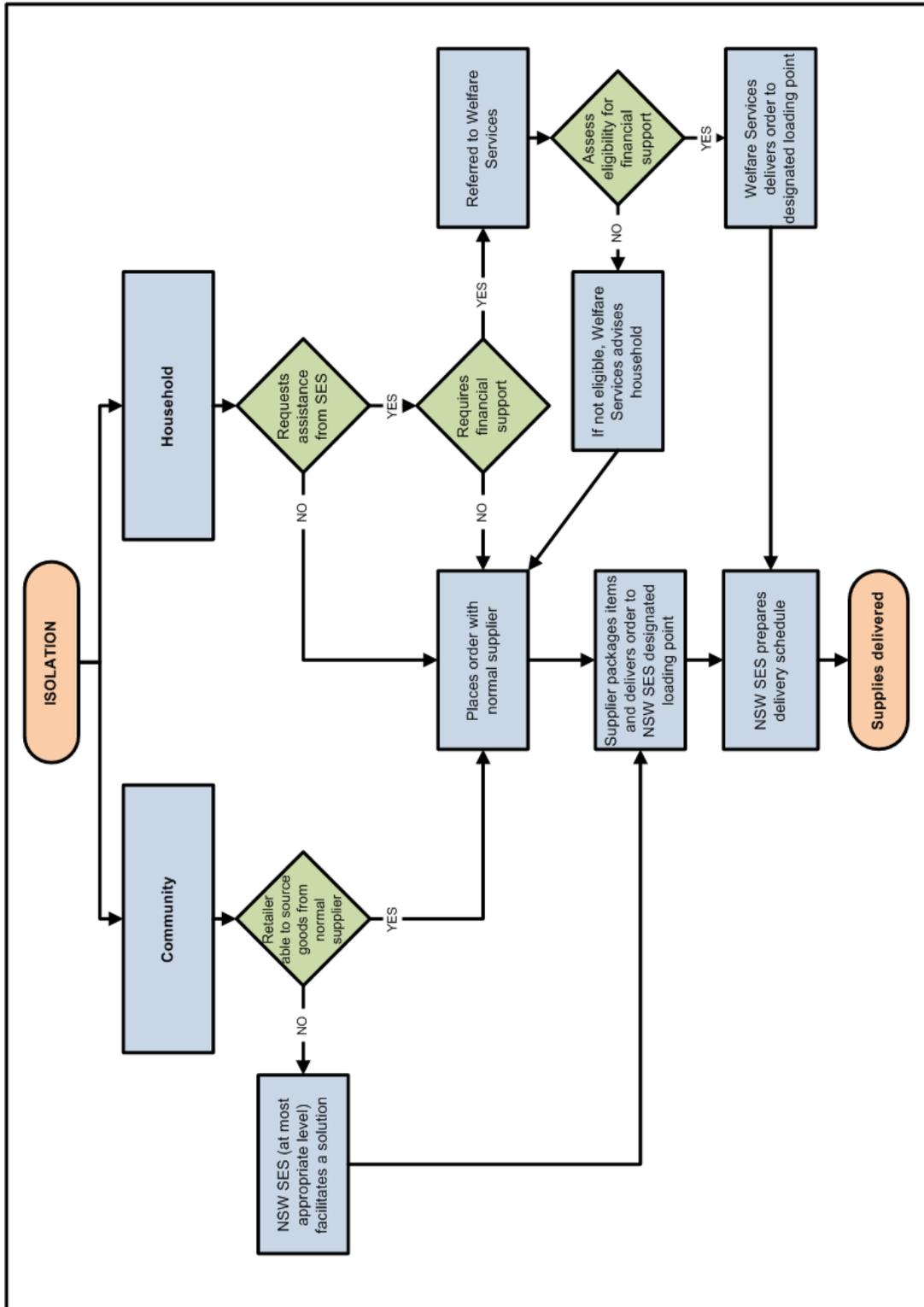
4.2 RECOVERY COORDINATION AT THE REGION AND STATE LEVEL

- 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 SEOCN 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

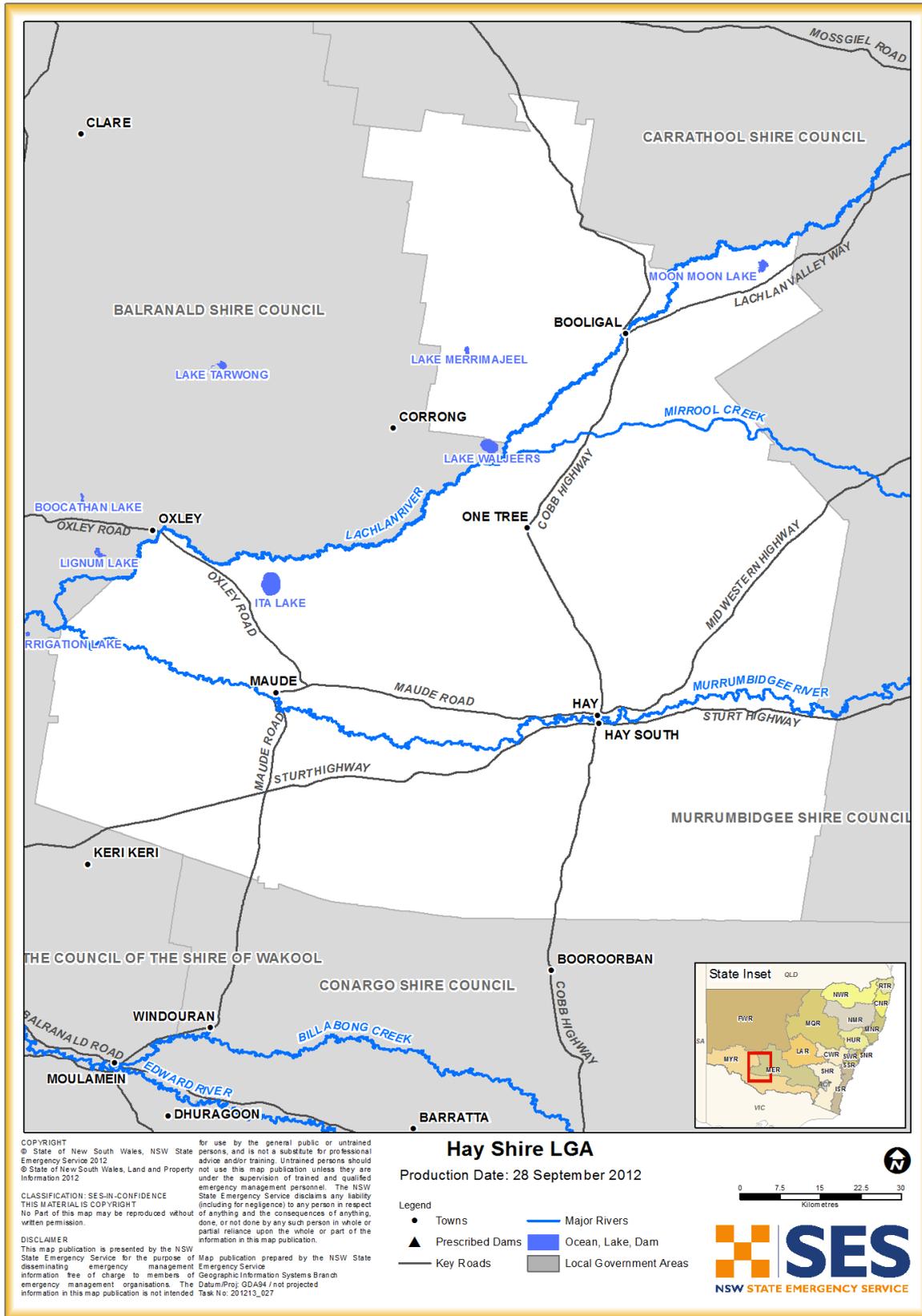
- 4.3.1 As soon as possible after flooding has abated, the NSW SES Local Controller will advise participating organisations of details of response operation after action review arrangements.
- 4.3.2 The NSW SES Local Controller will ensure that adequate arrangements are in place to record details of 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 Hay 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 - HAY SHIRE COUNCIL LGA MAP



HAZARD AND RISK IN HAY SHIRE

Volume 2 of the Hay Shire Local Flood Plan

Last Update: June 2007 (amended October 2012)

ANNEX A - THE FLOOD THREAT

General

1. Riverine flooding in the Hay Shire Council area can occur from the Murrumbidgee River, the Lachlan River or the Mirrool Creek.

The Murrumbidgee River Catchment

2. The Murrumbidgee River is 1,600 kilometres long and is the third longest river in the state. It rises in the Snowy Mountains at an altitude of approximately 1600 metres in steep high-rainfall country, initially flowing south-eastwards before turning north near Cooma. It flows through the Australian Capital Territory and west into Burrinjuck Dam storage lake. Numerous tributaries drain from the high country and join the river above the dam.
3. From Burrinjuck Dam the river flows through undulating foothills to the urban centre of Wagga Wagga, being joined by several tributaries along the way. The most notable of these is the Tumut River, on which is built a series of dams associated with the Snowy Hydro-electric Scheme, and the State Water owned and operated Blowering Dam. The Tumut River enters the Murrumbidgee upstream of Gundagai. Other tributaries entering the river above Wagga Wagga include Jugiong, Muttama, Adelong, Billabong, Hillas, Tarcutta and Kyeamba creeks.
4. From Wagga Wagga the river traverses open plains country characterised by considerable anabranch and effluent creek development. The main tributaries and anabranches below Wagga Wagga are Houlaghlans, Sandy, Bullenbung, Beaver/Old Man and Bundidgerry creeks. The Old Man and Bundidgerry creeks rejoin the main channel within the Narrandera Shire. The important tributaries of the Bundidgerry are the Boggy and Cowabbie creeks which drain the Coolamon and south western part of Temora council areas.
5. Within the Hay Council area several effluents, anabranches and tributaries make up a complex system of channels on the floodplain of the Murrumbidgee River. These include Gum Creek (which leaves the river within the Murrumbidgee Shire), and Coonoon, Budgee, Shallow Gum, Pimpara, Five Mile, Uara, Fiddlers, Nimmie and Pollen creeks. The floodplain is broad, flat and relatively treeless. Most of it is of less than 100 metres elevation.

