

Upper Hunter LGA

Local Flood Emergency Sub Plan



UPPER HUNTER SHIRE COUNCIL FLOOD EMERGENCY SUB PLAN

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

Volume 1 of the Upper Hunter Shire Council Local Flood Plan

Endorsed by the Emergency Management

Committee Endorsed Date: 7th December 2022

AUTHORISATION

The Upper Hunter Shire Council Flood Emergency Sub Plan is a sub plan of the Upper Hunter Shire Council 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



NSW SES Local/Unit Commander

Date: 7/12/22

Endorsed



Greg McDonald

Chair, Local Emergency Management Committee

Date: 7 December 2022

VERSION HISTORY

Version Number	Description	Date
September 2022 V2	Amendments for the LEMC and alignment to the State Flood Plan	30/09/2022

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

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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 Upper Hunter Shire Council 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 Upper Hunter Shire Council Local Emergency Management Plan (EMPLAN) and is endorsed by the 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 Upper Hunter Shire Council 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 Upper Hunter Shire Council LGA. The Upper Hunter Shire Council 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 Northern Zone and for emergency management purposes, is part of the Hunter Central Coast Emergency Management Region.
- 1.4.3 The plan sets out the Upper Hunter Shire Council level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Upper Hunter Shire Council LGA. Hazard and Risk information and SES Response Arrangements can be found in Volume 3.
- 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 The arrangements for dealing with episodes of coastal erosion by severe weather, are described in the NSW State Storm Sub Plan.
- 1.4.6 The arrangements for the emergency management of tsunami are dealt with in the NSW State Tsunami Emergency Sub Plan.

- 1.4.7 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 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; and
 - 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 Plan.
- 1.7.2 Specific roles and responsibilities for agencies, functional areas and organisations in relation to flooding within Upper Hunter Shire Council are detailed within this plan, Appendix B and Appendix C.
- 1.7.3 Any agency with agreed responsibilities in this plan that are temporarily, or no longer able to fulfil their responsibilities must as soon as possible notify the:
- a. NSW SES Incident Controller (for local or zone level responsibilities during response operations).
 - b. NSW SES Zone Duty Commander (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. Conducting exercises to test arrangements.
 - 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 from after action reviews, reports, or inquiries; and
 - 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 material published in previous versions of the Local Flood Plan is now maintained on the NSW SES website at:
<https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/> including:
- a. Flood Plan Glossary.
 - b. NSW SES Dam Failure Notification Flowchart.
 - c. NSW SES Resupply Flowchart.

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

- 2.1.1 The NSW SES maintains information on the nature of flooding and effects of flooding on the community in the Upper Hunter Shire Council LGA. This is outlined in Volume 3 – Hazard and Risk in Upper Hunter Shire Council.
- 2.1.2 Declared dams in or upstream of the Upper Hunter Shire Council Local Government Area.

Dam Name	Owner	High Risk Dam
Glenbawn	WaterNSW	N/A
Murrurundi	Upper Hunter Shire Council	N/A
Aldridges Creek	Consolidated Pastoral Company P/L	N/A

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

3.1.1 The Floodplain Development Manual outlines the NSW Government's Flood Prone Lands 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. 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. NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk.
- b. NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk.

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. 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 or coastal inundation; and
- b. NSW SES will provide advice, support and technical resources for NSW SES representatives to contribute effectively to local Floodplain 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:** 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 (CMG's) 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 NSW SES.

4.3 FLOOD INTELLIGENCE SYSTEMS

4.3.1 **Strategy:** 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; and
- 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. 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). Gauges of relevance within the Upper Hunter Shire Council LGA are also listed in Volume 3 of this plan.
- c. The NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW 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. Upper Hunter Shire Council has developed and maintains a flood warning system for Scone and Aberdeen.
- f. Dam Owners will provide Dam Failure Warning Systems (where required) and consult NSW SES on alert levels and messaging. Alert level definitions are listed in Dam Emergency Plans.
- g. NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.

- h. NSW SES develops and maintains warning and flood information products by:
 - Utilising flood intelligence data.
 - Developing pre-written warning and flood information products.
 - Continuously reviewing warning and flood information products; and
 - Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW Flood Warning Consultative Committee; and maintain Operational Readiness.
 - Participating in the development of public information and warning systems.

4.5 BRIEFING, TRAINING AND EXERCISING

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

Actions:

- a. NSW SES will consult stakeholders throughout the development of plans.
- b. NSW SES will inform stakeholders of content changes after revisions.
- c. NSW SES will ensure their facilities and resources are maintained and operationally ready.
- d. NSW SES will train personnel for their expected flood operation roles; and
- e. 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:** 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:** NSW SES works with individuals, communities, businesses and government agencies to build flood resilience.

Actions:

- a. Work with 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. 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 of Meteorology (BoM) Severe Weather Warning or Thunderstorm Warning that includes heavy rain or storm surge; or
- b. On the receipt of a BoM Flood Watch or Flood Warning; or
- c. On receipt warnings for flash flood; or
- d. On receipt of a dam failure alert; or
- e. When other evidence leads to an expectation of flooding.

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

5.2.1 **Strategy:** Maintain effective control of flood operations across New South Wales.

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 Duty Commander will appoint Incident Controllers and establish Incident Control Centres (see NSW SES facilities on map in Appendix A).
- d. The NSW SES Incident Controller, in consultation with participating supporting emergency services and functional areas will determine the appropriate breakdown of an Area of Operations into Divisions and/or Sectors in accordance with the principles of AIIMS.

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

Actions:

- a. NSW SES will operate Incident Control Centre(s) as required.
- b. The NSW SES Incident Control Centre(s) will:
 - Control resources from NSW SES and coordinate resources of supporting emergency services and functional areas.
 - Manage Request for Assistance (RFA) tasking and ensure they are actioned in a timely manner.
 - Undertake response planning and determine future resourcing requirements; and

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

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

Actions:

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

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

Actions:

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

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

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

Actions:

- Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by NSW SES to supporting emergency services and Functional Areas listed under this Plan.
- All supporting emergency services and Functional Areas 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.
- The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information.
- Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by NSW SES. This may occur post

impact and continue into the recovery phase.

- e. NSW SES may request Engineering 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 and official forecasts and warnings, 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 BoM 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 Dam Failure Warning Systems to provide warnings and information to NSW SES and communities (where appropriate).
- c. NSW SES Incident Controllers will issue the following NSW SES flood information products incorporating warnings from the above, expected consequences and safety messages:
 - Livestock and Equipment (pump) Warnings
 - Local Flood Advices
 - Flood Bulletins
 - NSW SES Evacuation Warning
 - NSW SES Evacuation Order
 - NSW SES All Clear
- d. NSW SES liaises with the Bureau of Meteorology to discuss the development of flood warnings as required.
- e. NSW SES provides alerts and deliver flood information to affected communities using a combination of public information methods.

- f. 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 Council websites
 - Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.
- h. The Public Information and Inquiry Centre will be established by the NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.
- i. The Disaster Welfare Assistance Line will be established by Disaster Welfare Services 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: 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 through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings; and
- 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. Upper Hunter Shire Council will coordinate the closure and reopening of council managed roads once inspections have been carried out by the relevant authority.
- b. The Transport Management Centre (TMC) in coordination with 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 Upper Hunter Shire Council or Transport for NSW have not already acted and if public safety requires such action);
- d. 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 Arrangements for the protection of local assets are outlined in Volume 3 of this NSW SES local Flood Emergency Plan. In addition, Local and Region EMPLAN's contain infrastructure inventories.

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

Actions:

- a. The Transport Services Functional Area is to coordinate the provision of information about the assessment and restoration of transport network infrastructure
- b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).
- c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Public Safety Network.
- d. The Engineering Services Functional Area is to:
 - Coordinate the assessment and restoration of critical public buildings for example hospitals.
 - Assessment and operation of flood protection levees.
 - Protection of property.
 - Construction and repair of levees.
 - Dam safety assessment and dam stability.
 - Water supply and sewerage operations.
 - Other critical infrastructure
- e. Functional Areas will keep the NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

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

5.8.2 Community specific evacuation arrangements are located in Volume 3 of this Plan.

5.8.3 **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; and
 - Resources and delivery of evacuation information.
 - Length of isolation.
 - c. NSW SES Incident Controllers, and flood planners will carefully consider the risks involved in conducting evacuations.
 - d. All evacuation decisions will be made as per the current NSW SES policies and procedures, and consistent with the NSW Evacuation Management Guidelines.
 - e. Potential Evacuation Centres are located in Volume 3 / Local EMPLAN.
 - f. The NSW Police Force will coordinate the provision of overall security for evacuated areas.
- 5.8.4 **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. 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. 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 Welfare Services, 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 Evacuation Order 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. NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. In these cases, the NSW SES will brief the 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 the Welfare Services Functional Area Supporting Plan.
- c. Schools Administration (Government and Private) will manage the safety of students directly affected by flooding and will work with the NSW SES in the temporary closure of schools and will coordinate with NSW SES Transport and Welfare Services in the management of school evacuees.
- d. Disaster Victim Registration will be controlled and coordinated by the NSW Police Force with the assistance of NSW SES and Welfare Services Functional Area.
- e. 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 SEOCON may establish Major Evacuation Centres or Mass Care facilities.

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

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:** Coordinate maintenance of food supplies for flood affected communities.

Actions: All matters relating to the primary production, manufacturing, processing, and handling of all food from primary industries to retail, inclusive of all restaurants, food services and catering businesses should be referred to the NSW Food Authority through the Agriculture and Animal Services Functional Area.

5.9.5 **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 assist with evacuation, emergency care of animals and assessment, humane destruction and disposal of affected animals, and supply of emergency fodder, water, and aerial support where necessary.

5.10 FLOOD RESCUE

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

Actions:

- a. 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 Land Rescue Policy and the NSW State Rescue Board Flood Rescue Policy which sets out the framework, governance, responsibilities and requirements for the management and conduct of flood rescue in NSW.
- c. 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 NSW SES. Supporting emergency services must supply information regarding rescues performed to the NSW SES. Notification arrangements with NSW Police Force are outlined in the NSW State Rescue Board Flood Rescue Policy.

