

**Oberon**

# Local Flood Emergency Sub Plan



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# OBERON FLOOD EMERGENCY SUB PLAN

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

**Volume 1 of the Oberon Flood Emergency Sub Plan**

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

**11 November 2024  
Version 3.0**

# AUTHORISATION

The Oberon Flood Emergency Sub Plan is a sub plan of the Oberon 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 Local/Unit Commander

Print Name:


*Joshua Clark*  
\_\_\_\_\_

Date:

*11/11/2024*  
\_\_\_\_\_

## Endorsed

Signature:

  
\_\_\_\_\_  
Chair, Local Emergency Management Committee

Print Name:

*Cornelia Wiehels*  
\_\_\_\_\_

Date:

*11/11/2024*  
\_\_\_\_\_

## VERSION HISTORY

Version Number	Description	Date
1.0	Oberon Local Flood Plan	July 2011
2.0	Oberon Local Flood Plan	07 December 2015

## 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

[www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

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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 Oberon 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 Oberon 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 Oberon 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 Oberon LGA. The Oberon 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 Oberon LGA level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Oberon 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 Oberon LGA are detailed within this plan, Appendix B and Appendix C.
- 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 Flood, Storm and Tsunami Plans](#) including:

- a. Flood Plan Glossary.
- b. The NSW SES Dam Failure Notification Flowchart.
- c. The 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 Oberon LGA.

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

Dam Name	Owner	High Risk Dam
Oberon Dam	Water NSW	No
Chifley Dam	Bathurst Regional Council	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 the 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'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. 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. 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 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. 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 after 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 , 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 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 Disaster Welfare Services Functional Areas 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 Oberon 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 Oberon 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. 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 Oberon 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 the 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 Welfare Services.
- 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 Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.
- b. Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with 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, Transport and Welfare Services Functional Area 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 (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 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 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 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, the Welfare Services Functional Area and Oberon 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 Oberon 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 SEOCAN and 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.

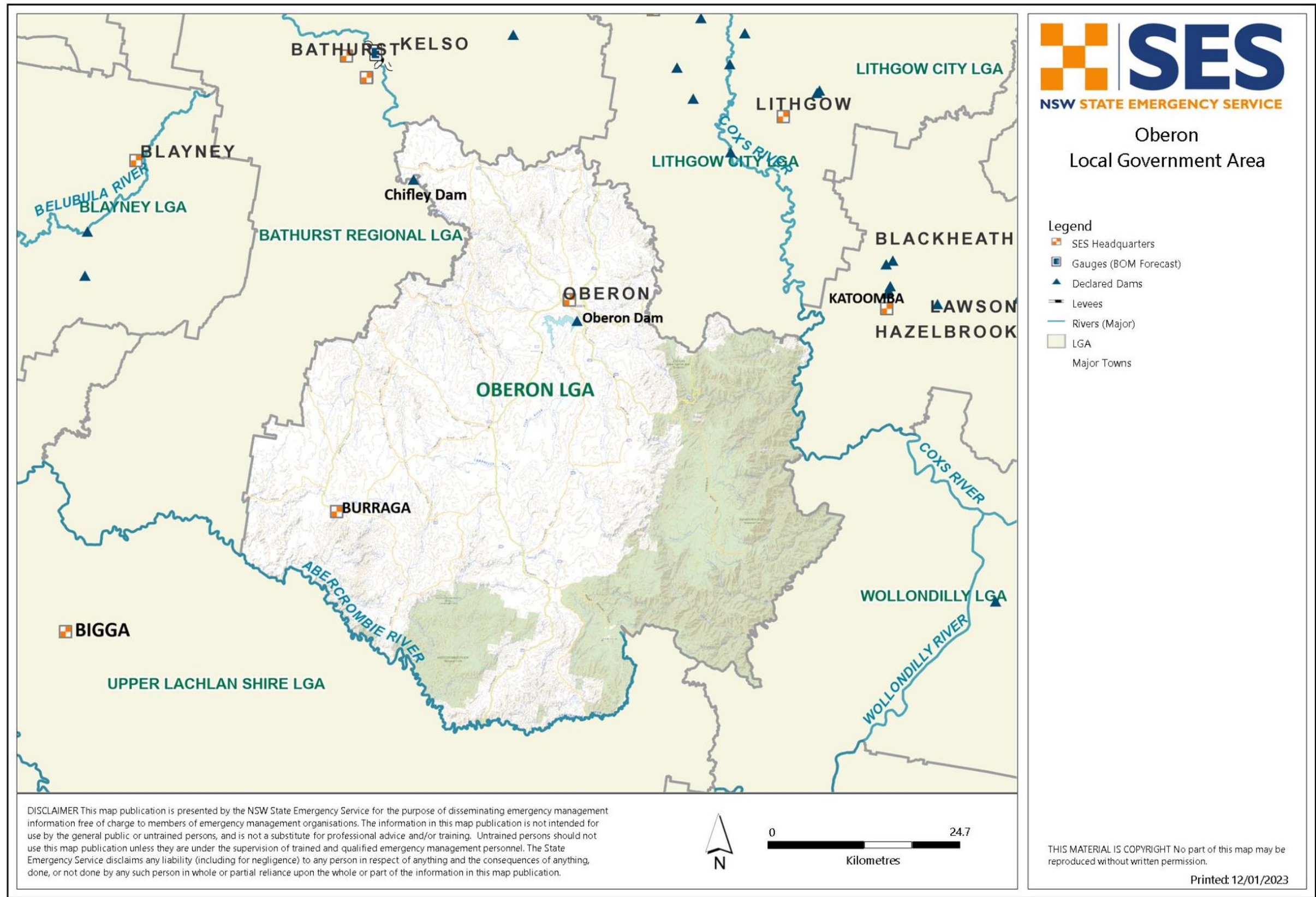
Refer to the NSW State Flood Plan for a complete glossary of terminology used throughout this plan and within NSW SES Flood Plans.

**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 Oberon Area



## 10 Appendix B – Roles and Responsibilities

AGENCY	RESPONSIBILITIES
<b>NSW State Emergency Service</b>	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 <a href="#">NSW State Flood Emergency Plan</a> .

AGENCY	RESPONSIBILITIES
<b>Agriculture and Animal Services Functional Area</b>	The roles and responsibilities for the Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan and NSW State Flood Plan.
<b>Australian Government Bureau of Meteorology</b>	The roles and responsibilities for the Australian Government Bureau of Meteorology (the Bureau) are outlined in the NSW State Flood Plan.
<b>Caravan Park Proprietor(s)</b>	<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 Centre's 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 the Energy and Utilities Services 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 the 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 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.

AGENCY	RESPONSIBILITIES
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.
Oberon Council	<p data-bbox="507 741 687 779"><b>Preparedness</b></p> <ul data-bbox="507 801 1453 1422" 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 Risk Management 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 Emergency 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 1444 639 1482"><b>Response</b></p> <ul data-bbox="507 1505 1453 2018" 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> </ul> </li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>– 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.</li> <li>– Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected.</li> </ul> <ul style="list-style-type: none"> <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 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 the State Government in accordance with the State Recovery Plan.</li> </ul>
<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>State Emergency Operations Controller (SEOC)</b>	The roles and responsibilities for the SEOC/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>AGENCY</b>	<b>RESPONSIBILITIES</b>
<b>Telecommunications Services Functional Area</b>	The roles and responsibilities for the Telecommunications Services Functional Area are outlined in the Telecommunications Services Functional Area (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.
<b>VRA Rescue NSW</b>	The roles and responsibilities for VRA Rescue NSW are outlined in the NSW State Flood Plan.
<b>Water NSW</b>	The roles and responsibilities for Water NSW are outlined in the NSW State Flood Plan.
<b>Welfare Services Functional Area</b>	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

<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>Aboriginal Organisations or Groups</b></p>	<p><b>Bathurst Local Aboriginal Land Council</b>            149 Russell Street Bathurst            Ph: 02 6332 6835</p> <ul style="list-style-type: none"> <li>• Act as the point of contact between the NSW SES and the Oberon aboriginal community.</li> <li>• Inform the NSW SES Unit Commander about flood conditions and response needs.</li> <li>• Disseminate flood information, including flood and evacuation warnings, to the Oberon aboriginal community.</li> </ul>
<p><b>Communication</b></p>	<ul style="list-style-type: none"> <li>• The NSW SES Oberon Facebook page</li> </ul>



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# HAZARD AND RISK IN OBERON

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**Volume 2 of the Oberon Local Flood Plan**

Last Update: July 2011

# ANNEX A - THE FLOOD THREAT

## LANDFORMS AND RIVER SYSTEMS

### GENERAL

1. The Oberon Council Area is located on the higher country of the NSW Central Tablelands in undulating to mountainous terrain. In general, the area has only minor problems with flooding. Most flooding is of short duration, lasting only a matter of hours.
1. Warning times for floods are typically very short and all rivers within the council area rise and fall quickly, especially in their upper reaches. Flash flooding may occur extremely quickly after a storm and with no warning.
2. Flooding can occur at any time of year as a result of one of three main types of weather system:
  - a) In summer, low-pressure troughs extending southward from the northern part of the continent can cause intense short-period rainfall leading to flooding.
  - b) Winter floods tend to be the result of sequences of troughs associated with southern depressions and crossing the region from west to east. These rarely produce high daily falls but can bring substantial falls over long periods. In general, it is these winter systems which are the more significant in terms of flood production.
  - c) High-intensity, short-duration convective thunderstorms occur in summer and bring flooding to limited areas. They may cause town and village drainage systems to surcharge and small creeks to flood, but they rarely cause significant rises in major streams.

