



**BERRIGAN SHIRE
LOCAL FLOOD PLAN**

**A SUB-PLAN OF THE
BERRIGAN SHIRE LOCAL DISASTER PLAN
(DISPLAN)**

Chair, Local Emergency
Management Committee

Berrigan SES Local Controller

JUNE 2009 EDITION

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Berrigan Shire Council Technical Services Department	1
NSW Fire Brigades, Berrigan, Finley, Tocumwal.....	1 each
Rural Fire Service, Corowa/Berrigan Zone	1
Ambulance Service of NSW, Berrigan, Finley.....	1 each
Australian Red Cross Society, Tocumwal.....	1
Volunteer Rescue Association, Tocumwal Rescue Squad	1
Country Energy.....	1
Telstra	1
Department of Primary Industries, Murray/Murrumbidgee Region	1
Department of Community Services, West Murrumbidgee Region.....	1
Department of Environment and Climate Change, Deniliquin.....	1
Roads and Traffic Authority, Finley	1
Evacuation Centres	1 each
Hospitals	1
Schools.....	1 each
Council Library	1
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LIST OF ABBREVIATIONS

The following abbreviations have been used in this plan:

AEP	Annual Exceedance Probability
AHD	Australian Height Datum
ARI	Average Recurrence Interval (Years)
ALERT	Automated Local Evaluation in Real Time
AWRC	Australian Water Resources Council
BoM	Australian Government Bureau of Meteorology
CBD	Central Business District
DCF	Dam Crest Flood
DSC	Dams Safety Committee
DISPLAN	Disaster Plan
DECC	Department of Environment and Climate Change
DoCS	Department of Community Services
DSEP	Dam Safety Emergency Plan
DVR	Disaster Victim Registration
GIS	Geographic Information System
GRN	Government Radio Network
HF	High Frequency
IFF	Imminent Failure Flood
PMF	Probable Maximum Flood
PMR	Private Mobile Radio
PMP	Probable Maximum Precipitation
PSTN	Public Switched Telephone Network
RTA	Roads and Traffic Authority
SES	State Emergency Service
SEWS	Standard Emergency Warning Signal
UHF	Ultra High Frequency
VHF	Very High Frequency
VRA	Volunteer Rescue Association
WICEN	Wireless Institute Civil Emergency Network

GLOSSARY

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

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

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

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

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

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.

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

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.

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 liable 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.

Flood Plan. A plan that deals specifically with flooding and is a sub-plan of a Disaster Plan. Flood plans describe agreed roles, responsibilities, functions, actions and management arrangements for the conduct of flood operations and for preparing for them.

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.

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 BoM 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.

Geographic Information System (GIS). A computerised database for the capture, storage, analysis and display of locationally defined information. Commonly, a GIS portrays a portion of the earth's surface in the form of a map on which this information is overlaid.

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 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.

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 streamflow, 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 Berrigan Shire Council area. It covers operations for all levels of flooding within the Council area.

1.2 Authority

- 1.2.1 This plan is issued under the authority of the *State Emergency and Rescue Management Act 1989* and the *State Emergency Service Act 1989*. It has been accepted by the Murray SES Region Controller and the Berrigan Shire Council Local Emergency Management Committee.

1.3 Area Covered By The Plan

- 1.3.1 The area covered by the plan is the Berrigan Shire Council area which includes the townships of Berrigan, Finley, Tocumwal and Barooga.
- 1.3.2 The Council area covers that part of the Murray River from just below the Yarrowonga Weir downstream to a point below the Bullatale Creek off-take. It also includes the off-takes and upper reaches of the Tuppall and Native Dog Creeks.
- 1.3.3 The Council area and its principal rivers and creeks are shown in Map 1.
- 1.3.4 The Council area is in the Murray SES Region and for emergency management purposes is part of the Murray Emergency Management District.

1.4 Description Of Flooding And Its Effects

- 1.4.1 The nature of flooding in the Berrigan Shire Council area is described in Annex A.
- 1.4.2 The effects of flooding on the community are detailed in Annex B.