- d. Rescue agencies will conduct rescue of domestic small and large animals as per the State Rescue Board Land 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 Agriculture and Animal 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. 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, NSW SES will establish loading points where retailers can instruct suppliers to deliver goods.
- d. NSW SES will endeavor to deliver mail to isolated communities but may not be able to do so according to normal Australia Post timetables.
- e. NSW SES will assist hospitals with resupply of linen and other consumables where able.
- f. NSW SES may request resupply assistance from supporting agencies.
- g. 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, NSW SES will establish a resupply schedule and coordinate the resupply for isolated rural properties.
- b. 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 ALL CLEAR AND 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. 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 'All Clear' message when the immediate danger to life and property has passed for areas assessed as safe.
- d. NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy:** Conclude response operations.

Actions:

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

5.14 POST IMPACT ACTIONS

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

Actions:

- a. 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 of Meteorology, Welfare Services

and Upper Hunter Shire Council representatives.

- b. 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. 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 NSW SES as lead agency to transition to Resilience NSW 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. 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: NSW SES works with relevant stakeholders including Upper Hunter Shire Council on post flood data collection analysis including review of flood intelligence where necessary.

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

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

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

6.2 NSW SES RECOVERY ROLE

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

6.2.2 Actions:

- a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase.
- b. 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. NSW SES will provide information to Resilience NSW 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. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.
- f. NSW SES may coordinate immediate relief in collaboration with Resilience NSW.

7 ABBREVIATIONS

For a full list of abbreviations refer to the [NSW State Flood Plan - Abbreviations](#)

8 GLOSSARY

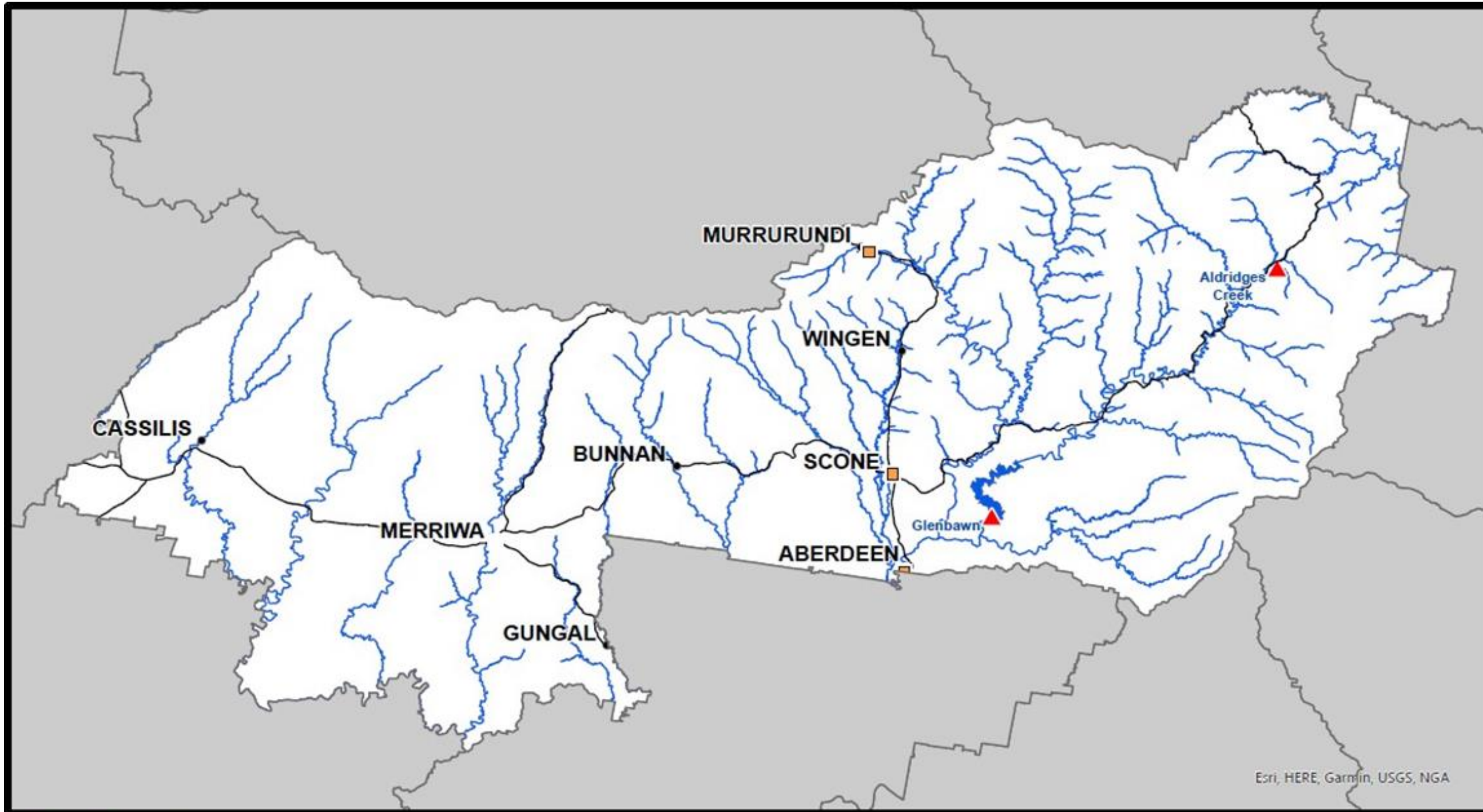
Common emergency service terminology can be found within the Australian Disaster Resilience Glossary.

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 Upper Hunter Shire Council Area

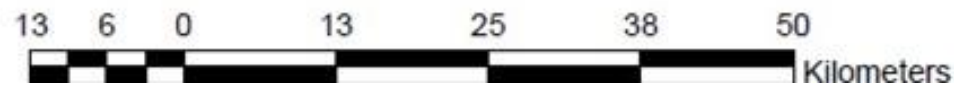


Esri, HERE, Garmin, USGS, NGA



**UPPER-HUNTER
LGA**

SES Unit HQ	Declared Dams
Key towns	Key Rivers
Roads	Lakes, Ocean



10 Appendix B – Roles and Responsibilities

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

AGENCY	RESPONSIBILITIES
Agriculture and Animal Services Functional Area	<p>The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> • Disseminate briefing information to participating agriculture and animal services and related stakeholders. • When activated the Agriculture and Animal Services will coordinate the provision of required services which may include: <ul style="list-style-type: none"> – Coordinate response for animal welfare including pets, livestock and wildlife. – Supply and delivery of emergency fodder. – Emergency water replacement in certain circumstances; and – Financial, welfare and damage assessment assistance to flood affected primary producers. • Support recovery arrangements including: <ul style="list-style-type: none"> – Administer transport subsidies to primary producers.
Australian Government Bureau of Meteorology	The roles and responsibilities of the Australian Government Bureau of Meteorology are outlined in the NSW State Flood Plan.
Upper Hunter Shire Council	<p>Preparedness</p> <ul style="list-style-type: none"> • Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented. • Develop and implement floodplain risk management plans in accordance with the NSW Government’s Flood Prone Land Policy and the Floodplain Development Manual. • Provide levee studies, flood studies and floodplain management studies to the NSW SES. • Maintain Dam Safety Emergency Plans for the [Upper Hunter Shire Council] dams and provide copies to the NSW SES. • Provide information on the consequences of dam failure to the NSW SES for incorporation into planning and flood intelligence.

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Coordinate the development of warning services for catchments prone to flash flooding (small catchments), where appropriate; • Maintain council-owned flood warning networks and flood mitigation works. • Participate in NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Sub-Plans. • Maintain a plant and equipment resource list for the council area. • Contribute to community engagement activities. <p>Response</p> <ul style="list-style-type: none"> • Subject to the availability of council resources, assist the NSW SES with flood operations including: <ul style="list-style-type: none"> – Traffic management on council managed roads. – Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested). – Property protection tasks including sandbagging. – Assist with the removal of caravans from caravan parks – Warning and/or evacuation of residents and other people in flood liable areas. – Provision of back-up radio communications – Resupply of isolated properties; and – Technical advice on the impacts of flooding. – Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise the NSW SES, the NSW Police Force and people who contact the council for road information. – Assist the NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected. • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • Operate flood mitigation works including critical structures such as detention basins and levees and advise the NSW SES regarding their operation. • Manage and protect council-owned infrastructure facilities during floods. • Provide advice to the NSW SES and the Health Services Functional Area during floods about key council managed infrastructure such as sewerage treatment and water supply.

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Advise the Environmental Protection Agency of any sewerage overflow caused by flooding. • Work with the NSW SES and DPIE to collect flood related data during and after flood events. <p>Recovery</p> <ul style="list-style-type: none"> • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.
Caravan Park Proprietor(s)	<ul style="list-style-type: none"> • Prepare a flood emergency plan for the Caravan Park; • Ensure that owners and occupiers of movable dwellings are aware that the caravan park is flood liable by providing a written notice to occupiers taking up residence and displaying this notice and emergency management arrangement within the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: <ul style="list-style-type: none"> – Provide the manager of the caravan park with a contact address and telephone number in case of an emergency; and – Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed and are maintained in proper working order). • Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to: <ul style="list-style-type: none"> – Ensure that they have spare batteries for their radios. – Listen to a local radio station for updated flood information; and – Prepare for evacuation and movable dwelling (cabins) relocation. • Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. • Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers. • Secure any movable dwellings that are not able to be relocated to prevent floatation; and