### RIVER SYSTEMS

3. **Duckmaloi River:** The Duckmaloi River flows north through Edith on the western side of the Great Divide through rural and forested areas to join the Fish River just north of Duckmaloi. The Duckmaloi Weir is located on the Duckmaloi River a short distance below Edith. Water from the weir is piped into the Fish River water supply system.
4. **Fish River:** The Fish River rises to the south of the Oberon town-ship and runs through the centre of the Oberon Council Area through rural and forested lands into Oberon Dam. From here the river flows north east to Duckmaloi where it is joined by the Duckmaloi River and continues on to Tarana to the north. The river then turns west, flowing through rural land to the open plain of

O'Connell and on towards Bathurst. The river forms the northern boundary of the council area.

5. **Kowmung River:** The Kowmung River flows to the east of the Great Divide, mainly through National Park and inaccessible country. Water levels rise and fall rapidly.
6. **Cox's River:** The Cox's River rises north of the Oberon Council Area and flows along part of its eastern boundary through rugged country. Its major tributary within the council area is the Jenolan River.
7. **Abercrombie River:** The Abercrombie River flows in a westerly direction along the southern boundary of the Oberon Council Area through rural areas with low populations. The surrounding country is very steep, causing the river to rise quickly. The main tributary of the Abercrombie within council area is Mt Warong Creek.
8. **Campbells River:** The Campbells River flows north on the western side of the Oberon Council Area into Ben Chifley Dam and then through rural areas to join the Fish River and form the Macquarie River. Lower lying land in The Lagoon area is flood liable.

## A1. STORAGE DAMS

9. Dam locations are shown on Map 2 in Annex L in the Oberon LGA Map, signified by the symbol 

### Oberon Dam - Oberon LGA

10. (Owner: State Water Corporation, Fish River Water Supply Scheme). The dam is located on the Fish River 2 km south of Oberon. It was constructed in three stages with the final security upgrading completed in 1996 and provides bulk water to Oberon, Lithgow, Pacific Power and Sydney Water. The dam type is a concrete slab & buttress and homogenous earth with toe filter drains. There are two (2) types of spillways; 1 x uncontrolled, ogee crest overflow with flip bucket; 1 x fuse plug chute. Crest length is 399 metres (232m concrete buttress dam & 167m earth embankment). Storage at FSL is 45,000 ML.

In the event of dam failure at least nine (9) houses between Oberon and Tarana (Lithgow LGA) would be inundated to beyond floor level and would require evacuation before the arrival of waters from the dam. Beyond Tarana it is expected that very serious flooding would also occur. The same is true in the area of The Lagoon which would be affected by back-up flow up the Campbells River. The current Dam Safety Emergency Plan (DSEP) is dated August 2007.

## Ben Chifley Dam - Bathurst LGA

11. Ben Chifley Dam (capacity approx 30,800 million litres) owned by Bathurst Regional Council is located approx 15 kilometres south of Bathurst and 3.5 kilometres south east of The Lagoon on the Campbells River. The dam is used as a water supply for Bathurst as well as for recreational activities. The dam is an earth fill embankment dam with a height of 34.4m and a crest length of 455m. The original concrete lined service spillway located on the right abutment controls flow with an 84m long ogee crest. The auxiliary fuse plug spillway on the left abutment is 172m wide with provision of 6 fuse plug embankments, varying in height from 4.4m to 11.4m. A dam break study for failure of this dam showed that in a sunny day failure up to 350 houses downstream would be inundated with a flood wave time to the first residence being 26 minutes. During a PMF dambreak event there would be between 600 and 650 houses inundated. The current Dam Safety Emergency Plan (DSEP) is dated June 2005 and is a 'draft' copy.

## A2. WEATHER SYSTEMS AND FLOODING

1. Most parts of the Oberon Council area have an average annual rainfall of between 900 & 1200mm. This rainfall is distributed in a fairly uniform manner across the seasons, but there are tendencies towards higher flood frequencies in the February-April and June-August periods than at other times of year. Almost all of recorded severe flood events have occurred during these periods however, large amounts of rain can fall at any time of year. In severe events, more than half the average annual rainfall could be recorded at some stations over a period of several days.
2. Flooding in the Oberon Council area usually results from one of four mechanisms:
  - i. **Cyclonic depressions** forming troughs extending from northern Australia and directing northerly streams of moist, unstable air into northern and central western NSW. Such systems, which occur during the warmer months, frequently produce intense short-period rainfalls leading to flooding. Flooding from this mechanism is rare, however.
  - ii. **Well-developed low-pressure troughs** associated with depressions well to the south and crossing the council areas from west to east. Sequences of such troughs can produce high rainfall totals over a period of weeks, usually in the winter months, with daily falls being less intense than those experienced as a result of the cyclonic depressions noted above.
  - iii. **Low-pressure systems** situated off the coast of NSW and causing flows of moist air across the Great Dividing Range. This mechanism was responsible for the floods of August 1986 and August 1998.

- iv. **High-intensity, short-duration convective thunderstorms** bringing very heavy rain and causing local runoff, flash flooding on minor tributaries and the surcharging of artificial drainage systems in built-up areas. Such storms are largely confined to the late spring, summer and early autumn months and do not create main-stream flooding.
3. Detailed records of flooding within the council area generally concentrate on the surrounding areas to river systems in the LGA including the village of O'Connell from the Fish River. It is known, however, that flooding is irregular on all streams, with long virtually flood-free periods separated by shorter periods of frequent and sometimes severe flooding.

### **A3. CHARACTERISTICS OF FLOODING**

1. There are no large flood prone areas within the Oberon Council Area. Isolated properties and houses in the various river valleys may be affected by flooding however, stock movement is periodically necessary, especially on the lower reaches of the Fish and Campbell's Rivers. Some houses can be isolated for periods of several hours when floods occur. Only on rare occasions however, are evacuations necessary. The largest area of flood liable land is in the O'Connell area, where several houses can be affected due to flooding of the Fish River.
2. The main effects of flooding in the area are road closures which can range from short periods to in the worst cases for up to two (2) days causing considerable disruption to traffic. The Edith Road (Oberon to Jenolan Caves) can be cut at Edith and the Duckmaloi Road (Oberon to Hampton) can be cut just outside Oberon. In both cases, flood response operations in the east of the council area can be hampered. Roads can also be cut in the Tarana and O'Connell areas, and the Shooters Hill, Dog Rocks and Taralga Roads (Oberon - Goulburn) can be affected by flood waters.
3. Bush walkers, campers and tourists can be cut off by flooding, especially in the Jenolan Caves area and in the remote country in the east and south of the council area in the valleys of the Cox's, Kowmung and Abercrombie Rivers.

### **A4. FLOOD HISTORY**

1. There are a low number of recorded flood events in the Oberon area, however peak river heights are available for the Fish River at O'Connell and the Duckmaloi/Fish River Junction.

<b>Month, Year</b>	<b>Peak River Heights</b>	<b>Impacts</b>
April 1950	Abercrombie river height unknown	Causes: Rain (unknown amount)  Effects: flooding of Abercrombie Caves with approx. 7m height recorded in main arch carve.
August 1986	Fish River 6.10m at O'Connell Bridge	Causes: Rain (unknown amount)  Effects: Roads closed and houses inundated (details not known)
July 1988	Duckmaloi River 3.9m at Junction	Causes: Rain (unknown amount)  Effects: (details not known)
August 1990	Fish River at O'Connell Bridge  Duckmaloi River 2m at Junction	Causes: Rain (unknown amount)  Effects: Water on O'Connell-Oberon Road at 3.7m and inundation to houses (Mills Cottage at 4.9m)

## **A5. FLOOD MITIGATION SYSTEMS**

1. There are no known purpose built flood mitigation systems within the Oberon LGA.

## **A6. EXTREME FLOODING**

1. The worst floods ever recorded in the Oberon Council area should not be considered to be the most serious which will ever occur. An extreme flood would be expected to rise more quickly than did serious floods in the past and could reach much higher levels and higher velocities of flow.
2. It has been ascertained that Oberon Dam located on the Fish River near the town of Oberon, could fail in a genuinely extreme flood of a magnitude which would be likely to occur only very rarely and which would be more severe than any flood so far experienced in the Fish River valley. If failure were to occur, a large volume of water would be released and would travel down the valley as a flood wave inundating large areas close to the river.

## ANNEX B - EFFECTS ON THE COMMUNITY

### B1. COMMUNITY PROFILE

Census Description	LGA	Oberon
Total Persons	5031	2474
Total Dwellings	1808	951
Total persons aged 65 years and over	646	339
Total persons aged below 15 years	1044	571
Total persons needing assistance (profound / severe disability)	160	94
Total persons of indigenous origin	108	57
Total persons using Internet	956	435
Single parent families	146	102
Persons living alone	467	297
Total persons who do not speak English well	8	4
Total persons who lived at a different address 5 years ago	1582	916
Households without vehicles	84	73
Total persons residing in caravans, cabins or houseboats	36	24
Mean household size	3	2

Table B-1: Census of Housing and Population data (2006)

## **B2. SPECIFIC RISK AREAS - FLOOD**

### **OBERON**

1. The town of Oberon has no significant flooding issues with most flooding experienced in the wider area in villages of O'Connell, Burruga and Abercrombie.

### **Dams**

2. The Special Oberon Dam Warning and Alarm System has been developed to warn nine at-risk households below Oberon Dam of potential or actual dam failure flooding. The system consists of a series of arrangements for monitoring flood levels at the dam and for passing warning messages to the households downstream.
3. Residents of the nine houses at risk have been issued with a written summary of the circumstances under which dam failure could occur and of the arrangements governing the passage of warnings. In addition, they have been advised as to what to take with them when they evacuate and where they should go.
  - a) Special arrangements have been devised to warn the potentially at-risk residence in The Lagoon area of any threat of a failure of Ben Chifley Dam, and to facilitate evacuation if required. These arrangements are summarised in the table at the end of this appendix and consist of:
    - b) Notification procedures to ensure that appropriate agencies are made aware of any threat and can mobilise necessary resources. These include:
      - The monitoring devices of the Bathurst ALERT system, which provide information on rainfall and streamflow conditions and the depth of water in the dam's spillway.
      - Automatic alarms which are transmitted to Bathurst City Council and Central West SES Region Headquarters personnel when these monitoring devices reach particular, pre-set levels.
      - Procedures for notifying the Oberon SES Local Headquarters and other agencies within the Oberon Council area.
      - Procedures to initiate monitoring of the dam and surveillance of downstream areas.
    - c) Procedures for warning the residents of the at-risk dwelling and advising them as to appropriate actions. These could be to prepare to evacuate or to actually do so. Warning would be automatically by pager in the first instance, followed up by phone calls and doorknocks.



