

**Wentworth Shire**

# **Local Flood Emergency Sub Plan**



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# WENTWORTH SHIRE FLOOD EMERGENCY SUB PLAN

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

**Volume 1 of the Wentworth Shire Flood Emergency Sub Plan**

**Endorsed by the Wentworth Local Emergency Management Committee**

**15 November 2023**

**Version 3.0**

# AUTHORISATION

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

## Authorised

Signature:   
\_\_\_\_\_  
*NSW SES Unit Commander*

Print Name: SIMON PRADHAN

Date: 10 - 1 - 2024

## Endorsed

Signature:   
\_\_\_\_\_  
*Chair, Local Emergency Management Committee*

Print Name: KEN ROSS

Date: 14 December 2023

## VERSION HISTORY

Version Number	Description	Date
1.0	Wentworth Shire Flood Emergency Sub Plan	December 2012
2.0	Wentworth Shire Flood Emergency Sub Plan	16 May 2018

## AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

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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  
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# 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 Wentworth Shire 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 Wentworth Shire Local Emergency Management Plan (EMPLAN) and is endorsed by the 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 Wentworth Shire 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 Wentworth Shire LGA. The Wentworth Shire 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 Far West Emergency Management Region.
- 1.4.3 The plan sets out the Wentworth Shire level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Wentworth Shire 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 tsunamis) 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 Wentworth Shire LGA are detailed within this plan (Appendix B and Appendix C).
- 1.7.3 Any agency with agreed responsibilities in this plan that are temporarily unable, or are 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 [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 Wentworth Shire LGA.
- 2.1.2 Declared dams in or upstream of the Wentworth Shire Local Government Area.

Dam Name	Owner	High Risk Dam
Hume Dam	Water NSW & MDBA	No
Menindee Lakes	Water NSW & MDBA	No
Burrinjuck Dam	Water NSW	No
Blowering Dam	Water NSW	No

## 3 PREVENTION/ MITIGATION

### 3.1 INTRODUCTION

- 3.1.1 The Floodplain Development 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 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. Dam owners will provide Dam Emergency Plans (where required) and consult with the NSW SES on alert levels and messaging. Alert level definitions are listed in 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' 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. Partner 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. 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 of 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. 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 local EMPLAN.

**Actions:**

- Supporting emergency services and functional areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required.
- The NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.
- Where possible Emergency Operation Centres to be co-located with NSW SES Incident Control Centres for Flood Emergency Response.

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

**Actions:**

- The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources.
- The NSW SES may request resources and logistics support directly from a supporting emergency service or functional area.
- Wherever possible, supporting organisations are to provide their own logistic support in consultation with the NSW SES where appropriate.
- 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 after a flood.

**Actions:**

- 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.
- All supporting emergency services, 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 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 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. 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.
  - 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: <https://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. Wentworth Shire 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 Wentworth Shire 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 that the 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. Transport Services Functional Area is to coordinate the provision of information about the assessment and restoration of transport network infrastructure.
- b. Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).
- c. Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Public Safety Network.
- d. 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 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. 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. 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 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 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 Services and Welfare Services Functional Areas in the management of school evacuees.
- d. Disaster Victim Registration (DVR) 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 (SEOCN) 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 the SEOCN 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.

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

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

**Actions:**

- a. 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. Agriculture and Animal Services Functional Area role will coordinate the evacuation, emergency care of animals and assessment, humane destruction and disposal of affected animals, and supply of emergency fodder, water and 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 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 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 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 a '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, Welfare Services Functional Area and Wentworth Shire Council representatives.
- b. The NSW SES will conduct After Action Reviews (AARs), 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 State Operations Recovery Coordinator (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 the 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 Wentworth Shire 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 Operations Controller (SEOC) and the State Emergency Response 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.