1.5 Responsibilities

- 1.5.1 The general responsibilities of emergency service organisations and supporting services (functional areas) are listed in the Local Disaster Plan (DISPLAN). 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 **Berrigan SES Local Controller.** The Berrigan SES Local Controller is responsible for dealing with floods as detailed in the State Flood Plan, and will:

- a. Control flood operations. This includes:
 - Directing the activities of the SES units operating within the Council area.
 - Coordinating the activities of supporting agencies and organisations and ensuring that liaison is established with them.
- b. Maintain a Local Headquarters at 1 Jerilderie Street St, Tocumwal in accordance with the SES Controllers' Handbook and the SES Operations Manual.
- c. Ensure that SES members are trained to undertake operations in accordance with current policy as laid down in the SES Controllers' Handbook and the SES Operations Manual.
- d. Develop and operate a flood intelligence system.
- e. Coordinate the development and operation of a flood warning service for the community.
- f. Participate in floodplain risk management initiatives organised by the Berrigan Shire Council.
- g. Coordinate a public education program
- h. Ensure that the currency of this plan is maintained.
- i. Identify and monitor people and/or communities at risk of flooding.
- j. Direct the conduct of flood rescue operations.
- k. Direct the evacuation of people and/or communities.
- l. Provide immediate welfare support for evacuated people.
- m. Coordinate the provision of emergency food and medical supplies to isolated people and/or communities.
- n. 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.
- 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.
 - Moving farm animals.
- p. Assist the Berrigan 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. If SES resources are available, assist with emergency fodder supply operations conducted by Department of Primary Industries.
- s. If SES resources are available, assist the NSW Police Force, RTA and Council with road closure and traffic control operations.
- t. Exercise financial delegations relating to the use of emergency orders as laid down in the SES Controllers' Handbook.
- u. Coordinate the collection of flood intelligence.
- v. Submit Situation Reports to the Murray SES Region Headquarters and agencies assisting within the Council area. These will contain information on:
- Road conditions and closures.
 - Current flood behaviour.
 - Current operational activities.
 - Likely future flood behaviour.
 - Likely future operational activities.
 - Probable resource needs.
- w. Keep the Local Emergency Operations Controller advised of the flood situation and the operational response.
- x. Issue the 'All Clear' when flood operations have been completed.
- y. Ensure that appropriate After Action Reviews are held after floods.
- z. Assist in the establishment and deliberations of the Recovery Coordinating Committee.

1.5.3 Berrigan SES Unit Members:

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

- The management of the Berrigan SES Local Headquarters Operations Centre.
 - Gathering flood intelligence.
 - Flood rescue.
 - Evacuation.
 - Providing immediate welfare for evacuated people.
 - Delivery of warnings and information.
 - Resupply.
 - Levee monitoring.
 - Sandbagging.
 - Lifting and/or moving household furniture and commercial stock.
 - Moving farm animals.
 - 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 operations.

1.5.4 **Ambulance Service of NSW, Berrigan, Finley:**

- a. Assist with the evacuation of elderly and/or infirm people.
- b. Deploy ambulance resources to areas likely to become isolated in consultation with the Berrigan SES Local Controller.

1.5.5 **Australian Government Bureau of Meteorology (BoM):**

- a. Provide Flood Watches for the Murray-Riverina and Murrumbidgee River Basins.
- b. Provide Flood Warnings, incorporating height-time predictions, for the Murray River at Tocumwal (409202), Mulwala (409025), Corowa (409002), and Albury (409001).
- c. Provide severe weather warnings when flash flooding is likely to occur.

1.5.6 Australian Rail Track Corporation

- a. Close and re-open railway lines as necessary and advise the Berrigan SES Local Controller.
- b. Assist SES in the identification of rail infrastructure at risk of flooding and the consequences of infrastructure disruption.

1.5.7 Australian Red Cross Society (Berrigan Shire) (DoCS Community Partner activated by DoCS)

- a. Assist the NSW Police Force with the registration of evacuees at evacuation centres.
- b. Provide personal support at evacuation/recovery centres.
- c. Provide outreach services post event.

1.5.8 Berrigan Shire Council Local Emergency Operations Controller:

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

1.5.9 Berrigan Shire Council Local Emergency Management Officer:

- a. Provide executive support to the Local Emergency Operations Controller in accordance with the Berrigan Shire Council Local Disaster Plan.
- b. At the request of the Berrigan SES Local Controller, advise appropriate agencies and officers of the activation of this plan.

1.5.10 Berrigan Shire Council:

- a. Maintain a plant and equipment resource list for the Council area.
- b. Contribute to the development and implementation of a public education program.
- c. At the request of the Local SES Controller, deploy personnel and resources for flood related activities.
- d. Close and reopen Council roads (and other roads nominated by agreement with the RTA) and advise the Berrigan SES Local Controller, the Police and people who telephone the Council for road information.
- e. Provide filled sandbags to urban and village areas in which flooding is expected.
- f. Assist with the removal of caravans from caravan parks.

