NSW STATE EMERGENCY SERVICE

Dubbo Regional

Local Flood Emergency Sub Plan

FloodSafe

DUBBO REGIONAL FLOOD EMERGENCY SUB PLAN

A Sub Plan of the Local Emergency Management Plan (EMPLAN)

Volume 1 of the Dubbo Regional Flood Emergency Sub Plan

Endorsed by the Dubbo Regional Local Emergency Management Committee

24 June 2024
Version 1.0

AUTHORISATION

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

Authorised

Signature: Jerence

NSW SES Local/Unit Commander

Print Name: Terence Siriwardena

Date: 24th June 2024

Endorsed

Signature:

Chair, Local Emergency Management Committee

Print Name: Cliff De Jager

Date: 24th June 2024

VERSION HISTORY

Version Number	Description	Date

PREVIOUSLY ENDORSED VERSION PRIOR TO LGA AMALGAMATION

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

Description	Date
Dubbo City Local Flood Plan	2003
Dubbo City Local Flood Plan	2013
Wellington Local Flood Plan	2008
Wellington Local Flood Plan	2015

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

Manager Emergency Planning
NSW State Emergency Service
PO Box 6126, Wollongong NSW 2500
nswses.communityplanning@ses.nsw.gov.au

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

Amendment Number	Description	Updated by	Date

DISTRIBUTION LIST

Available for general use and distribution on the NSW State Emergency Service website www.ses.nsw.gov.au

CONTENTS

1 OUTLINE AND SCOPE

1.1 PURPOSE

1.1.1 The purpose of this plan is to set out the multi-agency arrangements for the emergency management of flooding in the Dubbo Regional Local Government Area (LGA).

1.2 AUTHORITY

1.2.1 This plan is written and issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) ('SERM Act'), the *State Emergency Service Act 1989* (NSW) ('SES Act') and the NSW State Emergency Management Plan (EMPLAN).

1.2.2 This plan is a sub plan to the Dubbo Regional Local Emergency Management Plan (EMPLAN) and is endorsed by the Dubbo Regional Local Emergency Management Committee (LEMC).

1.3 ACTIVATION

1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.

1.3.2 The Dubbo Regional Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

1.4.1 The area covered by this plan is the Dubbo Regional LGA. The Dubbo Regional LGA and its principal towns, villages, rivers and creeks are shown in Appendix A.

1.4.2 The council area is in the NSW SES Western Zone and for emergency management purposes, is part of the Central West Emergency Management Region.

1.4.3 The plan sets out the Dubbo Regional Council level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Dubbo Regional LGA

1.4.4 In this plan a flood is defined as a 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 (including tsunami) overtopping coastline defences.

1.4.5 This plan outlines the local level arrangements for the management of downstream consequences of flooding due to dam failure, however it does not cover the management of flooding of an underground mine by inrush or other cause, which should be covered by the Mine Emergency Sub Plan for the respective mine.

1.5 GOALS

1.5.1 The primary goals for flood emergency management in NSW are:

a. Protection and preservation of life.

b. Establishment and operation of flood warning systems.

c. Issuing of community information and community warnings.

d. Coordination of evacuation and welfare of affected communities.

e. Protection of critical infrastructure and community assets essential to community survival during an emergency incident.

f. Protection of residential property.

g. Protection of assets and infrastructure that support individual and community financial sustainability and aid assisting a community to recover from an incident.

h. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

1.6 KEY PRINCIPLES

1.6.1 The protection and preservation of human life (including the lives of responders and the community) is the highest priority.

1.6.2 Evacuation is the primary response strategy for people impacted by flooding.

1.7 ROLES AND RESPONSIBILITIES

1.7.1 General responsibilities of emergency service organisations and functional areas are set out in the NSW State EMPLAN and NSW State Flood Sub Plan.

1.7.2 Specific roles and responsibilities for agencies, functional areas and organisations in relation to flooding within Dubbo Regional LGA are detailed within this plan, Appendix B, Appendix C and Appendix D.

1.7.3 Any agency with agreed responsibilities in this plan which are temporarily unable or no longer able to fulfil their responsibilities in response operations must, as soon as possible, notify:

a. The NSW SES Incident Controller (for local or zone level responsibilities during response operations).

b. The NSW SES Zone Duty Commander and/or the NSW SES Western Zone office (for regional level responsibilities outside of response operations).

1.8 PLAN MAINTENANCE AND REVIEW

1.8.1 The NSW SES will maintain the currency of this plan by:

a. Ensuring that all supporting emergency services and functional areas, organisations and officers mentioned in it are aware of their roles and responsibilities.

b. Conduct a minimum of one exercise every five years or within two years of the plan being reviewed.

c. Reviewing the contents of the plan:

- When there are changes which alter agreed plan arrangements.
- When changes to land use strategic plans and policies increase the population at risk.
- After a flood including recommendations from after action reviews, reports or inquiries.
- As determined by the NSW SES Commissioner.

d. The plan is to be reviewed no less frequently than every five years or after a significant flood event.

1.9 SUPPLEMENTARY DOCUMENTS

1.9.1 Supplementary and supporting material of the Local Flood Emergency Sub Plan is maintained on the NSW SES website at: https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/including:

a. Flood Plan Glossary.

b. NSW SES Dam Failure Notification Flowchart.

c. NSW SES Resupply Flowchart.

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

2.1.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in the Dubbo Regional LGA.

2.1.2 Declared dams in or upstream of the Dubbo Regional Local Government Area.

Dam Name	Owner	High Risk Dam
Burrendong Dam	Water NSW	No

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

3.1.1 The Floodplain Risk Management Manual outlines the NSW Government's Flood Prone Land Policy which details the framework for managing flood prone land in New South Wales. Incorporation of floodplain risk management into land use planning is one of the key means to limit the exposure to flood risks to our communities and help build long term resilience to future flood events.

3.2 LAND USE PLANNING

3.2.1 **Strategy:** Effective land use planning is a key focus for minimising the impacts of flooding. The NSW SES will work with land use planning and consent authorities to inform and influence the consideration of the risks arising from flood, storm

and tsunami to prevent the creation of intolerable impacts of these hazards on the community.

Actions:

a. The NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk to life and/or property due to flooding.

b. The NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk to life and/or property due to flooding.

3.3 FLOODPLAIN RISK MANAGEMENT

3.3.1 **Strategy**: Advocate for consideration of emergency management in decision making to reduce risks to the existing community and minimise the growth in future, continuing and residual risk due to development through input to the floodplain management program.

Actions:

a. The NSW SES will provide coordinated and consistent emergency management advice to councils and other agencies in relation to the management of land that is subject to flooding.

b. The NSW SES will provide advice, support, technical resources and training for NSW SES representatives to contribute effectively on Local Floodplain Risk Management Committees.

4 PREPARATION

4.1 INTRODUCTION

4.1.1 Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency.

4.2 FLOOD EMERGENCY PLANNING

4.2.1 **Strategy**: The NSW SES develop, review and maintain Flood Emergency Sub Plans.

Actions:

a. Develop and review this NSW SES Local Flood Emergency Sub Plan as required. Local Flood Emergency Sub Plans outline the specific arrangements for management of flood events within an LGA and may include cross boundary arrangements.

b. Review plans as per Section 1.8.

4.2.2 Local EMPLAN Consequence Management Guides (CMGs) for flood are not required for communities covered by the NSW SES Local Flood Emergency Sub Plans however may be utilised in place of Local Flood Emergency Sub Plan if agreed to by the NSW SES.

4.3 FLOOD INTELLIGENCE SYSTEMS

4.3.1 **Strategy**: The NSW SES develop and maintain a flood intelligence system to identify flood behaviour, its impact on the community and required response actions.

Actions:

a. Gather and assess flood information for the full range of flood types and severities.

b. Collect, collate, and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk.

c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

4.4.1 **Strategy**: Develop, maintain and prepare systems for the provision of flood warnings and associated warning services.

Actions:

a. All levels of government work in partnership to develop and maintain flood warning infrastructure.

b. The NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the NSW State Flood Plan (see Section 1.9).

c. The NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW and ACT Flood Warning Consultative Committee.

d. The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.

e. The Dam Owners will provide the Dam Emergency Plans (where required) and consult with the NSW SES on alert levels and messaging. Alert level definitions are listed in the Dam Emergency Plans.

f. The NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.

g. The NSW SES develops and maintains warning and flood information products by:

- Utilising flood intelligence data.
- Developing warning and flood information products.
- Continuously reviewing warning and flood information products.
- Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW and ACT Flood Warning Consultative Committee and maintains Operational Readiness.
- Participating in the development of public information and warning systems.

h. Gauge owners adequately maintain flood warning gauges and systems, including those identified in the 'Service Level Specification' maintained by the Bureau of Meteorology (Bureau) and those identified in the 'Provision and Requirements for Flood Warning in New South Wales's maintained by the NSW SES.

4.5 BRIEFING, TRAINING AND EXERCISING

4.5.1 **Strategy**: Ensure the NSW SES, supporting agencies, functional areas and the community are prepared and familiar with the strategies and arrangements within the Flood Emergency Sub Plan and supporting documents.

Actions:

a. The NSW SES will consult stakeholders throughout the development of plans.

b. The NSW SES will inform stakeholders of content changes after revisions.

c. The NSW SES will ensure their facilities and resources are maintained and operationally ready.

d. The NSW SES will train personnel for their expected flood operation roles.

e. The NSW SES will regularly brief stakeholders on the exercise arrangements contained in the NSW Flood Emergency Sub Plan.

4.6 COMMUNITY RESILIENCE TO FLOODING

4.6.1 **Strategy**: The NSW SES provides and maintains a flexible volunteer workforce to support community resilience.

Actions:

a. Ensure ongoing recruitment and training of a diverse range of volunteers.

b. Ensure pre-planning to facilitate the management of spontaneous volunteers and community members during a flood.

4.6.2 **Strategy**: The NSW SES works with individuals, communities, businesses and government agencies to build flood resilience.

Actions:

a. Partners with and engage communities to understand and manage the risks associated with floods, including providing business continuity guidance (NSW SES Business FloodSafe), family preparedness (NSW SES Home FloodSafe) and other engagement strategies.

b. The NSW SES will collate, assess and disseminate flood information to the community.

c. Collaborate with individuals, businesses, government agencies and communities when developing flood intelligence, preparedness and response information.

d. Plan for floods collaboratively with communities through community and stakeholder participation and engagement.

e. Collaborate with community sector and recognise the needs of individuals within communities who have an increased susceptibility during floods.

5 RESPONSE

5.1 INTRODUCTION

5.1.1 Flood response operations will begin:

a. On receipt of a Bureau Severe Weather Warning or Thunderstorm Warning that includes heavy rain or storm surge; or

b. On the receipt of a Bureau Flood Watch or Flood Warning; or

c. On receipt warnings for flash flood; or

d. On receipt of a dam failure alert; or

e. When other evidence leads to an expectation of flooding.

