

Maitland City

Local Flood Plan







MAITLAND CITY FLOOD EMERGENCY SUB PLAN

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

Volume 1 of the Maitland City Local Flood Plan

Endorsed by the Maitland City Council Emergency Management Committee

Endorsed Date: 6 May 2022

AUTHORISATION

The Maitland City Flood Emergency Sub Plan is a sub plan of the Maitland City 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 Locat/Unit Commander Inspector Craig Parsons Date: 6 May 2022

Endorsed

Chair, Local Emergency Management Committee Mr Andrew Betts Date: 28 April 2022

VERSION HISTORY

Version Number	Description	Date
2.0 1.0	Maitland City Flood Emergency Sub Plan Maitland Local Flood Plan	June 2013 February 2003

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

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

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

Amendment Number	Description	Updated by	Date
1.1	Minor Amendments to Transport NSW Section	T Ware	14.2.22
1.2	Annexure "B" update to DPIE	T Ware	21.2.22

DISTRIBUTION LIST

Available for general use and distribution on the following websites - www.emergency.nsw.gov.au or www.ses.nsw.gov.au

This plan is Attribution (CC BY) under the Creative Commons licensing system, unless otherwise indicated. Copyright resides with the State of New South Wales, NSW State Emergency Service unless otherwise indicated.

CONTENTS

MAIT	LAND	O CITY FLOOD EMERGENCY SUB PLAN1
AUTH	IORIS	ATION2
VERS	ION H	IISTORY
AME	NDME	NT LIST
DISTE	RIBUT	ION LIST
CONT	ENTS	
1	ουτι	INE AND SCOPE6
	1.1	Purpose
	1.2	Authority
	1.3	Activation
	1.4	Scope
	1.5	Goals7
	1.6	KEY PRINCIPLES7
	1.7	Roles and Responsibilities7
	1.8	Plan Maintenance and Review7
	1.9	Supplementary Documents
2	OVEF	RVIEW OF NSW FLOOD HAZARD AND RISK8
	2.1	The Flood Threat
3	PREV	'ENTION/ MITIGATION9
	3.1	Introduction
	3.2	Land Use Planning9
	3.3	Floodplain Risk Management9
4	PREP	ARATION9
	4.1	Introduction9
	4.2	Flood Emergency Planning9
	4.3	Flood Intelligence Systems
	4.4	Development of Warning Systems 10
	4.5	Briefing, training and exercising11
	4.6	Community Resilience to Flooding
5	RESP	ONSE
	5.1	Introduction
	5.2	Incident Management Arrangements12
	5.3	Use of Information and Collection of Intelligence13
	5.4	Provision of Information and Warnings to the Community14
A	at 202	1 Volume 1 Maitland City Level Flood Dlan

	5.5	Protection of Property	15
	5.6	Road and Traffic Control	15
	5.7	Protection of Essential Services	16
	5.8	Evacuation	16
	5.9	Evacuee Management And Welfare	18
	5.10	Flood Rescue	19
	5.11	Resupply	19
	5.12	All Clear and Return	20
	5.13	End of Response Operations	21
	5.14	Post Impact Actions	21
6	RECO	OVERY OPERATIONS	22
	6.1	Introduction	22
	6.2	NSW SES Recovery Role	22
7	ABB	REVIATIONS	22
8	GLO	SSARY	22
9	AP	PENDIX A – MAP OF MAITLAND CITY COUNCIL AREA	24
10	ΑΡ	PENDIX B – ROLES AND RESPONSIBILITIES	25
11	APP	ENDIX C – COMMUNITY SPECIFIC ROLES AND RESPONSIBILITIES	38

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 Maitland City 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 Maitland City Local Emergency Management Plan (EMPLAN) and is endorsed by the Maitland City Council 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 Maitland City 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 Maitland City LGA. The Maitland City 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 Maitland City level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the Maitland City 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 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 Maitland City 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: <u>https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/</u> 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 Maitland City LGA. This is outlined in Volume 3 Hazard and Risk in Maitland City.
- 2.1.2 Declared dams in or upstream of the Maitland City Local Government Area.