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Inform the NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks.
Childcare Centres and Preschools	<ul style="list-style-type: none"> • When notified of possible flooding or isolation, childcare centres and preschools should. <ul style="list-style-type: none"> – 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; and – Assist with coordinating the evacuation of preschools and childcare centres.
Dams Safety NSW	The roles and responsibilities of the Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan.
Department of Defence	Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448).
Department of Industry	The roles and responsibilities for the Department of Industry (Crown Lands and Water Division) are outlined in the NSW State Flood Plan.
NSW Department of Planning Industry and Environment (Water)	<p>Prevention</p> <ul style="list-style-type: none"> • Department of Planning, Industry and Environment (Water) is responsible for the management of the state's surface water and groundwater resources and reports to the NSW Government for water policy and the administration of key water management legislation, including the <i>Water Management Act 2000</i> (NSW) and <i>Water Act 1912</i> (NSW) and corporate flood work licencing under the <i>Water Management Act 2000</i> (NSW). • Manage the approval process for controlled activities (works that have the potential to affect the quantity or flow of water in a water course) under the <i>Water Management Act 2000</i> (NSW); and • Develop rural Floodplain Management Plans under the Water Management Act 2000 (NSW) in partnership with the Department Planning, Industry and Environment. • Management of the state government's water level gauges for the flood warning network in tidal areas in NSW (Manly Hydraulic Laboratory (MHL) operates this system as a service provider on behalf of DPIE Water).
NSW Department of Industry, Planning and Environment – Water	Owns and manages the Hunter Valley Flood Mitigation Scheme (HVFMS) . <p>Prevention</p> <ul style="list-style-type: none"> • Maintains the Hunter Valley Flood Mitigation Scheme in a flood ready

	<p>state.</p> <ul style="list-style-type: none"> • Maintains operational capability in relation to emergency management. <p>Preparedness</p> <ul style="list-style-type: none"> • Closes flood gates in response to flood watches and warnings issued by BoM in accordance with the Flood Emergency Response Plan. <p>Response</p> <ul style="list-style-type: none"> • Advises NSW SES on status of scheme infrastructure. • Monitors the functioning of the scheme. • Provides intelligence in terms of real time flood modelling, high risk assets and surveillance of operation of scheme. • Responds to community calls regarding damage to scheme infrastructure, or malfunctioning of infrastructure. • Supports NSW SES and ARTC in closing of the Maitland rail floodgates and Maitland ring levee in accordance with the Flood Emergency Response Plan.
<p>Energy and Utilities Services Functional Area</p>	<p>The roles and responsibilities for 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"> • Assist NSW SES with identification of infrastructure at risk of flood damage where resources are available. • Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: <ul style="list-style-type: none"> – Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. – Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation. – Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply. – Clear or make safe any hazard caused by power lines or electricity distribution equipment. – Reconnect customers' electrical/ gas/ water/wastewater installations, when certified safe to do so and as conditions allow. – Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence.
<p>Engineering Services Functional Area</p>	<p>The roles and responsibilities for Engineering Services are outlined in the Engineering Services Supporting Plan, and NSW State Flood Plan.</p>

AGENCY	RESPONSIBILITIES
Environmental Services Functional Area	The roles and responsibilities for Environmental Services are outlined in the Environmental Services (ENVIROPLAN) Supporting Plan .
Floodplain Management Australia	The roles and responsibilities of Floodplain Management Australia are outlined in the New South Wales State Flood Plan .
Fire and Rescue NSW (as per NSW State Flood Plan)	<p>Preparedness</p> <ul style="list-style-type: none"> • Identify and notify the NSW SES of any locations at risk of fire (within Fire Districts (13) or hazardous materials that pose a significant threat to surrounding populations due to the impact of a flood for incorporation into NSW SES flood intelligence and planning; and <p>Response</p> <ul style="list-style-type: none"> • Meet the agreed arrangements described in the NSW SES and Fire and Rescue NSW Mutual Aid Agreement. • Provide Incident Management personnel and Liaison Officers to the NSW SES where required. • When requested by NSW SES, provide support to the NSW SES in response to flood emergencies across the State. • Assist the NSW SES with the warning and/or evacuation of at-risk communities. • Assist the NSW SES with the monitoring/reconnaissance of flood prone areas. • Provision of Land Based and In Water Flood Rescue Operators as required. • Provision of appropriately trained personnel to perform Down the Wire (DTW) functions as required. • Conduct Hazmat operations including asbestos risks, arising from flood emergencies in coordination with the SES Incident Controller. • Decontamination of Flood Rescue Operators as required. • Assist the NSW SES with the resupply of isolated communities and/or properties. • Assist the NSW SES with property protection tasks including sandbagging. • Provide resources for pumping flood water out of buildings and from low-lying areas. • Assist with clean-up operations, including the hosing out of flood affected properties. • Provide trained staff to support a joint intelligence unit, if established by NSW SES, including Remotely Piloted Aircraft System (RPAS) pilots to assist with field observations.

	<ul style="list-style-type: none"> Assist the NSW SES to undertake damage assessment including structural collapse risks. Coordinate the pre-deployment of fire resources to communities within NSW Fire Districts if access is expected to be lost, in consultation with the NSW SES; and Coordinate the deployment of the FRNSW High trans Pump to locations in consultation with NSW SES. <p>Recovery</p> <ul style="list-style-type: none"> Participate in After Action Reviews as required
Forestry Corporation of NSW	<p>Response</p> <ul style="list-style-type: none"> Close and reopen Forestry Corporation of NSW roads when affected by flood waters and advise the NSW SES of its status. Manage traffic on Forestry Corporation of NSW roads. Facilitate the safe reliable access of emergency resources on Forestry Corporation managed roads. Assist the NSW SES with identification of road infrastructure at risk of flooding. Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means; and <p>Close and relocate people from camping grounds at risk of flooding in State Forest managed areas.</p>
Health Services Functional Area	<p>The roles and responsibilities for Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan.</p> <p>Roles and responsibilities in addition to the Supporting Plan are: Ensure that appropriate business continuity plans are developed for essential health infrastructure and are activated during floods.</p>
Local Emergency Operations Controller (LEOCON)	<ul style="list-style-type: none"> Monitor flood operations. <p>If requested, coordinate support for the NSW SES Incident Controller.</p>
Local Emergency Management Officer (LEMO)	<p>If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.</p>
Manly Hydraulics Laboratory (MHL)	<p>The roles and responsibilities of Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.</p>
Marine Rescue NSW	<p>The roles and responsibilities for Marine Rescue NSW are outlined in the NSW State Flood Plan.</p>
NSW Ambulance	<p>The roles and responsibilities for NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan.</p>

AGENCY	RESPONSIBILITIES
<p>NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission</p>	<p>Preparedness</p> <ul style="list-style-type: none"> • Liaise with the NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures (or where required, for students to be moved to a suitable location until normal school closing time); • Ensure that evacuation plans for flood liable schools have arrangements for flooding; and • Assist NSW SES with community engagement and capacity building programs. <p>Response</p> <ul style="list-style-type: none"> • Assist with the coordination of the evacuation of schools and the immediate welfare of students until returned to the appropriate carer. • Pass information to school bus drivers/companies and/or school principals on expected or actual impacts of flooding; and • Provide space in schools for evacuation centres where necessary.
<p>NSW Department of Planning and Environment (DPIE EES)</p>	<p>Prevention</p> <ul style="list-style-type: none"> • Oversee the delivery of the NSW Flood Prone Land Policy through the Floodplain Management Program. This includes technical support and financial assistance to councils including assistance with the identification of flood risks, the preparation and implementation of Floodplain Risk Management Plans and associated mitigation and management actions. DPIE EES also provide technical support to other agencies on flood risk management and understanding flood mitigation works including levees. • Work with the NSW SES on the Flood Data Access Program to improve the provision of flood information through the NSW Flood Data Portal. • Assist the DPIE Water in the preparation of rural floodplain management plans under the <i>Water Management Act 2000</i> (NSW). • Provision of strategic technical advice to support floodplain risk management. <p>Preparedness</p> <ul style="list-style-type: none"> • Assist the NSW SES in the exercising of Flood Sub Plans • Advise the NSW SES about conditions which may lead to coastal inundation or retarded river drainage near the coast. <p>Response</p> <ul style="list-style-type: none"> • Provide technical advice on flood risks to the NSW SES on request • Work with the relevant local council and NSW SES to collect flood related data during and after flood events. <p>Recovery</p> <ul style="list-style-type: none"> • Support recovery committees as required.

AGENCY	RESPONSIBILITIES
NSW Food Authority	The roles and responsibilities for NSW Food Authority are outlined in the Food Industry Emergency Sub Plan .
NSW National Parks and Wildlife Services (as per NSW State Flood Plan)	<p>Preparedness</p> <ul style="list-style-type: none"> Assist the NSW SES with identification of road infrastructure in National Parks at risk of flooding. <p>Response</p> <ul style="list-style-type: none"> Close and reopen National Parks and Wildlife Service roads when affected by flood waters and advise the NSW SES of its status. Facilitate the safe reliable access by emergency resources on National Parks and Wildlife Service managed roads. Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means; and <p>Close and direct people to leave camping grounds at risk of flooding in National Parks and Wildlife Service managed areas.</p>
NSW Police Force (as per NSW State Flood Plan)	<p>Preparedness</p> <ul style="list-style-type: none"> Participate in NSW SES briefings, training and exercises as required. <p>Response</p> <ul style="list-style-type: none"> Provide a Liaison Officer to the NSW SES Operation Centre if required. When requested by NSW SES, in flood operations when training and equipment are available and suitable. <ul style="list-style-type: none"> Assist with warning and/or evacuation of at-risk communities. Assist with monitoring / reconnaissance of flood prone areas. Assist with flood rescue operations. Conduct road and traffic control operations in conjunction with council and/or Transport NSW. Coordinate searches for missing people within flood affected areas. Coordinate security of supply lines evacuated and damaged areas. Manage Disaster Victim Registration; and Operate the Public Information and Inquiry Centre, if requested or otherwise needed during flood events. <p>Recovery</p> <ul style="list-style-type: none"> Participate in After Action Reviews as required.

AGENCY	RESPONSIBILITIES
<p>NSW Rural Fire Service (as per NSW State Flood Plan)</p>	<p>Preparedness</p> <ul style="list-style-type: none"> • Participate in NSW SES briefings, training and exercises as required; and • Meet the agreed arrangements described in the NSW SES/NSW RFS Memorandum of Understanding. <p>Response</p> <ul style="list-style-type: none"> • Provide a Liaison Officer to the NSW SES Operation Centre or Emergency Operations Centre as required. • Provide Incident Management Personnel when requested. • Provide trained staff to support a joint intelligence unit, if established by NSW SES. • Provide aviation support, management and advice as requested through the State Air Desk. • Provide specialty aircraft and appropriately trained personnel to perform Down the Wire (DTW) functions as required. • Assist with Damage Assessments; and • Provide Strike Teams during flood operations when requested by NSW SES. This may include assistance with: <ul style="list-style-type: none"> – Warning and/or evacuation of at-risk communities. – Monitoring / reconnaissance of flood prone areas. – Property protection tasks including sandbagging. – Pumping flood water out of buildings and from low-lying areas. – Back-up radio communications. – Clean-up operations, including the hosing out of flood affected properties. – Deploying resources to communities within Rural Fire Districts where access is expected to be lost in consultation with the NSW SES. – The resupply of isolated communities and/or properties; and – Decontamination of NSW SES Flood Rescue Operators as required. <p>Recovery</p> <ul style="list-style-type: none"> – Participate in After Action Reviews as required.