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

5.2.1 **Strategy**: Maintain effective control of flood operations across NSW.

Actions:

a. The NSW SES uses the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response.

b. Control of flood response will be at the lowest effective level and may be scaled to suit the incident.

c. The NSW SES State Controller (or delegate) will appoint Incident Controllers and establish Incident Control Centres (see NSW SES facilities on map in Appendix A).

d. The NSW SES Incident Controller, in consultation with participating supporting emergency services and functional areas will determine the appropriate breakdown of an Area of Operations into Divisions and/or Sectors in accordance with the principles of AIIMS.

5.2.2 **Strategy**: Maintain Incident Control Centre(s).

Actions:

a. The NSW SES will operate Incident Control Centre(s) as required.

b. The NSW SES Incident Control Centre(s) will:

- Control resources from the NSW SES and coordinate resources of supporting emergency services and functional areas.
- Manage incident tasking and ensure they are actioned in a timely manner.
- Undertake response planning and determine future resourcing requirements.

- Coordinate information flow, including warnings, public information and social media.

5.2.3 **Strategy**: Provide effective liaison between the NSW SES and supporting agencies or functional areas in accordance with the local EMPLAN.

Actions:

a. Supporting emergency services and functional areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required.

b. The NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.

c. Where possible Emergency Operation Centres are to be co-located with the NSW SES Incident Control Centres for Flood Emergency Response.

5.2.4 **Strategy**: Coordinate resources and logistics support to ensure operational effectiveness.

Actions:

a. The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources.

b. The NSW SES may request resources and logistics support directly from a supporting emergency service or functional area.

c. Wherever possible, supporting organisations are to provide their own logistic support in consultation with the NSW SES where appropriate.

d. The NSW SES Incident Controller will control air support operations and may utilise supporting agencies in the management of aircraft.

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

5.3.1 **Strategy**: Ensure flood information is effectively utilised, communicated and collected during and post a flood.

Actions:

a. Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by the NSW SES to supporting emergency services and functional areas listed under this plan.

b. All supporting emergency services and functional areas and Council will accurately record and report information relevant to their activities and any real time flood information (including road closure information) to the NSW SES Incident Controller. This may be in the form of a combined Emergency Operations Centre (EOC) report, or direct from agencies where an EOC has not been established.

c. The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information.

d. Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by the NSW SES. This may occur post impact and continue into the recovery phase.

e. The NSW SES may request the Engineering Services Functional Area to assist with the gathering of flood intelligence including (not limited to) maximum flood extents, peak flood heights, recording major flood damage at key high velocity locations and preparation of the after-flood report.

5.3.2 **Strategy**: Ensure flood intelligence is incorporated into operational decision-making.

Action: The NSW SES will use flood intelligence, official forecasts, warnings, and flood scenario products to undertake an assessment of the predicted impact of a flood and to inform operational decision-making.

5.4 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

5.4.1 **Strategy**: Timely and effective warnings are distributed to the community.

Actions:

a. The Bureau issues public weather and flood warning products before and during a flood. These may include:

- Severe Thunderstorm Warnings – Detailed - Issued for all capital cities and surrounding areas when individual severe thunderstorms are within range of the capital city radars.
- Severe Thunderstorm Warnings - Broad-based - Issued for the entire Australian state or territories affected highlighting broad areas where severe storms may occur within the next 3 hours.
- Severe Weather Warnings with reference to heavy rainfall and/or storm surge.
- Flood Watches.
- Flood Warnings.

b. The dam owners will utilise the Dam Emergency Plan to provide warnings and information to the NSW SES and communities (where appropriate).

c. The NSW SES Incident Controllers will issue the following NSW SES Flood Warnings aligning to the Australian Warning System.

- Advice
- Watch and Act
- Flood Bulletins.
- Emergency Warning

d. The NSW SES liaises with the Bureau to discuss the development of flood warnings as required.

e. The NSW SES provides alerts and deliver flood information to affected communities using a combination of public information.

f. The NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams.

g. Road closure information will be provided to the community through the following agencies/methods:

- Local Government websites.
- Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.

h. The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.

i. The Disaster Welfare Assistance Line will be established by the Disaster Welfare Services Functional Area where required to provide information on welfare services and assistance. Assistance line contact details will be broadcast once Disaster Welfare services commence.

5.5 PROTECTION OF PROPERTY

5.5.1 **Strategy**: Coordinate the protection of property from destruction or damage arising from floods.

Action: The NSW SES, supporting agencies, and community volunteers will assist the community (where resources are available, feasible and safe to do so) in:

a. The protection of properties including critical infrastructure through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings.

b. The raising or moving of household furniture and commercial stock/equipment.

5.6 ROAD AND TRAFFIC CONTROL

5.6.1 **Strategy**: Coordinate the closing and re-opening of flood affected roads.

Actions:

a. The Dubbo Regional Council will coordinate the closure and reopening of council managed roads once inspections have been carried out by the relevant authority.

b. Transport for NSW will coordinate the closure and reopening of the state road network.

c. The NSW Police Force may close and re-open roads but will normally only do so (if the Dubbo Regional Council or Transport for NSW have not already acted and if public safety requires such action.

d. The NSW SES will assist with erecting road closure signs and barriers when time and resources permit.

5.6.2 **Strategy**: Coordinate traffic control measures in flood affected areas.

a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989.*

b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Local and Region EMPLANs contain infrastructure inventories.

5.7.2 **Strategy**: Minimise disruption to the community by ensuring protection of infrastructure and supply of essential energy, utility services and lifelines.

Actions:

a. The Transport Services Functional Area is to coordinate the provision of information about the assessment and restoration of transport network infrastructure.

b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).

c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Public Safety Network.

d. The Engineering Services Functional Area is to:

- Coordinate the assessment and restoration of critical public buildings for example hospitals.
- Assessment and operation of flood protection levees.
- Protection of property.
- Construction and repair of levees.
- Dam safety assessment and dam stability.
- Water supply and sewerage operations.
- Other critical infrastructure.

e. The Functional Areas and the Dubbo Regional Council will keep the NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

5.8.1 Evacuation is the NSW SES' primary response strategy for managing the population at risk of flooding.

5.8.2 **Strategy**: Conduct planning to ensure all evacuation constraints are considered.

Actions:

a. Evacuations will take place when there is a risk to public safety. Circumstances may include:

- Evacuation of people when their homes or businesses are likely to flood.
- Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access.
- Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable.

b. The NSW SES will consider the following in evacuation decisions:

- Duration of evacuation.
- Characteristics of the community.
- Numbers requiring evacuation.
- Availability of evacuation routes and transport.
- The ability for existing levees or other flood protection works to fulfil their intended function.
- Time available for evacuation.
- Evacuee management requirements.
- Resources and delivery of evacuation information.
- Length of isolation.

c. The NSW SES Incident Controllers, planning and intelligence officers will carefully consider the risks involved in conducting evacuations.

d. All evacuation decisions will be made as per the current NSW SES policies and procedures, and consistent with the NSW Evacuation Management Guidelines.

e. Potential Evacuation Centres are located in the Local EMPLAN.

f. The NSW Police Force will coordinate the provision of overall security for evacuated areas.

5.8.3 **Strategy**: Evacuate people pre-emptively from dangerous or potentially dangerous places and or locations created by the flood hazard to safe locations away from the hazard.

a. The NSW SES will control and coordinate the evacuation of affected communities.

b. The NSW SES Commissioner (or delegate) will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.

c. The NSW SES Commissioner (or delegate) will order any necessary evacuations and provide information to the community about when and how to evacuate.

d. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the local EMPLAN and supporting plans.

e. The Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes) in consultation with the NSW SES and the Welfare Services Functional Area.

f. School administration offices (government and private) will coordinate the evacuation of schools in consultation with the NSW SES and the Welfare Services Functional Area, if not already closed.

g. Caravan Park proprietors will inform the NSW SES Incident Controller when caravan park evacuations have been completed.

h. People who are reluctant or refuse to comply with any Emergency Warning will be referred to the NSW Police Force.

5.9 EVACUEE MANAGEMENT AND WELFARE

5.9.1 Research and experience in flood operations shows that most evacuees go to family, friends and commercial accommodation outside the impact area.

5.9.2 **Strategy**: Maintain the welfare of communities and individuals affected by the impact of a flood.

Actions:

a. The NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. The NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.

b. The Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan.

c. Schools administration (government and private) will manage the safety of students directly affected by flooding and will work with the NSW SES in the temporary closure of schools and will coordinate with the NSW SES, the Transport and Welfare Services Functional Areas in the management of school evacuees.

d. Disaster Victim Registration will be controlled and coordinated by the NSW Police Force with the assistance of the NSW SES and the Welfare Services Functional Area.

e. The NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible.

f. Where the expected remaining number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the State Emergency Operations Controller (SEOCON), may establish Major Evacuation Centres or Mass Care facilities.

g. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES and SEOCON in consultation with members of the State Emergency Management Committee (SEMC).

5.9.3 **Strategy**: Coordinate available and accessible health services for flood affected communities.

Actions: The provision of environmental health advice, assessment of public health risks and coordination of immediate mental health support will be provided by the Health Services Functional Area.

5.9.4 **Strategy**: Maintain the welfare of animals impacted by a flood.

Actions:

a. The Agriculture and Animal Services Functional Area will coordinate the welfare of livestock, pets, companion animals and wildlife including support to primary producers, animal holding establishments and community members.

b. The Agriculture and Animal Services Functional Area role will coordinate the evacuation, emergency care and assessment of animals the humane destruction and disposal of affected animals and the supply of emergency fodder and water (with aerial support where necessary).

5.10 FLOOD RESCUE

5.10.1 **Strategy**: Control and coordinate flood rescue of people and domestic animals.

Actions:

a. The NSW SES will perform flood rescue, where training and equipment is suitable and where a risk assessment has indicated that the risk to rescuers is acceptable.

b. Flood rescue operations will be conducted in accordance with the State Rescue Board NSW State Rescue Policy which sets out the framework, governance, responsibilities and requirements for the management and conduct of flood rescue in NSW.

c. The NSW SES may request other supporting emergency services to undertake flood rescues on behalf of the NSW SES. Agencies must be authorised/accredited to undertake flood rescue operations in accordance with the State Rescue Board requirements, as prescribed by the NSW SES. Supporting emergency services must supply information regarding rescues performed to the NSW SES. Notification arrangements with the NSW Police Force are outlined in the State Rescue Board NSW State Rescue Policy.

d. Rescue agencies will conduct rescue of domestic small and large animals as per the State Rescue Board NSW State Rescue Policy (and may include large animal rescue of family horses and cows at a residence or property). The rescue of livestock (which includes commercial animals found on farming and breeding enterprises) will be coordinated through the Animal and Agriculture Services Functional Area.