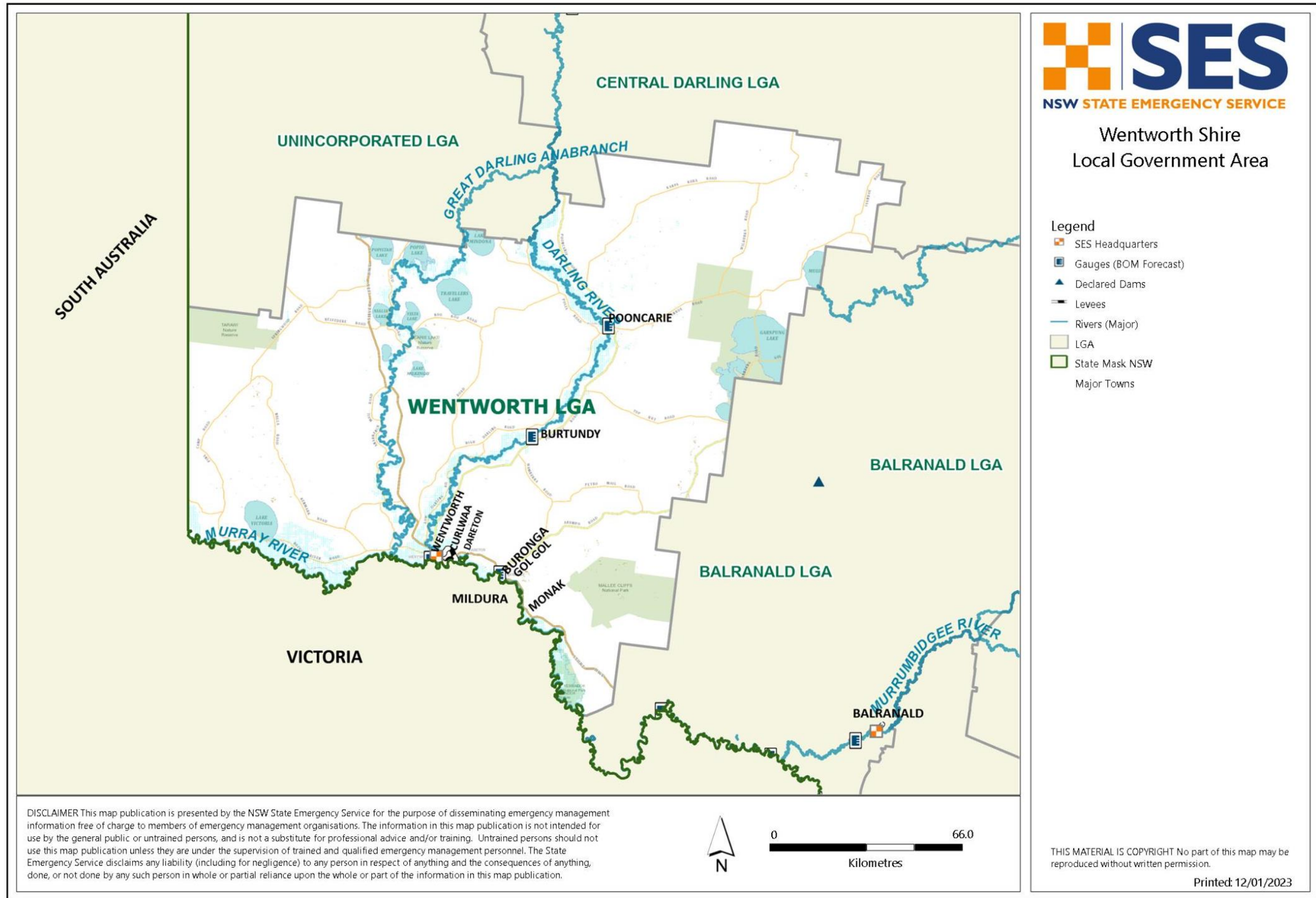
Refer to the NSW State Flood Plan for a complete glossary of terminology used throughout this plan and within NSW SES Flood Plans.

**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 Wentworth Shire 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. NSW SES roles and responsibilities in relation to floods are outlined in the <a href="#">NSW State Flood Plan</a> .

AGENCY	RESPONSIBILITIES
Agriculture and Animal Services Functional Area	The roles and responsibilities for Agriculture and Animal Services 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)	<ul style="list-style-type: none"> <li>• Prepare a flood emergency plan for the caravan park.</li> <li>• 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.</li> <li>• Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should:             <ul style="list-style-type: none"> <li>– Provide the manager of the caravan park with a contact address and telephone number in case of an emergency.</li> <li>– 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).</li> </ul> </li> <li>• Ensure that occupiers are informed of flood information. At this time, occupiers should be advised to:             <ul style="list-style-type: none"> <li>– Ensure that they have spare batteries for their radios.</li> <li>– Listen to a local radio station for updated flood information.</li> <li>– Prepare for evacuation and movable dwelling (cabins) relocation.</li> </ul> </li> <li>• Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs.</li> <li>• 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.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Secure any movable dwellings that are not able to be relocated to prevent floatation.</li> <li>• 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.</li> </ul>
<b>Childcare Centres and Preschools</b>	<ul style="list-style-type: none"> <li>• When notified of possible flooding or isolation, childcare centres and preschools should. <ul style="list-style-type: none"> <li>– 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.</li> <li>– Assist with coordinating the evacuation of preschools and childcare centres.</li> </ul> </li> </ul>
<b>Dams Safety NSW</b>	The roles and responsibilities for Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan.
<b>Department of Defence</b>	Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448).
<b>Energy and Utilities Services Functional Area</b>	<p>The roles and responsibilities for Energy and Utilities Services Functional Area are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN).</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> <li>• Assist the NSW SES with identification of infrastructure at risk of flood damage where resources are available.</li> <li>• Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: <ul style="list-style-type: none"> <li>– Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection.</li> <li>– Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation.</li> <li>– Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply.</li> <li>– Clear or make safe any hazard caused by power lines or electricity distribution equipment.</li> <li>– Reconnect customers’ electrical / gas / water / wastewater installations, when certified safe to do so and as conditions allow.</li> <li>– Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.</li> </ul> </li> </ul>