- d) Arrangements to guide evacuations. Should evacuation become necessary, an evacuation centre would be established at the Apsley Downs Sales Complex and assistance would be provided to evacuees as necessary to reach this location.

### **Other Considerations**

4. Special events in Oberon may attract increased visitors to the area, with the following major events being identified:
- Oberon Show, February each year.
  - Oberon Steam Festival, February each year.

## **B3. ROAD CLOSURES**

1. The following table lists roads liable to flooding in the Oberon Council area :

<b>Road</b>	<b>Closure location</b>	<b>Consequence of closure</b>	<b>Alternate Route</b>	<b>Indicative gauge height</b>
Oberon - Bathurst	Eight Mile Swamp Creek	Short term closure (1-4 hours)		
Foleys Creek	Brisbane Valley Creek	Short term closure (1-4 hours)		
Oberon - Rockley	Brisbane Valley Creek	Short term closure (1-4 hours)		
Oberon - Rockley	Native Dog Creek	Short term closure (1-4 hours)		
Black Springs - O'Connell	Brisbane Valley Creek	Short term closure (1-4 hours)		
Black Springs - O'Connell	Captain Kings Creek	Short term closure (1-4 hours)		
O'Connell - Lagoon	Alicks Creek	Short term closure (1-4 hours)		
Bloom Hill	Alicks Creek	Short term closure (1-4 hours)		
Wisemans Creek	Sewells Creek	Short term closure (1-4 hours)		
Jaunter	Browns Creek	Short term closure (1-4 hours)		
Jaunter	Long Flat Creek	Short term closure (1-4 hours)		
Arkstone - Burruga	Isabella River	Short term closure (1-4 hours)		
Greywacke	Captain Kings Creek	Short term closure (1-4 hours)		
MR 255	Slippery Creek	Short term closure (1-4 hours)		
MR 255	Emu Valley Creek	Short term closure (1-4 hours)		

<b>Road</b>	<b>Closure location</b>	<b>Consequence of closure</b>	<b>Alternate Route</b>	<b>Indicative gauge height</b>
Mt Olive Rd	Emu Valley Creek	Short term closure (1-4 hours)		
Carlwood Rd	Snakes Valley Creek	Short term closure (1-4 hours)		
Chatham Valley	Duckmaloi River	Short term closure (1-4 hours)		
Mozart Rd	Fish River Creek	Short term closure (1-4 hours)		
Mozart Rd	Long Arm Creek	Short term closure (1-4 hours)		
Murrays Lane	Fish River Creek	Short term closure (1-4 hours)		
MR 255	Fish River	Medium - Long term closure (up to two days)		
Tarana - O'Connell - Muttons Falls	Fish River	Medium - Long term closure (up to two days)		
Tarana - O'Connell - Sydmouth Valley	Fish River	Medium - Long term closure (up to two days)		
Tarana - O'Connell - Rainville	Fish River	Medium - Long term closure (up to two days)		
MR 253 - O'Connell	Fish River	Medium - Long term closure (up to two days)		
MR 256	Abercrombie River	Medium - Long term closure (up to two days)		
Jerrong	Abercrombie River	Medium - Long term closure (up to two days)		
Jerrong	Werong Creek	Medium - Long term closure (up to two days)		
MR 253-Edith	Duckmaloi River	Medium - Long term closure (up to two days)		
Burroughs Crossing	Duckmaloi River	Medium - Long term closure (up to two days)		

<b>Road</b>	<b>Closure location</b>	<b>Consequence of closure</b>	<b>Alternate Route</b>	<b>Indicative gauge height</b>
Hazelgrove - Duckmaloi	Duckmaloi River	Medium - Long term closure (up to two days)		
Isabella - Burruga	Isabella River	Medium - Long term closure (up to two days)		
Black Springs - Burruga	Campbell's River	Medium - Long term closure (up to two days)		
Phill's Falls	Fish River	Medium - Long term closure (up to two days)		

#### **B4. SUMMARY OF ISOLATED COMMUNITIES AND PROPERTIES**

1. There are no significant areas within Oberon LGA that are susceptible to lengthy periods of isolation due to flooding.

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# SES RESPONSE ARRANGEMENTS FOR OBERON

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**Volume 3 of the Oberon Local Flood Plan**

Last Update: July 2011

## ANNEX C - GAUGES MONITORED BY THE OBERON SES LOCAL HEADQUARTERS

Gauge Name	Type	AWRC No.	Stream	Flood level classification			Special Reading Arrangements	Owner
				Minor	Moderate	Major		
Oberon Dam			Fish					
Hazelgrove ‡		10176	Fish					SES
Duckmaloi Junction ‡	Manual	10125	Fish					SES
Tarana (Telemetric) ‡	Telemetric	10365	Fish					SES
O'Connell Causeway		10278	Fish					SES
O'Connell Bridge ‡		10279	Fish					DLWC
Saltwater Creek	Manual	10339	Fish					
Edith (Duckmaloi) ‡	Manual	10133	Duckmaloi					DLWC
Ben Chifley Dam ‡		10020	Campbells					COU

**Table C-1: Gauges monitored by the Oberon SES Local Headquarters**

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

## ANNEX D - DISSEMINATION OPTIONS FOR SES FLOOD INFORMATION AND WARNING PRODUCTS

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

### Television Stations:

Station	Location
Capital TV	Orange
Prime TV	Orange
WIN TV	Orange
ABC TV	Sydney

### Radio Stations:

Station	Location	Frequency	Modulation
2BS	Bathurst	1503	AM
2LT	Lithgow	107.9	FM
2CR	Orange	549	AM
2MCE	Bathurst	92.3	FM

### Newspapers:

Name	Location
Oberon Review - Thursdays	Printed Rural Press Dubbo

### Other Agencies:

- List other agencies to assist with dissemination of flood information and warnings (eg use of a third party website).
- Note any arrangements for SES LHQ to pass information direct to media organisations.

# ANNEX E - TEMPLATE EVACUATION WARNING, EVACUATION ORDER AND ALL CLEAR

## Flood Evacuation Warning



[name] SES Region Headquarters

[Enter address]

Telephone: (02) [#####]

Fax: (02) [#####]

Issued [day] [date] at [time in civilian format (am,pm)]

Email: [#####]

Radio stations are asked to immediately broadcast this message and repeat it.

Use of the Standard Emergency Warning Signal (SEWS) with this message is authorized.

## Flood Evacuation Warning for [Enter location/s]

*Authorised By: [ (name and operational position title) ]*

As a result of the flood level predicted by the Bureau of Meteorology for [ *location* ] at [ *date/time* ] the State Emergency Service recommends that residents within the nominated areas should prepare to evacuate within the next [ *number* ] hours.

Residents should monitor the situation and be prepared to evacuate when instructed to do so. A Flood Evacuation Order will be issued by the SES if evacuation is required.

You can choose to go to friends or relatives. Alternatively, evacuation centres will be established at [ *location/s* ] where you can obtain temporary accommodation and other help.

To prepare for possible evacuation you should:

- Raise belongings by placing them on tables, beds and benches. Put electrical items on top. You may be able to place light weight items in the roof space.
- Collect together medicines, personal and financial documents, mementos and photos
- If possible, check to see if your neighbours need help
- Make arrangements for care of pets or other animals, or take your pets with you when you evacuate
- Take three days' supply of clothing and medicines
- Find out where to turn off the electricity and gas
- Continue to listen to a local radio station for updates

Don't walk ride or drive through floodwaters – this is the main cause of death and injury during floods

For emergency assistance telephone the SES on 132 500

Web site: [www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

End SES Flood Evacuation Warning \_\_\_\_\_

*[Enter next update and currency details]*



# Flood Evacuation Order



[name] SES Region Headquarters

[Enter address]

Telephone: (02) [#####]

Fax: (02) [#####]

Issued [day] [date] at [time in civilian format (am,pm)]

Email: [#####]

Radio stations are asked to immediately broadcast this message and repeat it.

Use of the Standard Emergency Warning Signal (SEWS) with this message is authorized.

## Flood Evacuation Order for [Enter locations]

**Authorised By:** [ (name & operational position title) ]

As a result of the flood level predicted by the Bureau of Meteorology for [ *location* ] at [ *date/time* ] the State Emergency Service is directing residents within the nominated areas to evacuate within the next [ *number* ] hours.

Do not delay your evacuation. Roads will be congested or closed. You could become trapped and need rescue. Remaining in flooded areas is dangerous and may place your life at risk.

You can choose to go to friends or relatives. Alternatively, evacuation centres will be established at [ *location/s* ] where you can obtain temporary accommodation and other help.

**Delete as required** {If you don't have a car, buses may operate where possible on normal routes. Special transport can also be provided on request if necessary, telephone [ *telephone number* ]}

As you evacuate you should:

- Take your important documents, mementos and photos
- Take your spare clothing and medicines
- If possible, check to see if your neighbours need help
- Turn off the electricity and gas
- Don't walk ride or drive through floodwater
- Continue to listen to a local radio station for updates

For emergency assistance telephone the SES on 132500

SES web site: [www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

End SES Flood Evacuation Order

*This Flood Evacuation Order remains current until the All Clear has been issued*

# ALL CLEAR



[name] SES Region Headquarters

[Enter address]

Telephone: (02) [#####]

Fax: (02) [#####]

Issued [day] [date] at [time in civilian format (am,pm)]

Email: [#####]

Radio stations are asked to immediately broadcast this message and repeat it.