The Lachlan River Catchment

6. The Lachlan River is 560 kilometres long and drains an area of 84,700 kilometres. It rises in the Great Dividing Range between Bathurst and Goulburn and flows in a westerly direction, being joined by the Abercrombie, Boorowa and Belubula rivers, Mandagery Creek and several minor tributaries including Hovells, Koorawatha, Ooma, Yeo Yeo (Bland), Goobang, Euglo, (Humbug), Tinda, Crowie and Booberoi creeks. The river enters the Hay Shire council area about 15 kilometres upstream of Booligal and flows in a south westerly

direction before losing definition in the Great Cumbung Swamp from where its flood waters join the Murrumbidgee River. Significant flow into the Murrumbidgee River normally only occurs during periods of flooding.

7. Within the Hay council area the drainage pattern is complex, including several effluent creeks, the Cabbage Garden Creek anabranch and the tributary Mirrool Creek. Pimpara Creek is an effluent from the river which carries water to the Murrumbidgee River. The area drained by these water courses is flat and featureless.
8. The **Mirrool Creek**, which rises west of Temora, is the only significant tributary to enter the Lachlan River within the Hay council area. Much of its flow path is poorly defined, parts of it appearing more as intermittent lakes and swamps than as incised creek beds.

Flood Characteristics

9. Very large areas of the Hay Shire Council area are subject to flooding from the Murrumbidgee and Lachlan Rivers, and from the Mirrool Creek. The extremely flat terrain of the region dictates that drainage is very slow. Flood depths are not great, but inundation can last for some months.
10. The anabranches and effluent creeks carry water only during periods of high flow on the rivers. At other times they are dry, as are the many intermittent lakes and swamps. The effluents from the Lachlan River spread water over a very large area during times of flood, and only rarely does this water rejoin the main channel. On both rivers, channel capacity declines towards the west and flood flows spill out more frequently in downstream areas than elsewhere. The width of the inundated area downstream of Maude is much greater than that upstream of Hay.
11. Warning times for floods are very long, flows on the Murrumbidgee River having taken 10-26 days to travel from Wagga Wagga to Hay depending upon the magnitude of the flood and the condition of the floodplain at its onset. After prolonged dry periods, the billabongs, effluents and anabranches take up much of the flow causing strong attenuation of the severity of the event. Warning times are also very long on the Lachlan River.

Flood Behaviour

12. Major flow paths exist to the north and south of Hay. To the south, water has broken out at the Keringal Escape and flowed south before meeting the Bungah Creek which rejoins the main stream at South Hay. To the north, water breaks out east of Hay and travels across the floodplain to the north-east and north of Hay. This behaviour is represented in Map 7.

Weather Systems and Flooding

13. All major floods along the Murrumbidgee have occurred during months when the Southern Oscillation Index (SOI) was positive, with about two thirds occurring during La Nina events when the SOI is strongly positive. Floods

within the Hay Shire Council area can be caused by the following types of weather systems;

- a. Inland troughs (open U shaped low pressure systems) that bring tropical moisture from northern Australia to central and southern NSW. Some of these trough systems are accompanied by closed low pressure cells that form in central or southern NSW. This type of system is the main cause of flooding on the Murrumbidgee, with most having occurred during spring and summer, and a couple in March.
- b. Sequences of southern air masses coming from the Antarctic region and moving in a north easterly direction over the catchment. This flood producing mechanism operates primarily between the months of April and October.
- c. Low-pressure systems located over the east coast of Australia and causing moist airflows over the Snowy Mountains. Major floods in August 1974 and June 1952 were caused by this system, and in all likelihood the major floods in the winters of 1852 and 1853.
- d. Short duration, high intensity convective thunderstorms that occur over small areas during summer. These may cause town drainage systems to surcharge and minor creeks to rise rapidly. Such thunderstorms do not cause mainstream riverine flooding.

Peak Height Flow Times for Floods on the Murrumbidgee River

14. Burrinjuck Dam to Wagga Wagga: 42 to 76 hours
15. Tumut to Wagga Wagga: 33 to 61 hours
16. Gundagai to Wagga Wagga: 19 to 52 hours
17. Wagga Wagga to Narrandera: 3.5 to 5 days
18. Narrandera to Hay: 6 to 21 days

Storage Dams

19. **Talbingo Dam**, consists of a 161 metre high rockfill structure with a central clay core. The dam has a gross capacity of 921,400 megalitres, with an active capacity of 160,400 megalitres. Releases from the dam are through the Tumut 3 Intake Structure, which has a discharge capacity of 1.133 megalitres per second. The dam's spillway is an ungated crest in a deep unlined channel excavation on the western rim of the reservoir, with a discharge capacity of 4.248 megalitres per second. Discharges via the spillway are avoided whenever possible as it has no scour protection. Releases from Talbingo Dam flow through Jounama Pondage to Blowering Dam. Talbingo Dam is normally operated as close to full supply as practicable.

20. **Jounama Pondage**, consists of a 44 metre rockfill structure with a central clay core. The dam has a gross capacity of 43,500 megalitres with an active capacity of 27,800. Jounama has a gated spillway capable of discharging 3.965 megalitres per second. The dam collects discharges from Talbingo Dam, Jounama and Buddong Creeks to form a pumping pool to aid in electricity production at Tumut 3 Power Station and maintain a small degree of flow regulation into Blowering Dam. It is subjected to moderate water level fluctuations and currents which make it unsuitable for recreation. Due to Jounama's small size the likely impact of its failure would be minimal with discharges being absorbed by Blowering Dam.
21. **Blowering Dam**, completed in 1968, consists of a 112 metre high earth and rockfill structure with a central clay core, concrete chute spillway, four outlet valves and a 80MW hydro-electric power station. At full supply level the lake formed has a surface area of 4460 hectares. The dam has a catchment area of 1,630 square kilometres and a storage capacity of 1,630,000 megalitres. The dam stores water that has been released from upstream storages. The large amount of water released from those storages to meet the demand for electricity in winter, is held in Blowering until summer when it is needed by farmers for irrigation. Releases are controlled by the four outlet valves and the Hydro-electric power station, which have a combined capacity of 23,000 ML/day. Blowering's spillway has a capacity of 203,000 ML/day. Releases flow down the Tumut River, towards Tumut.
22. **Burrinjuck Dam** is a concrete gravity dam located in a narrow gorge downstream of Canberra. The dam was constructed between 1907 and 1928 to store water for irrigation in the Murrumbidgee Irrigation Areas and for hydro-electric power generation. The Dam's catchment is 13,000 square kilometres and a submerged storage area, at full supply level of 5500 ha. The maximum height of the dam wall is 93m above the lowest point of the foundation. The spillways are located on either side of the main wall and consist of side channel spillways at the left and right abutments and three spillway chutes controlled by sector gates. Since upgrade works in 1994 the dam is no longer considered to be deficient and is now capable of safely passing the PMF.

Flood History

23. Since European Settlement in the area in the 1840's, Hay has experienced flooding on a number of occasions. Since 1952 there have been 20 floods greater than 8.0 metres (major flood classification).
24. In recent times the four largest floods to be recorded on the Hay town gauge have occurred in 1956 (8.99m), 1974 (9.02m), 2010 (8.48m) and 2012 (8.99m).
25. Prior to these events large floods have been recorded in 1870, 1922, 1925, 1931 and 1934.

Levee Systems

26. Levees are flood mitigation structures which aim to reduce flood damages by reducing the frequency of flooding. They do so by creating a barrier between floodwaters and the area at risk.
27. All levees, unless designed for the biggest flood possible in a given area (the Probable Maximum Flood or PMF), will ultimately be over-topped by events larger than their Design Height. A levee can also fail, without overtopping, through lack of maintenance, inadequate construction or unforeseen structural circumstances.
28. Serious flooding can occur behind a levee even when floodwater from the river has not entered the area. This is caused when local stormwater or creek flooding cannot drain through the levee to the river. This type of flood can often occur while the river is in flood on the outside of the levee.
29. Levees are intended to protect property and are not fundamentally designed to protect the lives of people. In some special circumstances, supported by a thorough risk assessment, it may be warranted to allow people to shelter behind a levee during a flood. In general however, leaving people behind a levee during a flood it is not good public safety practice. This means that for all communities protected by levees emergency plans must be maintained detailing evacuation arrangements to be undertaken when floodwaters threaten to exceed the Design Height or otherwise result in levee failure.
30. Since the continuing performance of a levee cannot be assured for any flood that exceeds its Design Height, the Design Height specification is used as the default trigger for consideration of evacuation.
31. The location of Hay and South Hay on the floodplain of the Murrumbidgee River has resulted in the construction of an earth levee system that runs along both the northern and southern banks. These levees provide significant, but not certain protection from flooding. The current alignment of the levees is shown in Map 6.
32. The **Hay Town Levee** extends for a total length of about 5.7 kilometres and is formed by a combination of elevated roadways, earth embankments and naturally elevated ground. The levee forms a 'horseshoe-like' shape around the developed sections of the town, effectively linking points of relatively higher ground at the northern limits of development. The levee was originally constructed prior to the 1956 flood, with some additional work to raise the crest carried out before the arrival of the '56 peak, thereby preventing inundation of the town. Emergency works subsequently carried out to repair and raise sections of the levee in the face of the 1974, 2010 and 2012 floods also succeeded in preventing inundation of the town.
33. The **South Hay Levee** system was constructed in 1974 to protect a narrow strip of post-1956 development located between the Sturt Highway and the southern banks of the river. The levee effectively forms a closed "loop" around South Hay, protecting an area bounded by Lang St. in the north, Miller St. in the east,