Dam Name	Owner	High Risk Dam
Glennies Creek Dam	Water NSW	
El Klaros Dam	AK Soave Pty Limited	
Glenbawn Dam	State Water Corp	
Lostock Dam	Water NSW	
Chichester Dam	Hunter Water Corp	
	_	

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:** Work with landuse planning and consent authorities to advocate that the risks arising from floods are considered so as 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**: NSW SES advocates for the recognition of emergency management considerations through participation in the floodplain risk 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

4.2.2 **Actions**:

- a. Develop and review this NSW SES Local Flood Plan as required. Local Flood Plans outline the specific arrangements for management of flood events within an LGA, and may include cross boundary arrangements; and
- b. Review plans as per <u>Section 1.8</u>.
- 4.2.3 Local EMPLAN Consequence Management Guides (CMG) for flood are not required for communities covered by NSW SES Local Flood Plans.

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.

- 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 Maitland City 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. 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.
- f. NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.
- g. 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.

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.

- 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.

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 Incident Controller, in consultation with participating supporting emergency services and Functional Areas will determine the appropriate breakdown of an incident area into Divisions and/or Sectors in accordance with the principles of AIIMS as well as the predefined Divisions and Sectors outlined within the NSW SES Intelligence System
- 5.2.2 **Strategy**: Maintain Incident Control Centre(s).

- 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:

- a. Supporting emergency services and Functional Areas should provide Liaison Officers to NSW SES Incident Control Centre(s) and/or Emergency Operation Centres as required; and
- b. NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.
- 5.2.4 **Strategy**: Coordinate resources and logistics support to ensure operational effectiveness.

Actions:

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

5.3 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

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

- a. 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.
- b. 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.
- c. The NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information; and
- d. 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.
- 5.3.2 **Strategy**: Ensure flood intelligence is incorporated into operational decisionmaking.

Actions: 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.

- a. The BoM issues public weather and flood warning products before and during a flood. These may include:
 - Severe Thunderstorm Warnings with reference to heavy rainfall
 - Regional Severe Thunderstorm Warnings with reference to heavy rainfall
 - Detailed Severe Thunderstorm Warnings (for Sydney / Newcastle / Wollongong) with reference to heavy rainfall,
 - Severe Weather Warnings with reference to heavy rainfall and/or storm surge,
 - Flood Watches, and
 - 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 the following methods:
 - Mobile and fixed public address systems.
 - Two-way radio.
 - Emergency Alert (SMS and voice message alerting system).
 - Telecommunications (including Auto dial systems).
 - Facsimile
 - Standard Emergency Warning Signal.

- Doorknocking.
- Mobile and fixed sirens.
- Variable message signs.
- Community notices in identified hubs.
- Distribution through established community liaison networks, partnerships and relationships; and
- NSW SES social media and website.
- 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; and
 - My Road Info
 - 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. Maitland City 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 Maitland City 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 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. Transport Services Functional Area will keep the NSW SES informed of the status 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 Government Radio Network.
- d. The Engineering Services Functional Area is to coordinate the assessment and restoration of critical public buildings for example hospitals; and
- 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.

- 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; and
 - Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable; and
- 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.
 - Time available for evacuation.
 - Evacuee management requirements; and
 - Resources and delivery of evacuation information.
- 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; and
- 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 Incident Controller will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.
 - c. The NSW SES Incident Controller 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; and
- g. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES and SEOCON in consultation with members of the State Emergency Management Committee.
- 5.9.3 **Strategy**: Coordinate available and accessible health services for flood affected communities.

Actions: The provision of environmental health advice, assessment of public health risks and coordination of immediate mental health support will be provided by 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:

- 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; and
- 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; and
- 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 Animal and Agriculture Services Functional Area.