AGENCY	RESPONSIBILITIES
VRA Rescue NSW (as per NSW State Flood Plan)	<p>Response</p> <ul style="list-style-type: none"> • Where requested by the NSW SES, assist in flood operations when training and equipment are available and suitable, including assistance with: <ul style="list-style-type: none"> – The warning and/or evacuation of at-risk communities. – Flood rescue operations. – Monitoring / reconnaissance of flood prone areas. – Resupply of isolated communities and/or properties; and – Property protection tasks including sandbagging.
Owners of Declared Dams within or upstream of the LGA (as per NSW State Flood Plan)	<p>Preparedness</p> <ul style="list-style-type: none"> • Assist the NSW SES with community engagement programs. • Provide NSW SES with information necessary for response planning and warning distribution. • Assist the NSW SES identify correlations between water level and/or discharges at the dam for use in flood response operations (warning and evacuation); and • Consult with the NSW SES State Headquarters in the development of Dam Emergency Plans, including the development of dam failure alerts, in accordance with the Dam Safety Committee Guidelines. <p>Response</p> <ul style="list-style-type: none"> • Where water level monitoring or other instrumentation allows, provide NSW SES with flood advices as per pre-agreed thresholds for use in downstream flood response operations (warnings). • Notify NSW SES of potential or actual dam failures in accordance with the Dam Emergency Plan and Dam Safety NSW Guidelines. • Close at-risk camping grounds / recreational areas within their managed areas. • In the case of declared dams whose risks are intolerable, assist the NSW SES in planning to warn and evacuate people at risk of dam failure and maintain and operate any special Dam Failure Warning Systems and/or automatic telemetered monitoring devices to assist with early detection of incidents which are installed until such time that the risks have been lowered to an acceptable level; and <p>Owners of gated dams:</p> <ul style="list-style-type: none"> • Provide all available information to the BoM and the NSW SES on storage levels and actual and prospective water releases and their likely impacts on downstream river levels.

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Advise the downstream community of prospective and actual water releases, except in those circumstances where the BoM would issue flood warnings; and • Where possible actively work with NSW SES and the BoM to reduce the impacts of flooding on communities through management of water releases within identified safe parameters and within statutory licensing provisions under the <i>Water Management Act 2000</i> and <i>Water NSW Act 2014</i>.
Public Information Services Functional Area	<p>The roles and responsibilities for Public Information Services are outlined in the Public Information Services Supporting Plan.</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> • On receipt of advice from NSW SES of any weather event likely to result in significant multi agency operational activity, the Public Information Functional Area Coordinator PIFAC determines if a daily multi- agency teleconference is required to ensure that the information needs of each agency are being met and to address any issues. These teleconferences continue through the response phase into the recovery phase.
Resilience NSW	<ul style="list-style-type: none"> • The roles and responsibilities of Resilience NSW are outlined in the NSW State Flood Plan.
SEOCN/SEOC	<p>The roles and responsibilities of the SEOCN/SEOC are outlined in the New South Wales State Flood Plan.</p>
Surf Life Saving NSW (as per NSW State Flood Plan)	<ul style="list-style-type: none"> • The roles and responsibilities for Surf Life Saving NSW are outlined in the NSW State Flood Plan.
Telecommunications Services Functional Area	<p>The roles and responsibilities for Telecommunications Services are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan.</p>

AGENCY	RESPONSIBILITIES
Transport for NSW (TfNSW)	<ul style="list-style-type: none"> • Transport for NSW (TfNSW) coordinates information on road conditions for emergency services access. • Transport for NSW (TfNSW) coordinates the management of the road network across all modes of transport. • Transport for NSW (TfNSW) in conjunction will assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. • TMC will assist the NSW SES with the communication of flood warnings and information provision to the public through Live Traffic and Social Media according to the VMS protocols and procedures. • Assist the NSW SES with identification of road infrastructure at risk of flooding.
Transport Services Functional Area	<p>The roles and responsibilities for Transport Services are outlined in the Transport Services Supporting Plan.</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> • Participate in risk management studies. • Assist the NSW SES to identify transport infrastructure at risk of flood damage for incorporation into planning and intelligence; and • Coordinate the provision of traffic and transport operations as consistent with the roles of Transport organisations.
Water NSW	<p>The roles and responsibilities for Water NSW are outlined in the New South Wales State Flood Plan.</p>
Welfare Services Functional Area	<p>The roles and responsibilities for Welfare Services are outlined in the Welfare Services Functional Area Supporting Plan.</p>

11 Appendix C – Community Specific Roles and Responsibilities

<p>Community Members</p>	<p>Preparedness</p> <ul style="list-style-type: none"> • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit; and • Be involved in local emergency planning processes. <p>Recovery</p> <ul style="list-style-type: none"> • Assist with community clean-up if required and able to do so. Participate in After Action Reviews if required.
<p>Aboriginal organisations or groups</p>	<ul style="list-style-type: none"> • Act as the point of contact between the NSW SES and the Wonnarua people. • Inform the NSW SES Aberdeen, Scone or Murrurundi Unit Commanders about flood conditions and response needs. • Disseminate flood information, including flood and evacuation warnings, to the Wonnarua community.
<p>Cross-border assistance arrangement</p>	<ul style="list-style-type: none"> • A local cross-border mutual assistance arrangement exists in which the NSW SES Local Units and the other Services outside the Hunter Valley will deploy resources to support each other.

HAZARD AND RISK IN UPPER HUNTER SHIRE

Volume 2 of the Upper Hunter Shire Local Flood Plan

Last Update: August 2007

ANNEX A - THE FLOOD THREAT

Landforms and River Systems

1. The Upper Hunter Shire Council is located in the upper Hunter Valley of New South Wales and occupies an area of 8070 square kilometres
2. Apart from a small and virtually unpopulated area in the north-east which is drained by the Barnard River, the eastern half of the council area lies within the catchment area of the Hunter River. The western half is drained by the Goulburn River.
3. The Hunter's headwaters are at elevations of up to about 1,500 metres in the Mt Royal Range and in the Liverpool Range (which forms part of the Great Divide). Most of the catchment within the council area is rugged, dissected and forested, with limited floodplain development around Scone and Aberdeen on the main river and on the lower portions of its major tributaries. Tributaries of the Hunter from east to west are, Omadale, Moonan, Stewarts, and Rouchel Brooks, Isis and Pages Rivers, Parsons Gully, Kingdon Ponds, Middle Brook, Dartbrook and Wybong Creek.
4. Tributaries in the Western portion of the Council area are (east to west): Cuan Creek, Wybong Creek, Halls Creek, Worondi Rivulet, Merriwa River, Bow River, Krui River, Munmurra River and the upper reach of the Talbragar River which forms a part of the boundary. The Talbragar River flows into the Macquarie River.

Storage Dam

5. Glenbawn Dam, the largest water storage on the Hunter River system is located 20 kilometres upstream of Aberdeen and commands a catchment area of 1295 square kilometres.
6. About 120,000 megalitres of the dam's 870,000 megalitre capacity is allocated to 'store' flood waters and thus limit the impacts of flooding downstream. Considerable mitigation can be achieved for small floods and the frequency of low-level flooding has been reduced since the dam's construction.
7. The effect of the dam on more serious floods like those of 1870 and 1955 (and even 1976 and 1992) is minimal however and **it cannot prevent severe flooding downstream in such events**. The 1955 flood peak would have been reduced by approximately 0.3 metres at Aberdeen had the dam existed then, and the 1971 and 1976 peaks would have been lowered by a similar amount.
8. Glenbawn Dam has been classed as 'non-deficient' by the NSW Dams Safety Committee and is therefore considered to have an unlikely chance of failure. In each case, the dam's owner has prepared a Dam Safety Emergency Plan which details surveillance procedures and the management and notification of emergencies.

Weather Systems and Flooding

9. The heavy rain which produces flooding tends to come from southward-moving depressions or ex-tropical cyclones occurring in the summer and autumn months. Some summer floods, however, are the result of short-duration convective thunderstorms which can cause flooding on small creeks and in the town of Murrurundi when the drainage system overflows. Flooding can also occur at other times of year from the passage of frontal systems.

Characteristics of Flooding

10. Flooding can occur on all the streams within the council area. On most of them, warning time is limited or non-existent and inundation periods tend to be only hours in duration. On the main river, warning times are longer and inundation can last for a few days, especially in the south of the council area.