<b>AGENCY</b>	<b>RESPONSIBILITIES</b>
<b>Engineering Services Functional Area</b>	The roles and responsibilities for the Engineering Services Functional Area are outlined in the Engineering Services Supporting Plan and NSW State Flood Plan.
<b>Environmental Services Functional Area</b>	The roles and responsibilities for the Environmental Services Functional Area are outlined in the Environmental Services (ENVIROPLAN) Supporting Plan.
<b>Floodplain Management Australia</b>	The roles and responsibilities for Floodplain Management Australia are outlined in the NSW State Flood Plan.
<b>Fire and Rescue NSW</b>	The roles and responsibilities for Fire and Rescue NSW are outlined in the NSW State Flood Plan.
<b>Forestry Corporation of NSW</b>	The roles and responsibilities for the Forestry Corporation of NSW are outlined in the NSW State Flood Plan.
<b>Health Services Functional Area</b>	The roles and responsibilities for the Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan and NSW State Flood Plan.
<b>Local Emergency Operations Controller (LEOCON)</b>	<ul style="list-style-type: none"> <li>• Monitor flood operations.</li> <li>• If requested, coordinate support for the NSW SES Incident Controller.</li> </ul>
<b>Local Emergency Management Officer (LEMO)</b>	<ul style="list-style-type: none"> <li>• If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.</li> </ul>
<b>Manly Hydraulics Laboratory (MHL)</b>	The roles and responsibilities for Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
<b>Marine Rescue NSW</b>	The roles and responsibilities for Marine Rescue NSW are outlined in the NSW State Flood Plan.
<b>NSW Ambulance</b>	The roles and responsibilities for NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan and NSW State Flood Plan.
<b>NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission</b>	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.
<b>NSW Department of Planning and Environment (Environment and Heritage Group)</b>	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).
<b>NSW Department of Planning and Environment (Water)</b>	The roles and responsibilities for the NSW Department of Planning and Environment (Water) are outlined in the NSW State Flood Plan.

<b>AGENCY</b>	<b>RESPONSIBILITIES</b>
<b>NSW Food Authority</b>	The roles and responsibilities for the NSW Food Authority are outlined in the Food Safety Emergency Sub Plan.
<b>NSW National Parks and Wildlife Services</b>	The roles and responsibilities for NSW National Parks and Wildlife Services are outlined in the NSW State Flood Plan.
<b>NSW Police Force</b>	The roles and responsibilities for the NSW Police Force are outlined in the NSW State Flood Plan.
<b>NSW Reconstruction Authority</b>	The roles and responsibilities for the NSW Reconstruction Authority are outlined in the NSW State Flood Plan.
<b>NSW Rural Fire Service</b>	The roles and responsibilities for the NSW Rural Fire Service are outlined in the NSW State Flood Plan.
<b>Owners of Declared Dams within or upstream of the LGA</b>	The roles and responsibilities for owners of declared dams are outlined in the NSW State Flood Plan.
<b>Public Information Services Functional Area</b>	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.
<b>SEOCN/SEOC</b>	The roles and responsibilities for the SEOCN/SEOC are outlined in the NSW State Flood Plan.
<b>Surf Life Saving NSW</b>	The roles and responsibilities for Surf Life Saving NSW are outlined in the NSW State Flood Plan.
<b>Telecommunications Services Functional Area</b>	The roles and responsibilities for the Telecommunications Services Functional Area are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan.
<b>Transport for NSW</b>	<ul style="list-style-type: none"> <li>• Transport for NSW coordinates information on road conditions for emergency services access.</li> <li>• Transport for NSW coordinates the management of the road network across all modes of transport.</li> <li>• Transport for NSW in conjunction will assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes.</li> <li>• 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.</li> <li>• Assist the NSW SES with identification of road infrastructure at risk of flooding.</li> </ul>
<b>Transport Services Functional Area</b>	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.