## All Clear for [Enter locations]

**Authorised By:** [ (name & operational position title) ]

[Describe the condition that justify the All Clear including any special precautions/conditions and safety advices that people must take]

The SES has issued the ALL CLEAR for [enter locations] at [time / date]. This means that it is now safe to return to [enter locations].

People with access to transport can return to their properties now.

[People who/If you] require transport assistance you should contact [insert contact details] for further information on arrangement for return.

For emergency assistance telephone the SES on 132500

SES web site: [www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

End SES All Clear

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# ANNEX F - DETAILS OF THE DAM FAILURE WARNING SYSTEM FOR OBERON DAM

This Annex describes the downstream consequences and specific notification and warning arrangements for the failure of Oberon Dam and should be read in conjunction with the response arrangements detailed in this plan.

## F1. INTRODUCTION

1. The dam is located on the Fish River 2 km south of Oberon. It was constructed in three stages with the final security upgrading completed in 1996 and provides bulk water to Oberon, Lithgow, Pacific Power and Sydney Water. The dam type is a concrete slab & buttress and homogenous earth with toe filter drains. There are two (2) types of spillways; 1 x uncontrolled, ogee crest overflow with flip bucket; 1 x fuse plug chute. Crest length is 399 metres (232m concrete buttress dam & 167m earth embankment). Storage at FSL is 45,000 ML.
2. The most likely causes of dam failure are:
  - 'Sunny Day' Failure due to a rapidly deteriorating structural condition induced by engineering fault or sabotage (not induced by an inflow flood).
  - Failure due to a rapidly deteriorating structural condition such as may be induced by earthquake.
  - Failure due to an extreme flood overtopping the dam
3. Although the dam is currently not identified as having deficiencies, an unsafe or emergency condition could occur at any time due to extreme natural events. Failure from a cause not related to extreme natural events is always a possibility although the probability of occurrence is extremely low. Oberon Dam as it presently exists is categorised as a 'High B' Consequence dam.
4. The Oberon Dam is estimated to be able to withstand a flood inflow volume of approximately 935m<sup>3</sup>/s which would produce an outflow of approximately 282m<sup>3</sup>/s. This is the equivalent to the maximum spillway capacity at the dam's embankment crest equalling a Potential Failure Flood (PFF). The dam wall would overtop at this level and its structural integrity is not guaranteed.

## F2. CONSEQUENCES OF FAILURE

1. Dam failure could result in the following:
2. Up to 31 residential properties could be inundated however it is only likely that 10 of these would be affected. These properties are located on the southern

fringe of Oberon towards Edith, with the river valleys travelling towards Tarana and into the Macquarie River. Significant damage would be caused to infrastructure including bridges and roads, and the main western railway line. Also, water supply would sustain damage due to the dam being a source of water for the area.

3. Approximately 27 dwellings could be inundated by failure of Oberon Dam.

Modelled Event	Number of Houses	Population at Risk
PFF (IFF) No Dam Failure	1	3
PFF + Dambreak	9	27
Sunny Day Failure	9	27
PMF	9	27

**Table F-1: Number of houses at risk of inundation**

4. The number of houses at risk of inundation in the four (4) modelled scenarios is shown in the table above. The study area of the model extends from the dam downstream to the Tarana - O'Connell Road a distance of 58.55 kilometres.
5. The DSEP identifies properties at risk. In the event of an Alert being issued to SES for Oberon Dam, some or all of these properties may require evacuation.

### **F3. FLOW TRAVEL TIMES**

1. The flow time for a dam break wave to reach the first property to be inundated during a PFF + dambreak flood event is approximately sixty (60) minutes. (refer to chainage charts in Dam Break Study for individual flow times to affected properties downstream).
2. It should be noted that the travel times listed relate to only one component of the lead-up time before downstream flooding commences, and should be considered indicative only.

### **F4. INUNDATION AREA**

1. Downstream flood inundation mapping has been completed for Oberon Dam and is located in the Dam Safety Emergency Plan and Dambreak Study.

### **F5. SUNNY DAY FAILURE.**

1. In the unlikely event of the dam failing under normal inflow conditions, downstream flood inundation would result from water held in the storage.

2. The non-flood failure is considered to have the most potential for loss of life as it is likely to occur when there are no flood warnings and hence emergency services are not on standby and the public is unprepared.

## **F6. INUNDATION MAPPING.**

1. Dam break flood inundation mapping has been prepared for Oberon Dam and is contained in the Oberon Dam Safety Emergency Plan.

## **F7. MONITORING**

1. The dam owner/operator is responsible for monitoring and managing any potential emergency at the dam site.
2. The system operates as follows as a flood is rising:
  - a) A manual gauge located on the Fish River upstream of Lake Oberon is monitored by Fish River Water Supply personnel to provide an indication of flows into the lake from the upper catchment.
  - b) Flood levels at Oberon Dam are monitored by Fish River Water Supply personnel living adjacent to the dam. At particular, pre-determined flood levels, a flood sensor activates a siren which can be heard by these employees who then contact the following by telephone, pager or radio:
    - Officer In Charge, Duckmaloi Water Clarification Plant (Fish River Water Supply).
    - SES Local Controller.
    - Oberon Police Station.
    - Central West SES Division Headquarters.
  - c) Other monitoring networks for the Oberon Dam include:
    - Electronic Piezometers - Located on Main embankments 1-3 and monitored daily.
    - Seepage Monitoring Point - Located downstream of collector wall and monitored daily.
    - Standpipe Piezometers - Located on Main embankments 1-4 and monitored daily.
    - Visual Dam Level Inspections conducted daily.
    - Dam inspections of Main embankment, Concrete structure and fuse plugs conducted twice weekly.
    - Crack surveys of Main embankment conducted every seven (7) years.

## F8. NOTIFICATION PROCEDURES

1. The primary contact for dam failure warning notification by the dam owner to the SES is the NSW SES 24hr Operations Communications Centre. The SES Operations Communications Centre will subsequently notify the Central West SES Region Headquarters After Hours Duty Officer who will contact the Oberon SES Local Controller. An alternate NSW Police contact is available if this notification procedure was to fail.
2. A flow chart illustrating the notification arrangements for potential dam failure is shown in Annex J.

## F9. WARNING

1. Dam failure alerts are issued to SES and are used to trigger appropriate response actions. Alert levels from the DSEP for flood failure have been reproduced in Table F-3 against SES responses. Responses escalate as the alert level migrates from white to red. The conditions that define each of the alert levels (as identified in the DSEP) are listed in Table F-2 below. The meaning of each alert level is as follows:
  - White: Preliminary alert to assist the SES in its preparation. This is not a public alert. It indicates a potential issue/condition has been observed at the dam and is being investigated.
  - Amber: Alert level necessitating the warning of the population at risk to prepare for evacuation.
  - Red: Alert level requiring the immediate evacuation of the downstream population at risk.
2. Actions indicated as occurring at particular Alert Levels may be brought forward if the development of a flood warrants.

Alert	Defining Conditions	Min Time to Reach Alert Levels (approx)
White Alert	Storage level of dam reaches RL 1069.73m AHD - 1.65m above FSL Discharge reaches 8,640 ML/day equivalent to 1:10 AEP flood.	Approximately 45 minutes until amber level reached
Amber Alert	Storage Level Bay 1 triggered at water level of RL 1071.05m AHD - 2.97m above FSL In the event of an Earthquake	Approximately 35 minutes until red level reached
Red Alert	Storage Level has reached crest level of the concrete section of RL 1072.13m AHD - 4.05m above FSL	

Table F-2: Oberon Dam Flood Failure Alert levels

3. The State Water Corporation (Dam Safety and Audit Manager) will disseminate dam failure warnings.
4. State Water Corporation Staff will keep the SES informed of the conditions of the dam through monitoring networks and the discharge through the spillway at 0.5m interval releases. The dam alerts will be activated in sequence as the storage level rises during the course of a major flood event and will be sent to the SES as they occur.
5. The following table outlines the notification, warning and evacuation arrangements for a potential failure of Oberon Dam.

Alerts	Defining Conditions	Notification Arrangements and Actions for Oberon Dam					
		State Water Corporation	SES OCC	SES Region Controller	SES Local Controller	LEOCON / Other agencies	People at risk
White Alert	Storage level of dam reaches RL 1069.73m AHD - 1.65m above FSL Discharge reaches 8,640 ML/day equivalent to 1:10 AEP flood.	Advise SES Communications Centre of White Alert Level being reached and provide regular updates on the situation at the dam	Receive notification from dam operator  Advise SES Region Controller  Advise SEOC	Receive notification from SES SHQ  Advise SES Local Controller, SES Units SES Local Headquarters  Advise the District Emergency Management Officer (DEMO).  Consider need for OAAA for warning and evacuation operations.	Confirm SES RHQ has been notified.  Activate Local Flood Plan.  Refer to Local Flood Plan for agencies to notify that the White Alert Level has been reached. (See Annex I, Dam Failure Alert Notification Arrangements Flowchart).	When requested by SES Local Controller, coordinate support	No action required.  Some evacuations may be necessary due to mainstream riverine flooding.
Amber Alert	Storage Level Bay 1 triggered at water level of RL 1071.05m AHD - 2.97m above FSL  In the event of	Advise SES Operations Communications Centre of Amber Alert Level being reached and provide regular updates on the	Receive notification from dam operator  Advise SES Region Controller	Notify SES Local Controller, SES units SES LHQ.  Provides SES Flood Bulletins and evacuation warnings to the	Confirm SES RHQ has been notified.  Coordinate the delivery of warnings to at-risk residents.	When requested by SES Local Controller, coordinate support	Prepare homes for inundation, pack valuables, mementos and pets and prepare to evacuate.