the Sturt Highway to the south, and Archer Street in the west. (The section of the Sturt Highway between Archer and Miller Streets is understood to be about 500 mm above the peak level of the 1956 flood.) The levee is generally located east of the Lachlan Street Bridge and is effectively formed by the low level embankment created to construct the Lang Street roadway. It extends from the relatively high ground near Palmer Street (on the downstream side of the Lachlan Street Bridge abutment) eastwards to those properties between Roset and Miller Streets which are located on the northern side of Lang Street. A privately owned levee at the rear of these properties links to sections of the public levee near Roset Street in the west and Shiel Street in the east. This section of privately owned levee was surveyed as an extension to the publicly owned levee system, and for all intents and purposes has been incorporated into the South Hay levee system. Emergency works to repair and raise sections of the levee in the face of the 2010 and 2012 flood succeeded in preventing inundation of South Hay.

34. A 540 metre long section of privately owned levee has been constructed near the western limit of the developed area of Hay, between the northern bank of the river and houses that front Clay Street. This section of levee is an earth embankment that extends downstream along the river bank from Moppett Street to the southern extension of the Hursley Street road reserve. The private levee effectively provides a degree of flood protection to properties south of Clay Street. However, the extent of this protection is unclear because the crest elevation has not been surveyed and the materials and construction methods employed to build the levee are not documented.
35. Surveys by registered surveyors in 2010/2011 revealed that the lowest points in the Hay (North) levee were over a length of about 50m behind private residences in Hatty Street (90.4m AHD=8.93m on the town gauge), and in the South Hay levee over a length of about 30m at Halse Park in Lang Street (90.4m AHD=8.93m on the town gauge).
36. During the March 2012 flood, emergency works carried out by Council to increase the crests of the public levees successfully protected properties in Hay and South Hay from a flood which peaked at 8.99m.

Levee Overtopping

37. Although temporary augmentation works carried out by Council prior to arrival of flood peaks have to date successfully prevented overtopping, the towns levees cannot be relied on to provide absolute protection from floods and they will almost certainly be overtopped at some time in the future by an extreme flood. Once the levees are overtopped, then depending upon the floods eventual magnitude all properties within Hay and South Hay are at-risk from flooding.

Extreme Flooding

38. While flooding worse than that of 1956, 1974 and 2012 is anticipated to be rare, it must be expected that more severe events than any previously experienced will occur. Extreme floods could reach considerably greater heights than have so far been recorded, and would inundate larger areas for longer periods than in

the past. Although it is probable that such floods would occur with less warning time than usual, it is expected that several days warning would still be available.

39. Although the prospect is considered to be extraordinarily unlikely, it is nevertheless feasible that extreme flooding within the Hay Shire could result as a consequence of a Probable Maximum Flood, and/or the failure of a major dam(s) located upstream of Gundagai on the Murrumbidgee and Tumut Rivers.

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

AREAS AT RISK

1. The Hay Shire Council area has a long history of flooding and locations within it including Hay, Booligal, Maude and surrounding rural properties are considered flood liable. Some major roads within the council area are also prone to flooding, resulting in their closure to traffic. Communities within the Shire can be affected by inundation, isolation and indirect effects through loss of key infrastructure.

Hay

2. The town of Hay (pop. 2445) is situated in south western NSW about 730 kilometres from Sydney on the banks of the Murrumbidgee River. Hay is divided into two precincts, Hay and South Hay. Hay is located on the northern bank of the Murrumbidgee whilst South Hay is on the southern bank.
3. Hay is the larger precinct containing the commercial centre and the majority of residential developments. Major community facilities such as Council and various emergency service organisations headquarters, schools and the Hospital are also located in this section of town.
4. South Hay comprises a narrow strip of development between the Murrumbidgee River and the Sturt Highway. This development comprises a mix of residential and commercial uses, and includes the towns two Caravan Parks.
5. Both Hay and South Hay are protected by a series of levee banks, their locations being shown in Map 6. The main town levee was constructed prior to the 1956 flood peak arriving, and successfully protected the main part of town from flooding. The levee protecting South Hay was constructed prior to arrival of the 1974 peak. In the face of subsequent floods in 2010 and 2012, emergency works carried out by Council to raise the height of low points in the levees have succeeded in preventing floodwaters from entering Hay or South Hay.
6. In the event of over-topping or a catastrophic breach of the levees, developed properties behind them would be flooded. It has been estimated that should this occur as a result of a flood similar in magnitude to that of 1956, approximately 370 properties in Hay and 104 properties in South Hay would experience over-floor flooding. This amounts to 33% of the properties in Hay and 85% of the properties in South Hay. The average depths of over-floor flooding would average 0.2 metres in Hay and 0.4 metres in South Hay. Many other properties would experience flooding of their yards. An estimate of the area likely to be inundated as a result of such an occurrence is shown by Map 5. In the likelihood of such an event occurring, evacuations from Hay and South Hay would be necessary.

7. Specific vulnerable properties at risk from isolation, inundation, and/or loss of essential services as a result of levee over-topping events include the following:
 - a. Hay Caravan Park, Moama St, Hay (80 sites in total, 10 permanent vans)
 - b. Hay Plains Holiday Park, Nailor St (40 sites in total, 14 permanent vans)
 - c. Hay Airport, South Hay (isolated)
 - d. Fire Station, Macauley St
 - e. St Marys School, Moppett St
 - f. War Memorial High School, Morgan St
 - g. Police Station, Moppett St
 - h. Hay Pre-School Kindergarten Inc and Hay Plains Day Care
 - i. Hay Primary School, Lachlan St
 - j. Retirement Village, Murray St
 - k. Hay Hospital, Murray St
 - l. Ambulance Station, Murray St
 - m. Hay SES Local Headquarters, Dunera Way
8. Marginally higher ground is located in the northern section of Hay around the Hospital and former railway station offering opportunities for temporary assembly.
9. Dwellings are located outside the levees with frontages on the river between Leonard St and the Lions Park, between Orson St. and Moppett St., and between Lindsay St. and Harrison St. These areas are fairly high, but still flood liable.
10. Flooding of the Lachlan Street bridge approaches outside of the levees may result in the isolation of South Hay from Hay.
11. Although the flood of 2012 did not result in complete isolation of the town, this could potentially occur in a larger flood event with isolation lasting many days and requiring extensive resupply operations to be conducted.
12. About 50 properties located along the Murrumbidgee River in either direction from Hay are outside the levee and are prone to flooding at different heights. Isolation is also a consideration with some of these dwellings.

Booligal

13. Fifteen houses, a shop and a hotel are located close to the Lachlan River and could be flooded by an extreme flood. As a result of such an event Booligal is likely to become isolated, possibly for weeks, requiring resupply.

Maude

14. Maude, containing approximately 15 homes and a caravan park has a minor levee on its southern side along the right bank of the Murrumbidgee River. The village was not inundated during the 2012 event, but it is not expected that this levee could hold out an extreme flood and over-topping would affect all properties. Maude would likely become isolated, requiring resupply.

Rural Areas

15. Very large tracts of grazing land can be inundated by flooding from the Lachlan and Murrumbidgee rivers, and by the Mirrool Creek. Stock must be removed, and property owners must prepare for isolation. In the winter of 1990, some properties were isolated for a period of months as a result of repeated flooding on the Lachlan River. Most individual farm dwellings are on high ground or have levee protection, however, evacuations may still be necessary in large floods.

Road Closures

16. Roads known to be susceptible to flooding include:
 - a. Sturt Hwy: at the Gum Creek crossing 25 kilometres east of Hay, and at the Bungah Creek crossing 8 kilometres east of Hay.
 - b. Mid Western Highway: 4 kilometres east of Hay in a severe Murrumbidgee River flood of the magnitude of the 1956 event, and further to the north-east in the Carrathool Council area by flooding of Mirrool Creek.
 - c. Cobb Hwy: 10 kilometres north of Hay at a causeway, 10 kilometres south of Booligal by the Mirrool Ck, 1 kilometre north of Booligal by Cabbage Garden Creek, and further north by the Merrowie and Merrimajeel Creeks. Access from Booligal to Hay and Griffith could be cut.
 - d. Hay-Maude Rd: 20 kilometres west of Hay by the Murrumbidgee River.
 - e. Maude-Moulamein Rd: south of Maude by Fiddlers Creek.
 - f. Booligal-Hillston Rd: 15 kilometres north/east of Booligal by the Lachlan River.