AGENCY	RESPONSIBILITIES
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 Welfare Services Services Functional Area are outlined in the Welfare Services Functional Area Supporting Plan and NSW State Flood Plan.
Wentworth Shire Council	<p data-bbox="507 568 687 600"><b>Preparedness</b></p> <ul data-bbox="507 629 1453 1245" style="list-style-type: none"> <li>• Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented.</li> <li>• Develop and implement floodplain risk management plans in accordance with the NSW Government’s Flood Prone Land Policy and the Floodplain Development Manual.</li> <li>• Provide levee studies, flood studies and floodplain management studies to the NSW SES.</li> <li>• Maintain council-owned flood warning networks and flood mitigation works.</li> <li>• Participate in the NSW SES led flood emergency planning meetings, to assist in the preparation of Flood Sub Plans.</li> <li>• Maintain a plant and equipment resource list for the council area.</li> <li>• Contribute to community engagement activities.</li> </ul> <p data-bbox="507 1267 635 1299"><b>Response</b></p> <ul data-bbox="507 1328 1453 2000" style="list-style-type: none"> <li>• Subject to the availability of council resources, assist the NSW SES with flood operations including: <ul style="list-style-type: none"> <li>– Traffic management on council managed roads.</li> <li>– Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested).</li> <li>– Property protection tasks including sandbagging.</li> <li>– Assist with the removal of caravans from caravan parks.</li> <li>– Warning and/or evacuation of residents and other people in flood liable areas.</li> <li>– Provision of back-up radio communications.</li> <li>– Resupply of isolated properties.</li> <li>– Technical advice on the impacts of flooding.</li> <li>– Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES, the NSW Police Force and people who contact the council for road information.</li> </ul> </li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>– Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected.</li> <li>• Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations.</li> <li>• Operate flood mitigation works including critical structures such as detention basins and levees and advise the NSW SES regarding their operation.</li> <li>• Manage and protect council-owned infrastructure facilities during floods.</li> <li>• 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.</li> <li>• Advise the Environmental Protection Authority of any sewerage overflow caused by flooding.</li> <li>• Work with the NSW SES and the NSW Department of Planning and Environment to collect flood related data during and after flood events.</li> </ul> <p><b>Recovery</b></p> <ul style="list-style-type: none"> <li>• Provide for the management of health hazards associated with flooding including removing debris and waste.</li> <li>• Ensure premises are fit and safe for reoccupation and assess any need for demolition.</li> <li>• Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.</li> </ul>

## 11 Appendix C – Community Specific Roles and Responsibilities

<p><b>Community Members</b></p>	<p><b>Preparedness</b></p> <ul style="list-style-type: none"> <li>• Understand the potential risk and impact of flooding.</li> <li>• Prepare homes and property to reduce the impact of flooding.</li> <li>• Understand warnings and other triggers for action and the safest actions to take in a flood.</li> <li>• Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours.</li> <li>• Have an emergency kit.</li> <li>• Be involved in local emergency planning processes.</li> </ul> <p><b>Recovery</b></p> <ul style="list-style-type: none"> <li>• Assist with community clean-up if required and able to do so.</li> <li>• Participate in After Action Reviews if required.</li> </ul>
<p><b>Private Companies or other Organisations</b></p>	<p><b>Arumpo Bentonite Pty Ltd Wentworth, Morello Earthmoving Buronga, Withers Earthmoving Wentworth</b></p> <ul style="list-style-type: none"> <li>• Assist with the provision of; labour, earthmoving equipment, sand, engineering. (levees, sandbagging)</li> </ul>
<p><b>Service and Sporting Clubs</b></p>	<p><b>Coomealla Lions Club, Wentworth Rotary Club, Wentworth District Rowing Club, Wentworth Tennis Club, Wentworth District Football and Netball Association</b></p> <p>Assist with;</p> <ul style="list-style-type: none"> <li>• Delivery of evacuation warnings.</li> <li>• Conduct of evacuations.</li> <li>• Lifting and/or moving household furniture and commercial stock.</li> <li>• Sandbagging.</li> <li>• Monitoring of levees.</li> <li>• Relocation of caravans.</li> </ul>
<p><b>Aboriginal Organisations or Groups</b></p>	<p><b>Dareton Local Aboriginal Land Council:</b></p> <ul style="list-style-type: none"> <li>• Act as the point of contact between the NSW SES and the local indigenous community.</li> <li>• Inform the Wentworth SES Unit Commander (NSW SES) about flood conditions and response needs.</li> <li>• Disseminate flood information, including flood and evacuation warnings, to the local indigenous community.</li> </ul>
<p><b>Cross-border Assistance Arrangement</b></p>	<p>A local cross-border mutual assistance arrangement exists in which Wentworth SES Unit (NSW SES) and the Mildura SES Unit (VICSES) will deploy resources to support each other.</p>