5.11 RESUPPLY

5.11.1 **Strategy**: Coordinate resupply to towns and villages isolated by flooding to minimise disruption to the community.

Actions:

a. The NSW SES will advise communities and businesses if flood predictions indicate that areas are likely to become isolated, and indicative timeframes where possible.

b. Retailers should be advised to ensure sufficient stock is available for the duration of the flood.

c. When isolation occurs, the NSW SES will establish loading points where retailers can instruct suppliers to deliver goods.

d. The NSW SES will endeavour to support the delivery of mail to isolated communities but may not be able to do so according to normal Australia Post timetables.

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

f. The NSW SES may request resupply assistance from supporting agencies.

g. The NSW SES may conduct resupply operations as per the designated resupply plan for the event.

h. Where additional supplies are required Engineering Services Functional Area be requested to coordinate the supply of goods and services in response to and recovery from the emergency.

5.11.2 **Strategy**: Coordinate resupply to rural properties isolated by flooding.

Actions:

a. When requested, the NSW SES will establish a resupply schedule and coordinate the resupply for isolated rural properties.

b. The NSW SES will provide local suppliers with designated loading points. Resupply items are to be packaged by the supplier.

c. Isolated households unable to afford resupply items will be referred to the Welfare Services Functional Area for assistance.

5.12 RETURN

5.12.1 **Strategy**: Coordinate the safe return of communities to flood affected areas when the immediate danger to life and property has passed.

Actions:

a. The NSW SES Incident Controller will determine when it is safe to progressively return in consultation with the relevant Emergency Operations Controller and supporting agencies considering the ongoing risk to public safety.

b. The NSW SES Incident Controller will specify the level of access to affected communities as the following:

- Not suitable for access; or
- Limited access by emergency services and response agencies; or
- Limited access by residents and/or business operators; or
- Full access.

c. The NSW SES Incident Controller will issue an Advice Warning advising "Reduced Threat: Return with Caution" when the immediate danger to life and property has passed for areas.

d. The NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy**: Conclude response operations.

Actions:

a. Response operations will conclude when:

- There is a reduced likelihood of additional flooding within the Area of Operation and flood waters have receded.
- All requests for assistance related to the flood have been completed.
- The need for warning and evacuation no longer exist.
- There is no further likelihood of rescuing people.
- Resupply is no longer required (resupply operations may occur concurrently with the recovery phase).
- Response to fire and hazardous material incidents have concluded (not including subsequent clean-up of contaminated sites).
- All affected areas have had an 'Reduced Threat: Return with Caution' issued.

5.14 POST IMPACT ACTIONS

5.14.1 **Strategy**: Learnings from the event are used to inform recovery and future events.

Actions:

a. The NSW SES will continue to engage with communities after significant floods through convening one or more community forums, workshops or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically include other agencies such as the Bureau, the Welfare Services Functional Area and Dubbo Regional Council representatives.

b. The NSW SES will conduct After Action Reviews, at the conclusion of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning.

c. The NSW SES will provide information and data throughout the emergency response to inform community recovery. A report will be developed at the

request of the SERCON at the conclusion of the response within an area. Should a response summary report be required it will include the following:

- The emergency action plan in place at conclusion of the response emphasising any continuing activities including community meetings/ engagement activities.
- Resources allocated to the emergency response and associated exit strategies.
- Details of any areas or situations with potential to re-escalate the emergency.
- A recommendation for the conclusion of the NSW SES as lead agency to transition to the NSW Reconstruction Authority as the lead agency for recovery.
- Any actions that are incomplete or outstanding.
- Damage assessment data and information obtained throughout the response phase which will further support the long-term recovery of communities.

d. The NSW SES will undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.

5.14.2 **Strategy:** Participate in post flood data collection analysis.

Actions: The NSW SES works with relevant stakeholders and the Dubbo Regional Council on post flood data collection analysis including review of flood intelligence where necessary.

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

6.1.1 Recovery is the process of returning an affected community to its proper level of functioning after an emergency. It will generally commence simultaneously with the response phase.

6.1.2 Recovery operations will be initiated and conducted as outlined in the NSW State EMPLAN and as further detailed in the NSW Recovery Supporting Plan.

6.2 NSW SES RECOVERY ROLE

6.2.1 **Strategy**: The NSW SES will support recovery operations and established Recovery Committees.

6.2.2 **Actions**:

a. The NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the recovery phase.

b. The NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies and general

advice and assistance to the committee as a subject matter specialist and or expert.

c. The NSW SES will provide information to the NSW Reconstruction Authority to support applications to Treasury for Natural Disaster Relief and Recovery Arrangements.

d. The NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a flood.

e. The NSW SES, and where required supporting agencies, will assist with clean-up operations after floods, where possible when resources and personnel permit.

f. The NSW SES may coordinate immediate relief in collaboration with the State Emergency Recovery Controller (SERCON) .

7 ABBREVIATIONS

For a full list of abbreviations refer to the NSW State Flood Plan – Abbreviations.

8 GLOSSARY

Common emergency service terminology can be found within the Australian Disaster Resilience Glossary.

Readers should refer to EMPLAN Annex 9 – Definitions.

Refer to the NSW State Flood Plan for a complete glossary of terminology used throughout this plan and within NSW SES Flood Plans.

For a full list of definitions refer to the Supporting Document - State Flood Plan Glossary https://www.ses.nsw.gov.au/media/2650/glossary.pdf

9 Appendix A – Map of Dubbo Regional Council Area

10 Appendix B – Roles and Responsibilities

AGENCY	RESPONSIBILITIES
NSW State Emergency Service	The NSW SES is the designated Combat Agency for floods, storms and tsunami and controls response operations. The NSW SES roles and responsibilities in relation to floods are outlined in the NSW State Flood Plan.

AGENCY	RESPONSIBILITIES
Agriculture and Animal Services Functional Area	The roles and responsibilities for the Agriculture and Animal Services Functional Area are outlined in the Agriculture and Animal Services Supporting Plan and NSW State Flood Plan.
Australian Government Bureau of Meteorology	The roles and responsibilities for the Australian Government Bureau of Meteorology (Bureau) are outlined in the NSW State Flood Plan.
Caravan Park Proprietor(s)	• Prepare a flood emergency plan for the caravan park. • Ensure that owners and occupiers of movable dwellings are aware that the caravan park is flood liable by providing a written notice to occupiers taking up residence and displaying this notice and emergency management arrangement within the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: – Provide the manager of the caravan park with a contact address and telephone number in case of an emergency. – Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed and are maintained in proper working order). • Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to: – Ensure that they have spare batteries for their radios. – Listen to a local radio station for updated flood information. – Prepare for evacuation and movable dwelling (cabins) relocation. • Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. • Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers.

AGENCY	RESPONSIBILITIES
	• Secure any movable dwellings that are not able to be relocated to prevent floatation. • Inform the NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks.
Childcare Centre's and Preschools	• When notified of possible flooding or isolation, childcare 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 childcare centres.
Dams Safety NSW	The roles and responsibilities for Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan.
Department of Defence	Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448).
Dubbo Regional Council	**Preparedness** • Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented. • Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Risk Management Manual. • Provide levee studies, flood studies and floodplain management studies to the NSW SES. • Maintain council-owned flood warning networks and flood mitigation works. • Participate in the NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Emergency Sub Plans. • Maintain a plant and equipment resource list for the council area. • Contribute to community engagement activities. **Response** • Subject to the availability of council resources, assist the NSW SES with flood operations including: – Traffic management on council managed roads. – Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested). – Property protection tasks including sandbagging. – Assist with the removal of caravans from caravan parks.

AGENCY	RESPONSIBILITIES
	– Warning and/or evacuation of residents and other people in flood liable areas. – Provision of back-up radio communications. – Resupply of isolated properties. – Technical advice on the impacts of flooding. – Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES, NSW Police Force and people who contact the council for road information. – Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected. • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • Operate flood mitigation works including critical structures such as detention basins and levees and advise the NSW SES regarding their operation. • Manage and protect council-owned infrastructure facilities during floods. • Provide advice to the NSW SES and the Health Services Functional Area during floods about key council managed infrastructure such as sewerage treatment and water supply. • Advise the Environmental Protection Authority of any sewerage overflow caused by flooding. • Work with the NSW SES and the NSW Department of Planning and Environment to collect flood related data during and after flood events. **Recovery** • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to the State Government in accordance with the State Recovery Plan.
Energy and Utilities Services Functional Area	The roles and responsibilities for the Energy and Utilities Services Functional Area are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN) Roles and responsibilities in addition to the supporting plan are: • Assist the NSW SES with identification of infrastructure at risk of flood damage where resources are available.

AGENCY	RESPONSIBILITIES
	• Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: – Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. – Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation. – Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply. – Clear or make safe any hazard caused by power lines or electricity distribution equipment. – Reconnect customers' electrical/ gas/ water/wastewater installations, when certified safe to do so and as conditions allow. – Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.
Engineering Services Functional Area	The roles and responsibilities for the Engineering Services Functional Area are outlined in the Engineering Services Supporting Plan and NSW State Flood Plan.
Environmental Services Functional Area	The roles and responsibilities for the Environmental Services Functional Area are outlined in the Environmental Services (ENVIROPLAN) Supporting Plan.
Floodplain Management Australia	The roles and responsibilities for Floodplain Management Australia are outlined in the NSW State Flood Plan**.**
Fire and Rescue NSW	The roles and responsibilities for the Fire and Rescue NSW are outlined in the NSW State Flood Plan.
Forestry Corporation of NSW	The roles and responsibilities for the Forestry Corporation of NSW are outlined in the NSW State Flood Plan.
Health Services Functional Area	The roles and responsibilities for the Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan and the NSW State Flood Plan.
Local Emergency Operations Controller (LEOCON)	• Monitor flood operations. • If requested, coordinate support for the NSW SES Incident Controller.
Local Emergency Management Officer (LEMO)	• If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities for Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
Marine Rescue NSW	The roles and responsibilities for Marine Rescue NSW are outlined in the NSW State Flood Plan.