- g. Provide back-up radio communications.
- h. In the event of evacuations, assist with making facilities available for the domestic pets and companion animals of evacuees.
- i. Provide for the management of health hazards associated with flooding. This includes maintaining water supply and sewerage systems and removing debris and waste.
- j. Ensure premises are fit and safe for reoccupation and assess any need for demolition.
- k. Establish and maintain floodplain risk management committees and ensure that key agencies are represented on such committees.
- l. Provide flood studies and floodplain management studies to the SES.

1.5.11 Caravan Park Proprietors, Bushlands on the Murray Holiday Park

- a. Prepare a Flood Management Plan for the Caravan Park.
- b. Ensure that owners and occupiers of caravans/units are aware that the caravan park is flood liable and what they must do to facilitate evacuation and van relocation when flooding occurs.
- c. Ensure that occupiers are informed of Flood Warnings and Flood Watches.
- d. Coordinate the evacuation of people and the relocation of moveable vans when floods are rising and their return when flood waters have subsided.
- e. Inform the SES of the progress of evacuation and/or van relocation operations and of any need for assistance in the conduct of these tasks.

1.5.12 Childcare Centres and Preschools:

- a. The following schools and child care centres are to be contacted by the SES in the event of possible flooding:
 - Tocumwal Pre School, Jerilderie Street, Tocumwal
 - Trikki Kids Child Care Centre, Cnr Takari Street and Nangunia Street, Barooga
- b. When notified the schools and childcare centres should:
 - Liaise with the Berrigan SES Local Controller and consider 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 childcare centres.

1.5.13 Wireless Institute Civil Emergency Network (WICEN):

- a. Provide communications assistance.

1.5.14 Country Energy:

- a. Provide advice to the Berrigan SES Local Controller of any need to disconnect power supplies or of any timetable for reconnection.
- b. Clear or make safe any hazard caused by power lines or electrical reticulation equipment.
- c. Assess the necessity for and implement the disconnection of customers' electrical installations where these may present a hazard.
- d. Advise the public with regard to electrical hazards during flooding and to the availability or otherwise of the electricity supply.
- e. Inspect, test and reconnect customers' electrical installations as conditions allow.
- f. Assist the SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.

1.5.15 Department of Community Services (DoCS) Griffith and Deniliquin

- a. Manage evacuation centres.
- b. Provide clothing, accommodation, food and welfare services for flood affected people, including stranded travellers.

1.5.16 Department of Primary Industries, Murray/Murrumbidgee Region:

- a. Coordinate the supply and delivery of emergency fodder.
- b. Provide advice on dealing with dead and injured farm animals.
- c. Provide financial, welfare and damage assessment assistance to flood affected farm people.
- d. Coordinate the operation of animal shelter compound, facilitate for the domestic pets and companion animals of evacuees.

1.5.17 NSW Fire Brigades, Berrigan, Finley, Tocumwal:

- a. Assist with the delivery of evacuation warnings.
- b. Assist with the conduct of evacuations.

- c. Provide equipment for pumping flood water out of buildings and from low-lying areas.
- d. Assist with cleanup operations, including the hosing out of flood affected properties.
- e. Deploy fire resources to areas likely to become isolated, in consultation with the SES Local Controller.

1.5.18 NSW Police Force, Deniliquin LAC:

- a. Assist with the delivery of evacuation warnings.
- b. Assist with the conduct of evacuation operations.
- c. Conduct road and traffic control operations in conjunction with Council and/or RTA.
- d. Coordinate the registration of all evacuees.
- e. Secure evacuated areas.

1.5.19 Private Companies:

Assist with the provision of:

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

1.5.20 Rural Fire Service (RFS), Berrigan/Corowa Zone:

- a. Provide personnel in rural areas and villages to:
 - Inform the Berrigan SES Local Controller about flood conditions and response needs in their own communities, and
 - Disseminate flood information.
- b. Provide personnel and high-clearance vehicles for flood related activities.
- c. Assist with the delivery of evacuation warnings.
- d. Assist 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 cleanup operations, including the hosing of flood affected properties.
- i. Deploy fire resources to areas likely to become isolated in consultation with the Berrigan SES Local Controller.

1.5.21 Rail Corporation New South Wales (RailCorp), CountryLink, VicTrack

- a. Assist with the provision of trains/buses for evacuations, commuting and or re-supply purposes.