Scone

11. Scone is located on the common floodplain of the Kingdon Ponds, Middle Brook and Parsons Gully. Flooding at the town can originate from one or more of these streams. The greatest flow tends to occur in Parsons Gully, which also takes increasing proportions of the total flow as overall flood volume rises at Scone. In the February 1955 flood, the largest on record, this stream carried over 70% of the flood waters whereas in the 5% AEP (Annual Exceedence Probability) event it carries only about half. Being on the low side of the joint floodplain, Parsons Gully tends to receive most of the 'excess' flow in the rarer, large flood events. The three streams tend to break their banks only in the 5% and rarer events. Figtree Gully, a small watercourse which enters the town from the north-east, also causes problems, particularly in the central business district and usually on a flash flooding basis.
12. The largest floods recorded at Scone occurred in 1955, 1971 and 1976. Of these the 1955 flood is estimated to have been an event of a magnitude which would occur on average, only once in about 100 years. Such a flood has roughly a 1% chance of occurring in any one year. The 1971 and 1976 floods have roughly a 2 - 4% chance of occurring in any year. The most recent significant flood occurred in February 1992.
13. Peak flows at Liverpool Street in historic and design floods have been estimated in cubic metres per second (cumecs) as follows from the three streams:

Event	Middle Brook		Kingdon Ponds		Parsons Gully	
	Cumecs	(Mega L/Day)	Cumecs	(Mega L/Day)	Cumecs	(Mega L/Day)
20% AEP	41	(3,542)	94	(8,121)	130	(11,232)
10% AEP	43	(3,715)	98	(8,467)	215	(18,576)
January 1976	44	(3,801)	140	(12,096)	285	(24,624)
5% AEP	45	(3,888)	146	(12,614)	290	(25,056)
February 1971	48	(4,147)	153	(13,219)	330	(28,512)
February 1955	83	(7,171)	226	(19,526)	763	(65,923)

Aberdeen

14. Aberdeen is situated on the left bank of the Hunter River. Several major tributaries join the Hunter River at Aberdeen and flooding can occur there from individual tributaries or combinations of them. The lower parts of the town are built partly on floodplains and have periodically experienced partial inundation on several occasions. Large rural areas on the approximately 5 km wide floodplain adjacent to the town can be inundated in serious floods.
15. Warning times of the onset of major flooding in Aberdeen is very short. Flood travel time under high flow conditions from the Scone area to Aberdeen is approximately three hours, with a similar time frame for both Glenbawn Dam and the Rouchel Brook.
16. A levee at Aberdeen reduces the impact of flooding there by pushing flood waters back into the river. Backwater flooding can still occur however and flooding on Kingdon Ponds and Dart Brook (both of which enter the main river below the town) can cause water on the main river to be held back, increasing the duration and level of flooding
17. In the flood of February 1955 Aberdeen, experienced three separate flood peaks in 40 hours with houses in the low-lying parts flooded to depth of over one metre. The largest peak reached a level of 10.40 metres on the Aberdeen Bridge. Recent floods of significance occurred in 1971 and 1992.

Murrurundi

18. Warning times are very short and most of the flooding which occurs is 'flash' flooding. Some floods have occurred after prolonged steady to heavy rain: The 1976 event resulted from falls of 250-350 mm spread over four days. The worst recorded floods in the town of Murrurundi occurred in 1949, 1955, 1971, 1976 and 1996. In 1949, before the levee was constructed upstream of Arnolds Bridge, fast-moving flood waters up to half a metre deep swept down Mayne St.

Flood Mitigation Systems

19. Both Aberdeen and Murrurundi have protective levees designed to divert fast-flowing waters and reduce the area of inundation and therefore the number of properties which experience flooding.

20. The Aberdeen Levee is on the left bank of the Hunter River and extends 700 metres upstream from the New England Highway crossing at Aberdeen. It has a crest height of 10.7 metres, which is 900mm above the 1971 flood level of 9.80 metres (Aberdeen Gauge 210056). The Willowgrove Manufactured Home Village is directly behind the levee and would be subject to inundation from backwater flows and overtopping of the levee. Approximately 120 residences would be subject to varying levels of flooding.
21. The Adelaide Street Levee in Murrurundi is on the right bank of the Pages River and extends 150 metres upstream from Arnold's Bridge. It is constructed to the level of a 1% AEP flood height and designed to overtop uniformly along its length in floods greater than 1% AEP.

Extreme Flooding

22. The worst floods ever recorded in the Upper Hunter Shire Council area since European settlement should not be regarded as the most severe which can occur there. Worse floods than have been seen in recent decades must be expected. They will be very rare, but as tends to occur with extreme events, they may reach considerably greater heights than have previously been recorded. In addition, they may be both faster to rise and more dangerous in terms of depth and velocity than previous events.
23. Peak heights reached in the serious floods of recent decades are shown below in metres at the gauges indicated:

Location	1955	1971	1976	1992	1998	2000
Rouchel Brook at the Vale	No Rec	2.21	1.91	1.5	4.39	1.8
Gundy (Pages River)	8.10	7.10	7.08	8.25	5.3	6.86
Yarrandi Bridge (Dart Brook at Scone)	No Rec	No Rec	No Rec	No Rec	6.02	4.0
Dart Brook at Aberdeen No.2 Gauge	No Rec	8.16	7.95	No. Rec	No Rec	No Rec
Aberdeen (Hunter River)	10.40	9.80	9.08	9.20	8.16	8.16
Muswellbrook (Hunter River)	11.63	11.10	10.40	10.32	9.66	9.98
Denman (Hunter River)	8.29	7.92	7.70	7.60	7.88	7.67
Sandy Hollow (Goulburn River)	10.90	9.50	6.00	7.10	6.07	5.24
Warkworth (Wollombi Brook)	11.33	3.5	3.2	4.5	5.14	2.75
Singleton (Hunter R)	14.57	14.07	12.38	11.20	11.6	9.78

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

Community Profile

Census Description	LGA	Scone	Aberdeen	Merriwa	Murrurundi
Total Persons	12975	4625	1791	944	805
Total Dwellings	4996	1814	660	394	325
Total persons aged 65 years and over	2015	789	218	226	189
Total persons aged below 15 years	2631	934	386	182	145
Total persons with a need for assistance (profound / severe disability)	530	218	55	68	72
Total persons of indigenous origin	401	144	95	41	29
Total persons using Internet	2516	870	316	161	129
Single parent families	490	195	79	52	35
Persons living alone	1366	543	168	132	109
Total persons who do not speak English well	36	15	0	0	0
Total persons who lived at a different address 5 years ago	4380	1690	574	316	256
Households without vehicles	388	202	45	44	49
Total persons residing in caravans, cabins or houseboats	94	41	37	3	3
Mean household size	2	2	3	2	2

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

Specific Risk Areas

1. The Upper Hunter Shire Council area has numerous areas which can be affected by flooding, but serious problems tend to be confined to the towns of Scone, Aberdeen and Murrurundi and low-lying rural areas nearby. Most of the outlying villages in the east and west of the council area can become isolated during periods of flooding, but no dwellings or other buildings are likely to

experience inundation. Rural land on the lower Pages River in the vicinity of Sedgenhoe is liable to inundation and some houses, horse studs and quarries can be seriously affected. Substantial areas of rural land between and to the west of Scone and Aberdeen are liable to flooding.

Scone

2. SCONE (2006 census town population 4,625) can experience serious inundation on both its eastern and western sides. The Liverpool (Moobi) road, which crosses Parsons Gully, the Kingdon Ponds and Middle Brook, has inadequate culverts for severe floods and acts as an embankment. Flood levels are decreased downstream but increased on the upstream side. It has been estimated that in a flood of the magnitude of the 1955 event the water level at the Aberdeen St-Liverpool St intersection could be as much as 0.5m higher than it was in 1955.
3. Flooding can occur to the west of Hill Street, affecting properties in Aberdeen Street and nearby streets west to Middle Brook Road. Satur (2001 census town population of 1,143) is flood free but can be cut off from Scone for several hours as was the case in February 1992. The western ends of Forbes, Mount and Parker Streets in Scone are also flood liable.
4. The February 1992 flood caused over floor flooding of 20 dwellings and one shop. These were located in Liverpool, Wingen, Kingdon, Aberdeen and Parker Streets. Further properties in these streets and in Mount, Susan and St Aubins Streets were affected by flooding of sheds and garages or yards. The total number of properties with water in their yards totalled 77 in this event.
5. On Scone's northern, eastern and south-eastern edges a number of properties are flood liable. The backyards of properties facing the New England Highway have been inundated in the past, and flooding from Figtree Gully has affected properties in Waverley, Park and Barton Streets and Oxford Road. Local flooding from drainage of the hills to the east of town remains a problem. New subdivisions east of Barton Street and south of Gundy Road may also be flood prone in severe events. Even in an extreme flood, however, it is not expected that more than 50 dwellings in Scone would need to be evacuated.
6. Scone Airport can be isolated during periods of flooding. Access can be lost to the TAFE College and racecourse, as well as to the village of Bunnan. In a genuinely severe flood, it is possible that Scone itself could be cut off from road access in all directions.
7. The table below summarises the effects of floods of increasing magnitude in the Scone area.

Average Recurrence Interval (years)	AEP %	Effects
5	20	Kingdon Ponds and Middle Brook at bank full stage; natural levee overtopped.
7	14	Middle Brook and Liverpool Roads cut.
20	5	Aberdeen Street flooded.
50	2	Water enters dwellings in Aberdeen Street.
100	1	65 dwellings and 10 commercial properties affected by floodwaters.

Towarri National Park

8. The Washpools Picnic and Camping area is situated on the Middlebrook Creek in the Towarri National Park approximately 20 kilometres north west of Scone. Access to the campground is via Middlebrook Road in 4 wheel drive vehicles only. As a result of heavy rainfall, the creek can rise rapidly, isolating campers in a remote location for a period of time.

Aberdeen

9. ABERDEEN (2006 census town population 1,791) has not experienced severe inundation since its levee bank was constructed during the 1970s, although there were significant floods in 1982, 1992 and 1996. These were less severe than the 1955 and 1971 events, the latter of which peaked at about 10.2 metres at the Aberdeen's gauge just downstream of the town.
10. Backwater flooding can still occur, floodwaters crossing Jefferson Park and the New England Highway and entering residential streets including Abercairney, Hall, Dart, Gundeabri, Nandowra and McQueen Streets west of the railway line. A mobile home park/village, a bowling/golf club, football ground, and tennis clubhouse and courts can be inundated.
11. East of the railway line, flood waters can enter McAdam Street (Rouchel Road). Sandbagging of a culvert can block off the water in minor events. Some problems are also possible in the St Andrews Street area, where land in a new subdivision could be inundated. In this area over-floor inundation is unlikely.
12. Farms and farm dwellings west of Aberdeen can be flooded, with 30 or more houses being flood liable in the Blairmore Lane area. Extreme flooding would see a very large area of farmland under water. The maximum number of houses requiring evacuation in Aberdeen itself would probably be no more than about 80 in such an event.
13. Substantial areas of farmland and several houses to the east and north of Aberdeen can be isolated and inundated. In the valley of the Dart, Pages and Rouchel, farm properties can be inundated during periods of flooding, as is also

true near and downstream of the confluence of these streams and the Hunter River.