AGENCY	RESPONSIBILITIES
NSW Ambulance	The roles and responsibilities for the NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan and the NSW State Flood Plan.
NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission	The roles and responsibilities for the NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission are outlined in the NSW State Flood Plan.
NSW Department of Planning and Environment (Environment and Heritage Group)	The roles and responsibilities for the NSW Department of Planning and Environment (Environment and Heritage Group) are outlined in the NSW State Flood Plan (referred to as DPIE EES).
NSW Department of Planning and Environment (Water)	The roles and responsibilities for the NSW Department of Planning and Environment (Water) are outlined in the NSW State Flood Plan.
NSW Food Authority	The roles and responsibilities for the NSW Food Authority are outlined in the Food Safety Emergency Sub Plan.
NSW National Parks and Wildlife Services	The roles and responsibilities for the NSW National Parks and Wildlife Services are outlined in the NSW State Flood Plan.
NSW Police Force	The roles and responsibilities for the NSW Police Force are outlined in the NSW State Flood Plan.
NSW Reconstruction Authority	The roles and responsibilities for the NSW Reconstruction Authority are outlined in the NSW State Flood Plan.
NSW Rural Fire Service	The roles and responsibilities for the NSW Rural Fire Service are outlined in the NSW State Flood Plan.
Owners of Declared Dams within or upstream of the LGA	The roles and responsibilities for owners of declared dams are outlined in the NSW State Flood Plan.
Public Information Services Functional Area	The roles and responsibilities for the Public Information Services Functional Area are outlined in the Public Information Services Supporting Plan and NSW State Flood Plan**.**
State Emergency Operations Controller (SEOCON)	The roles and responsibilities for the SEOCON are outlined in the NSW State Flood Plan**.**
Surf Life Saving NSW	The roles and responsibilities for Surf Life Saving NSW are outlined in the NSW State Flood Plan.
Telecommunications Services Functional Area	The roles and responsibilities for the Telecommunications Services Functional Area are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan.

AGENCY	RESPONSIBILITIES
Transport for NSW	• Transport for NSW coordinates information on road conditions for emergency services access. • Transport for NSW coordinates the management of the road network across all modes of transport. • Transport for NSW in conjunction will assist NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. • Assist the NSW SES with the communication of flood warnings and information provision to the public through Live Traffic and Social Media according to the VMS protocols and procedures. • Assist the NSW SES with identification of road infrastructure at risk of flooding.
Transport Services Functional Area	The roles and responsibilities for the Transport Services Functional Area are outlined in the Transport Services Functional Area Supporting Plan and NSW State Flood Plan.
VRA Rescue NSW	The roles and responsibilities for VRA Rescue NSW are outlined in the NSW State Flood Plan.
Water NSW	The roles and responsibilities for Water NSW are outlined in the NSW State Flood Plan.
Welfare Services Functional Area	The roles and responsibilities for the Welfare Services Functional Area are outlined in the Welfare Services Functional Area Supporting Plan and NSW State Flood Plan.

11 Appendix C – Community Specific Roles and Responsibilities - Dubbo

Community Members	**Preparedness** • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit. • Be involved in local emergency planning processes. **Recovery** • Assist with community clean-up if required and able to do so. • Participate in After Action Reviews if required.
Aboriginal Organisations or groups	• Act as the point of contact between the NSW SES and the Dubbo community. • Inform the NSW SES Dubbo Unit Commander about flood conditions and response needs. • Disseminate flood information, including flood and evacuation warnings, to the Dubbo community. **Dubbo Local Aboriginal Land Council** Corner of Wingewarra and Darling Streets, Dubbo NSW 2830 Ph: (02) 6884 5276
Communication	• The NSW SES Dubbo Facebook Page.

12 Appendix D – Community Specific Roles and Responsibilities - Wellington

Community Members	**Preparedness** • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit. • Be involved in local emergency planning processes. **Recovery** • Assist with community clean-up if required and able to do so. • Participate in After Action Reviews if required.
Aboriginal Organisations or Groups	• Act as the point of contact between the NSW SES and the Wellington community. • Inform the NSW SES Wellington Unit Commander about flood conditions and response needs. • Disseminate flood information, including flood and evacuation warnings, to the Wellington community. **Wellington Local Aboriginal Land Council** 163 Simpson Street, Wellington NSW 2820 Ph: (02) 6845 2229
Communication	• The NSW SES Wellington Facebook Page.

NSW STATE EMERGENCY SERVICE

HAZARD AND RISK IN DUBBO CITY

Volume 2 of the Dubbo City Local Flood Plan

Last Update: June 2003 (DRAFT)

FloodSafe

ANNEX A - THE FLOOD THREAT

Landforms and River Systems

1. The Macquarie River is formed near Bathurst by the joining of the Fish and Campbell's Rivers. These two streams drain a high plateau consisting largely of undulating to hilly terrain. From Bathurst to Burrendong Dam the river is confined to a very narrow and steep sided valley. At the dam the Macquarie is joined from the east by the Cudgegong River, which rises in uplands around Rylstone.

2. From Burrendong Dam the Macquarie flows in north-westerly direction through Wellington being joined from the south by the Bell and Little Rivers. The Bell River rises in the flat to undulating country surrounding Mount Canobolas near Orange. The Bell River catchment is comparatively steep and floodwaters are confined mostly within the river channel until they reach Wellington. Consequently the river tends to rise and fall very rapidly. Overnight rain can result in a flood the following morning, with the floodwater gone by the same afternoon.

3. The Macquarie continues northwards for a few kilometres before turning westwards to cut through the Catombal Range after which it meanders through gently undulating country in a north-westerly direction towards Dubbo. Below Wellington the valley widens, the river flats gradually becoming more extensive and in places are several kilometres wide. Upon entering the broader, flatter valley, the river also changes, its cross-section is now broader and shallower.

4. Apart from the Bell, the only tributary of any significance joining the Macquarie in this reach is the Little River, which joins from the south at Terra Bella. This river is normally dry, but can contribute substantial volumes of water during floods. The Little rises in undulating to hilly country west of Molong and flows north to the Macquarie upstream of Dubbo. The Little River also serves as part of the eastern boundary of the Dubbo City council area with the Wellington Council area.

5. After flowing in a north-westerly direction through Dubbo, it is joined a few kilo metres north of Dubbo by the Talbragar River. This river rises in mountainous country at the junction of the Liverpool Range and the Warrumbungle Range. The Talbragar flows in a south-westerly direction with the mountainous slopes rapidly giving way to undulating country near Coolah Passing Dunedoo its valley is broad and flat, bordered by undulating hills which become less apparent as the river progresses towards Dubbo. Downstream of the Sandy Creek confluence halfway between Elong Elong and Dunedoo, the valley has a particularly broad floor with the flood plain averaging about one kilometre wide in this reach.

6. At the confluence with the Talbragar River the Macquarie turns due west until it reaches Narromine. A number of creeks join the river, most notably Coolbaggie Creek, which joins midway between Dubbo and Narromine.

Weather Systems and Flooding

7. Flooding within the Dubbo Council area can occur at any time of the year. In summer, low-pressure troughs extending southwards from northern Australia can cause intense short-period rainfall leading to flooding. Winter floods are more often the result of a number of troughs associated with southern depressions and crossing the region from west to east. These systems rarely produce high daily rainfalls but can bring substantial falls over longer periods. In general, it is these winter systems which are the more significant in terms of flood production, and there is a tendency towards a concentration of flooding in June, July and August. Some of the most severe floods however, have occurred in the summer months.

8. Most of the severe floods have resulted from sequences of rain events rather than from individual ones. The early events wet the catchment, and the later ones often generate the significant flooding. Significant rainfalls preceded the August 1990 flood in April and July resulting in minor flooding events in these months.

9. Although flood events are usually the result of extended rainfall periods, localised flooding from sudden severe thunderstorms does occur. High flows in the Bell and Little Rivers are common when such thunderstorm cross their headwaters. Also, the Villages of Wongarbon and Eumungerie have suffered severe localised flooding as a consequence of these types of events. Such thunderstorms occur mainly in summer and with very little warning. They have no appreciable impact on levels in the major rivers.

10. Major floods have been most common during the winter months, more than half having occurred during this period. However, the relatively flood free months of February and March have recorded the two highest floods on record. The monthly distribution of floods that have exceeded 8m at Dubbo between 1885 and 1990 is shown below:

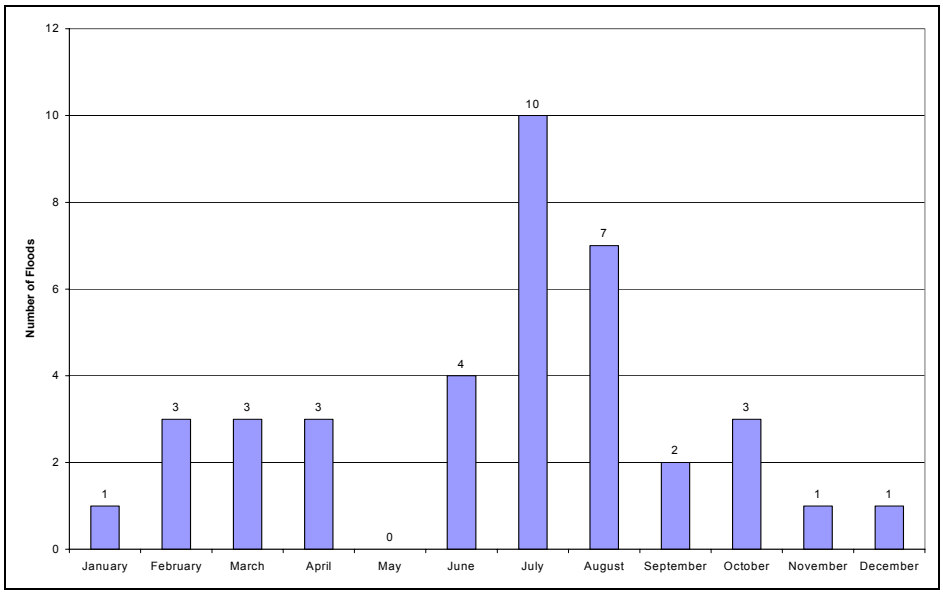

Figure 1 - Monthly distribution of floods recorded at Dubbo

Characteristics of Flooding – Macquarie River

11. The Burrendong Dam since its construction in 1965 has had a significant mitigating effect on flood levels at Dubbo. The Dam commands a catchment of 13,900 km^2, which is approximately 70% of the catchment upstream of Dubbo. Due to the physical control exerted by the Dam, its resultant outflow discharges are invariably lower than its corresponding peak inflows. This, together with its usual ability to delay releases so flood peaks from downstream tributaries are not compounded, permits the actual reduction of the flood crest. However, 30% of the catchment above Dubbo by-passes the Dam and therefore is not directly influenced by it. In addition, releases from the Dam are inevitable when its nominal flood storage is exceeded and although still less than the inflow into the Dam, such discharges can be substantial in volume and capable of causing flooding downstream in there own right, as occurred in 1971 and 1990.

12. The extent of flooding in the Macquarie River from the Dam to Wellington is limited by the steeply rising ground on both sides of the river. Below Wellington the topography is less rugged, but the river remains confined between high banks until just above Ponto Bridge near Geurie. Downstream of this point, moderate floods cause inundation in a narrow strip along the river as well as backing up and flowing through some cowals further away from the river. Major floods such as occurred in 1955 cause extensive inundation. This flood resulted in extensive inundation below the Little River with areas covered between one and four kilometres wide.