5.11 RESUPPLY

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

Actions:

- a. 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 endeavour 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.
- 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; and
- 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.

- 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 impact on the following:
 - Access and egress
 - Communications
 - Power supply
 - Gas supply
 - Infrastructure damage
 - Hazardous materials; and
 - Public health risks (including sewerage)
- b. NSW SES Incident Controller will specify the level of access to affected communities as the following:
 - Not suitable for access.

- Limited access by emergency services and response agencies.
- Limited access by residents and/or business operators; or
- Full access
- c. 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; and
- d. The NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy**: Conclude response operations.

Actions:

- a. Response operations will conclude when:
 - The physical impact of the flood has ceased.
 - 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); and
 - 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.

- 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 Maitland City representatives.
- b. NSW SES will ensure that damage assessment information is provided to the relevant Emergency Operations Controller to inform the recovery impact assessment.
- NSW SES will conduct After Action Reviews, wherever possible, within three weeks of the end of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning.

- 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 will work with the NSW Department of Planning, Industry and Environment (DPIE) and Maitland City Council(s) 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; and
- e. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.

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



Appendix A – Map of Maitland City Council Area 9

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 <u>New South Wales</u> <u>State Flood Plan.</u>

AGENCY	RESPONSIBILITIES	
Agriculture and Animal Services Functional Area	The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan	
	Roles and responsibilities in addition to the Supporting Plan are:	
	 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:	
	 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:	
	 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.	
Maitland City	Preparedness	
	• Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented.	
	 Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual. 	
	• Provide levee studies, flood studies and floodplain management studies to the NSW SES.	
	• Maintain Dam Safety Emergency Plans for the [Maitland City] 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
	• 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.
	Response
	 Subject to the availability of council resources, assist the NSW SES with flood operations including:
	 Traffic management on council managed roads. Provision of assistance to the NSW SES (plant, equipment and personnel where able and requested). Property protection tasks including sandbagging. Assist with the removal of caravans from caravan parks 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 flash flood warning systems;
	 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
	• 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.
	Recovery
	 Provide for the management of health hazards associated with flooding including removing debris and waste.
	• Ensure premises are fit and safe for reoccupation and assess any need for demolition.
	 Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.
Caravan Park Proprietor(s)	 Prepare a flood emergency plan for the Caravan Park;
	• Ensure that owners and occupiers of movable dwellings are aware that the caravan park is flood liable by providing a written notice to occupiers taking up residence and displaying this notice and emergency management arrangement within the park.
	• Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should:
	 Provide the manager of the caravan park with a contact address and telephone number in case of an emergency; 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:
	 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	
	• 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	 When notified of possible flooding or isolation, childcare centres and preschools should. 	
	 Liaise with the NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures; 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.	
Energy and Utilities Services	The roles and responsibilities for Energy and Utilities Services are outlined	
	Roles and responsibilities in addition to the Supporting Plan are:	
	 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:	
	 Provide advice to the NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. 	
	 Advise the NSW SES of any hazards from utility services during flooding and coastal erosion/inundation. 	
	 Advise the public with regard to electrical hazards during flooding and coastal erosion/inundation, and to the availability or otherwise of the electricity supply. 	
	 Clear or make safe any hazard caused by power lines or electricity distribution equipment. 	
	 Reconnect customers' electrical/ gas/ water/wastewater installations when certified safe to do so and as conditions allow 	
	 Assist the NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence. 	
Engineering Services	The roles and responsibilities for Engineering Services are outlined in the	
runctional Area	Engineering Services Supporting Plan.	

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	Preparedness
NSW State Flood Plan)	• 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
	Response
	 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, rising 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.