1.5.22 Roads and Traffic Authority (RTA):

- a. Close and reopen Newell and Riverina Highways if affected by flood waters and advise the Berrigan SES Local Controller.

1.5.23 School Administration Offices (including the Department of Education and Training, the Catholic Education Office and Private Schools):

- a. Liaise with the SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures.
- b. Pass information to school bus drivers/companies and/or other school principals on expected or actual impacts of flooding.
- c. Assist with the coordination of the evacuations of the following schools:
 - Tocumwal Public School
 - Sacred Heart Catholic School, Tocumwal
 - Barooga Primary School, Barooga
- d. Provide space in schools for evacuation centres where necessary.

1.5.24 Service and Sporting Clubs:

Assist with:

- a. Delivery of evacuation warnings.
- b. Conduct of evacuations.
- c. Lifting and/or moving household furniture and commercial stock.

- d. Sandbagging.
- e. Monitoring of levees.
- f. Relocation of caravans.

1.5.25 State Water (Hume Dam):

- a. Maintain and operate the Dam Failure Warning System for Hume Dam.
- b. Contribute to the development and implementation of a public education program on flooding within the Council area.
- c. Maintain a Dam Safety Emergency Plan and provide copies to the SES.
- d. Provide information on the consequences of dam failure to the SES for incorporation into planning and flood intelligence.

1.5.26 Telstra:

- a. Maintain telephone services.
- b. Repair and restore telephone facilities damaged by flooding.
- c. Provide additional telecommunications support for the Berrigan SES Local and/or Unit Headquarters as required.
- d. Assist the SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.

1.5.27 Transport Services Coordinator:

- a. Arrange transport facilities for evacuations and/or commuting purposes.

1.5.28 Volunteer Rescue Association (VRA), Tocumwal:

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

1.6 Cross-Border Assistance Arrangements

- 1.6.1 Legislative responsibility for emergency management of floods in Victoria lies with the local council. Flood response arrangements for Victorian towns (Barmah, Cobram and Yarrawonga) and properties on the Murray River, adjacent to the Berrigan Shire, are outlined in the Moira Shire Municipal Emergency Management Plan.
- 1.6.2 Any request for out of area assistance by either State response agency will be made in accordance with NSW and Victorian emergency management arrangements and legislation.

PART 2 - PREPAREDNESS

2.1 Maintenance Of This Plan

2.1.1 The Berrigan 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 In any event, the plan is to be reviewed no less frequently than every five years.

2.2 Floodplain Risk Management

2.2.1 The Berrigan SES Local Controller will ensure that the SES:

- a. Participates in floodplain risk management committee activities when those committees are formed.
- b. Consults with the flood prone community about the nature of the flood problem and its management.
- c. Informs the Murray SES Region Headquarters 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 SES will develop and maintain a flood intelligence system.

2.4 Development of Warning Systems

- 2.4.1 The SES will establish and/or maintain a 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

- a. The Berrigan SES Local Controller, with the assistance of the Berrigan Shire Council, the Murray SES Region Headquarters and 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 and schools.
 - c. Publicity given to this Plan and to flood-orientated SES activities through local media outlets, including articles in local newspapers about the flood threat and appropriate responses.

2.6 Training

- 2.6.1 Throughout this document there are references to functions that must be carried out by the members of the Berrigan SES. The Berrigan 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 SES.

2.7 Resources

- 2.7.1 The Berrigan SES Local Controller is responsible for maintaining the condition and state of readiness of SES equipment and the Berrigan SES Local Headquarters.

PART 3 - RESPONSE

3.1 Control

- 3.1.1 The SES is the designated Combat Agency for floods and is responsible for the control of flood operations. This includes the co-ordination of other agencies and organisations for flood management tasks.

3.2 Operations Centres

- 3.2.1 The Berrigan SES maintains an Operations Centre at 1 Jerilderie Street, Tocumwal.
- 3.2.2 The Berrigan Shire Council Emergency Operations Centre is located at Council Chambers at 56 Chanter Street, Berrigan.

3.3 Operational Management

- 3.3.1 Tocumwal is treated as a single sector in the case of evacuation.
- 3.3.2 Barooga is treated as a single sector in the case of evacuation.
- 3.3.3 Rural areas are treated as a single sector in the case of evacuation.

3.4 Liaison

- 3.4.1 At the request of the Berrigan SES Local Controller, each agency with responsibilities identified in this plan will provide liaison (including a liaison officer where necessary) to the Berrigan SES Operations Centre.
- 3.4.2 Liaison officers are to:
- a. Have the authority to deploy the resources of their parent organisations at the request of the Berrigan SES Local Controller,
 - b. Advise the Berrigan SES Local Controller on resource availability for their service, and
 - c. Be able to provide communications to their own organisations.