Murrurundi

14. MURRURUNDI (2006 census town population 805) has a small levee upstream of Arnolds Bridge near the New England Highway Bridge which has significantly reduced flood liability during low-level flood events. If this levee was overtopped, flooding of shops and additional dwellings would occur.
15. Inundation of a motel and small numbers of houses and other buildings in Wades Lane, Brook Street and a short section of the New England Highway (Mayne Street) at Murrurundi. This occurs from flooding on the Pages River and Halls Creek. On rare occasions, flood flow has been pushed around the upstream limit of the levee and water has flowed down Liverpool, Adelaide and Victoria Streets and into Mayne Street.
16. BLANDFORD - Inundation of some houses and the grounds of the Blandford Public School

Merriwa

17. MERRIWA (2006 census town population 944). Flooding in Merriwa is from the Merriwa River and its tributary, Whitneys Creek. Bettington, Dutton, Bow, Vennacher and Blaxland Streets can be inundated, as could Grumman House (Aged People's Hostel) in Marquet Street. Flows from Whitneys Creek are fast, but areas near the Merriwa River experience backwater inundation. During the 1955 flood inundation of the caravan park, several dwellings, businesses and community buildings and low-lying recreational areas in Merriwa took place because of debris trapped at the Merriwa bridge. This bridge has since been replaced with a higher bridge but the area has not had any significant flooding since then to see what affect it has had on reducing potential flooding.
18. CASSILIS - Floods here can be fast-flowing and Cassilis can be cut off for several hours or, in a severe event, for a few days. Inundation of up to about ten low-lying dwellings and a shop in Branscombe Street can occur when the Munmurra River is in flood.

Road Closures

19. Numerous roads within the council area are liable to closure during flood periods, and farm families and small communities can be cut off. The Rouchel Brook, Gundy, Moonan, Ellerston, Bunnan, Glenbawn Dam and Blairmore Lane areas can all be cut off from Scone, and all can become completely isolated in very severe events. Short-term resupply problems result. The following table indicates known closure points and summarises the conditions of closure. In very severe events, the number of points of closure would be greater than indicated here and the durations of closure would be longer.

Road	Closed at	Duration of Closure	Remarks
New England Highway: Scone - Aberdeen	Turanville	Short periods	Shallow water over road
Scone - Murrurundi	Parkville, low lying land on north of village	Short periods	Shallow water over road
Scone - Merriwa	Liverpool Street, Scone	Up to 2 days	Up to 1.5 metres deep
Scone - Ellerston	Pages River cuttings west of Gundy. Numerous gullies and causeways north of Belltrees	12 hours	Erosion and rockfalls
Scone - Glenbawn	Segenhoe, Turrunga Stud Pages River Crossing	4 hours 3 days	Causeway can have water over it for weeks.
Aberdeen - Segenhoe	Numerous gullies and causeways	8 hours	Causeways can have up to 300 mm over them for days
Aberdeen - Kayuga	Blairmore area	1 day	
Aberdeen - Dartbrook	Between New England Highway and Back Muswellbrook Road	1 day	
Aberdeen - Rouchel	Numerous gullies and causeways	1 day	
Aberdeen - McCulleys Gap	Sandy Creek Crossing	2 days	
Rouchel Road - Glenbawn	Broads Crossing, Hunter River	3 days	Can also be affected by discharge from Glenbawn Dam
New England Highway, Middlebrook	Dry Creek Crossing Middlebrook Crossing	1 day 3 days	
Parkville - Middlebrook Road	Kingdon Ponds Crossing	4 days	
Scone - Middlebrook	Numerous causeways North of Liverpool Street, Scone	Short periods Up to 2 days	
Gundy - Waverley	Numerous gullies and causeways	8 hours	
Belltrees - Stewarts Brook	Numerous creek crossings and causeways	2 days	
Yarrandi - Kars Springs	Numerous causeways	6 hours	
Kars Springs Road - Thompsons Creek	Dartbrook Crossing	2 days	
Bunnan - Kars Springs	Wybong Creek Crossing	3 days	

Road	Closed at	Duration of Closure	Remarks
Bunnan - Wybong	Wybong Creek Crossing	3 days	
Scone - Muswellbrook, back Muswellbrook Road	Dalmore Sand Creek	1 day 2 days	
New England Hwy - Blandford	Warlands Creek, Blandford	up to 12 hours	
Mayne St – Murrurundi		*	If the levee were to be overtopped
Timor-Gundy Road	Several creeks	*	
Blandford-Glen Lawn Road	Isis River crossing	*	
Sergeant Gap Road (Timor-Oakleigh)	Pages Creek-Dingo Creek junction	*	
Crawney Road (Timor- Nundle)	Isis River crossing	*	

*Most closures are for only a few hours, except when roads are damaged by flooding when longer-term closure becomes necessary.

SES RESPONSE ARRANGEMENTS FOR UPPER HUNTER SHIRE

Volume 3 of the Upper Hunter Shire Local Flood Plan

Last Update: August 2007

ANNEX C - GAUGES MONITORED BY THE SCONE SES LOCAL HEADQUARTERS

Gauge Name	AWRC No	Stream	Flood Classification			Reading Arrangements	Owner
			Min	Mod	Maj		
Wingen		Kingdon Ponds		3.0	3.5	Local Reader	
Cressfield	210093	Kingdon Ponds				DECC Muswellbrook	DECC
Parkfield		Kingdon Ponds				Local Reader	
Scone † ‡	210904	Kingdon Ponds	3.2	3.5	3.7	Scone SES	
Dartbrook	210088	Dart Brook				Aberdeen SES	
Wheatly's						Aberdeen SES	
Sans Tache		Dry Creek				Local Reader	
Dry Creek						Local Reader	
Aroona		Middle Brook				Local Reader	
Headingly		Middle Brook				Local Reader	
Scone		Middle Brook				Scone SES	
Moonan (Stick Me Up Bridge)	210018	Isis River				DECC	DECC
Aberdeen †	210056	Hunter River				Aberdeen SES	DECC
Bickham at Blandford	210061	Pages River				DECC /Local Reader	DECC
Gundy	210052					DECC Muswellbrook	DECC
Snowden Hall		Isis River				Local Reader	
Glenugie						Local Reader	DECC
Thornwaite		Dart Brook				Local Reader	
Yarrandi	210124	Dart Brook				DECC Muswellbrook	DECC
Moobi		Dart Brook				Local Reader	
Dartbrook		Dart Brook				Aberdeen SES	
Bunnan		Wybong Creek				Local Reader	
Rouchel (The Vale)	210014	Rouchel Brook				DECC Muswellbrook	DECC
Pages u/s Kewell Creek	210142						
Gardiners Lane						Aberdeen SES	

Notes:

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

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

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

Television Stations:

Station	Location
NBN 3	Newcastle
Prime	Newcastle
Prime (Channel 7)	Sydney
Ten (Southern Cross Ten)	Coffs Harbour
Ten (Southern Cross Ten)	Canberra

Radio Stations:

Station	Location	Frequency	Modulation
2NM/	Muswellbrook	981	AM
2UH ABC	Muswellbrook/Newcastle	1044	AM
Power FM	Muswellbrook	98.1	FM
ABC Upper Hunter	Muswellbrook	105.7	FM
2NU/ABC	Tamworth		AM
2MO	Gunnedah		AM
2TM	Tamworth	1287	AM

Newspapers:

Name	Location
The Herald	Newcastle

Other Agencies:

All other agencies listed with responsibilities under this plan or Local Disaster Plan

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

Evacuation Warning for []

Date/Time of Issue: []

Authorised By: []

The current river level is [] metres at [], with further rises likely. It is possible that [] areas will require evacuation.

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

To prepare for evacuation, you should:

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

If evacuation is necessary:

- Turn off the electricity, gas and water.
- Take three days' supply of clothes with you.
- If you have a car, drive to the evacuation centre at [] (*specify route if appropriate*).
- If you don't have a car, buses will operate on normal routes. Special transport can also be provided on request if necessary, telephone 132-500.
- So that you can be accounted for, it is important that you register at the evacuation centre.
- After registering, you may go to the house of a friend or relative. Alternatively, accommodation will be arranged for you.
- The Police will provide security for your property while you are away.

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

General

1. The Merriwa Caravan Park on the Golden Highway, Merriwa is situated on the banks of the Merriwa River and is flood liable.

Advising Procedures

2. Caravan Park proprietors are encouraged to ensure that the owners and occupiers of caravans are:
 - a. Made aware that the caravan park is flood liable by:
 - Handing a printed notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding and outline the evacuation and van relocation arrangements as detailed in this Annex.
 - Displaying this notice prominently in each van.
 - b. Made aware that if they are expecting to be absent from their vans for extended periods, they must:
 - Provide the manager with a key; in a sealed envelope; to the van.
 - Provide a contact address and telephone number.
 - Inform the manager if a vehicle will be required to relocate the van during flood time.
 - Leave any mobile van in a condition allowing it to be towed in an emergency (ie: tyres inflated, jacks wound up, personal effects secured and annexes and lines for water, sewer, electricity and gas readily detachable).
 - c. Informed when a flood is rising. At this time, occupiers will be advised to:
 - Ensure that they have spare batteries for their radios.
 - Listen to a local radio station for updated flood information.
 - Prepare for evacuation and van relocation.
3. The Upper Hunter Shire SES Local Controller will ensure that the managers of caravan parks are advised of flood warnings and the details of any evacuation order.