SES RESPONSE ARRANGEMENTS FOR HAY SHIRE

Volume 3 of the Hay Shire Local Flood Plan

Last Update: June 2007 (amended October 2012)

ANNEX C - GAUGES MONITORED BY THE HAY SES LOCAL HEADQUARTERS

Gauge Name	Type	AWRC No	Stream	Flood Classification		
				Min	Mod	Maj
Narrandera*‡	Auto	410034	Murrumbidgee	6.7	7.3	8.2
Darlington Point*‡	Auto	410021	Murrumbidgee	5.5	7.0	7.3
Carrathool*‡	Auto	410078	Murrumbidgee	7.0	7.5	8.5
Hay*‡	Manual	410002	Murrumbidgee	6.5	7.5	8.0
Hay (Weir)	Auto	410136	Murrumbidgee			
Maude (Weir)	Auto	410040	Murrumbidgee			
Hillston (Weir) *	Auto	412039	Lachlan	2.4	2.8	3.0
Booligal (Weir)	Auto	412005	Lachlan	2.4		
Corrong	Auto	412045	Lachlan			

Notes:

1. The Bureau of Meteorology provides flood warnings for the gauges marked with an asterisk (*).
2. SES Local Flood Advices are provided for the gauges marked with a single cross (†).
3. The SES holds a Flood Intelligence Card for the gauges marked with a double cross (‡).

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

The Murrumbidgee SES Region Headquarters distributes SES Flood Bulletins and other flood related information (including Flood Warnings) to the following regional media outlets, as appropriate:

Television Stations:

Station	Location
WIN Television	Griffith/Wagga Wagga
Prime Television	Wagga Wagga
Southern Cross Television	Canberra
SBS Television	Melbourne
ABC Television	Melbourne

Radio Stations:

Station	Location	Frequency	Modulation
2RG	Griffith	963	AM
ABC Riverina	Wagga Wagga	675	AM
ABC Riverina	Wagga Wagga	88.1	FM
2WG	Wagga Wagga	1152	AM
Star FM	Griffith	99.7	FM
2QN	Deniliquin	1521	AM
2 Hay FM	Hay	92.1	FM

Newspapers:

Name	Location
The Riverine Grazier	Hay

Other Agencies:

All agencies listed under this Plan and the Hay Local Displan are to receive copies of SES Flood Bulletins, as appropriate.

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

Evacuation Warning for []

Date/Time of Issue: []

Authorised By: []

The Bureau of Meteorology has predicted a flood level of [] metres at [] (*place*) at [] (*time*). This means that the following area(s) may be inundated [].

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

To prepare for evacuation, you should:

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

If evacuation is necessary:

- Turn off the electricity, gas and water.
- Take three days' supply of clothes with you.
- If you have a car, drive to the evacuation centre at [] (*specify route if appropriate*).
- If you don't have a car special transport will also be provided on request if necessary, telephone [].
- So that you can be accounted for, it is important that you register at the evacuation centre.
- After registering, you may go to the house of a friend or relative. Alternatively, accommodation will be arranged for you.
- The Police will provide security for your property while you are away.

ANNEX F - EVACUATION ARRANGEMENTS FOR THE HAY SHIRE COUNCIL AREA

Background

1. The NSW SES, as per the provisions of the NSW Disaster Plan, is the designated Combat Agency responsible for controlling floods and coordinating the rescue, evacuation and welfare of affected communities.
2. During large floods evacuations may be required from the townships of Hay, Booligal and Maude, and/or from rural areas within the Shire.
3. In instances where floods are not considered likely to threaten the Hay levees, arrangements would be made for persons needing to evacuate from villages and rural areas to be moved to Hay to be sheltered.
4. Whilst many residences on the flood plain have floor levels likely to remain above all but the most extreme floods, these buildings cannot always be considered safe refuges because of likely water supply, sewerage and telephone system failure. Residents of these building may therefore need to evacuate when severe floods are predicted so as to avoid the necessity for later operations to rescue them.
5. In their Hay Levee Rehabilitation Project (2005) report, consulting firm Patterson Britton & Partners forecast that if the levee systems protecting Hay were to fail during a 1956 type flood, that 299 residential properties and 51 commercial properties in the town and 98 residential properties and 6 commercial properties in South Hay would be flooded above floor level. Subsequent modelling carried out by wmaWater as part of the Hay Town Levees–Hydraulic Assessment provided updated data, including a Peak Flood Velocity Map which provided a graphical assessment of the likely extent of inundation should this scenario occur. A copy is reproduced in this Plan as Map 5.
6. For floods which are anticipated to overtop or breach the Hay and South Hay levees it may be necessary to evacuate the entire community of about 2445 residents. Where this is necessary, and subject to the prevailing flood situation elsewhere within the region, the town's population would likely be evacuated to Griffith. Should this be unsuitable, alternate location(s) would be determined. It is likely that several days warning time would be available to organise and conduct an evacuation of Hay.
7. In preparation for the March 2012 flood, temporary works were carried out by the Hay Shire Council to raise both the Hay and the South Hay levee's to a level which it felt would hold out a predicted flood peak of 9.0 metres. In the absence of documented engineering advice certifying that the levees could be relied upon to hold out a flood of this height the SES, as a precaution to protect life and property, issued an Evacuation Order for areas of the town expected to be

inundated in the event of a levee breach. The levee held, successfully prevented the eventual flood peak of 8.99m from damaging property protected behind it.

8. Additional flood inundation forecast mapping has been commissioned following the 2012 event which will assist with decisions to determine the extent and need for future evacuations.

Arrangements

9. **Control.** During floods, evacuations will be controlled by the NSW SES. Small-scale evacuations will be controlled by the Hay SES Incident Controller. Should the evacuation operation escalate beyond the capabilities of local resources, control may be handed over to the Murrumbidgee SES Incident Controller. In the case of a large scale evacuation of Hay the evacuation operation will be controlled by the Murrumbidgee SES Incident Controller.
10. **Conduct.** Evacuations will be controlled by the SES Incident Controller and conducted in five phases:
 - a. Phase 1 - Decision
 - b. Phase 2 - Warning
 - c. Phase 3 – Withdrawal
 - d. Phase 4 – Shelter
 - e. Phase 5 – Return
11. **Supporting agencies** with responsibilities to assist with evacuation tasks are outlined in Part 1 of this Plan
12. **Hay Hospital** is located north of Murray Street upon higher ground and would likely only experience over floor inundation in a very extreme event. However should the main levee fail during a flood equivalent to that of 1956, the hospital may be affected by loss of some essential services. Loss of essential services that could result in evacuation of the Hospital include loss of sewerage, telecommunications, and water (for over 24 hours). The Hospital has an emergency generator that would need additional fuel supply after 24 hours.

If evacuation of the hospital is deemed necessary it will be coordinated by NSW Health. NSW Health will utilise MLHD Patient Transport Vehicles wherever possible to relocate the Hay Hospital infirm, engaging ASNSW only when clinically indicated treatment is required en-route.

Emergency Department Services would be maintained while the community or emergency services remained in the town, unless over floor flooding of the Hospital occurred.

Decision

13. **The decision to evacuate.** The responsibility for issuing any general evacuation order during flooding rests with the SES's 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 normally only be made after consultation with the Local Emergency Operations Controller, the Local Emergency Management Committee, the Shire Council and the Murrumbidgee SES Region Controller.
14. **When evacuation should occur.** As far as possible, evacuation will be carried out before inundation occurs.
15. **Self-motivated evacuation.** Some people will make their own decision to evacuate earlier and move to alternative accommodation using their own transport. These evacuees will be advised, via the media, to inform the Police or SES of their evacuation and their temporary address.
16. **Evacuation triggers.** The following conditions are triggers for evacuation.
 - a. **Failure of Essential Services.** The failure of public utilities such as sewerage, power, telephones and water pose a significant health risk to residents on the floodplain or in flood affected areas. In the event of any or all of these systems failing or potentially failing, the need for evacuations will be discussed with the members of the LEMC.
 - b. **Flooding affecting properties.** Evacuations are to occur if it is considered likely that properties will be flooded above floor level.
 - c. **Prolonged Isolation.** When prolonged isolation is expected persons who are unsuited for living in isolated areas will be encouraged to evacuate.
 - d. **Potential Levee Failure/Overtopping.** The levees protecting Hay and South Hay were initially constructed by Council as a result of the flood threats in 1956 and 1974, and have subsequently had temporary work carried out to raise them in the face of the 2010 and 2012 floods. This work successfully protected the town against both events. Detailed surveys conducted by registered surveyors in 2010/2011 (prior to the temporary work to raise the crest in 2012) revealed the lowest points of both the Hay and South Hay levees to be 90.4m AHD, equivalent to a reading of 8.93m on the town gauge. Allowing 0.5m freeboard from the crest, as recommended by the PWD in their Audit of the Hay Levees (1991), a prediction by the Bureau of Meteorology for a flood peak at or above a height of 8.43m at Hay is agreed to be the appropriate trigger point for consideration to be given to a full or partial evacuation of Hay.

Phase 2 – Warning

17. As soon as possible after the decision to evacuate is made, the Hay SES Incident Controller will issue evacuation warnings/orders to the ‘at risk’ residents advising them what to do before and during evacuations.
18. **Content of Evacuation Warnings.** A template guide to the content of evacuation warning messages is at Annex E. These may be disseminated, as appropriate, by one or more of the following means:
 - a. Radio, Television and Newspaper outlets (listed in Annex D).
 - b. Door-knocks by emergency service personnel.
 - c. Public address systems from emergency service vehicles.
 - d. Telephone.
 - e. Two-way radio.
 - f. Inclusion in SES Flood Bulletins.
19. **Doorknocking.** Field teams conducting doorknocks will record and report the following information back to the Operations Centre:
 - a. Addresses and locations of houses doorknocked and/or evacuated.
 - b. The number of occupants.
 - c. Details of support required (such as transport, medical evacuation, assistance to secure house and/or property and raise or move belongings).
 - d. Details of residents who refuse to comply with the evacuation order.
20. **Refusal to evacuate.** Field teams should not waste time dealing with people who are reluctant or refuse to comply with any evacuation order. These cases should be referred to the Local Emergency Operations Controller who will arrange for Police to ensure their evacuation when so required.