Alerts	Defining Conditions	Notification Arrangements and Actions for Oberon Dam					
		State Water Corporation	SES OCC	SES Region Controller	SES Local Controller	LEOCON / Other agencies	People at risk
	an Earthquake	<p>situation at the dam</p> <p>Closely monitor the condition of Oberon Dam and implement preventative measures to return it to a safe condition as soon as possible.</p>	Advise SEOC	<p>media organisations listed in Annex D.</p> <p>Coordinate provision of out of area assistance for warning and evacuation operations.</p>	Coordinate the notification of other agencies as listed in Local Flood Plan		<p>Notify SES doorknockers if transport to evacuation centres will be required.</p> <p>Some evacuations may be necessary due to mainstream riverine flooding.</p>
Red Alert	Storage Level has reached crest level of the concrete section of RL 1072.13m AHD - 4.05m above FSL	Advise SES Communications Centre of Red Alert Level being reached and provide regular updates on the situation at the dam	<p>Receive notification from dam operator</p> <p>Advise SES Region Controller</p> <p>Advise SEOC</p>	<p>Notify SES Local Controller, SES units, SES LHQ.</p> <p>Advise the DEMO.</p> <p>Confirm that residents immediately downstream of the dam have been notified of Red Alert Level being reached.</p>	<p>Confirm SES RHQ has been notified.</p> <p>Evacuate at-risk residents.</p> <p>Coordinate the notification of other agencies as per the Local Flood Plan</p> <p>Ensure that evacuation centres are ready to receive</p>	When requested by SES Local Controller, coordinate support	Evacuate to nearest evacuation centre or assembly area.

Alerts	Defining Conditions	Notification Arrangements and Actions for Oberon Dam					
		State Water Corporation	SES OCC	SES Region Controller	SES Local Controller	LEOCON / Other agencies	People at risk
				<p>Activate the Standard Emergency Warning Signal (SEWS) and ensure that evacuation warnings are broadcast over the radio stations listed in Annex D.</p> <p>Coordinate provision of out of area assistance for evacuation operations</p>	<p>evacuees.</p> <p>Conduct warning and evacuation of downstream residents by doorknock and public address systems from emergency service vehicles.</p> <p>Coordinate transport of evacuees without their own vehicles.</p>		
Dam failure alert cancellation	Dam owner assesses threat and advises whether the risk to the dam structure has passed.	Advise SES OCC of the outcome of the risk assessment	<p>Receive notification from dam operator</p> <p>Advise SES Region Controller</p> <p>Advise SEOC</p>	<p>Following risk assessment of the dam, decide in consultation with Local and State Controller whether to issue an All Clear.</p> <p>Issue 'All Clear'</p>	<p>Deliver 'All Clear' message to other agencies as necessary.</p> <p>Coordinate issue of 'All Clear' message at evacuation centres or by phone/doorknock.</p>	When requested by SES Local Controller, coordinate support	Stay home, return home or await further advice.

Alerts	Defining Conditions	Notification Arrangements and Actions for Oberon Dam					
		State Water Corporation	SES OCC	SES Region Controller	SES Local Controller	LEOCON / Other agencies	People at risk
				<p>message to SES Local Controller, SES Units, SES Local HQ and SES State HQ</p> <p>Advise the DEMO that 'All Clear' has been issued.</p> <p>Issue 'All Clear' message over radio stations listed in Annex D.</p>			

Table F-3: Notification, warning and evacuation arrangements for a potential failure of Oberon Dam

# ANNEX G - DETAILS OF THE DAM FAILURE WARNING SYSTEM FOR BEN CHIFLEY DAM

This Annex describes the downstream consequences and specific notification and warning arrangements for the failure of Ben Chifley Dam and should be read in conjunction with the response arrangements detailed in this plan.

## G1. INTRODUCTION

1. Ben Chifley Dam was constructed in 1957 and is a water supply for the city of Bathurst, the dam is located in the Bathurst Regional Council Local Government Area (LGA) and is on the western boundary of the Oberon LGA. The dam is located on the Campbells River, a tributary of the Macquarie River and is approximately 17kms south of Bathurst. Ben Chifley Dam is a zoned earth fill embankment dam with a sloping central clay core constructed of weathered granite. The embankment crest has a length of 455m and a height of 34.4m with a storage capacity of 30,800 ML at FSL. The service spillway is an ogee crest with a fuse plug auxiliary consisting of 6 fuse plug embankments.
2. The most likely causes of dam failure are:
  - Failure due to flood levels overtopping the embankment
  - Failure due to rapidly deteriorating structural deficiency such as may be induced by an extreme earthquake, internal erosion, piping, landslide or sabotage. (This is the so-called "Sunny Day" failure, i.e. not induced by an inflow flood).
3. Although the dam is currently in good condition, an unsafe or emergency condition could occur at any time due to extreme natural events. Failure from a cause not related to extreme natural events is always a possibility although the probability of occurrence is extremely low.
4. Ben Chifley as it presently exists is categorised as a 'High A' Consequence dam.
5. The Ben Chifley Dam is expected to withstand a PMF event and is estimated to be able to withstand a flood volume up to a peak inflow of 9346m<sup>3</sup>/sec and peak outflow of 9172m<sup>3</sup>/sec. [insert details] passing through the storage.

## G2. CONSEQUENCES OF FAILURE

1. Dam failure could result in the following:
2. There are approximately 350 downstream residences that would be inundated due to 'Sunny Day' Dam Failure with this number increasing to around 650 in a PMF and PMF + Dambreak event. These downstream properties are located in the Campbells River Valley and The Lagoon, and the O'Connell village which is

part of the Oberon LGA, wider areas on the Macquarie River towards the city of Bathurst. Numerous roads in this area including roads in The Lagoon, the Lagoon Road to O'Connell and further downstream into Bathurst with numerous bridges at Hereford, Esrom and Rankin Streets affected along with the Main western Railway Line. Water supply to Bathurst would be affected.

- Up to approximately 650 dwellings could be inundated by failure of Ben Chifley Dam.

<b>Modelled Event</b>	<b>Number of Houses</b>	<b>Population at Risk</b>
<b>Sunny Day Dam Failure</b>	350	875
<b>Sunny Day Fuse Plug Bay 6 Failure</b>	250	625
<b>PMF (No Failure)</b>	600	1500
<b>PMF Dambreak</b>	650	1625

**Table G-1: Number of houses at risk of inundation**

- The number of houses at risk of inundation in the four (4) modelled scenarios is shown in the table above. The study area of the model extends from the dam downstream to the city of Bathurst.
- The DSEP identifies properties at risk. In the event of an Alert being issued to SES for Ben Chifley Dam, some or all of these properties may require evacuation.

### **G3. FLOW TRAVEL TIMES**

- Flow times for water to reach the first affected property downstream in PMF + Dam Break event is three (3) minutes. (refer to chainage charts in Dam Break Study and DSEP for individual flow times to affected properties downstream).
- It should be noted that the travel times listed relate to only one component of the lead-up time before downstream flooding commences, and should be considered indicative only.

### **G4. INUNDATION AREA**

- Downstream flood inundation could occur as the result of a dam failure due to a flood or a 'Sunny Day' failure. Areas affected by inundation in the Oberon LGA include those in the Campbells Creek Valley and The Lagoon.

### **G5. FLOOD FAILURE**

1. The likelihood of dam failure due of flooding would result from a PMF event that would have the potential to cause failure to the auxiliary fuse plugs 1-6. (see DSEP and Dam Break Study).

## **G6. SUNNY DAY FAILURE.**

1. In the unlikely event of the dam failing under normal inflow conditions, downstream flood inundation would result from water held in the storage.
2. The non-flood failure is considered to have the most potential for loss of life as it is likely to occur when there are no flood warnings and hence emergency services are not on standby and the public is unprepared.

## **G7. INUNDATION MAPPING.**

1. Dam break flood inundation mapping has been prepared for Ben Chifley Dam and is contained in the Ben Chifley Dam Safety Emergency Plan.

## **G8. MONITORING**

1. The dam owner/operator is responsible for monitoring and managing any potential emergency at the dam site.
2. Ben Chifley Dam is monitored by a network of instrumentation comprising of:
  - Electrical Piezometers - 1 located upstream and 13 downstream of embankment monitored fortnightly.
  - Standpipes - 3 located upstream and 5 downstream of embankment these are NOT monitored.
  - Settlement Points - 18 located upstream and 31 downstream of embankment monitored annually.
  - Seepage Weir - located adjacent to the downstream toe retaining wall monitored weekly.
  - Storage level Gauge Plates - telemetry system that is checked manually.

## **G9. NOTIFICATION PROCEDURES**

1. The primary contact for dam failure warning notification by the dam owner to the SES is the NSW SES 24hr Operations Communications Centre. The SES Operations Communications Centre will subsequently notify the Central West SES Region Headquarters After Hours Duty Officer who will contact the Oberon SES Local Controller. An alternate NSW Police contact is available if this notification procedure was to fail.

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

## G10. WARNING

1. Dam failure alerts are issued to SES and are used to trigger appropriate response actions. Alert levels from the DSEP for flood failure have been reproduced in Table G-3 against SES responses. Responses escalate as the alert level migrates from white to red. The conditions that define each of the alert levels (as identified in the DSEP) are listed in Table G-2 below. The meaning of each alert level is as follows:
  - White: Preliminary alert to assist the SES in its preparation. This is not a public alert. It indicates a potential issue/condition has been observed at the dam and is being investigated.
  - Amber: Alert level necessitating the warning of the population at risk to prepare for evacuation.
  - Red: Alert level requiring the immediate evacuation of the downstream population at risk.
2. Actions indicated as occurring at particular Alert Levels may be brought forward if the development of a flood warrants.