	<ul style="list-style-type: none"><li>• Any request for out of area assistance by either state response agency will be made in accordance with the NSW and Victorian emergency management arrangements (specifically State Operations Memorandum of Understanding) and legislation.</li><li>• Operations involving areas north and north west of the Greater Anabranche of the Darling River will be conducted by the Broken Hill SES Unit (NSW SES) when access from Wentworth is not possible.</li><li>• Properties that cannot be serviced by Menindee SES Unit (NSW SES) once the Pooncarie Menindee road is cut upstream of Tolarno station will be supported by the Wentworth SES Unit (NSW SES).</li><li>• The Victorian Ambulance Service (Mildura) will provide first-aid at evacuation centres and transport or arrange to transport and treat patients.</li></ul>
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# HAZARD AND RISK IN WENTWORTH SHIRE

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**Volume 2 of the Wentworth Shire Local Flood Plan**

Last Update: November 1993 (DRAFT)

## THE FLOOD THREAT

### BARWON/DARLING RIVER VALLEYS

#### The Darling River

To the south of Menindee the Darling flows in generally a southerly direction for about 480 kms, passing the small settlement of Pooncarie and then entering the Murray River at Wentworth. Below Menindee a major distributary leaves the Darling on the western side. Known as the Great Ana Branch of the Darling River, it follows a separate path for nearly 480 kms to join the Murray downstream of Wentworth. It is a natural flood channel flanked by many usually dry lakes. The Great Ana Branch receives periodic replenishment from the Menindee Storages.

The land in the region traversed by the Darling and its Ana Branch south of Menindee is flat with slopes less than 3 degrees, and varies from flood plain to gently undulating sand ridges. Near the Murray the general elevation falls to only about 30 metres above sea level.

The occurrence of floods from February to April generally results from the predominantly summer monsoonal rainfall that is received on the northern headwaters tributaries of the Darling River which drain the southern parts of Queensland. The consequent high flows from this region can take up to two months to reach Bourke. The frequency of floods in July and August is generally caused by high winter flows in the tributaries draining the central and northern parts of New South Wales.

In the reach of the Darling River below Wilcannia there are several ana branches which leave the Darling, the most notable of which is the Talyawalka Ana Branch. The Talyawalka which rejoins the Darling River near Menindee, only flows during floods in the Darling but during these times it carries more water than the main river. A large proportion of these flood waters makes its way eastward to a number of shallow lakes located between Menindee and Ivanhoe where it is quickly dissipated by the arid conditions. On the western bank of the Darling near Menindee a series of broad shallow lakes have been developed into a water conservation project and now form part of the Menindee Lakes Scheme.

#### The Murray River

The Murray River rises in the Australian Alps and extends across New South Wales, forming the State border with Victoria. It flows into South Australia, entering the ocean at Goolwa. The Murray River is affected by significant flows from the Mitta Mitta, Kiewa, Goulburn, Ovens and King Rivers originating in Victoria, and in the lower reaches by the

Murrumbidgee, Lachlan and Darling Rivers. The length and complexities of the river are such that floods of record will vary along its 2,500 km course.

Throughout its length it is controlled by the Murray-Darling Basin Commission to provide irrigation water to both New South Wales and Victoria and parts of South Australia. Control of the river for irrigation purposes is effected by the Hume Dam, Dartmouth Dam, Yarrowonga Weir and a series of smaller weirs. While these control measures for irrigation have a capacity to mitigate some flood waters, the complex inter-relationships of the drainage basin are such that the possibility of major flood remains relevant, particularly when very large storm systems develop over south-eastern Australia.

The six largest floods on record at Mildura are the 1870, 1956, 1917, 1931, 1975 and 1974 events. The 1956 flood closely approximated the recent 1% event as determined by a RWC study. At Mildura the difference in flood level between the three largest floods is 1871 to 1956, 0.2 metres, 1956 to 1917, 0.65 metres. The 1870 and 1956 floods at Mildura were above "normal" river level for about seven and four months respectively.