3.5 Communications

- 3.5.1 The primary means of office-to-office communications is by telephone, computer and facsimile.
- 3.5.2 The primary means of communication to and between deployed SES resources is by SES GRN and/or PMR.
- 3.5.3 All other organisations will provide communications as necessary to their deployed field teams.

3.5.4 Back-up communications are provided as follows:

- a. The Combined Berrigan SES Unit and Tocumwal Rescue Squad (VRA) VHF network.
- b. The Berrigan Rural Fire Service operates a UHF radio network which provides coverage for the Council area and properties with UHF.
- c. WICEN will provide radio equipment and operators as required.

3.6 Start of Response Operations

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

3.6.2 Response operation will begin:

- a. On receipt of a Bureau of Meteorology Preliminary Flood Warning, Flood Warning, Flood Watch.
- b. On receipt of a dam failure alert.
- c. When other evidence leads to an expectation of flooding within the Council area.

3.6.3 Contact with the Bureau of Meteorology to discuss the development of flood warnings will normally be through the Murray SES Region Headquarters.

3.6.4 The following persons and organisations will be advised of the activation of the plan regardless of the location and severity of the flooding anticipated:

- a. Berrigan Shire Council Local Emergency Operations Controller (for transmission to the NSW Police Force Local Area Command Headquarters).
- b. Berrigan SES Unit.
- c. Murray SES Region Headquarters.
- d. Berrigan Shire Council Local Emergency Management Officer (for transmission to appropriate Council officers and departments).
- e. Berrigan Shire Council Mayor.

3.6.5 Other agencies listed in this plan will be advised by the LEMO on the request of the Berrigan SES Local Controller and as appropriate to the location and nature of the threat.

3.7 Flood Intelligence

3.7.1 Sources of flood intelligence during times of flooding are:

a. **Bureau of Meteorology.** The Bureau provides:

- Flood Watches, which give an early appreciation of developing meteorological situations that could lead to flooding. These are normally provided on a whole-catchment basis for the Murray-Riverina and Murrumbidgee River
- Flood Warnings, which include river height readings and height-time predictions. The gauges for which predictions are provided for are listed in Annex C.
- Weather Forecasts warning of potential storm activity including severe weather warnings and severe thunderstorm warnings

b. **Murray SES Region Headquarters.**

The Region Headquarters provides information on flooding and its consequences, including those in nearby Council areas.

c. **Berrigan Shire Council.**

Road closure bulletins.

d. **Hume Dam-Failure Warning System.**

This system provides information on inflows to, outflows from and heights at Hume Dam. This system is operated by the Murray-Darling Basin Commission.

e. **River Murray Water.**

River Murray Water has been established by the Murray-Darling Basin Ministerial Council as an internal business division of the Murray-Darling Basin Commission for the specific purpose of operating and managing the River Murray system.

Weekly river reports containing information on gauge heights and river flows are available online http://www.mdbc.gov.au/rmw/river_information_centre.

f. **Department of Water and Energy, Deniliquin and Albury Office.**

This office advises flow rates and rates of rise for the Murray and Murrumbidgee Rivers. Daily river reports containing information on gauge heights and river flows are available from the website:
<http://waterinfo.nsw.gov.au>

g. **Active Reconnaissance.**

The SES monitors the following problem areas:

- Lower River Road causeways
- Tocumwal river gauge

3.8 Preliminary Deployments

- 3.8.1 When flooding is expected to be severe enough to cut road access to towns, within towns and/or rural communities, the Berrigan SES Local Controller will ensure that resources are in place for the distribution of foodstuffs and medical supplies to the areas that could become isolated.
- 3.8.2 When access between Tocumwal and Finley is expected to be cut, the Berrigan SES Local Controller will advise appropriate agencies so that resources (including sandbags, fire fighting appliances, ambulances, etc.) are deployed to ensure that operational capability is maintained.
- 3.8.3 The SES Local Controller is responsible to arrange for the deployment of people and resources from Finley, Berrigan, Barooga and Tocumwal as required, in advance of any flood crest to patrol, repair or maintain levee systems if required.