Alert	Defining Conditions	Min Time to Reach Alert Levels (approx)
<b>White Alert</b>	- 2.0m over service spillway (RL 712.62m AHD) - 2.0m over FSL	From WHITE alert stage to AMBER alert stage: 1 hour.
<b>Amber Alert</b>	- 2.6m over service spillway (RL 713.22m AHD) - 2.6m over FSL	From AMBER alert stage to RED alert stage: 1 hour.
<b>Red Alert</b>	- 3.5m over service spillway (RL 714.12m AHD) 3.5m over FSL.	From issue of RED alert stage to failure of dam wall: 3 hours.

**Table G-2: Ben Chifley Dam Flood Failure Alert levels**

3. The Bathurst Regional Council will disseminate dam failure warnings.
4. Bathurst Regional Council Staff will keep the SES informed of the monitoring and surveillance data relating to streamflow, spillway discharge and dam integrity. The dam alerts will be activated in sequence as the storage level rises during the course of a major flood event and will be sent to the SES as they occur.
5. The following table outlines the notification, warning and evacuation arrangements for a potential failure of Ben Chifley Dam.

Alerts	Defining Conditions	Notification Arrangements and Actions for Ben Chifley Dam					
		Bathurst Regional Council	SES OCC	SES Region Controller	SES Local Controller	LEOCON / Other agencies	People at risk
White Alert	- 2.0m over service spillway (RL 712.62m AHD) - 2.0m over FSL	Advise SES Communications Centre of White Alert Level being reached and provide regular updates on the situation at the dam	Receive notification from dam operator  Advise SES Region Controller  Advise SEOC	Receive notification from SES SHQ  Advise SES Local Controller, SES Units SES Local Headquarters  Advise the District Emergency Management Officer (DEMO).  Consider need for OOAA for warning and evacuation operations.	Confirm SES RHQ has been notified.  Activate Local Flood Plan.  Refer to Local Flood Plan for agencies to notify that the White Alert Level has been reached. (See Annex I, Dam Failure Alert Notification Arrangements Flowchart).	When requested by SES Local Controller, coordinate support	No action required.  Some evacuations may be necessary due to mainstream riverine flooding.
Amber Alert	- 2.6m over service spillway (RL 713.22m	Advise SES Operations Communications Centre of Amber	Receive notification from dam operator	Notify SES Local Controller, SES units SES	Confirm SES RHQ has been notified.  Coordinate the	When requested by SES Local Controller,	Prepare homes for inundation, pack



			<p>Advise SES Region Controller</p> <p>Advise SEOC</p>	<p>LHQ.</p> <p>Provides SES Flood Bulletins and evacuation warnings to the media organisations listed in Annex D.</p> <p>Coordinate provision of out of area assistance for warning and evacuation operations.</p>	<p>delivery of warnings to at-risk residents.</p> <p>Coordinate the notification of other agencies as listed in Local Flood Plan</p>	<p>coordinate support</p>	<p>valuables, mementos and pets and prepare to evacuate.</p> <p>Notify SES doorknockers if transport to evacuation centres will be required.</p> <p>Some evacuations may be necessary due to mainstream riverine flooding.</p>
	<p>AHD) - 2.6m over FSL.</p>	<p>Alert Level being reached and provide regular updates on the situation at the dam</p> <p>Closely monitor the condition of Ben Chifley Dam and implement preventative</p>					

		measures to return it to a safe condition as soon as possible.					
Red Alert	- 3.5m over service spillway (RL 714.12m AHD) 3.5m over FSL.	Advise SES Communications Centre of Red Alert Level being reached and provide regular updates on the situation at the dam	Receive notification from dam operator  Advise SES Region Controller  Advise SEOC	Notify SES Local Controller, SES units, SES LHQ.  Advise the DEMO.  Confirm that residents immediately downstream of the dam have been notified of Red Alert Level being reached.  Activate the Standard Emergency Warning Signal (SEWS) and ensure that	Confirm SES RHQ has been notified.  Evacuate at-risk residents.  Coordinate the notification of other agencies as per the Local Flood Plan  Ensure that evacuation centres are ready to receive evacuees.  Conduct warning and evacuation of downstream residents by doorknock and public address systems from emergency service vehicles.	When requested by SES Local Controller, coordinate support	Evacuate to nearest evacuation centre or assembly area.

				<p>evacuation warnings are broadcast over the radio stations listed in Annex D.</p> <p>Coordinate provision of out of area assistance for evacuation operations</p>	<p>Coordinate transport of evacuees without their own vehicles.</p>		
<p>Dam failure alert cancellation</p>	<p>Dam owner assesses threat and advises whether the risk to the dam structure has passed.</p>	<p>Advise SES OCC of the outcome of the risk assessment</p>	<p>Receive notification from dam operator</p> <p>Advise SES Region Controller</p> <p>Advise SEOC</p>	<p>Following risk assessment of the dam, decide in consultation with Local and State Controller whether to issue an All Clear.</p> <p>Issue 'All Clear' message to SES Local Controller, SES units, SES Local HQ and</p>	<p>Deliver 'All Clear' message to other agencies as necessary.</p> <p>Coordinate issue of 'All Clear' message at evacuation centres or by phone/doorknock.</p>	<p>When requested by SES Local Controller, coordinate support</p>	<p>Stay home, return home or await further advice.</p>

				<p>SES State HQ</p> <p>Advise the DEMO that 'All Clear' has been issued.</p> <p>Issue 'All Clear' message over radio stations listed in Annex D.</p>			
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**Table G-3: Notification, warning and evacuation arrangements for a potential failure of Ben Chifley Dam**

# ANNEX H - RESUPPLY FLOWCHART

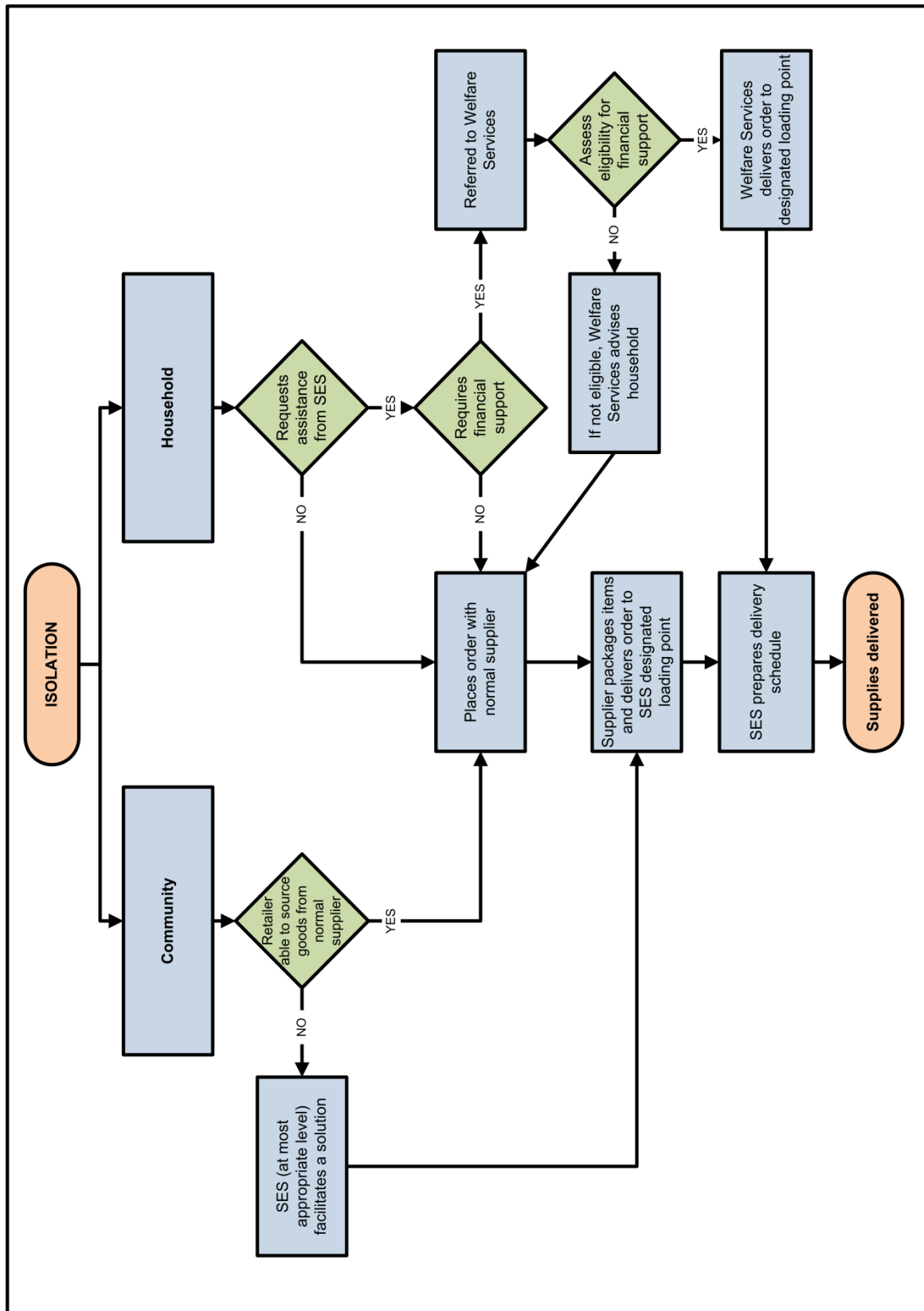
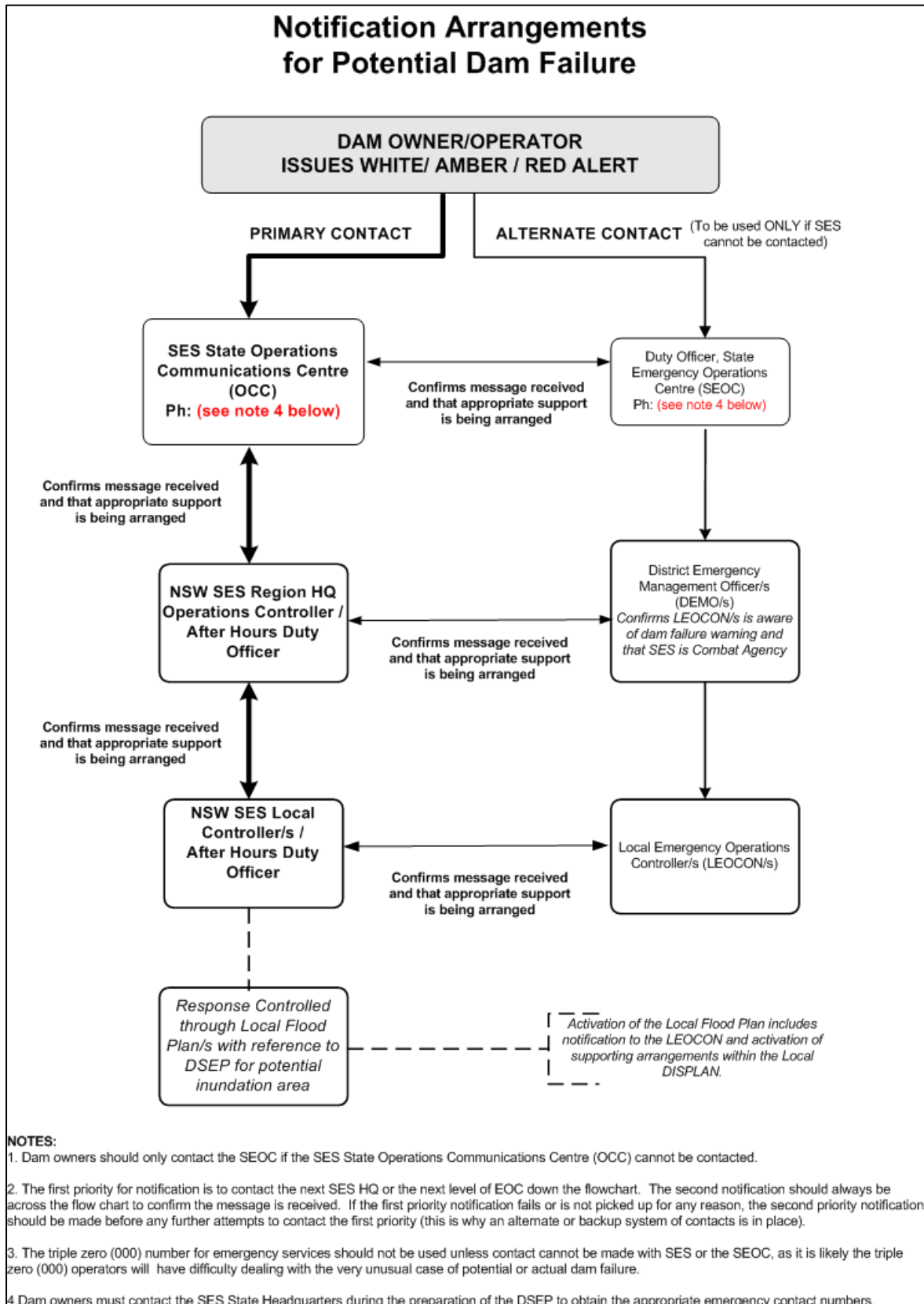