### **The Murrumbidgee River**

Although it flows into the Murray east of the Wentworth Council it can affect the heights at Wentworth if the Murray is also in Flood.

### **Darling River Flow Times**

#### **TOWNS TIME**

Mungindi to Mogil Mogil 3 days

Mogil Mogil to Collarenebri 1 day

Collarenebri to Walgett 5 days

Walgett to Brewarrina 11 days

Brewarrina to Bourke 7 days

Bourke to Louth 6 days

Louth to Tilpa 4 days

Tilpa to Wilcannia 10 days

Wilcannia to Menindee 14 days

Menindee to Pooncarie 13 days

Pooncarie to Burtundy 8 days

Burtundy to Wentworth 14 days

## **Murray River Flow Times**

### **TOWNTIME**

Albury to Wentworth 3 - 4 weeks

Yarrowonga to Tocumwal 24 hours

Echuca to Barham 7 Days

Barham to Wakool Junction 8 Days

Wakool Junction to Wentworth

RIVER FLOW TIMES CAN VARY GREATLY AND THE FIGURES ABOVE ARE A GUIDE ONLY. PARTICULARLY IN THE MORE MASSIVE EVENTS, FLOW TIMES CAN BE SHORTER THAN THESE.

## SPECIFIC RISK AREAS

### WENTWORTH (Population approximately 1500)

The town of Wentworth is sited at the confluence of the Murray and Darling Rivers in New South Wales 30 km from Mildura. Very severe flooding of low lying areas surrounding Wentworth is caused when major flows are experienced in the Murray, Darling and Murrumbidgee Rivers. Citrus orchards in the Wentworth - Buronga area could suffer water damage during periods of heavy flooding. It is the last of the Murray towns before the river crosses into South Australia. The primary road through the town is the Silver City Highway which links Wentworth to Broken Hill in the north and the Murray Valley to the east. The roads to Mildura and Broken Hill remain open during major floods. It is protected from flooding by three levee systems; a ring levee protecting the main area west of the Darling river, a U-shaped levee system protecting the area east of the Darling river and a ring levee system protecting the Hospital. Total levee length is 7.5 km and the levees were designed to provide 0.9 freeboard above the 1956 flood level.

The town is subject to the influence of flooding from two important rivers, the Murray and Darling. In this location there is the risk of coincident floods from the two independent systems leading to extreme flood levels. The 1956 flood is easily the highest on record at Wentworth this century and it is worth summarising the behaviour of this flood in both the Murray and Darling Rivers. Although 1956 was a major event in each river, in fact the second largest on record in both, the peaks at Wentworth were out of phase by four weeks and the contribution of the Darling to peak flow at Wentworth was only 10%. The town further benefited from the breakouts and effluents in the Darling River which conveyed large proportions of Darling water to the north and west of the town. Leading to lower levels at the Murray/Darling confluence. It could be hypothesised that had the Darling peaks more closely coincided with high Murray levels, the Pomona breakout which was flood water flowing directly from the Darling River Ana Branch and joining with the Murray west of Wentworth. Water flow may not have been as effective and more water could have been forced past Wentworth greatly exacerbating the situation.

If the levees were breached during a flood, it is believed that the whole town would be flooded, inundating some 410 residences and the commercial area. The levee system allows the town to function normally during flood times except for access to other centres. Village zoning incorporates some areas outside the levees.

The town of Wentworth has to date not been inundated as a result of failure of the levee system. The levee system protecting Wentworth is mostly of the embankment type up to 3.0 metres high. Where levees are located at the top of river banks total slope height above observed water level is up to 6 metres. Concrete retaining walls, of 300 m

total length, provide levee protection between sections of embankment levee to the west of the Darling River.

There are three levee systems, namely:-

(1) West of the Darling River

(2) East of the Darling River

(3) Hospital complex.

#### WEST OF THE DARLING RIVER

This 5.5 km long levee system protects the main Wentworth area west of the Darling River where the town's business centre is located. The first section requiring levee protection starts downstream of the bridge over the Darling River and ends at Adelaide Street. Council indicated that there is sufficient time to build a temporary levee during approaching floods. There are water supply pipes passing through the levee and these may create potential for piping failure. The next section of the levee protects the Sporting Complex, swimming pool, public reserve, Gaol and the Golf Club building (excluding the Golf Links). The levee is approximately 2 m high, has a 3 m wide crest. The Golf Links are protected by a private flood levee this levee may not be structurally sound. If rapid failure of this levee occurs, the water held behind it during floods will accelerate towards the town's levee. Along Adams Street, the road from Neville Street to Perry Street is the levee. The levee east of Adams Street is built on the top of the steep river banks which have the potential for slope failure. There is a reinforced concrete wall (150 m long) which is located on top of the steep river banks. The final section of the levee comprises a reinforced concrete retaining wall which appears to be in fair condition.