AGENCY	RESPONSIBILITIES	
	• 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.	
	 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.	
	Recovery	
	• Participate in After Action Reviews as required.	
Forestry Corporation of NSW	Response	
	• 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 	
	 Close and relocate people from camping grounds at risk of flooding in State Forest managed areas. 	
Health Services Functional Area	The roles and responsibilities for Health Services Functional Area are outlined in the Health Services (HEALTHPLAN) Supporting Plan.	
	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.	
Local Emergency Operations	Monitor flood operations.	
	• If requested, coordinate support for the NSW SES Incident Controller.	
Local Emergency Management Officer (LEMO)	 If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations. 	
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities of Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.	

AGENCY	RESPONSIBILITIES
Marine Rescue NSW (as per NSW State Flood Plan)	 Response When requested by NSW SES, assist in flood operations when training and equipment are available and suitable including assistance with: Warning and/or evacuation of at-risk communities. Providing communications personnel. Property protection tasks including sandbagging; and Flood rescue operations.
NSW Ambulance	The roles and responsibilities for NSW Ambulance are outlined in the <u>Health Services (HEALTHPLAN) Supporting Plan.</u>
NSW Department of Education	 Preparedness 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.
	Response
	 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.
NSW Department of	Prevention
Industry, Planning and Environment (as per NSW State Flood Plan)	 Oversee the delivery of the NSW Flood Prone Land Policy including financial support through the Floodplain Management Program. Provide technical advice to councils and state agencies including assistance with the identification of risks, the preparation and implementation of Floodplain Risk Management Plans and associated mitigation and management actions and understanding flood mitigation schemes 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 Department of Industry-Water in the preparation of rural floodplain management plans under the Water Management Act 2000 (NSW); and

AGENCY	RESPONSIBILITIES
	 Provision of strategic technical advice to support floodplain risk management and environmental water management in rural areas of the Murray Darling Basin.
	Preparedness
	• Assist the NSW SES in the exercising of Flood Sub Plans.
	 Management of the state government's water level gauges for the flood warning network in tidal areas in NSW (Manly Hydraulic Laboratory operates this system as a service provider on behalf of DPIE.).
	 Advise NSW SES about conditions which may lead to coastal inundation or retarded river drainage near the coast.
	Response
	• Provide related advice on flood risks to the NSW SES on request; and
	 Work with the relevant local council and NSW SES to collect flood related data during and after flood events.
	Recovery
	Support recovery committees as required.
NSW Department of Industry, Planning and	Owns and manages the Hunter Valley Flood Mitigation Scheme (HVFMS).
Environment – Water	Prevention
	 Maintains the Hunter Valley Flood Mitigation Scheme in a flood ready state. Maintains operational capability in relation to emergency management.
	Preparedness
	 Closes flood gates in response to flood watches and warnings issued by BoM in accordance with the Flood Emergency Response Plan.
	Response
	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.

AGENCY	RESPONSIBILITIES
	Recovery
	 Undertakes post flood damage assessment of Scheme infrastructure. Responds to community calls regarding damage and debris. Prioritises repairs on based risk. Builds back better.
NSW Food Authority	The roles and responsibilities for NSW Food Authority are outlined in the Food Industry Emergency Sub Plan.
NSW National Parks and	Preparedness
Wildlife Services (as per NSW State Flood Plan)	 Assist the NSW SES with identification of road infrastructure in National Parks at risk of flooding.
	Response
	 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
	Close and direct people to leave camping grounds at risk of flooding in National Parks and Wildlife Service managed areas.
NSW Police Force (as per NSW State Flood Plan)	Preparedness
	• Participate in NSW SES briefings, training and exercises as required.
	Response
	• 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.
	 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.