Figure H-1: Resupply Flowchart. Please note that the flowchart outlines the resupply process but does not encompass all potential situations and/or outcomes.

# ANNEX I - DAM FAILURE ALERT NOTIFICATION ARRANGEMENTS FLOWCHART



## **ANNEX J - MAPS**

MAP 1 - Hawkesbury River Basin

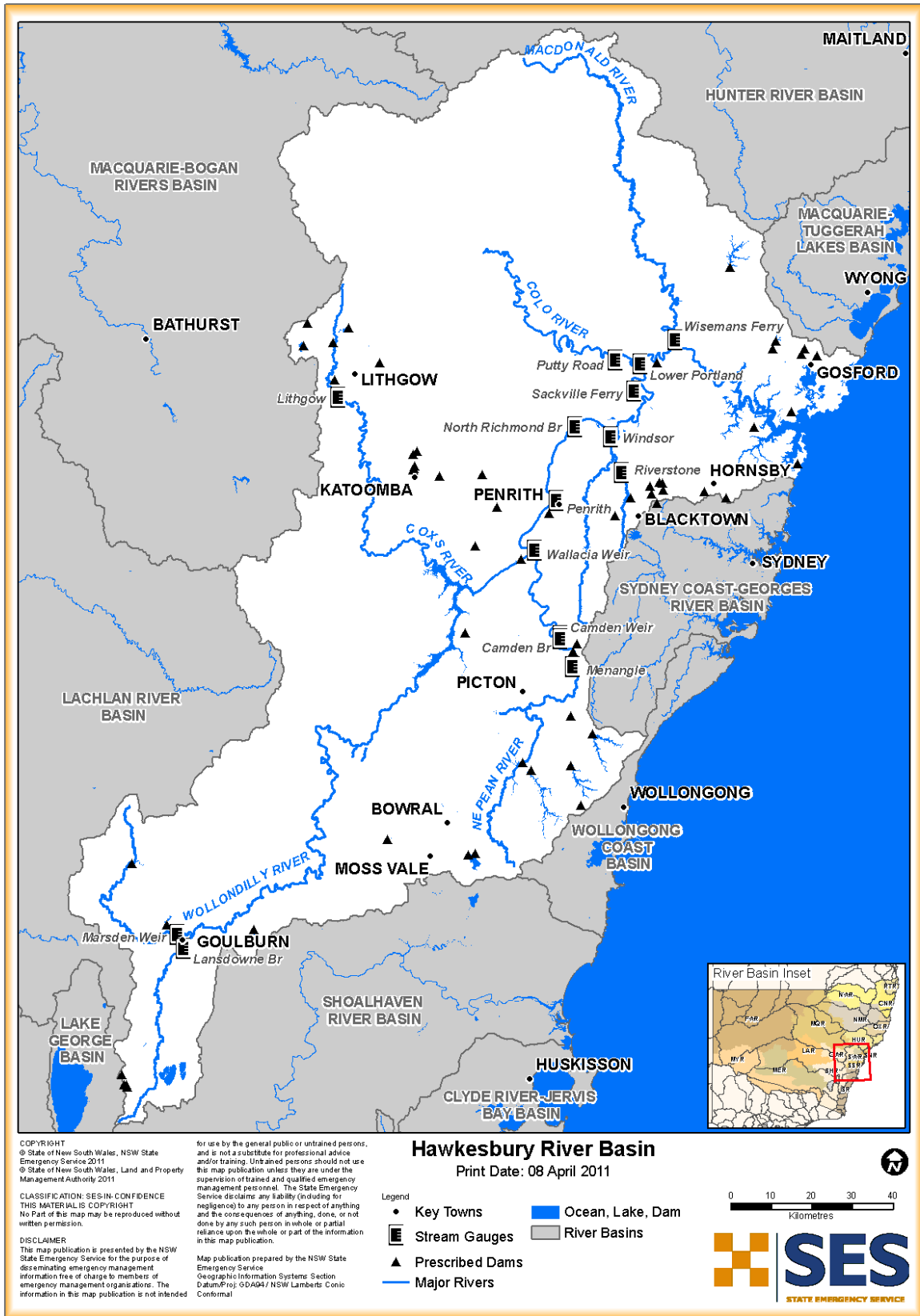
MAP 2 - Macquarie River Basin