13. The flood liable areas of the urban centre of Dubbo are not subject to frequent inundation because of the mitigating affect of the Burrendong Dam. Between the L.H. Ford Bridge and Railway Bridge, floods smaller than the 12 year ARI event are contained within the banks of the river. A flood having a magnitude of a 20 year ARI event will begin to affect low-lying commercial premises. The flood situation at Dubbo can be aggravated by the coincidence of high flows in both the Macquarie and Talbragar Rivers. However, this is a rare occurrence with the February 1955 flood only known to have reflected such conditions -the Talbragar backed-up the Macquarie to cause extensive inundation of parts of Central and North Dubbo.

Characteristics of Flooding – Talbragar River

14. Although floods within the river generally occur every few years, only the floods of 1870, 1920, 1926, 1950 and 1955 are known to have broken the banks. The flood of 1955 was the largest on record. It was produced by record rainfalls in the upper catchment and caused extensive damage. Water flowed with a high velocity across the valley floor removing large areas of topsoil and damaging houses. The whole of the Village of Ballimore was inundated to depths exceeding 1 metre. By comparison, the floods of 1920 and 1950, which were the next highest, only backed up into the low spots along the river.

River Distances – Crest Travel Times

15. The river distances and crest travel times are detailed in the following table:

Gauges	River Distance (km)	Travel Time Range (hours)	Median Travel Times (hours)
Macquarie River			
Burrendong Dam – Wellington	38	8—12	
Wellington – Wollombi	42	10—12	
Wollombi – Dubbo	32	6—16	9
Dubbo – Baroona	52	9—27	13.5
Baroona – Narromine	23	4—12	
Bell River			
Neurea – Wellington	25	1.5—11.5	6
Little River			
Obley – Allandale	56	6—11.5	9
Allandale – Wollombi	25	4—8	
Talbragar River			
Dunedoo – Narranmore	53	16—24	
Narranmore – Barbigal	49	10—20	
Barbigal – Ganarrin	36	12—20	

Figure 2 - River distances and crest travel times

Flood History

16. Between 1885 and 1990, 38 floods have reached 8.0 metres at Dubbo but these have occurred in only 23 years. Around four out of five years are therefore free of significant floods. The maximum continuous period without any floods was the 15 years from 1901 to 1915, while the maximum number of floods in anyone year was eight in 1950. Four floods above 8.0 metres occurred in 1990.

17. The most serious floods experienced in the Dubbo City Council area occurred in 1870, 1892, 1926, 1950, 1955 and 1956. Of these the 1955 flood was the most severe, reaching a height of 12.67 metres on the Dubbo Pump Station gauge. The flood-producing rains on this occasion fell largely over the catchments of the Cudgegong and Talbragar rivers, with only minor falls over the upper Macquarie. The coincidence of a major flood in the Talbragar River with high flows in the Macquarie River resulted in the backing-up of floodwaters into large portions of the Dubbo urban area.

18. Since the completion of Burrendong Dam at the junction of the Macquarie and Cudgegong Rivers in 1965, the dam has had a significant affect in attenuating flood events. Where as the 1956 flood (the second highest on record at 11.90 metres) principally resulted from high flows originating in the Macquarie River catchments before the dam was built, the 1990 event was mitigated as a consequence of the dam. The 1990 event similarly arose from rain mostly falling over the Macquarie upstream of Bathurst and over the Bell and Little River catchments. The Talbragar contributed virtually nothing on this occasion. Inflow to Burrendong Dam reached record levels in 1990. Peak releases were also at record levels, and the dam reached its highest storage level. This flood however, reached 10.06 metres at Dubbo while it is estimated that without the dam, it would have exceeded 12 metres.

19. Floods differ not only in terms of heights reached and the contributions of particular tributaries, but also in terms of volume of discharge and duration. The 1950 and 1956 floods were larger in terms of total discharge and lasted longer than the 1955 event but did not reach the same height. In accordance with seasonal differences in the nature of the major weather systems, it is the winter floods which have tended to be longer-lasting and of greater discharge.

Recorded Flood Events at Dubbo Exceeding 11 metres (Gauge heights relate to the Dubbo gauge)		
Year	**Date**	**Height (m)**
1870	22 June 1870	11.90
1892	26 September 1892	11.42
1926	26 March 1926	11.31
1950	5 April 1950	11.10
1955	25 February 1955	12.67
1956	14 March 1956	11.90

Figure 3 - Recorded flood events at Dubbo exceeding 11 metres

Significant Flood Events at Dubbo Since the Construction of Burrendong Dam (Gauge heights relate to the Dubbo gauge)		
Year	**Date**	**Height (m)**
1971	11 February 1971	9.78
1976	25 January 1976	7.30
1990	21 April 1990	8.96
1990	25 July 1990	8.34
1990	3 August 1990	10.06

Figure 4 - Significant flood events at Dubbo post Burrendong Dam

Flood Mitigation Systems and Extreme Flooding

20. Burrendong Dam is located on the Macquarie River just below its confluence with the Cudgegong River. The dam has a total catchment area of 13,890 km^2. The town of Wellington, which has a population of 5,600, is about 30 km downstream. The city of Dubbo, which has a population of about 32,000, is about 50 km downstream of Wellington.

21. In 1949, the then Water Conservation and Irrigation Commission undertook the planning and investigations for Burrendong Dam. The project was envisaged as a single purpose storage of 640,000 ML capacity, mainly for grazing and grain irrigation. Later because of the consequences of flood damage during the 1955 flood, the conservation storage capacity of the dam was increased to 1,118,000 ML and a flood mitigation storage of 489,000 ML was provided by seven radial gates in the spillway. The dam's construction was completed in 1963.

22. In 1989, the Burrendong Dam storage was supplemented by the completion of Windamere Dam, which is located on the Cudgegong River, an upstream tributary of the Macquarie River.

23. Both Burrendong and Windamere Dams are now owned by the Department of Land and Water Conservation and operated and maintained by State Water, the department's bulk water delivery business. Studies are now underway to examine the capability of the Burrendong Dam spillway to accommodate extreme floods.

24. Burrendong Dam is the single most important floodplain mitigation measure available to the City of Dubbo and has dramatically altered the extent, frequency and pattern of flooding within the city. The operation of Burrendong Dam as a flood mitigation storage is crucial to the flood security of Dubbo.

25. At Dubbo, the magnitude of the peak discharge of the February 1955 flood under pre-dam conditions would have a frequency of a 80 year ARI event. Under post-dam conditions it would have an ARI frequency of 500 years.

26. It is important to realise that the dam does not control all of the catchment above Dubbo. Therefore, major flooding can still occur from streams draining this uncontrolled area. Furthermore, although a rare event, the coincidence of high flows in both the Macquarie and Talbragar Rivers with resulting extreme flooding of Dubbo, is still a real and plausible threat. Despite the mitigating effect of Burrendong Dam, major flooding of the urban area of Dubbo and rural areas will occur, with the exceedance of the 1955 flood event also being a real but remote possibility.

27. Burrendong Dam is estimated to be able to withstand a flood volume up to 70-80% of that in the Probable Maximum Flood (PMF) at the dam site. The flow in such a flood would be vastly greater than has ever been recorded there and would be extremely rare. Failure would add further to the previously existing flow volume but is extremely unlikely because one of the saddle dams would be deliberately breached to save the main dam. This too would, however, add to the seriousness of an already very severe flood downstream.

28. If a failure were to occur the effects would be very severe for scores of kilometres downstream for a wide area and result in a flood of extreme proportions in the Macquarie River. Although some attenuation of the height of the flood wave could be expected by the time of arrival at Dubbo, the flood nevertheless would be of great severity to not only the urban area of Dubbo but the rural areas as well. Under such circumstances, the City of Dubbo would experience its worst flooding in recorded history with the highest known flood (1955) being exceeded by metres.

29. When studies of the potential effects of such flooding are completed, this plan will be revised to develop appropriate warning and evacuation procedures. It must be stressed however, that the risk of dam failure is extremely slight.

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

General

1. Floods smaller than the 12-year ARI flood event are contained within the banks of the Macquarie River. Following overtopping of the riverbanks some evacuations of low-lying residences and the Poplar Caravan Park is necessary when moderate flood level (7.9 metres) is reached. At 8.5 – 9.0 metres the low-lying commercial premises begin to be affected by the inundation of basement areas and necessitating the removal of vehicles from several car yards.

2. Flood heights in excess of 10.5 metres would cause severe disruption to the Central Business District. Floodwaters are expected to enter Macquarie Street at heights between 11.2 – 11.5 metres. At heights between the 2% AEP (10.94 metres) and the 1% AEP level (11.75 metres), flood waters begin to back-up the underground stormwater system resulting in the creation of 'lakes' up to 300mm in depth in the CBD outside the main line of river inundation.

3. In excess of 11.75 metres the scale of river inundation increases significantly with floodwaters breaking out across the city. North of the railway line the flood limit will spread more quickly reflecting the flatter and lower lying ground. Large portions of the CBD business premises and North Dubbo residences will require evacuation.

4. The location of flood level markers in the CBD for the 1955 and 1990 flood events is shown in Map 4.

5. The Dubbo SES Local Controller maintains a list of residential and commercial premises requiring warning if floods exceeding the moderate flood classification level are expected.

Dubbo Rural Area

6. The Villages of Wongarbon and Eumungerie experience some inundation from local watercourses, particularly Eumungerie where the Drillwarrina Creek can inundate the majority of the residences situated between the creek and the railway line.

7. The Village of Ballimore is subject to flooding by the Talbragar River at Major Flood level and above, having been inundated at least once in recorded history, that being 1955. The lower parts of the Village of Brocklehurst are subject to inundation from the Talbragar River for a 2% AEP event or greater.

8. The North Burrabadine subdivision is subject to isolation at Major Flood level by the severing of the only road access by a flood cowal. Some residences within the subdivision are also at risk of inundation above the major flood level.

9. Extensive rural areas on the Macquarie and Talbragar Rivers floodplains are inundated during the more severe events.

Roads Affected by Flooding

10. **Road Closures**. Dubbo City Council will close major arterial roads just prior to them being inundated with floodwater in order to prevent excessive damage to the road surface and to minimise risk to the road users. Road closures will occur around Dubbo as the result of a combination of both riverine flooding from the Macquarie River and localised flooding. Three areas receive special attention during periods of flooding. They are:

a. **Bligh Street**. Vehicles and caravans have to be moved from the area before inundation commences. When it is predicted that Bligh Street will be inundated during the day it will be closed prior to the morning traffic to reduce the requirement to shift vehicles from the area as the floodwaters rise.

b. **Emile Serisier Bridge**. Every attempt will be made to keep the bridge open for as long as possible. However, once the floodwaters reach the bottom of the bridge deck the bridge will be closed. This is because the usual build up of flood debris will quickly cause the floodwaters to flow over the bridge deck.