Phase 3 – Withdrawal

21. **Introduction.** Withdrawal involves the actual removal of the community/individuals from dangerous or potentially dangerous areas to safer areas.
22. It may be necessary for the entire population of Hay to be evacuated to Griffith. The residents of Maude and Booligal may need to be evacuated to Hay. If Hay is likely to be flooded, Maude and Booligal residents are to be evacuated to Griffith.

23. **Movement.** Evacuees are to be encouraged to move using their own transport where possible. The Hay SES Incident Controller will arrange transport for people without their own vehicles. Where evacuations routes have been flooded, it may be necessary to transport evacuees by flood rescue boat, aircraft and/or high clearance vehicle.
24. **Phasing.** The most vulnerable evacuees are to be given priority in their movement to shelter.
25. **Evacuation of Hay.** Evacuations from Hay to Griffith are to occur along the Mid-Western Highway and Kidman Way. This route may become affected by riverine flooding or localised flooding. Other routes do exist, however, their flood liability is uncertain. Before any evacuation takes place the status of the possible routes should be assessed.
26. Where evacuation routes have been flooded it may be necessary to ferry evacuees across flooded sections using flood rescue boats, aircraft and/or high clearance vehicle. Public transport such as buses would be required to support operations by providing the movement of evacuees over non-flooded road sections. In this scenario an assembly point will be nominated for evacuees to assemble to be transported by alternative means. If alternative transport is to be used from Hay the Hay Showgrounds could be used as the assembly point. Helicopters can land at this location.
27. **Evacuation of Maude.** Evacuees are to assemble at the Maude Hotel, from where they will be transported to Hay, Griffith or an alternate suitable location.
28. **Evacuation of Booligal.** Evacuees are to assemble at the Booligal Hotel, from where they will be transported to Hay, Griffith or an alternate suitable location.
29. **Animals.** 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. The Department of Primary Industries will make separate arrangements for the evacuation and care of companion animals.
30. **Transport and storage.** Transport and storage of furniture from flood threatened properties will be arranged if time and resources permit.
31. **Security.** The NSW Police will provide security for evacuated areas.
32. **Aircraft Management.** Arrangements for the management of aircraft are detailed in Section 3.16 of this Plan.

Phase 4 – Shelter

33. **Evacuation centres.** The purpose of an evacuation centre is to meet the immediate needs of victims. Evacuees will be advised which Evacuation Centre they should attend. If the scenario involves levee overtopping and the need for

evacuation is to Griffith, then evacuation centres are identified in the Griffith Local Displan.

34. The Griffith SES Local Controller will coordinate the reception of evacuees from Hay if evacuation from Hay to Griffith needs to occur.
35. If an evacuation centre needs be established in Hay for residents (including those from the communities of Maude and Booligal) living outside of the levees, then an evacuation centre can be established at the Hay War Memorial Hall in Lachlan Street. An alternate evacuation centre location is the Hay War Memorial High School in Pine Street. (Note: Both of these are within WMA's flood footprint, though floor levels are expected to be above inundation.)
36. **Action on arrival.** On arrival at evacuation centres, evacuees will be:
 - a. registered;
 - b. medically checked, if necessary; and
 - c. provided with their immediate welfare needs.
37. **Registration.** The NSW Police will ensure that all evacuees are registered on arrival at the designated evacuation centres.
38. **Animal shelter compounds.** Animal shelter compounds will be set up for the domestic pets and companion animals of evacuees. These facilities will be coordinated by the Department of Primary Industries.

Phase 5 – Return

39. Once it is considered safe to do so, the Hay SES Incident Controller will authorise the return of evacuees to their normal or alternative place of residence. This decision will be made in consultation with appropriate officers in regard to matters such as the electrical safety of buildings.
40. The return will be controlled by the Hay SES Incident Controller and may be conducted, at his/her request, by the Recovery Coordinating Committee.

ANNEX G - RESUPPLY REQUIREMENTS AND OPERATIONS FOR THE HAY SHIRE COUNCIL AREA

BACKGROUND

1. During periods of flooding many rural properties and the communities of Hay, Maude and Booligal can become isolated requiring resupply. The duration of isolation can last between several days to several weeks depending upon the severity of flooding and its location.

ARRANGEMENTS

Control

2. During floods, resupply of isolated communities and properties will be controlled by the NSW State Emergency Service (SES). Small-scale resupply operations will be controlled by the Hay SES Incident Controller. Should resupply operations escalate beyond the capabilities of local resources control may be handed over to the Murrumbidgee SES Incident Controller.

Conduct

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

Tasks

4. Hay SES Incident Controller
Coordinate the resupply of isolated communities and properties.
5. Department of Family & Community Services
Provide welfare services for flood affected people.
6. NSW Rural Fire Service
Assist the SES with resupply operations.

Concept of Operations

7. The normal mode of resupply will be maintained for as long as practicable. The main supply routes will be kept open to essential and emergency vehicles for as long as it is safe to do so. Once these routes are closed (either by the road owner, the Police or the SES) then the delivery of essential foodstuffs, fuel, urgent medical supplies and stores to the Council area will be coordinated by

the Murrumbidgee SES Region Headquarters using aircraft coordinated from Wagga Wagga.

Normal Supply Arrangements

8. Hay businesses typically obtain their supplies from Griffith, Melbourne, Canberra or Sydney.

Resupply Procedures

9. **Pre-Warning of Isolation.** When flood predictions indicate that areas are likely to become isolated, the Hay SES Incident Controller will advise businesses and rural residents that they should stock up. Rural residents need to ensure they have an adequate supply of high usage non-perishable items, pet food, fuel, water and essential medications. Rural residents can be advised by telephone, doorknock or radio.
10. **Resupply of Isolated Towns and Villages.** When isolation occurs, storekeepers will be expected to place orders on suppliers where they have a line of credit and to instruct those suppliers to package their goods and deliver them to loading points designated by the SES. Similarly, essential services will make arrangements to acquire their resupply needs from normal sources and have the supplies delivered to designated loading points.
11. The SES may establish a vetting committee to ensure that only essential goods are ordered. The committee may consist of representatives from the SES, Hay Shire Council, Police, F&CS and the Chamber of Commerce. The committee will ensure that businesses requesting supplies are not using the flood as a means of restocking free of charge and also that load space in resupply vehicles and aircraft is optimally used.
12. Where supplies are not available within the council area, the Hay SES Incident Controller may request them through the Murrumbidgee SES Region Headquarters.
13. The SES is prepared to deliver mail to isolated communities but may not be able to do so according to Australia Post timetables.
14. **Resupply of Isolated Properties** is a common requirement during floods. Property owners may call their suppliers direct or place their orders with the Hay SES, through F&CS, or through their friends. The principles to be applied when planning for the resupply of isolated properties are:
 - a. The SES will coordinate resupply and establish a schedule.
 - b. F&CS will liaise with the SES concerning property holders who place orders with them. They will include people in dire circumstances who receive resupply at no cost. F&CS has a well developed system for this situation, including a standard list of approved resupply items.

- c. If a property holder seeks resupply from the SES and claims to be, or is considered to be, in dire circumstances, he/she is to be referred to F&CS.
 - d. Local suppliers will liaise with the SES regarding delivery of resupply items to the designated loading point.
 - e. Local suppliers are responsible for packaging resupply items for delivery.
15. The outline of the resupply system for isolated properties is represented in Figure 1.