3.9 Warnings

- 3.9.1 Warning services operate according to the following arrangements:
- a. The Berrigan SES Local and/or Unit Headquarters:
 - Provides advice to the Murray SES Region Headquarters on current and expected impacts of flooding.
 - Coordinates the delivery of warnings to the community by door-knocking, telephone, mobile public address systems, local radio stations and two-way radio.
 - b. The Murray SES Region Headquarters issues warning information in the form of SES Region Flood Bulletins to:
 - Media organisations and agencies listed in Annex D.
 - Bushlands on the Murray Caravan Park
- 3.9.2 Warnings are provided as follows:
- a. **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 Berrigan SES Local Controller

will advise the Murray SES Region Headquarters which will issue SES Livestock and Equipment Warnings.

- b. **Bureau of Meteorology Flood Watches.** If there are signs of impending floods, Flood Watches will be incorporated in SES Flood Bulletins issued by the Murray SES Region Headquarters.
- c. **Bureau of Meteorology Flood Warnings.** Flood Warnings are issued for the locations detailed in Annex C. On receipt of such warnings, the Berrigan SES Local Controller will:
 - Advise the Berrigan Shire Council and the Berrigan Shire Council Local Emergency Operations Controller.
 - Provide the Murray SES Region Headquarters with information for inclusion in SES Flood Bulletins on the estimated impacts of flooding at the predicted heights.
- d. **Bureau of Meteorology Severe Weather Warnings for Flash Flooding.** 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. These are issued direct to the media by the BoM and incorporated into SES Bulletins.
- e. **Bureau of Meteorology Severe Thunderstorm Warning.** These are issued direct to the media by the BoM.
- f. **SES Local Flood Advices.** The SES may issue Local Flood Advices for the gauges listed in Annex C. These are issued in SES Region Flood Bulletins and/or direct from the Berrigan SES Local Controller via radio broadcast.
- g. **Evacuation Warnings.** The first evacuation warnings issued in the Berrigan Shire Council area can be expected when flooding is predicted to reach or exceed the following conditions:
 - 5.36m on the Tocumwal gauge - Campers at the Forest Camping Area and Murray River beaches must be evacuated.
 - 6.4m on the Tocumwal gauge – Bushlands on the Murray
 - 8.7m on the Tocumwal gauge – Crest height of town levee

A template guide to the content of evacuation warning messages is at Annex E.
- h. **Dam-Failure Warnings.** Special arrangements apply in the case of severe flooding that may have the potential to cause the failure of Hume Dam. Details of these arrangements are described in Annex H.

- i. **Standard Emergency Warning Signal (SEWS).** This signal may be played over radio and television stations to alert communities to Evacuation Warnings, Special Warnings or Dam-Failure Warnings. Approval to use the signal will be obtained by the Berrigan SES Local Headquarters from the Murray SES Region Headquarters.

3.10 Information

- 3.10.1 The Murray SES Region Headquarters issues SES Flood Bulletins to media outlets and agencies on behalf of all SES units in the Region. SES Flood Bulletins contain the following information relating to all Council areas in which flooding is occurring:
 - a. Current warnings, together with indications of the likely impact of flooding at any predicted heights.
 - b. Current flood heights and flood behaviour.
 - c. Details of conditions and closures of main roads.
 - d. Advice on safety matters and means of protecting property.
- 3.10.2 The Berrigan SES Local Headquarters provides a “phone-in” information service for the community in relation to current warnings, river heights, flood behaviour, road conditions and closures of local and main roads and advice on safety matters and means of protecting property.
- 3.10.3 During moderate and major floods, the Berrigan SES Local Controller provides a weekly flood report which is sent to the following papers:
 - a. Southern Riverina News
 - b. Cobram Courier
- 3.10.4 Collation and dissemination of road information is actioned as follows:
 - a. The Berrigan SES Local Controller provides road status reports for main roads in the Council area to the Murray SES Region Headquarters Road Information Cell and to the Deniliquin Police Local Area Command Headquarters. The Road Information Cell obtains information from the Police, Council, RTA and Vic Roads.
 - b. The Murray SES Region Headquarters distributes information on main roads to SES units, media outlets and agencies as part of SES Flood Bulletins.
 - c. The Road Information Cell also provides a “phone-in” service to the public.
- 3.10.5 The Berrigan SES Local Controller is to ensure that the Murray SES Region Controller is regularly briefed on the progress of operations and on future resource needs.