11. **Highway Detours**. When the Newell Highway north of Dubbo is closed by floodwaters the RTA implement a highway detour which diverts the traffic from the north at the Stockmarket turn-off. The detour diverts vehicles via Boothenba Road, Yarrandale Road, Cobbora Road, Wheelers Lane and back onto the Mitchell Highway.

12. Roads that may be affected by flooding are detailed in the following tables:

Urban Roads			
Gauge Height	**Road**	**Designation**	**Location of Closure**
6.8	Bligh Street		Talbragar & Bultje streets
7.4	Bligh Street		Remaining section
7.4	Mitchell Hwy (Emile Serisier Bridge)		Whyandra & Erskine streets
8.0	Brisbane Street		Macleay & Bourke streets
8.4	Newell Highway		River Street & Purvis Lane
8.5	Fitzroy Street		River Street & Purvis Lane

Figure 5 - Urban roads affected by flooding

Rural Roads			
Gauge Height	**Road**	**Designation**	**Location of Closure**
6.9	Troy Bridge		Troy Bridge Road & Newell Hwy
7.0	Angle Road		

Rural Roads			
Gauge Height	**Road**	**Designation**	**Location of Closure**
7.5	Old Dubbo Road		Hennessy's Road & Angle Park Road
8.0	Rawsonville Road		Burroway Road & Mitchell Hwy
8.0	Benelong Road		
8.5	Bunglegumbie Road		At Sandy Creek
9.5	North Burrabadine Road		
9.5	Burroway Road		

Figure 6 - Rural roads affected by flooding

Main Access Routes within the Dubbo Urban Area			
Road	**Designation**	**Affected At**	**Comments**
Newell Hwy		L.H.Ford Bridge	Eastern approach cut in minor floods.
Newell Hwy		North Dubbo & Troy	Inundated in floods above the moderate flood classification level.
Mitchell Hwy		Emile Serisier Bridge	Inundated moderate floods.

Figure 7 - Main access routes within the Dubbo urban area affected by flooding

Main Access Routes within the Dubbo Rural Area			
Road	**Designation**	**Affected At**	**Comments**
Mitchell Hwy		Brummagen Creek Bridge	Backwater from the Macquarie River.
Dunedoo Road	MR 206	5 km east of the Beni Rail crossing	Local flooding.
Troy Bridge Road		Troy Bridge	Inundated before the moderate flood classification level is reached.
Old Dubbo Road		Eulomogo Creek	
Obley Road		Several locations	Local and riverine flooding.
Rawsonville Road		Rawsonville Bridge	The northern approach is cut.
Benelong Road		Terra Bella bridge	Cut at Little River.
Bunglegumbie Road		Several locations	Affected by general overbank inundation.
Mogriguy – Eumungerie Road		Coalbaggie Creek	Local flooding.
Mogriguy – Eumungerie Road		Mogriguy & Sandy creeks	Local flooding.
Old Mendooran Road		Talbragar River Crossing	Inundated by minor flooding.
Barbigal Road		1 km south of Dunedoo Road	Local flooding.
Minore Road		Whylandra Creek Crossing	Local flooding.
Burroway Road		Mogriguy Creek	Backwater from Macquarie River.

Figure 8 - Main access routes within the Dubbo rural area affected by flooding

Air Transport

13. Access to the Dubbo airport from areas east of the Macquarie River remains until access to West Dubbo is lost when the eastern approaches to the L.H.Ford Bridge is inundated at 11.75 metres. The airport is capable of handling 767, 737, Airbus and C130 Hercules aircraft depending upon the condition of the pavement.

NSW STATE EMERGENCY SERVICE

SES RESPONSE ARRANGEMENTS FOR DUBBO CITY

Volume 3 of the Dubbo City Local Flood Plan

Last Update: June 2003 (DRAFT)

FloodSafe

ANNEX C - GAUGES MONITORED BY THE DUBBO SES LOCAL HEADQUARTERS

Gauge Name	Type	AWRC No	Stream	Flood Classification			Reading Arrangements
				Min	Mod	Maj	
Wellington Bridge*	Manual	421003	Macquarie River	6.0	11.0	13.0	BoM, SES
Geurie (Wollombi)	Manual	421900	Macquarie River	5.0	10.2	12.0	SES
Dubbo*	Telemeter	421001	Macquarie River	5.5	7.9	11.0	DLWC, BoM, SES
Ganarrin	Manual	421901	Macquarie River	-	-	-	SES
Baroona	Telemeter	421127	Macquarie River	4.0	10.0	12.0	DLWC, BoM
Rawsonville	Telemeter	421055	Coolbaggie Creek	-	-	-	DLWC
Newrea (Bell R)	Telemeter	421018	Bell River	4.9	5.4	6.4	DLWC, BoM
Wellington (Bell River)	Manual	421008	Bell River	3.4	5.9	8.4	SES

Note:

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

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

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

Television Stations:

Station	Location
Prime	Dubbo
ABC	Sydney
Capital	Sydney
WIN	Dubbo

Radio Stations:

Station	Location	Frequency	Modulation
2DU	Dubbo	1251	AM
2CR	Orange	548	AM
Zoo FM	Dubbo	92.7	FM
Star FM	Dubbo	93.5	FM
RHEMA	Dubbo		FM
Aussie	Dubbo	88.1	FM

Newspapers:

Name	Location
Daily Liberal	Dubbo

Other Agencies:

- RTA Dubbo
- NRMA Dubbo
- Dubbo City Council
- Orana Police District HQ
- NSW Ambulance Service Regional Office, Dubbo
- NSWFB, Dubbo
- NSWFB, Central Region, Young
- Australia Post, Dubbo
- Tourist Information Centre, Dubbo

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 other 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, buses will operate where possible on normal routes. Special transport can also be provided on request if necessary, telephone [ ].
- So that you can be accounted for, it is important that you register at the evacuation centre.
- After registering, you may go to the house of a friend or relative. Alternatively, accommodation will be arranged for you.
- The Police will provide security for your property while you are away.

ANNEX F - EVACUATION ARRANGEMENTS FOR THE DUBBO CITY AREA

Situation

1. A number of residences and properties will need to be evacuated during significant flood events up to the 1% AEP flood level. In most floods, the evacuation task would involve only a relatively small number of people living on the floodplain in the urban area and urban fringes of Dubbo. However, floods exceeding the 1% AEP level would require the evacuation of a large proportion of North Dubbo and the Central Business District and cause significant disruption.

2. A flood inundating the same urban area of Dubbo as the 1955 event would be expected to require the maximum evacuation of approximately 2,000 people.

3. Individual rural properties on the Macquarie and Talbragar River floodplains can expect to suffer inundation and/or short-term isolation depending on the severity of the flood. Affected persons will usually evacuate to friends or relatives located either in Dubbo or in the general vicinity. Disruption to telephone communications can be expected in the Benolong – Terrabella area following the breaking-out of floodwaters from the Macquarie River in those localities. Isolation of residences in the North Burrabadine Sub-division will occur during a major flood event together with inundation of some low-lying premises. Evacuation of residents to Dubbo prior to the severing of the only road access into that sub-division will need to be considered.

4. Portions of the Villages of Eumungerie and Wongarbon are prone to local flooding and may require partial evacuation whilst the lower parts of the Village of Brocklehurst are threatened by a 2% AEP event or greater in the Talbragar River. Evacuees in these Villages would normally be accommodated by friends or relatives in the locality, but if necessary, could be moved to Dubbo. The village of Ballimore however, is threatened by wide-spread inundation should an extreme event occur in the Talbragar River, and is likely to necessitate a complete evacuation of the village occupants to Dubbo. The maximum number of evacuees expected from the villages are approximately:

a. Eumungerie – 40 persons;

b. Brocklehurst – 30 persons;

c. Wongarbon – 30 persons; and

d. Ballimore – 120 persons.

5. As a regional centre serving a large area of north-western New South Wales, Dubbo is the nominated reception and initial billeting centre for evacuees from towns and villages in the surrounding local government areas of Coonamble, Gilgandra, Nyngan, Walgett, Warren, Wellington and Narromine. The maximum number of evacuees from the surrounding urban centres and villages is estimated to be as follows:

a. Collarenebri – 600 persons;

b. Coonamble – 500 persons;

c. Gilgandra – 2,000 persons;

d. Mendooran – 350 persons;

e. Narromine – 3,300 persons;

f. Nyngan – 2,300 persons;

g. Walgett – 2,000 persons; and

h. Warren – 2,000 persons.

Mission

6. The SES is to coordinate the evacuation of areas at risk of flooding in order to ensure the safety of residents.

Execution

7. **Control.** During floods the NSW SES will control evacuations.

8. **Conduct.** Evacuations will be controlled by the Dubbo SES Local Controller with the assistance of the LEOCON and conducted by Police, SES, NSWFB, VRA & RFS personnel in four phases:

a. Phase 1 - Warning.

b. Phase 2 – Withdrawal.

c. Phase 3 – Shelter.

d. Phase 4 – Return.

9. **Coordinating Instructions.**

a. **The decision to evacuate.** The responsibility for issuing any general evacuation order during flooding rests with the Dubbo SES Local Controller who exercises his/her authority in accordance with Section 22(1) of The State Emergency Service Act 1989. However, the decision to evacuate will usually be made after consultation with the LEOCON, Dubbo City Mayor and the Macquarie SES Division Controller.

b. **When evacuation should occur.** As far as possible, evacuation will be carried out before inundation occurs.

c. **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.

10. **Evacuation triggers.**

a. Following overtopping of the riverbanks some evacuations of low-lying residences and the Poplar Caravan Park is necessary when moderate flood level (7.9 metres) is reached.

b. At 8.5 – 9.0 metres, the low-lying commercial premises begin to be affected by the inundation of basement areas and necessitating the removal of vehicles from several car yards.

c. Flood heights in excess of 10.5 metres would cause severe disruption to the Central Business District. Floodwaters are expected to enter Macquarie Street at 11.2 – 11.5 metres. Between the 2% AEP (10.94 metres) and the 1% AEP level (11.75 metres), floodwaters begin to back-up the underground stormwater system resulting in the creation of 'lakes' up to 300mm in depth in the CBD outside the main line of river inundation.

d. In excess of 11.75 metres, the scale of river inundation increases significantly with floodwaters breaking out across the city. North of the railway line the flood limit will spread more quickly reflecting the flatter and lower lying ground. Large portions of the CBD business premises and North Dubbo residences will require evacuation.