#### EAST OF THE DARLING RIVER

The second levee system protects east Wentworth. This system is divided into two sections. The first is 1.1 km long constructed along the Darling River and the second is 0.4 km long, constructed along Tucker's Creek. The levee system along the Darling River is 2 m in height, has a 2.5 m wide crest. At Tucker's Creek the levee is directly on top of the steep bank where there is the potential for slope failure.

#### HOSPITAL

The third levee system protects the hospital complex. It is a 0.5 km long levee and has a similar formation to the levee system east of the Darling River. The levee is 2 metres in height, with a 2.5 metre crest width. A portion of this levee is directly on top of a steep river bank which has the potential for slope failure.

Flood level recording commenced at Wentworth in 1929, however up until 1956 only major events were noted. From 1956 onwards the frequency of event recording increased however there still remains years with no recorded river flows. The flood of 1870 is believed to be the highest flood of the Murray River however records are not available to indicate this flood level at Wentworth. The peak recorded flood level is at

RL34.56 m AHD (1956 flood) as measured at Lock 10. A statistical analysis of available records at Wentworth has been completed and it is proposed to similarly adopt recorded peak annual flows at Wentworth (Lock 10).

#### Gol Gol (Population approximately 650)

Gol Gol is situated on the north bank of the Murray River, five kilometres upstream of Mildura. The western fringe of the village, west of Punt Road, is low lying and flood liable. Recent development in Carramar Drive is on fill to around 0.75 metres above 1956 level. There are other scattered residential properties in and on the fringes of the low lying land in Punt Road, and on the Sturt Highway; some raised above flooding, others probably close to high flood levels. The section of the village between Punt Road and King Street is on elevated ground. East of King Street the village area is flat but above the 1:100 flood level with the exception of low areas south of the Sturt Highway near Gol Gol Creek. Two houses, old bakehouse, a hotel and caravan park south of the highway, are lower than the bulk of the village and could be liable to flooding. Some residents recall sandbagging around the bakehouse in past floods. The 1956 flood certainly the largest in living memory, just lapped the bitumen in the Sturt Highway along the river front and inundated the area around Gol Gol Creek. The village is essentially flood-free despite its riverfront location and the absence of protective works. New development to the west has been sited on filled ground above the 1% flood (approximately 1956) although access could be affected in high floods.

#### MURRAY RIVER AT WENTWORTH ( LOCK 10 )

Year	Rank	RHL (AHD)	Annual Year Exceedence Probability
1956	1	34.56	1.0
1931	2	34.23	2.6
1974	3	33.83	4.2
1975	4	33.72	5.8
1939	5	33.29	7.4
1973	6	33.19	7.4
1981	7	33.18	10.6
1990	8	33.03	12.2
1964	9	32.92	13.8
1989	10	32.31	15.4
1970	11	31.97	17.0
1983	12	31.89	18.6



1984	13	31.58	20.3
1978	14	31.14	21.9
1976	15	31.10	23.5
1988	16	30.53	25.1

#### Buronga (Population approximately 600)

Is situated at the junction of the Silver City and Sturt Highways on the north bank of the Murray River opposite Mildura. The bulk of the village is on high ground. There is, however, approximately 40 lots within the village, with part or all of the lot area flood liable. These lots are generally of substantial size supporting non-residential activity but often with a residence on the property. A disjointed and discontinuous system of private levees along the river front and around the boundaries of some land holdings provides a measure of local protection.

Floods in the Buronga area remain above "normal" river levels for up to nine months. The scattered houses on the Sturt Highway to the east are mostly on high ground, although some are sited towards the lower ends of the blocks and near or on flood liable land. Some houses are constructed on elevated supports on the river front while others are built on filled ground behind or tied into the ad hoc levees along the river. One group of houses is completely enclosed by a horseshoe shaped levee with the open end tied to high ground at the highway and the closed end at riverbank levee. Development along the leg of the Sturt Highway from the centre of Buronga to the Murray Bridge is all potentially flood liable. The development is a mixture of houses, light industrial installations, motels and semi-rural enterprises on both sides of the road. Some of the structures are elevated or on fill, but many are loose and flood liable.