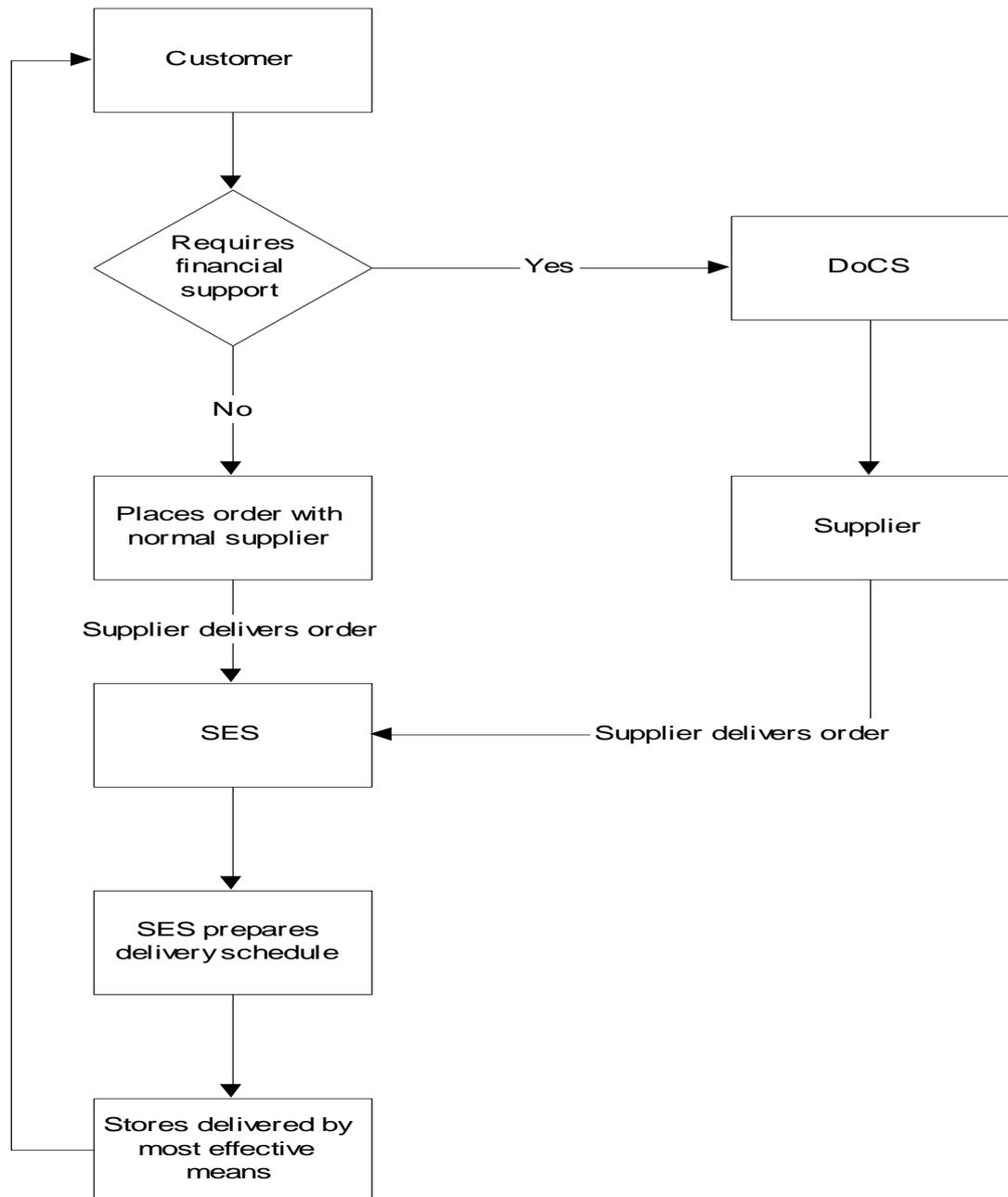


Figure 1 Outline of resupply system for isolated properties.

16. **Personnel Movement.** Where possible, the SES will assist isolated communities and properties with the movement of people to and from isolated areas.
17. **Method of Resupply.** Depending upon the extent of flooding and its impact on the road system, resupply will be conducted using high clearance vehicle, SES flood rescue boat, fixed wing or rotary wing aircraft.
18. **Air Resupply.** If air resupply is necessary the Hay SES Incident Controller will liaise with the Murrumbidgee SES Incident Controller who will make arrangements with the SES State Headquarters for air resupply. A loading point for air resupply can be established at Griffith airport.
19. **Refrigeration** for perishable goods can be provided by refrigerated trailers.
20. **Distribution Points:**
 - a. Hay – Hay Showgrounds
 - b. South Hay – Hay Airport
 - c. Maude – Maude Hotel
 - d. Booligal – Booligal Hotel

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

Background

1. There are two Caravan Parks located at Hay. The Hay Caravan Park is outside of the levee and is located north of the Sturt Highway between Miller and Boon Streets. The Hay Plains Holiday Park is inside the South Hay levee, located at 4 Nailor Street.
2. There is one small Caravan Park located at Maude. It is on high ground on the north side of the Post Office Hotel in Yang Yang Street, and is not flood liable for other than a very extreme flood.

Evacuation of Occupants and Relocation of Vans

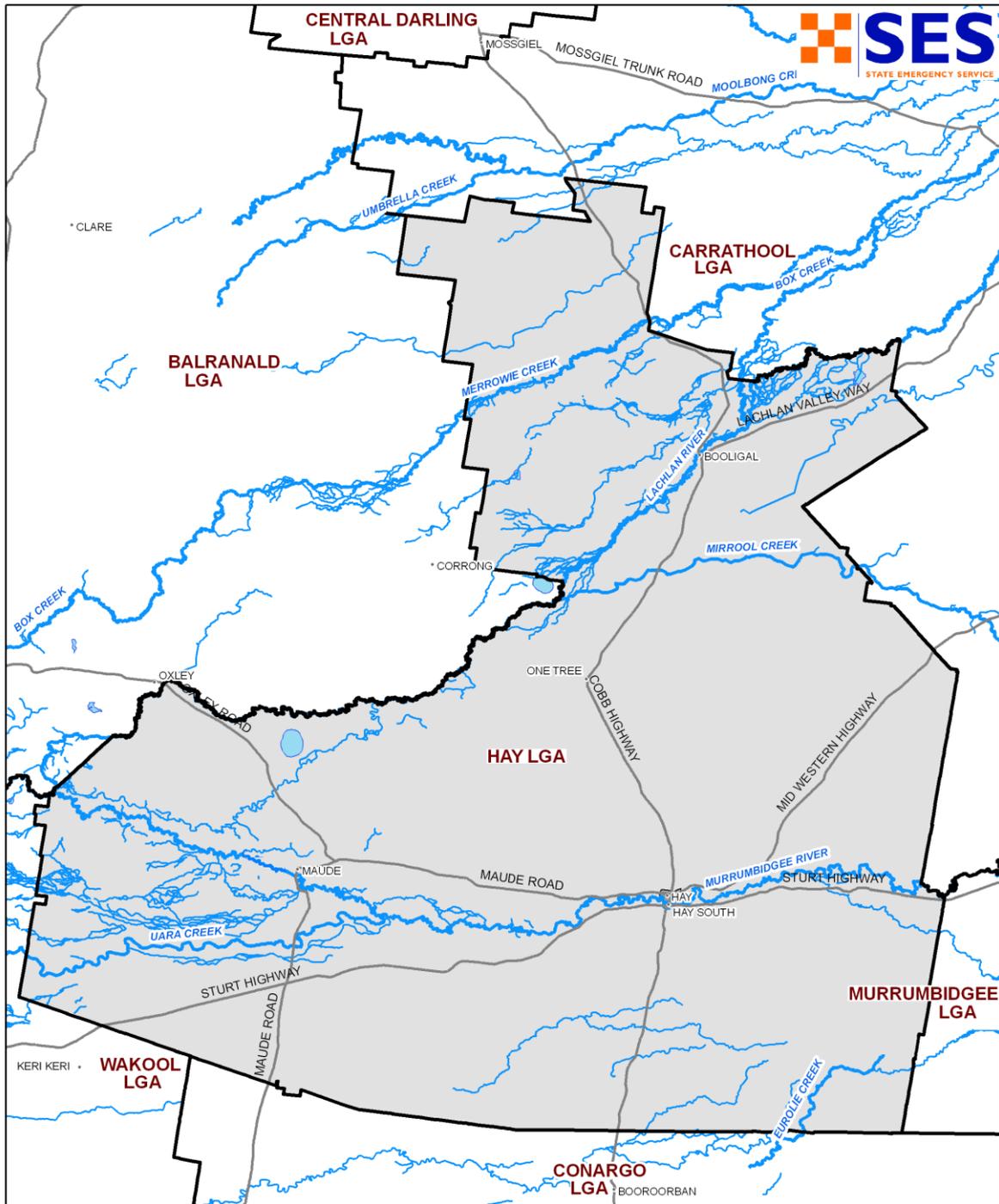
3. When an evacuation order is given for a Caravan Park the following guidelines apply:
 - a. Occupiers of any non-movable vans should:
 - Secure their vans by tying them down to prevent flotation.
 - Isolate power to their vans.
 - Collect personal papers, medicines, a change of clothing, toiletries and bedclothes.
 - Lift the other contents of their vans as high as possible within the van.
 - Move to a designated evacuation centre
 - b. Where possible, vans that can be moved will be relocated by their owners. Park managers will arrange for the relocation of mobile vans whose owners do not have a vehicle. Council and SES personnel will assist if required and resources permit. Vans are to be moved to the Hay Showground, or to an alternative site if so designated.
4. Occupants of vans that are being relocated should go to a designated evacuation centre if they have their own transport. Those without their own transport are to report to the caravan park office.
5. Caravan park managers will:
 - a. Ensure that their caravan park is capable of being evacuated
 - b. Advise the Hay SES Incident Controller of:

- The number of people requiring transport.
 - Details of any medical evacuations required.
 - Whether additional assistance is required to effect the evacuation.
- c. Check that no people remain in non-removable vans that are likely to be inundated.
- d. Inform the Hay SES Incident Controller when the evacuation of the caravan park has been completed.
- e. Provide the Hay SES Incident Controller with a register of people that have been evacuated.

Return of Occupants and Vans

6. The Hay SES Incident Controller will advise when it is safe for the caravan parks to be re-occupied.
7. Vans will be towed back to the caravan parks by van owners or by vehicles and drivers arranged by the park managers. SES personnel will coordinate assistance if required and available.

MAP 1 – HAY LOCAL GOVERNMENT AREA



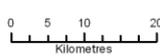
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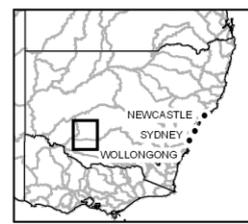
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 SES State Headquarters.