MAP 3 - Lachlan River Basin

MAP 4 - Oberon Local Government Area

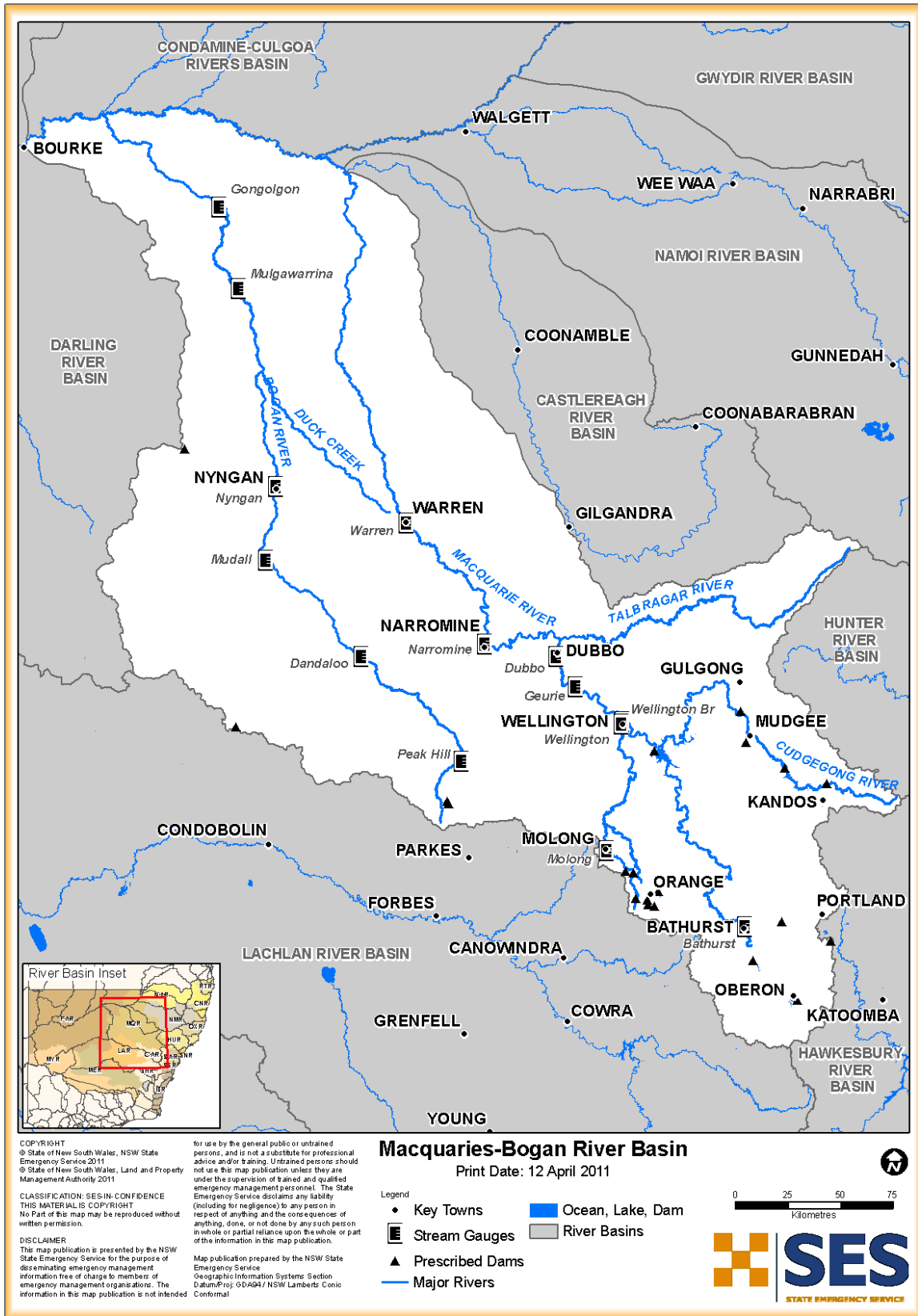
MAP 5 - Oberon Town

# MAP 1 - THE HAWKESBURY RIVER BASIN

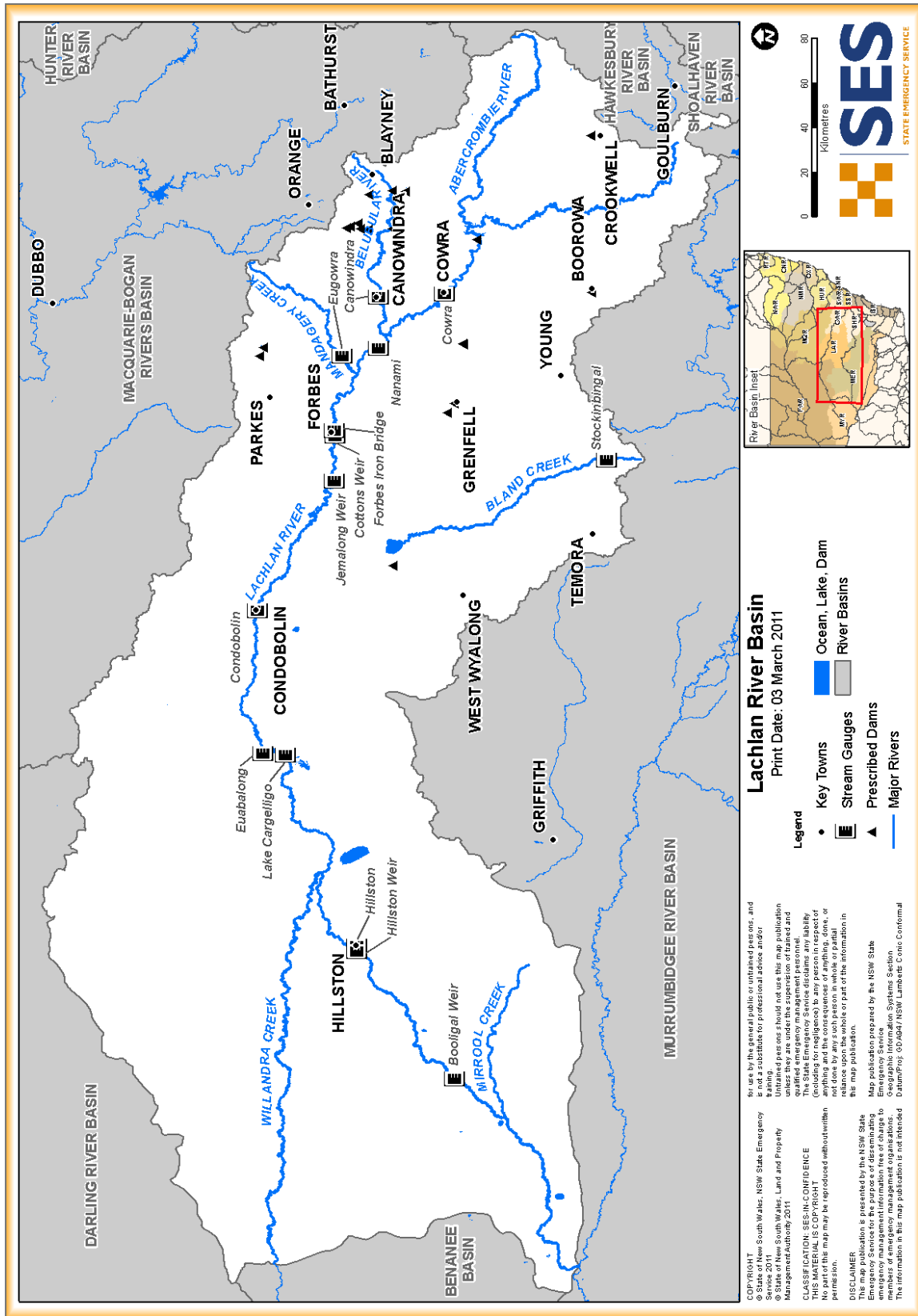




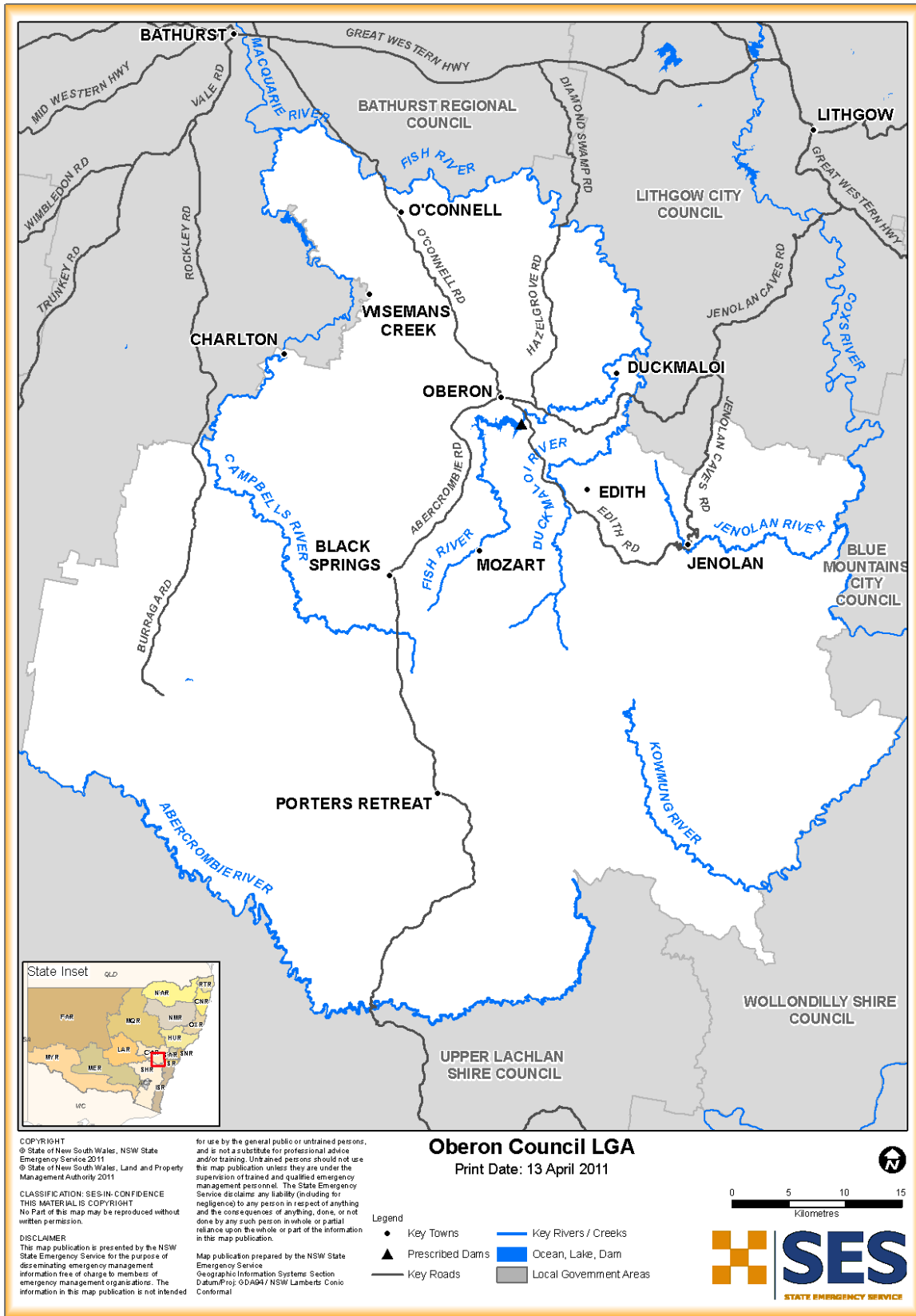
# MAP 2 - MACQUARIE RIVER BASIN



# MAP 3 - LACHLAN RIVER BASIN



# MAP 4 - OBERON COUNCIL AREA



# MAP 5 - OBERON TOWN MAP