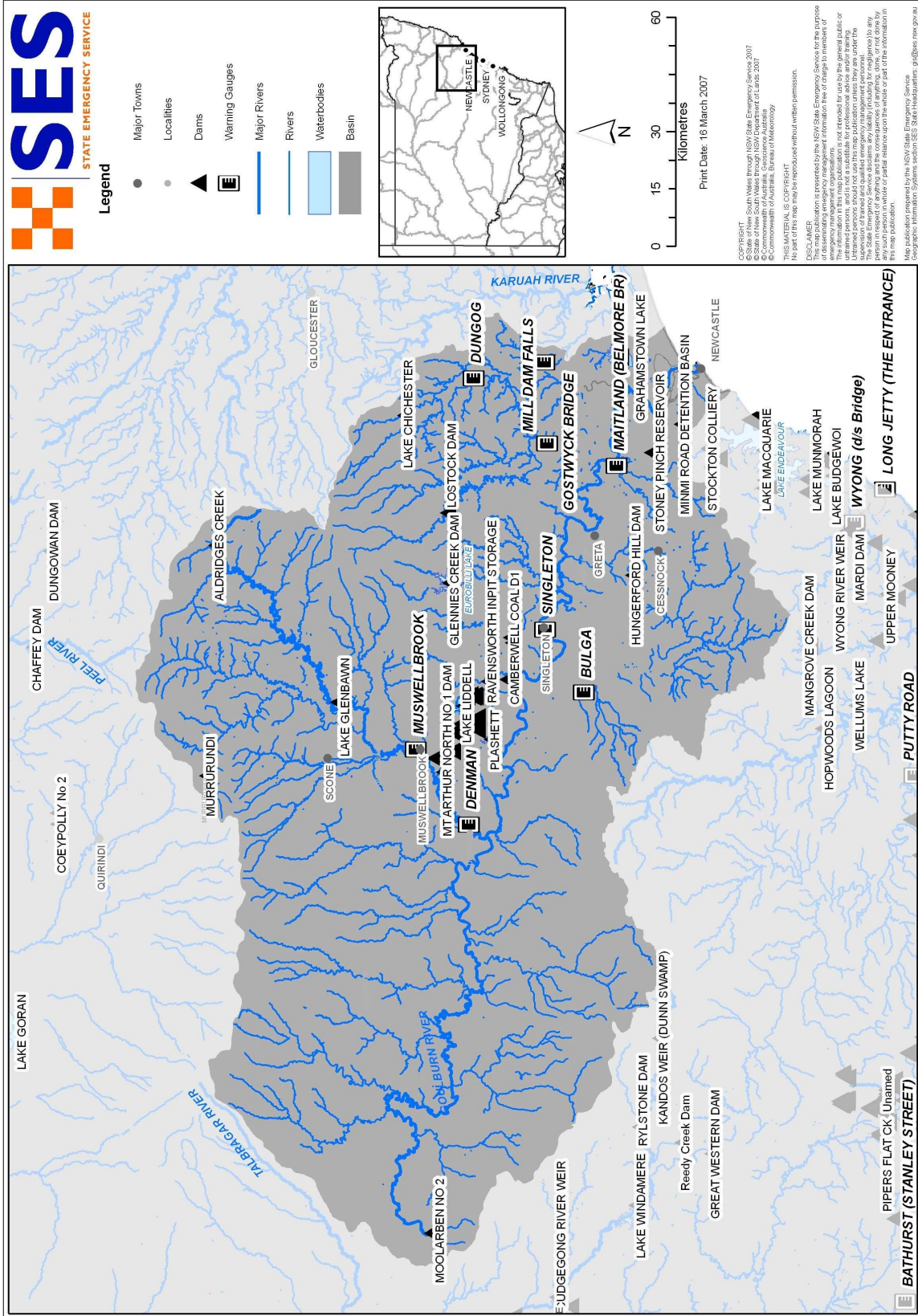
Evacuation of Occupants and Relocation of Vans

4. Caravan park proprietors are encouraged to install flood depth indicators and road alignment markers within their caravan parks.
5. When an evacuation order is given:
 - a. Occupiers of non-movable vans should:
 - Secure their vans by tying them down to prevent flotation.
 - Isolate power to their vans.
 - Collect personal papers, medicines, a change of clothing, toiletries and bedclothes.
 - Lift the other contents of their vans as high as possible within the van.
 - Move to a designated evacuation centre in the Merriwa School of Arts if they have their own transport, or move to the caravan office to await transport.
 - b. Where possible, vans that can be moved will be relocated by their owners. Park managers will arrange for the relocation of mobile vans whose owners do not have a vehicle. Council and SES personnel will assist if required and may be able to provide additional vehicles. Vans are to be moved out onto the Golden Highway.
6. Caravan park manager is encouraged to:
 - a. Ensure that their caravan park is capable of being evacuated within one hour.
 - b. Advise the Upper Hunter Shire SES Local Controller of:
 - The number of people requiring transport.
 - Details of any medical evacuations required.
 - Whether additional assistance is required to effect the evacuation.
 - c. Check that no people remain in non-removable vans that are likely to be inundated.
 - d. Inform the Upper Hunter Shire SES Local Controller when the evacuation of the caravan park has been completed.
 - e. Provide the Upper Hunter Shire SES Local Controller with a register of people that have been evacuated.

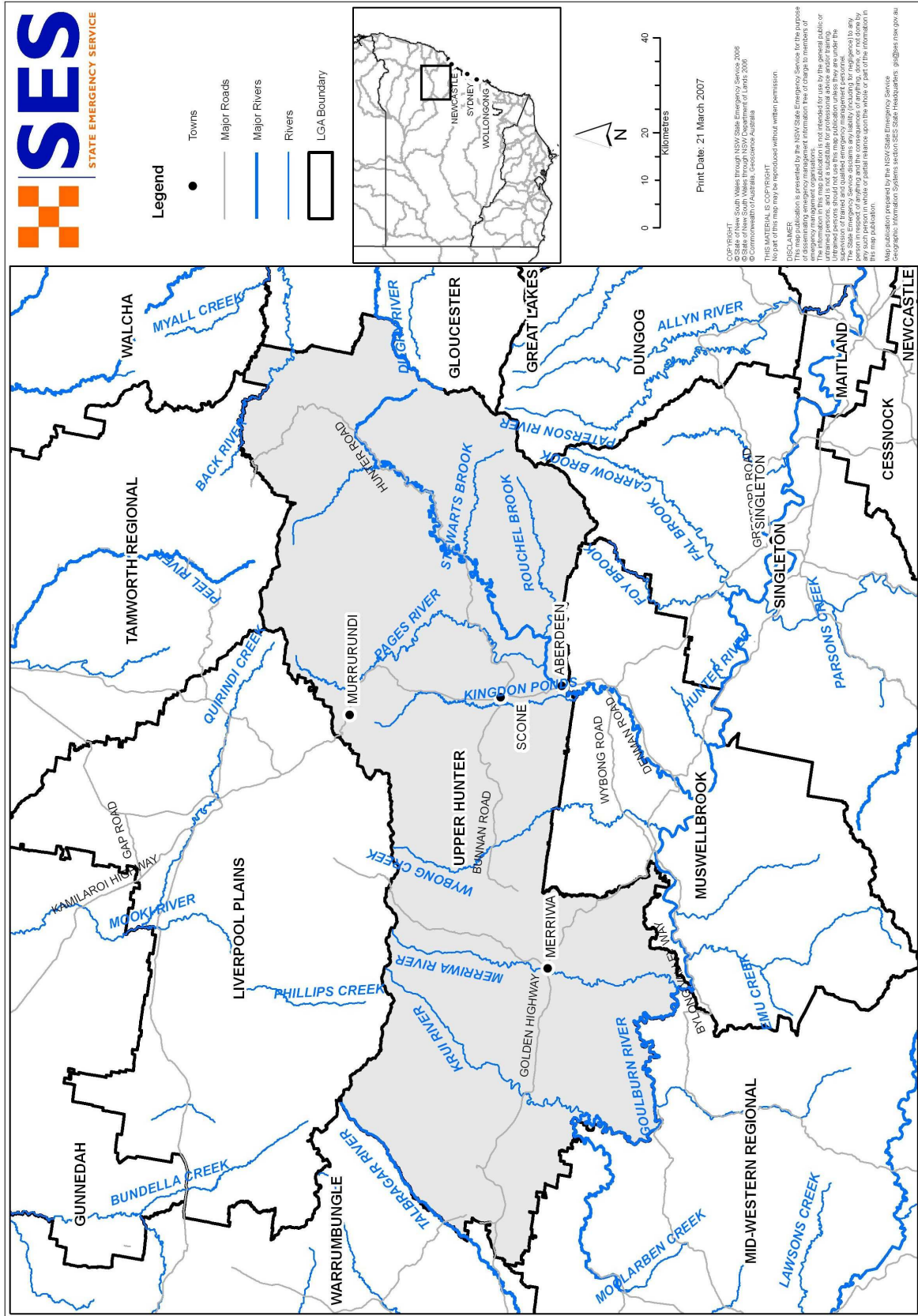
Return of Occupants and Vans

7. The Upper Hunter Shire SES Local Controller, using council resources as necessary, will advise when it is safe for the caravan parks to be re-occupied.
8. Vans will be towed back to the caravan park(s) by van owners or by vehicles and drivers arranged by the park managers. Again, Council and SES personnel will assist if available.