11. **Phase 1 – Warning**

a. **Evacuation warnings.** On the receipt of flood warnings predicting peak heights of 8.2 metres and above at the Dubbo gauge; the Dubbo SES Local Controller will consult as necessary to determine the level of the threat and the need to consider evacuations. As soon as possible after the decision to evacuate is made, the Dubbo SES Local Controller will issue evacuation warnings to the ‘at risk’ residents, indicating what people should do before evacuating and when actually doing so.

b. **Content of Evacuation Warnings.** A template guide to the content of evacuation warning messages is at Annex E. These are disseminated via:

- The radio and TV stations listed in Annex D.
- Door-knocks by emergency service personnel.
- Public address systems from emergency service vehicles.
- Telephone.
- Two-way radio.
- SES Flood Bulletins.

12. **Phase 2 – Withdrawal**

a. **Introduction.** Withdrawal involves the actual removal of the community/individuals from dangerous or potentially dangerous areas to safer areas.

b. **Movement.** Evacuees are to be encouraged to move using their own transport where possible. The Dubbo SES Local Controller will arrange transport for those people without their own vehicles.

c. **Special Needs Groups.** The Dubbo SES maintains a list of vulnerable residents and special needs groups (aged, infirm, handicapped and people requiring medical support). When evacuations are ordered Ambulance Service personnel will be deployed early to assist with the safe evacuation of these people.

d. **Animals.** Evacuees with their own transport will be encouraged to take their companion animals such as cats, dogs and horses with them as they evacuate. These animals will therefore be transported by car, truck or horse float along the evacuation routes designated in this plan. Companion animals so shifted will be collected from their owners at evacuation centres and taken to facilities to be arranged by the Dubbo City Council at either Boothenba Road or the Dubbo Showground. 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. In these cases provision will be made for animals to be picked up as the people are evacuated. Arrangements will also be made to pick up animals that are left behind. 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.

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

- Addresses and locations of houses doorknocked and/or evacuated.
- The number of occupants.
- Details of support required (such as transport, medical evacuation, assistance to secure house and/or property and raise or move belongings).
- Details of residents who refuse to comply with the evacuation order.

f. **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 Management

Operations Controller who will arrange for Police to ensure their evacuation.

g. **Security.** The NSW Police will provide security for evacuated premises.

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

- The Dubbo Airport.
- Dubbo Base Hospital, Myall Street, Dubbo.
- No 1 Oval, Victoria Park, Darling Street, Dubbo.
- Dubbo Showground, Fitzroy Street, Dubbo.
- Elizabeth Park, Windsor Parade, Dubbo.
- Dawson Park Greyhound Track, Wheelers Lane, Dubbo.
- Jubilee Oval, Wheelers Lane, Dubbo.

i. **Airport.** Access to the Dubbo airport from areas east of the Macquarie River remains until access to West Dubbo is lost when the eastern approaches to the L.H.Ford Bridge is inundated at 11.75 metres. The airport is capable of handling 767, 737, Airbus and C130 Hercules aircraft depending upon the condition of the pavement.

13. **Phase 3 – Shelter**

a. **Evacuation centres.** The usual purpose of evacuation centres is to meet the immediate needs of victims, 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 Dubbo SES Local Controller but managed as soon as possible by the Department of Community Services. Any or all of the following sites may be used as evacuation centres:

- **Dubbo**. For most floods any or all of the following locations could function as evacuation centres in the urban area of Dubbo:
  - Dubbo Civic Centre – Darling Street;
  - Police and Citizens Youth Club – Cnr Darling and Erskine streets;
  - Wesley Centre – Cnr Church Street and Carrington Avenue;
  - Masonic Hall – Wingewarra Street; and
  - Pipe Band Hall – Darling Street.

- In extreme floods necessitating large-scale evacuations and rendering the above locations unuseable, the following may function as evacuation centres:
    - South Dubbo High School Hall – Fitzroy Street;
    - Christian High School Hall – Sheraton Road;
    - St. Johns High School Hall – Sheraton Road;
    - Delroy High School Hall – East Street;
    - Ron Gordon Centre – Spears Drive;
    - Seventh Day Evangelists Hall – Cnr Cobra and Sterling streets; and
    - Girl Guides Hall – Boundary Road.
- **Villages**. Premises suitable for use as an Evacuation Centre in the Villages are listed below:
    - Eumungerie Hall – Railway Street, Eumungerie;
    - Eumungerie Primary School – Wheaton Street, Eumungerie;
    - Terramungamine BFB Building – Burraway Road, Brocklehurst;
    - St. Johns Ambulance Centre – Newell Highway, Brocklehurst;
    - Wongarbon Public Hall – Gundong Street, Wongarbon;
    - Wongarbon Scout/Tennis Club – Beni Street, Wongarbon; and
    - Ballimore Hall – Cnr Federation and Bunyip streets, Ballimore.

b. **Action on arrival.** On arrival, evacuees will be:

- registered;
- medically checked, if necessary; and
- provided with their immediate welfare needs.

c. **Registration.** The NSW Police will ensure that all evacuees are registered on arrival at the designated evacuation centres and details of

the registrations are to be sent to the NSW Police Western Region Headquarters by the quickest means available.

d. **Evacuees' Pets.** Evacuees managing their own evacuations should be encouraged to take their pets with them. However, pets cannot be managed at evacuation centres. In the event of a large-scale evacuation from North Dubbo, companion animals (domestic pets) will be accommodated in the Dubbo City Council animal pound in Boothenba Road. The Dubbo City Council will operate these facilities with assistance from the RSPCA. An alternative animal compound may be established at the Dubbo Showground. Assistance animals can accompany their owners on non-private transport provided for evacuees and at evacuation centres.

14. **Phase 4 – Return**

a. Once it is considered safe to do so, the Dubbo SES Local 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.

b. The return will be controlled by the Dubbo SES Local Controller and may be conducted, at his/her request, by DoCS.

Administration and Logistics

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

16. **Support provided at evacuation centres.** The expected duration of the evacuation will dictate the need for and level of facilities and support at the evacuation centres. If evacuations are expected to be of a short duration, evacuees may be provided with short-term accommodation at the centres. However, if they are expected to last for longer than 24 hours, evacuees will be encouraged to go to alternative accommodation or stay with friends where possible. Alternatively, accommodation will be arranged for them in hotels, motels or by billeting.

Control Arrangements

17. **Control.** Small-scale evacuations will be controlled by the Dubbo SES Local Controller. Should the evacuations operations escalate beyond the capabilities of local resources control may be handed over to the Macquarie SES Division Controller.

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

General

1. The following caravan parks are flood liable in Moderate floods (7.9 metres and above at the Dubbo gauge):

a. Poplars Caravan Park in lower Bultje Street.

b. Mid state Caravan Park at 21 Bourke Street, Dubbo.

Advising Procedures

2. Caravan Park proprietors will ensure that the owners and occupiers of caravans are:

a. Made aware that the caravan park is flood liable by:

- handing a printed notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and outline the evacuation and van relocation arrangements as detailed in this Annex; and

- displaying this notice prominently in each van.

b. Made aware that if they are expecting to be absent from their vans for extended periods, they should:

- 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; and

- 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).

c. Informed when a flood is rising. At this time, occupiers will be advised to:

- Ensure that they have spare batteries for their radios.

- Listen to a local radio station for updated flood information.
- Prepare for evacuation and van relocation.

3. The Dubbo SES Local Controller will ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.

Evacuation of Occupants and Relocation of Vans

4. Caravan park proprietors are encouraged to install flood depth indicators and road alignment markers within their caravan parks.

5. When an evacuation order is given:

a. Occupiers of non-movable vans should:

- secure their vans by tying them down to prevent flotation;
- isolate power to their vans;
- collect personal papers, medicines, a change of clothing, toiletries and bedclothes;
- lift the other contents of their vans as high as possible within the van; and
- move to the designated evacuation centre if they have their own transport, or move to the caravan office to await transport.

b. Where possible, vans that can be moved will be relocated by their owners. Park managers will arrange for the relocation of mobile vans whose owners do not have a vehicle. Council and SES personnel will assist if required and may be able to provide additional vehicles. Vans are to be moved to the Dubbo Showground.

6. Occupants of vans that are being relocated should go to a designated evacuation centre if they have their own transport. Those without their own transport are to report to the caravan park office.

7. Caravan park managers will:

a. Ensure that their caravan park is capable of being evacuated within 6-10 hours.

b. Advise the Dubbo SES Local Controller of:

- the number of people requiring transport;
- details of any medical evacuations required; and
- 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 Dubbo SES Local Controller when the evacuation of the caravan park has been completed.

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

Return of Occupants and Vans

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

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

ANNEX H - PROPERTY PROTECTION

Introduction

1. On Receipt of warnings of imminent flooding residents should be encouraged to prepare their property. The following paragraphs provide some useful checklists that can be conveyed to residential and commercial residents at risk of flooding.

Property Protection Checklist – Residential

2. Move as many household items as possible to a high a place as possible. **CAUTION**. The roof or upper floor may not be able to safely support the additional weight of heavy equipment or furniture unless it has been specially strengthened before hand.

3. Include cardboard boxes and newspapers as items to be moved to higher ground. Such material will disintegrate and clog drains when floodwaters recede.

4. Anchor, secure, or weigh-down any items that may become debris or battering rams in moving water. For example, tie furniture and personal items on top of a bed and then anchor the bed by tying it to the house structure.

5. Tie down timber, metal and loose items in the yard to prevent them from being carried away by floodwater or battered against other items or structures (eg. plastic drums and containers etc).

6. Remove all wood drawers, even though empty, from built-ins (eg. cabinets) and furniture (eg. dressers) because wood swells when wet and the resulting pressure between the drawers and their containers can damage wood fibres.

7. Remove light-bulbs from permanently mounted light fixtures below flood level to prevent their breakage. Put the light-bulbs and other glass items in plastic bags to prevent glass from shattering and spreading if the item is broken.

8. Protect valuable machinery and equipment that cannot be relocated by enclosing them in waterproof covers or by coating them with grease to minimise damage and to facilitate cleaning and return to operation. If practical, consider encircling such equipment with a wall of sandbags.

9. Relocate chemicals that react with water to give off heat or form explosive or toxic gases and chemicals (such as weed killers and potassium) to the highest level in the home and ensure that they are in waterproof containers. This will prevent safety hazards, pollution, or damage to materials in the home.

10. Remove and dispose of perishable food items in cabinets, refrigerators, and indoor garbage cans or place in plastic bags or containers and seal shut. Tie the lids outdoor garbage containers shut and anchor them to minimise the spread of disease and unsanitary conditions. Leave refrigerator and freezer doors **OPEN**.

11. For those who have a boat, moor it in such a way that access to it can be gained easily during the flood.

12. People who evacuate voluntarily are encouraged to tell a number of the family, a friend, neighbour or emergency workers when they are going and, if known, where they are going.