Hay Shire Council LGA



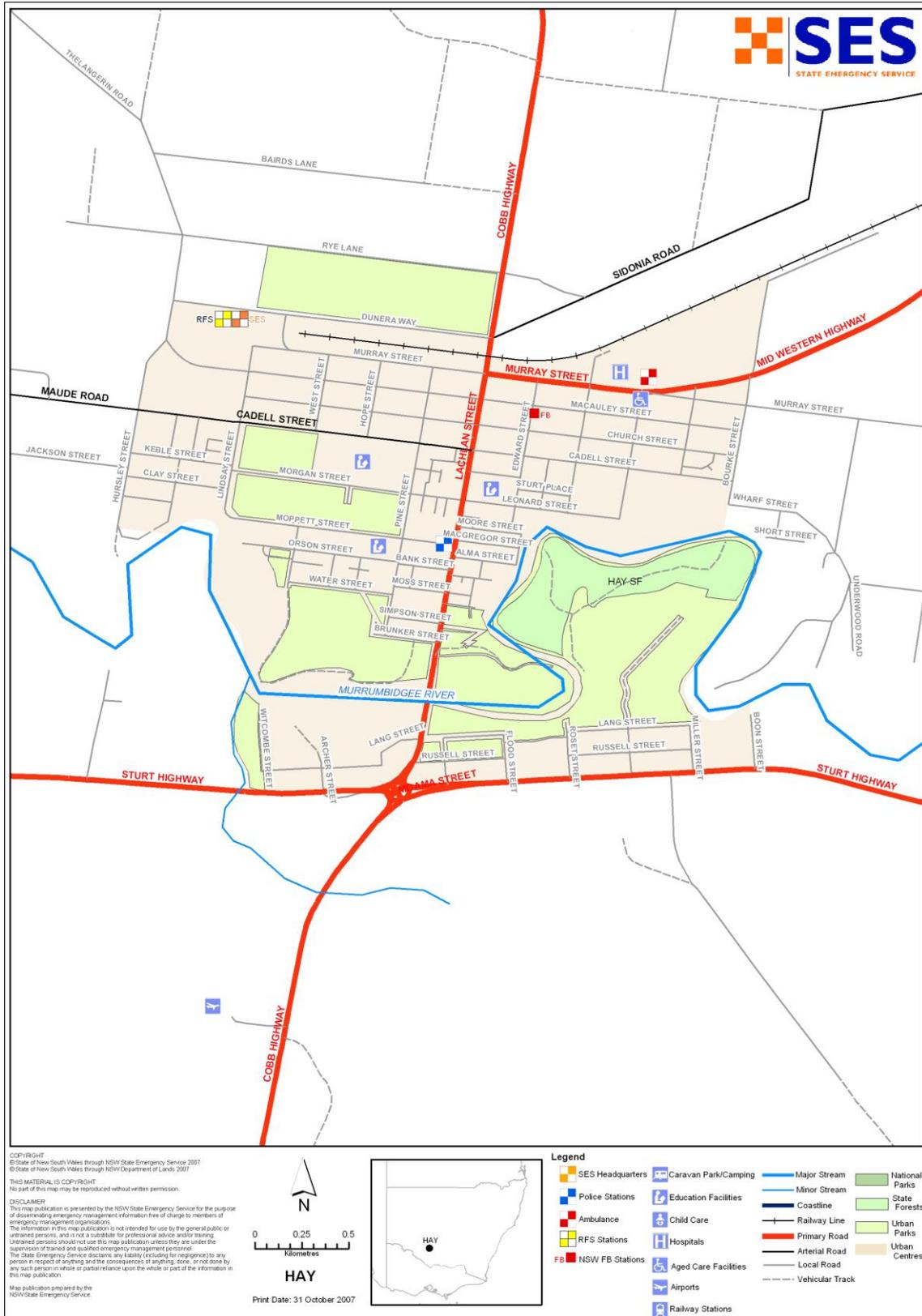
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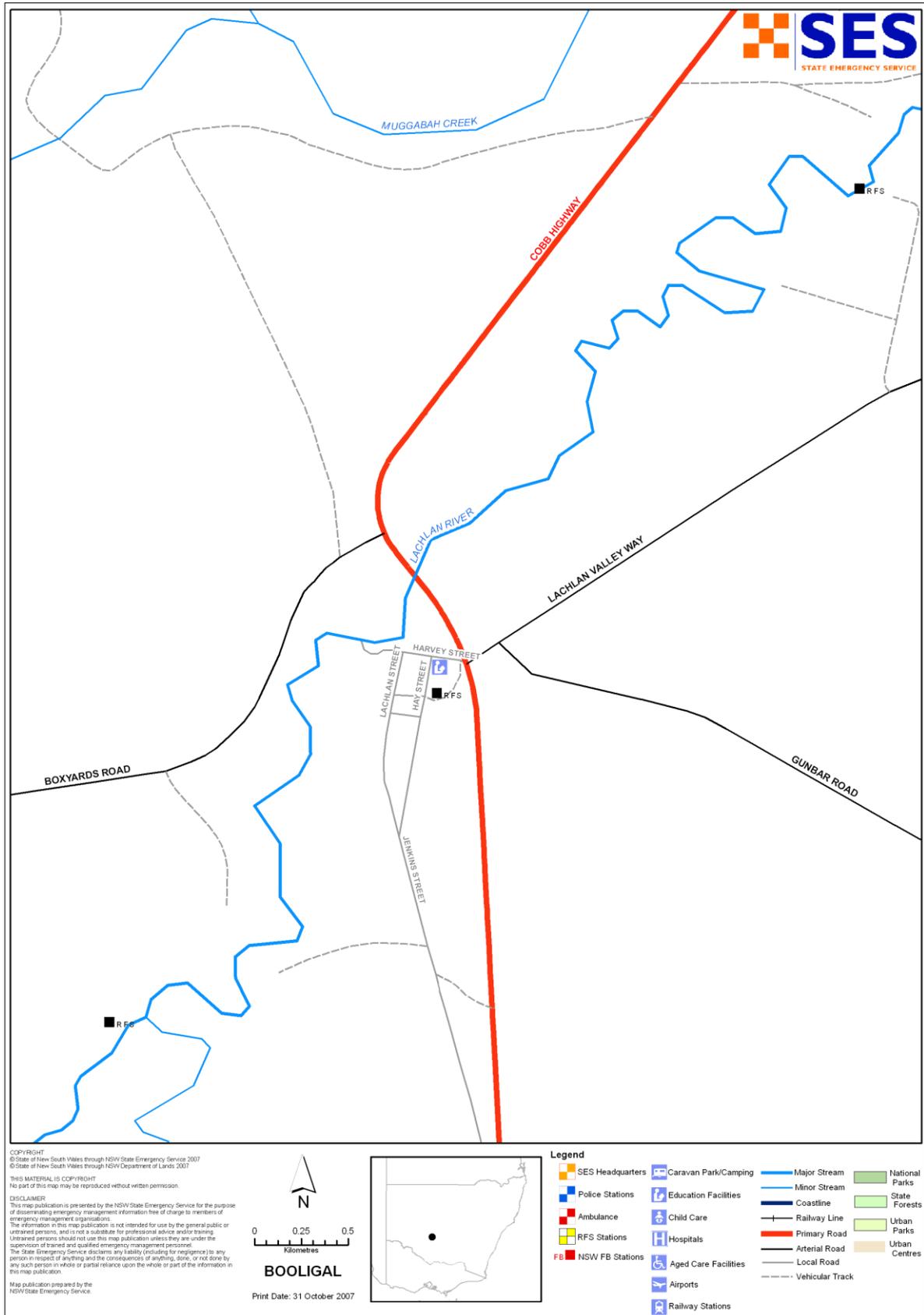
Legend