3.11 Road Control

- 3.11.1 A number of roads within the Council area are affected by flooding. Details are provided in Annex B.
- 3.11.2 The Council closes and re-opens its own roads and, acting as agent for the Roads and Traffic Authority (RTA), does the same for RTA roads.
- 3.11.3 The NSW Police Force has the authority to close and re-open roads but will normally only do so (if the Council or the RTA has not already acted) if public safety requires such action.
- 3.11.4 When resources permit, the SES assists Council or the Police by erecting road closure signs and barriers.
- 3.11.5 State Road closures are updated regularly by the RTA and are made available in the Daily Traffic Report on phone 132701 by the RTA Transport Management Centre in Sydney.
- 3.11.6 The RTA Regional Traffic Operations Manager is available for liaison with regard to road closures of RTA controlled roads.

3.12 Traffic Control.

- 3.12.1 In the event of major flooding, the Berrigan SES Local 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).

3.13 Flood Rescue

- 3.13.1 The Berrigan SES Local Controller is responsible for the coordination of flood rescue.
- 3.13.2 Flood rescues, may be carried out by accredited units using high clearance vehicles, flood boats and (under some circumstances) helicopters.
- 3.13.3 Additional flood boats and crews can be requested through the Murray SES Region Headquarters.

3.14 Evacuations

- 3.14.1 Evacuations from within the townships of Tocumwal and Barooga would only be required in the event of potential or actual levee failure or overtopping.
- 3.14.2 The primary means of evacuation will be by private transport, although those requiring transport will be evacuated in buses.

- 3.14.3 Evacuations will be controlled by the Berrigan SES Local Controller and conducted by the SES with the assistance of emergency service personnel from other agencies, service club members and Council staff (if available).
- 3.14.4 When evacuations first become possible, the Berrigan SES Local Controller will advise relevant DoCS personnel so that evacuation centres and welfare support can be set up in timely fashion.
- 3.14.5 Some residents may make their own decision to evacuate and move to alternative accommodation using their own transport. Such evacuees must be advised via the media to inform the Police or the SES of their evacuation and their temporary address.
- 3.14.6 Field teams conducting doorknocks will record and report back to the Operations Centre:
- a. Addresses and locations of houses doorknocked and/or evacuated.
 - b. 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).
- 3.14.7 The field teams will then carry out evacuations as required. Details of these premises will be passed to the Barooga, Berrigan, Finley, Tocumwal Police Stations.
- 3.14.8 The NSW Police Force will provide security for evacuated areas.
- 3.14.9 Evacuees will be taken to or advised to go to the nearest accessible evacuation centre, which may initially be established at the direction of the Berrigan SES Local Controller but which will be managed as soon as possible by the Department of Community Services. Any or all of the following sites may be used as evacuation centres:
- a. Barooga Sports Club
 - b. Tocumwal Aerodrome
 - c. Tocumwal State School.
 - d. Sacred Heart Catholic School
- 3.14.10 In an extreme flood event, such as dam failure or levee overtopping/ failure, large scale evacuation will be required.
- a. Barooga will be evacuated to Berrigan.
 - b. Tocumwal will be evacuated to Finley.

- 3.14.11 On arrival, evacuees will be registered, medically checked if necessary and provided with their immediate welfare needs.
- 3.14.12 The caravan parks known to be flood liable are listed in Annex G, along with arrangements relating to the evacuation of residents and the removal of caravans.
- 3.14.13 Transport and storage of furniture from flood-threatened properties will be arranged as time and resources permit.

3.15 Registration

- 3.15.1 NSW Police Force will ensure that all evacuees are registered on arrival at evacuation centres and details of registrations are sent to the Police District Headquarters by the quickest means available.
- 3.15.2 Assistance with registration will be provided by the Australian Red Cross Society (Berrigan Shire).

3.16 Management Of Evacuees' Pets

- 3.16.1 Evacuees managing their own evacuations will be encouraged to take their pets with them. However pets cannot be managed at evacuation centres. The Department of Primary Industries (Agriculture), will arrange appropriate accommodation for pets if required.
- 3.16.2 In the event of a large-scale evacuation of Tocumwal and/or Barooga, animal shelter compound facilities will be set up for domestic animals and companion animals. These facilities will be operated by the Department of Primary Industries.
- 3.16.3 Assistance animals are to accompany and/or remain in the care of their owners at all times. This includes transport and access into evacuation centres etc.

3.17 Essential Services

- 3.17.1 The Berrigan SES Local Controller will ensure that the providers of essential services (electricity, water, telecommunications, sewerage, medical and public health) are kept advised of the flood situation. Essential service providers must keep the Berrigan SES Local Controller abreast of their status and ongoing ability to provide those services.
- 3.17.2 Facilities needing protection are:
- a. Police Station at Barooga (sandbagging was required in the 1975 flood)
 - b. Town levee system

3.18 Logistics

- 3.18.1 The Berrigan SES Local Headquarters maintains a small stock of sandbags, and back-up supplies are available through the Murray SES Region

Headquarters. A motorised sandbag-filling machine is available from Murray Region Headquarters. Alternatively, local concrete trucks may be used.