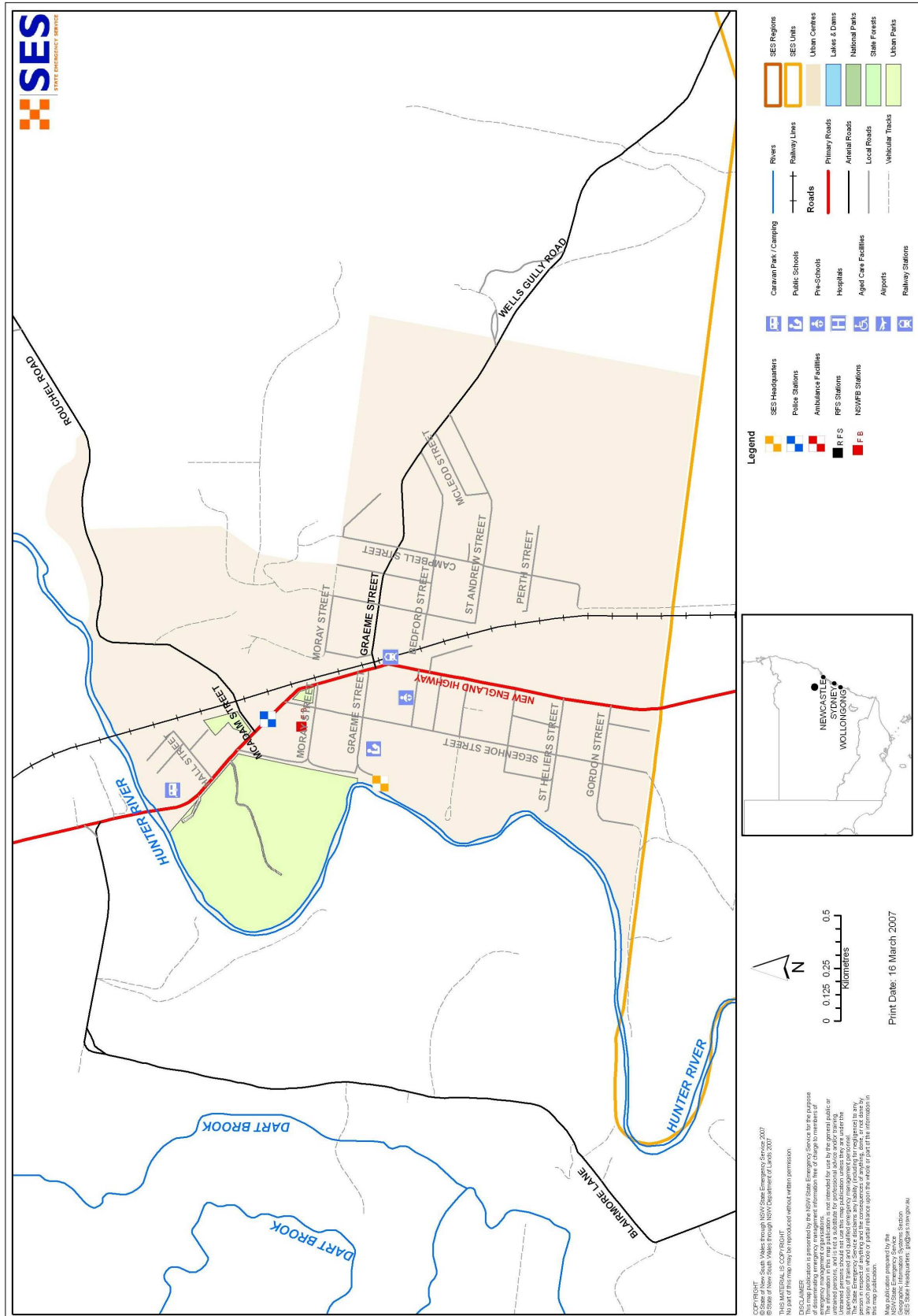
MAP 1 - RIVER BASIN



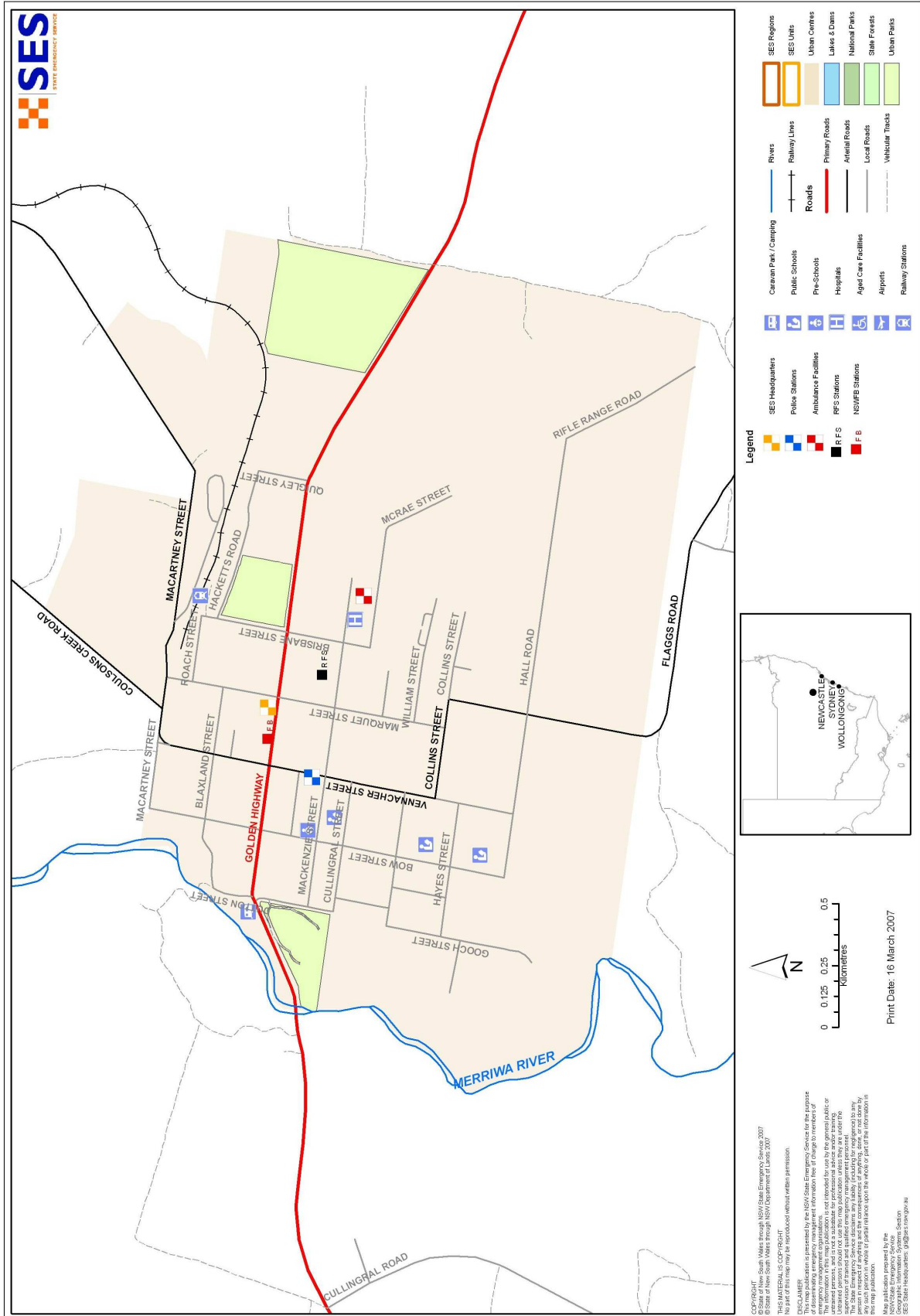
MAP 2 - COUNCIL AREA



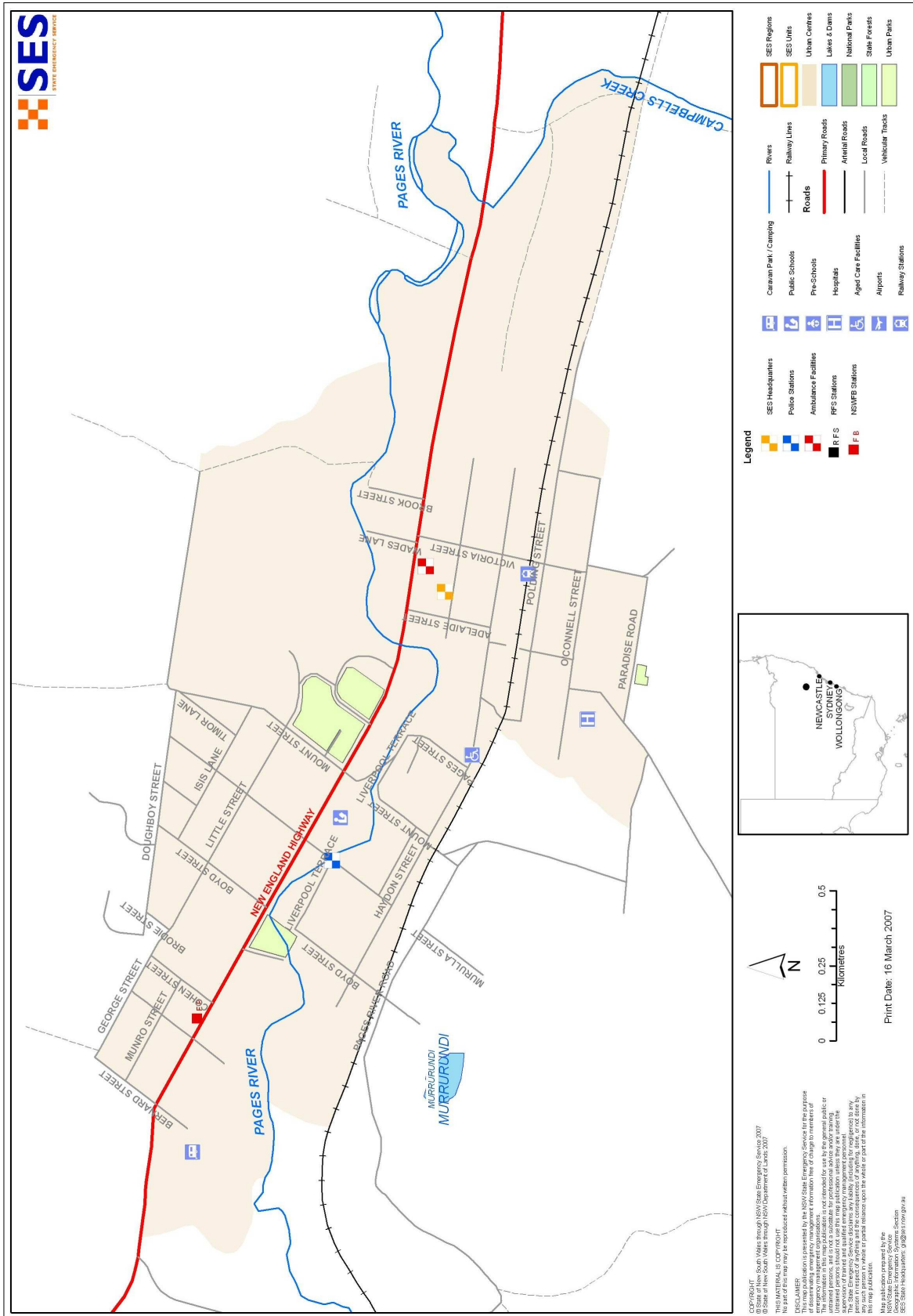
MAP 3 - ABERDEEN AREA



MAP 4 - MERRIWA AREA



MAP 5 - MURRURUNDI AREA



MAP 6 - SCONE AREA