Property Protection Checklist – Utilities

13. **Electrical System**:

    a. The flow of electricity through the home is controlled by either plug fuses or circuit breakers located within a meter board fuse box mounted on the wall of the home. If flooding is imminent, remove (don't just loosen) all fuses, including the one at the main switch and at the range switch, and put them in a place above the anticipated flood level. This will minimise the danger of short circuits when the power authority returns service to your home after the flood.

    b. If a circuit breaker panel board is present, switch each circuit breaker to the **OFF** position.

    c. Ensure all perishable food as been removed from the refrigerator and freezer.

    d. Ensure any outside hot water heaters are tied down.

14. **Gas**:

    a. Close main gas valve on the cylinder.

    b. Gas cylinders/bottles should be tied down or disconnected and removed above predicted flood height.

15. **Water**:

    a. Close stop valve at the water meter.

    b. Disconnect any underground sprinkler watering systems connected to the supply.

    c. Close any stop valves/taps connecting rainwater tanks to the house.

16. **Fuel Tanks**.

    a. Anchor fuel tanks to prevent them from overturning or floating.

    b. Close fuel tank valves to prevent leaks, spills and floodwater in filtration.

Property Protection Checklist – Commercial Premises

17. On receipt of a warning of imminent flooding commercial operators should consider the following checklist to ensure that they are adequately prepared.

18. Move as many goods and equipment items as possible to higher levels before access to the storage/display areas are cut off by rising floodwaters.

19. Ensure basement areas are attended to and not forgotten.

20. Protect valuable machinery and equipment that cannot be relocated by enclosing them in waterproof covers or by coating them with grease to minimise damage and to facilitate cleaning and return to operation (if practical, consider encircling such equipment with a wall of sandbags).

21. Anchor, secure or weigh-down any items that may become debris or battering rams in moving water.

22. Relocate chemicals that react with water to give off heat or form explosive or toxic gases and chemicals.

23. Remove perishable food items from cool rooms, refrigerators and freezers that are at risk of being inundated.

24. Tie down any loose items in the yard to prevent them from being carried away by floodwater.

25. If flooding is imminent, remove electrical fuses to all equipment and lighting in areas at risk of being inundated. If necessary, arrange an electrician to isolate such equipment or area from the remainder of the building. If the premise has a circuit breaker panel board, switch each appropriate circuit breaker to the **OFF** position.

26. Close the main gas valve on the gas cylinders/bottles.

27. Gas cylinders/bottles should be tied down or disconnected and removed above predicted flood height.

28. Close stop valves on water plumbing feeding areas likely to be inundated.

29. Disconnect any underground sprinkler watering systems connected to the water supply.

30. Anchor fuel tanks to prevent them from over turning or floating. Close fuel tank valves to prevent leaks, spills and floodwater infiltration.

ANNEX I - DETAILS OF EMERGENCY ACTIONS FOR BURRENDONG DAM

Introduction

1. Burrendong Dam is estimated to be able to withstand a flood volume up to 70-80% of that in the PMF (Probable Maximum Flood) at the dam site. The flow in such a flood would be vastly greater than has ever been recorded there and would be extremely rare. Failure would add further to the previously existing flow volume but is extremely unlikely because one of the saddle dams would be deliberately breached to save the main dam. This too would, however, add to the seriousness of an already very severe flood downstream.

2. If a failure were to occur the effects would be very severe for scores of kilometres downstream for a wide area and result in a flood of extreme proportions in the Macquarie River. Although some attenuation of the height of the flood wave could be expected by the time of arrival at Dubbo, the flood nevertheless would be of great severity to not only the urban area of Dubbo but the rural areas as well. Under such circumstances, the City of Dubbo would experience its worst flooding in recorded history with the highest known flood (1955) being exceeded by metres.

3. When studies of the potential effects of such flooding are completed, this plan will be revised to develop appropriate warning and evacuation procedures.

Emergency Action

4. The prime means of detecting the development of a potential emergency condition is through the daily visual inspection of the dam by the Officer-in-Charge, Assistant Officer-in-Charge, and inspection and monitoring activities of the Asset Services Branch, State Water. The three major possible causes of dam failure are:

a. Failure due to extreme flood levels overtopping the embankments.

b. Flood failure due to the failure of Windamere Dam (upstream of Burrendong Dam on the Cudgegong River, a tributary of the Macquarie) in the event of an extreme flood.

c. Failure due to a rapidly deteriorating structural deficiency such as may be induced by an extreme earthquake, internal erosion, landslide or sabotage. This is the so-called "Sunny Day" failure (ie not induced by an inflow flood).

5. Although the dam is currently in good condition, it is recognised that an unsafe or emergency condition could occur at any time due to extreme natural events. The Dam Safety Emergency Plan (DSEP) details two emergency actions—Action 1 and Action 2.

Action 1

6. Action 1 is known as the Emergency Action and is used to advise appropriate emergency services and authorities of a potential dam failure due to:

a. uncontrolled seepage through the embankment, abutments or foundations;

b. cracking or instability of the embankment caused by earthquakes or other factors;

c. the failure of Windamere Dam in an extreme flood event; or

d. an expectation that the storage level will exceed RL 362.41m AHD.

7. When Action 1 is activated, the SES is to make the necessary arrangements to evacuate at risk residents without delay. The extreme flood event that would cause a flood-induced failure would mean that many downstream residents should already have been evacuated before Action 1 is reached.

Action 2

8. Action 2 is activated when a significant incident occurs but immediate dam failure is unlikely and does not pose immediate danger. Action 2 may be activated because of significant incidents such as:

a. slips, cracking, increase in turbidity or volume of seepage flow or earthquake;

b. storage level reaches RL 358.5m AHD;

c. damage to the hoist bridge caused by earthquakes or other factors; or

d. major electrical or mechanical equipment failure or damage.

9. The main aim of Action 2 is for the dam staff to closely monitor the condition of the dam and implement preventative measures to return it to a safe condition as soon as possible.

Flood Operation

10. Under normal conditions, the operation of the storage is controlled from the dam. During flooding events, the dam will be continuously manned, and dam staff will receive instructions for operating the spillway gates from the Manager, Hydrologic Information and Audit. The Operations Engineer, Central Area and the Duty Officer at Burrendong Dam are in regular contact with each other. The gauging station network is a Telemeter, which can be interrogated by telephone. The storage water level is also displayed and recorded continuously on an automatic recorder in the dam office. If the storage behaviour from the storage level recorder appears suspect, the storage level indicator on the gauge boards at the storage is visually checked. The Burrendong Dam Duty Officer will keep the SES informed of the discharge through the spillway. Once all spillway gates are withdrawn from water, the

water level must be monitored by Burrendong Dam Staff, and the Manager, Safety and Audit, State Water and the State Emergency Service must be kept continually advised. The following alerts are sent to the State Emergency Service:

Water Level (metres AHD)	Alert or Action
Storage exceeds RL 344.73.	Storage exceeds Full Supply Level (concrete crest level). Water on the gates.
RL 350 and expected to exceed RL 350.83.	Water level expected to exceed the flood storage level. Spillway gates are raised to pass floods.
RL 356.92 and storage continues to rise.	Flood has reached the maximum induced surcharge level. The gates will be withdrawn from the water and releases will no longer be controlled by the gates.
RL 361.5 and storage continues to rise.	Flood has exceeded spillway design flood level. **ACTION 1** is activated.
Storage exceeds RL 361.5 and expected to exceed RL 362.41	Storage exceeds design flood level and is expected to overtop the dam wall. Saddle Dam "B" is breached.
RL 362.41	Storage at Design Crest Level (critical safety level). Imminent Failure Flood Level.

Figure 9 - Burrendong Dam Alerts

Inundation Area

11. For the case where dam failure is brought about by an extreme flood, there would already be unprecedented flooding downstream of the dam due to spillway discharge and flow in the Macquarie River. Downstream flood inundation could occur as the result of a failure due to extreme flood (including the breaching of Saddle Dam B) or a "Sunny Day" failure.

a. **Failure Due to Extreme Flood.** It is extremely unlikely that a flood would occur that would overtop the Burrendong Dam Main Embankment and lead to dam failure by erosion of the dam's crest and downstream face. The failure of Windamere Dam would only pose a threat when the airspace in Burrendong Dam has already been filled by heavy inflow from the catchment. Before such an event, steps can be taken to lower the storage level in Burrendong Dam and/or to breach Saddle Dam B to reduce the possibility further.

b. **Breaching Of Saddle Dam B.** In the event of major electrical or mechanical failure or blockage of the spillway gates, or insufficient spillway capacity, breaching of Saddle Dam B may be necessary in an extreme flood event. Preparations for breaching occur when the water level reaches RL 360.5m AHD and inflows indicate that the flood is expected to overtop the dam wall. When the storage level reaches RL 361.5m AHD and is expected to exceed RL 362.41m AHD, failure of Saddle Dam B is initiated. This will lead to severe downstream flooding but with less damage than catastrophic failure of the main embankment.

c. **" Sunny Day" Failure.** Failure due to a rapidly deteriorating structural deficiency such as may be induced by an extreme earthquake, internal erosion, landslide or sabotage in which the dam fails under a normal inflow condition is referred to as a "sunny day" failure. In such an event, downstream flood inundation would result from water held in the storage. It is extremely unlikely that any earthquake-induced settlement of the dam would exceed the height of the flood mitigation storage plus freeboard. However, it is likely that some of the dam's ancillary structures may be severely damaged by an extreme earthquake. In the event of a "sunny day" failure of Windamere Dam, its discharge would be absorbed by the air space in Burrendong Dam.

12. Dam break flood inundation mapping has not yet been finalised for Burrendong Dam. Therefore, accurate information on flood depths, velocities and travel times at various locations is not available to be included at this stage. However, the Dubbo SES holds an interim inundation map for planning purposes. Travel times for a dam failure flood would be substantially less than travel time for the 1:100 year event and other conditions would be far worse in the case of dam break. Note however that the travel time relates to only one component of the lead-up time before downstream flooding commences, and therefore of the possible warning time. The other components are listed below:

a. Rainfall duration, flood travel times upstream of the storage, and time to fill the storage (for flooding cases).

b. The lag time between the occurrence of an extreme earthquake and initiation of a consequential dam failure.

c. For other events not related to natural flooding, the lag between first observing a problem, and its development into a dam failure event.

13. Severe flooding would also be likely to damage electricity supply facilities in the area resulting in loss of power, to put telephone facilities out of action, and to cut off evacuation routes.

14. It should be noted that dam break resulting from extreme rainfall would be preceded by flooding many times more destructive than from a flood equivalent to the flood of record in the Macquarie Valley, and consequently vast areas downstream of Burrendong Dam would already have been evacuated.

MAP 1 - RIVER BASIN

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MAP 2 - DUBBO COUNCIL AREA

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MAP 3 - TOWN/VILLAGE/SUBURB AREA

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MAP 4 - LOCATION OF FLOOD LEVEL MARKERS