#### Dareton (Population Approximately 650)

It is situated on the Silver City Highway, 12 km upstream of Wentworth and 18 km downstream of Mildura. The town is primarily on high ground. A recent subdivision in Riverview Drive has building levels above the 1956 (1 %) flood. The only development on flood liable land is the Coomealla Golf Club with a two storey club house on the river flats. One house behind Riverview Drive and a sewerage installation are close to the flood fringe.

#### Pooncarie (population of about 25 People)

Is situated approximately 100 KM upstream of Wentworth on the Darling river. Flood records show that it has never been inundated by floodwater. It has no levee system as it is on high ground. Records show that it has been isolated (1974 1976 1977) and a required resupply by air. As the road to Pooncarie has been raised the possibility of isolation now seems to be remote.

### **Roads affected by Floods in the Wentworth Council Area**

#### Low Darling Road

Amaroo Road  
Boiell Road  
West Road, Buronga  
Carramar Drive  
River Road, Mourquong & Coomealla  
Sandbar Road  
Kookaburra Drive  
Ryans Road  
Log Bridge Road.

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# **SES RESPONSE ARRANGEMENTS FOR WENTWORTH SHIRE**

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**Volume 3 of the Wentworth Shire Local Flood Plan**

Last Update: November 1993 (DRAFT)

GAUGES FOR WHICH THE BUREAU OF  
METEOROLOGY PROVIDES FLOOD WARNINGS  
AND THE WENTWORTH SES MONITOR

RIVER SYSTEM AND GAUGE SITE	GAUGE NUMBER	OWNER	LGA	FLOOD CLASSIFICATIONS		
				MINOR	MODERATE	MAJOR
<b>DARLING RIVER</b>						
POONCARIE	425005	BOM	WENTWORTH	6.8	7.6	8.7
BURTUNDY	425007	DWR	WENTWORTH	6.1	-	7.7
MENINDEE	425001	DWR	CENTRAL DARLING	8.5	9.1	9.7
<b>MURRAY</b>						
EUSTON WEIR	414991	VIC	BALRANALD	9.1	9.8	10.3
MILDURA	414202	VIC	WENTWORTH	36.0	37.5	38.5
WENTWORTH WEIR (LOCK 10)	425992	BOM	WENTWORTH	7.3 32.1 (AHD)	7.9 32.7 (AHD)	9.1 33.9 (AHD)
<b>EDWARD</b>						
DENILIQVIN	409003	RMC	DENILIQVIN	4.6	7.2	9.4
MOULAMEIN	409014	RMC	WAKOOL	4.6	5.2	6.1
<b>MURRUMBIDGEE</b>						
BALRANALD	410003	RMC	BALRANALD	6.4	6.7	7.0

## DISSEMINATION OF BULLETINS

Murray SES Division Headquarters will disseminate Bureau of Meteorology Flood Bulletins on behalf of Wentworth Local Controller as appropriate to the following:

a. Radio Stations:

3SH - Swan Hill  
3MA - Mildura  
5RM - Berri  
3WV - Horsham  
Sunraysia 104.3 FM  
Swan Hill 102.1 FM

b. Television Stations:

Prime - Albury  
VICTV - Albury Office  
Southern Cross Network - Bendigo Office  
ABCTV - Melbourne  
IMPAJA TV - Northern Territory (Aboriginal Outback Network)  
STV 8 - Mildura  
SBS - Sydney  
ABC - Melbourne

c. DWR Regional Offices - Dareton

d. Victoria Rural Water Commission - Yarrawonga Weir

e. Police District Headquarters - Broken Hill

f. Newspapers:

Pastoral Times - Deniliquin  
Sunraysia Advocate - Wentworth  
Sunraysia Daily - Mildura  
Independent Star - Mildura  
Mildura Mid Week - Mildura

h. Victorian Ambulance Service - Mildura Control Centre

i. Victoria SES - Mildura

## GUIDE TO THE CONTENT OF EVACUATION WARNING MESSAGES

1. Time of issue and title of Authorising Officer.
2. Description of the area to which the warning applies and the flood threat to that area.
3. Information to be given to evacuees on:
  - a. Location of and route to evacuation centre.
  - b. Time by which evacuation should take place.
  - c. Arrangements for those without their own transport.
4. Evacuees to be advised to:
  - a. Raise furniture and furnishings above likely flood level.
  - b. Gather personal documents and mementoes and those belongings that can be fitted within own means of transport (or within a suitcase if travelling by bus).
  - c. Listen to radio for confirmation of message and for further information.
  - d. Assist neighbours if necessary.
5. Evacuees to be advised that Police will provide security for properties in the evacuated area.
6. Phone number for confirmation of warnings.