3.19 Aircraft Management

3.19.1 Aircraft can be used for a variety of purposes during flood operations including evacuation, rescue, re-supply, reconnaissance and emergency travel.

3.19.2 Air support operations will be conducted under the control of the SES Region Headquarters, which may allocate aircraft to units if applicable. The SES Local Controller may task aircraft allocated by the Region Headquarters for flood operations within the Council area.

3.19.3 **Helicopter Landing Points.** Suitable landing points are located at:

- a. Tocumwal Recreation Reserve
- b. Tocumwal Aerodrome
- c. Barooga Recreation Reserve

3.19.4 **Airport.** Access to the Tocumwal aerodrome remains in a 1:100 year event. Tocumwal Aerodrome is capable of handling planes to 5,700kg without concessions.

3.20 Resupply of Isolated Towns and Villages

3.20.1 The SES is responsible for the coordination of the resupply of isolated communities. If flood predictions indicate that areas are likely to become isolated, the Berrigan SES local Controller should advise businesses (normally through the Berrigan Shire Council) that they should stock up.

3.20.2 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.

3.20.3 Where practicable the Berrigan SES Local Controller will arrange for the delivery from normal suppliers of essential foodstuffs, fuels or urgent medical supplies required by an isolated property or community. This may be done using high clearance vehicles, floodboats or, on occasions, aircraft.

3.20.4 The Berrigan Shire Council will establish and chair a vetting committee to ensure that only essentials are ordered and that the business requesting the supplies is not using the flood as a means of restocking free of charge.

3.20.5 Where supplies are not available within the Council area, the Berrigan SES Local Controller may request them through the Murray SES Region Headquarters. The Region Headquarters will usually arrange for them to be delivered to the Berrigan SES Local Controller for further distribution within the Council area.

- 3.20.6 The SES is prepared to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables, and will assist hospitals with resupply of linen and other consumables.

3.21 Resupply of Isolated Properties

- 3.21.1 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. Property owners may call their suppliers direct or place their orders with the Berrigan SES, through DoCS, or through their own social networks.
- 3.21.2 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. DoCS will liaise with the SES concerning property holders who place orders with them. They will include people in dire circumstances who receive resupply at no cost. DoCS 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 DoCS.
 - 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 re-supply items for delivery.

3.22 Assistance for Animals

- 3.22.1 Matters relating to the welfare of livestock, companion animals and wildlife (including feeding and rescue) are to be referred to Department of Primary Industries (Agriculture).
- 3.22.2 Requests for emergency supply and/or delivery of fodder to stranded livestock, or for livestock rescue, are to be passed to Department of Primary Industries (Agriculture).

3.23 Stranded Travellers

- 3.23.1 Flood waters are not likely to restrict travel as flood free access remains via the Newell to the north and Riverina Highway through Finley. Travellers seeking assistance will be referred to DoCs for the arrangement of temporary accommodation.

3.24 All Clear

- 3.24.1 When the danger to life and property has passed, the Berrigan SES Local Controller will issue an 'All Clear' message signifying that response operations have been completed. This message will also advise details of arrangements for evacuated residents to return to their homes or indicate what longer-term accommodation arrangements have been made for those unable to do so.

PART 4 - RECOVERY

4.1 Welfare

- 4.1.1 The Department of Community Services will provide for the long-term welfare of people who have been evacuated.

4.2 Recovery Coordination

- 4.2.1 The Berrigan SES Local Controller will ensure that planning for long-term recovery operations begins at the earliest opportunity. This is to be done by briefing the Chairman of the Berrigan Shire Council Local Emergency Management Committee on the details of the flooding and assisting in the establishment of a Recovery Coordinating Committee.
- 4.2.2 The Recovery Coordinating Committee is to prepare an outline plan for recovery operations and be prepared to recommend how such operations would best be controlled and coordinated.

4.3 Arrangements for Debriefs / After Action Reviews

- 4.3.1 As soon as possible after flooding has abated, the Berrigan SES Local Controller will advise participating organisations of details of response operation after action review arrangements.
- 4.3.2 The Berrigan 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 Berrigan Shire Council Local Emergency Management Committee.