- LGA Boundary
- Major River
- Minor River
- Major Roads

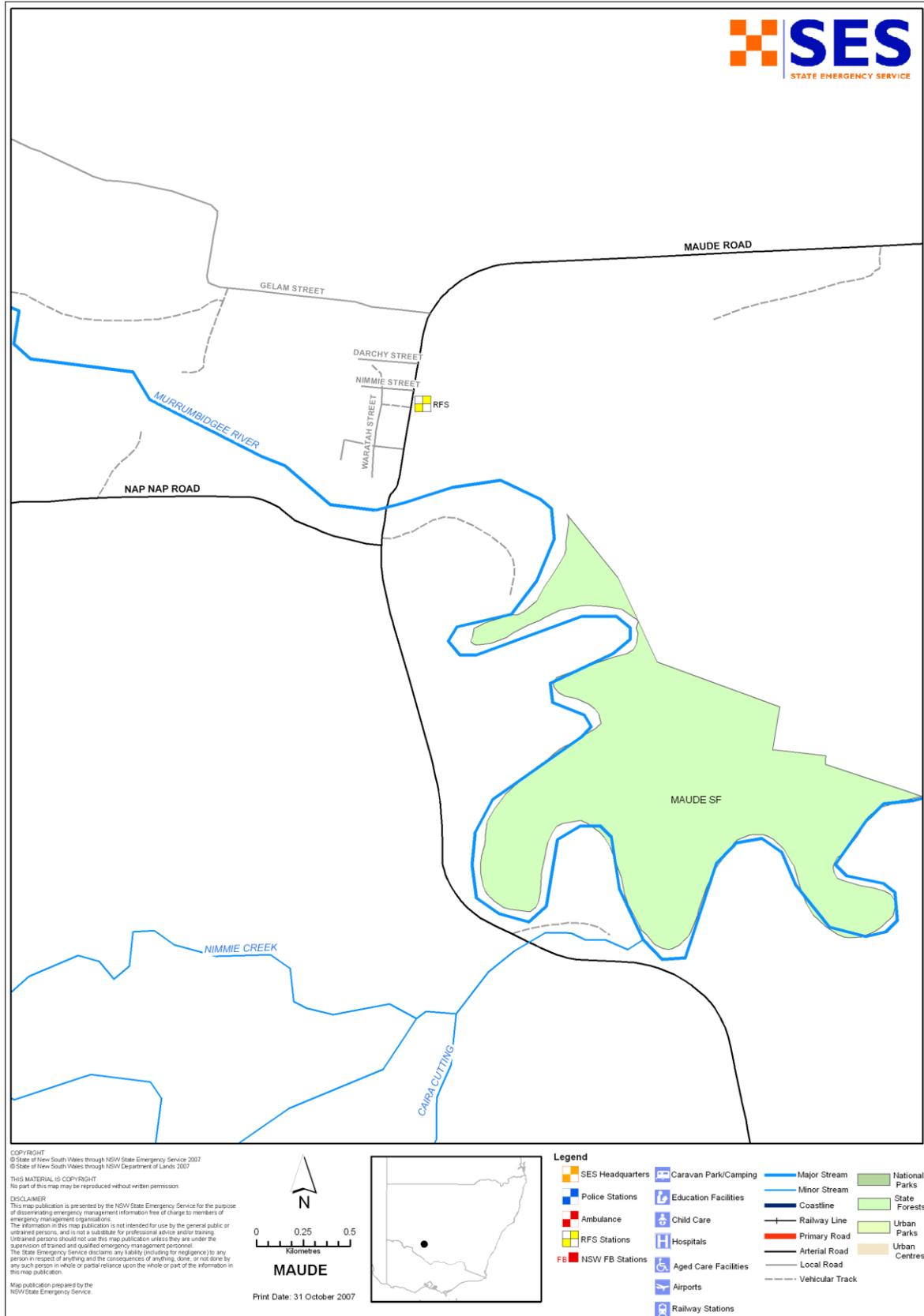
MAP 2 – HAY TOWN AREA



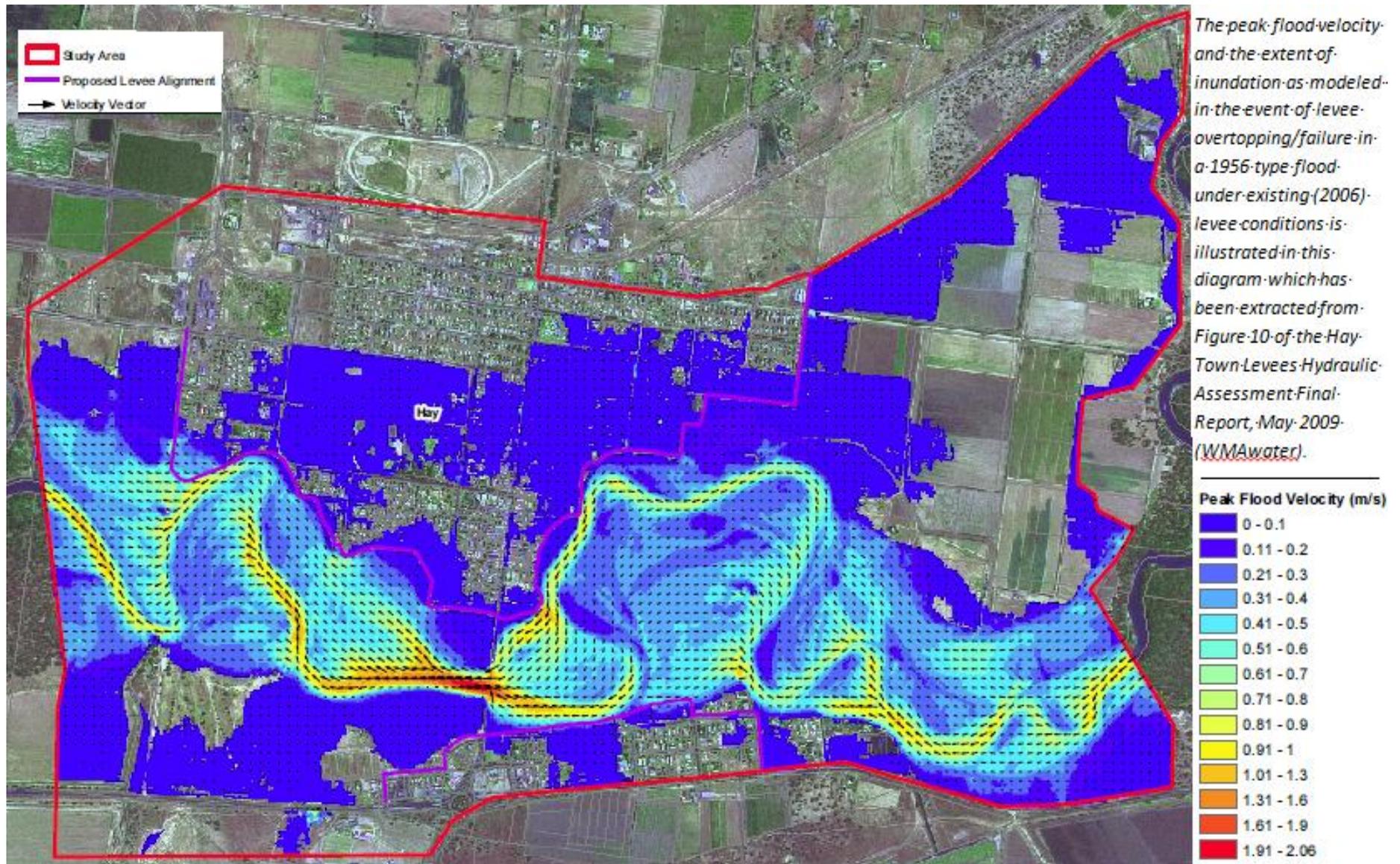
MAP 3 – BOOLIGAL VILLAGE AREA



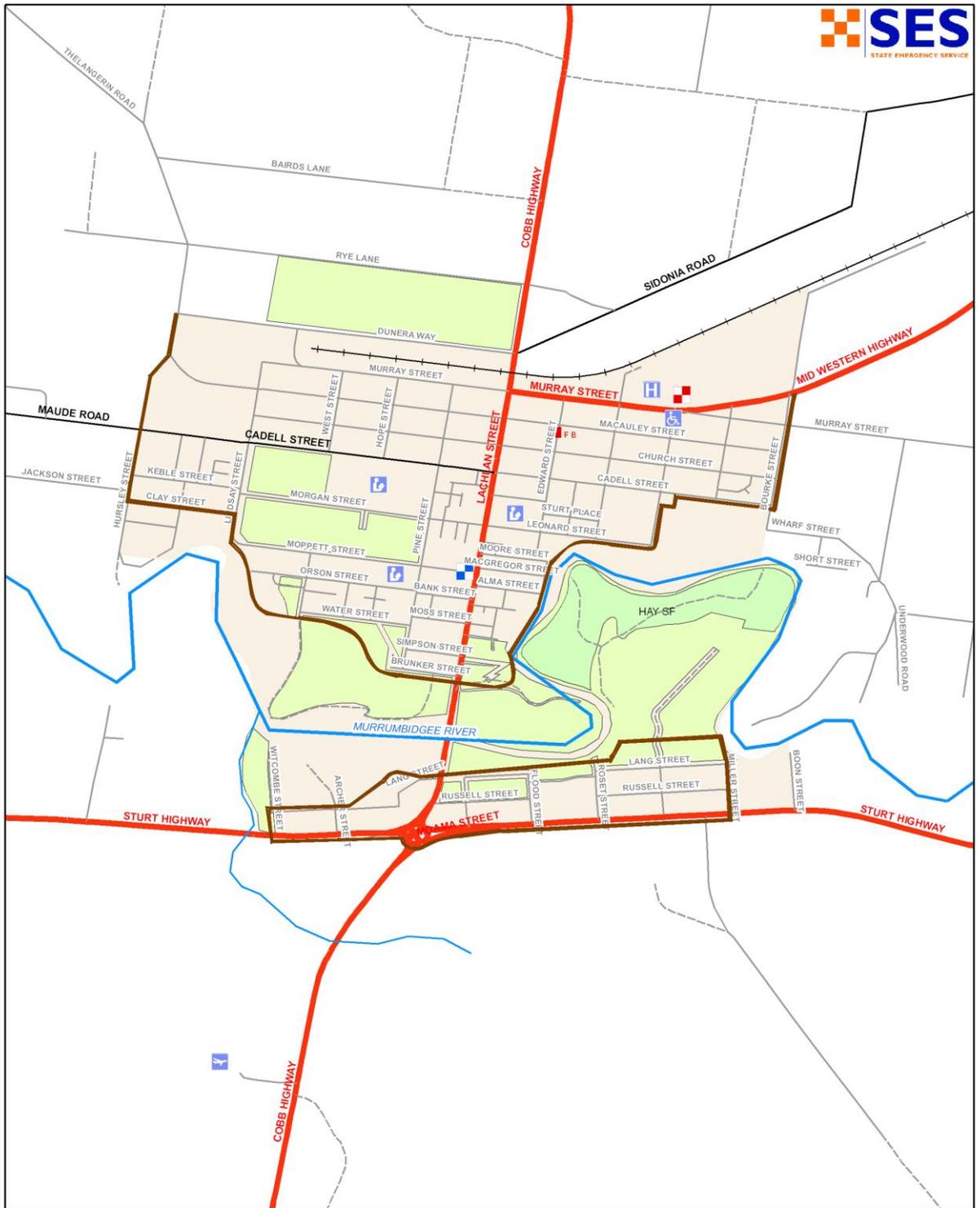
MAP 4 – MAUDE VILLAGE AREA



MAP 5 – PREDICTED INUNDATION OF HAY IN EVENT OF LEVEE FAILURE



MAP 6 – LEVEES AT HAY AND SOUTH HAY



MAP 7 – FLOOD BEHAVIOUR AT HAY