AGENCY	RESPONSIBILITIES
	Recovery
	Participate in After Action Reviews as required.
NSW Rural Fire Service (as	Preparedness
per NSW State Flood Plan)	 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.
	Response
	 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 speciality 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:
	 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.
	Recovery
	Participate in After Action Reviews as required.
NSW Volunteer Rescue Association (as per NSW State Flood Plan)	Response

AGENCY	RESPONSIBILITIES
	• Where requested by the NSW SES, assist in flood operations when training and equipment are available and suitable, including assistance with:
	 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	Preparedness
within or upstream of the LGA (as per NSW State Flood	• Assist the NSW SES with community engagement programs.
Plan)	• 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.
	Response
	 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
	Owners of gated dams:
	 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.
	• Advise the downstream community of prospective and actual water releases, except in those circumstances where the BoM would issue flood warnings; and
AGENCY	RESPONSIBILITIES
------------------------------	---
	• 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 licencing provisions under the <i>Water Management Act 2000</i> and <i>Water NSW Act 2014</i> .
Public Information Services	The roles and responsibilities for Public Information Services are outlined
Functional Area	in the Public Information Services Supporting Plan.
	Roles and responsibilities in addition to the Supporting Plan are:
	• 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	• The roles and responsibilities of Resilience NSW are outlined in the NSW State Flood Plan.
SEOCON/SEOC	The roles and responsibilities of the SEOCON/SEOC are outlined in the <u>New</u> South Wales State Flood Plan.
Surf Life Saving NSW (as per	Preparedness
NSW State Flood Plan)	 Contribute to NSW SES reviews into plans, policies and procedures as required; and
	• Participate in NSW SES briefings, training and exercises as required.
	Response
	 Assist the NSW SES with the warning and/or evacuation of at-risk communities.
	 Provide accommodation in Surf Life Saving facilities for evacuation centres where required; and
	 Assist the NSW SES with flood rescue operations, where training and equipment are suitable.
Telecommunications Services	The roles and responsibilities for Telecommunications Services are
Functional Area	outlined in the <u>Telecommunications Services (TELCOPLAN) Supporting</u> <u>Plan.</u>
Transport for NSW (TfNSW)	 Transport for NSW (TfNSW) will coordinate information on state road conditions for emergency services access.
	 Transport for NSW (TfNSW) will coordinate the management of the state road network across all modes of transport.

AGENCY	RESPONSIBILITIES			
	 Transport for NSW (TfNSW) may assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. 			
	 Transport for NSW (TfNSW) in collaboration with Transport Management Centre (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. 			
	 Transport for NSW (TfNSW) will assist the NSW SES with identification of State Road infrastructure at risk of flooding. 			
	 Transport for NSW (TfNSW) (NSW Trainlink) in conjunction with Rail Infrastructure Manager (RIM) will manage passenger rail services where rail infrastructure is impacted. 			
Transport Services Functional	The roles and responsibilities for Transport Services are outlined in the			
Area	Transport Services Supporting Plan.			
	Roles and responsibilities in addition to the Supporting Plan are:			
	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	The roles and responsibilities for Water NSW are outlined in the <u>New South</u> <u>Wales State Flood Plan.</u>			
Welfare Services Functional Area	The roles and responsibilities for Welfare Services are outlined in the Welfare Services Functional Area Supporting Plan.			

11 Appendix C – Community Specific Roles and Responsibilities

Community Members	Preparedness		
	 Understand the potential risk and impact of flooding. 		
	• Prepare homes and property to reduce the impact of flooding.		
	 Understand warnings and other triggers for action and the safest actions to take in a flood. 		
	 Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. 		
	 Have an emergency kit; and 		
	Be involved in local emergency planning processes.		
	Recovery		
	 Assist with community clean-up if required and able to do so. Participate in After Action Reviews if required. 		
Private companies or other organisations	• Assist with the provision of;		
	 Distribute flood warning and flood information provided by the NSW SES to members of Maitland's business community. 		
Service and sporting clubs	 Assist with; Maitland City 		
Aboriginal organisations or groups	Not Applicable		
Communication	Not Applicable		
Name of farmer or flood warning networks	Not Applicable		
Cross-border assistance arrangement	Not Applicable		
Community assistance groups	Not Applicable		



HAZARD AND RISK IN MAITLAND CITY

Volume 2 of the Maitland City Local Flood Plan

Last Update: February 2003



ANNEX A - THE NATURE OF FLOODING IN THE MAITLAND COUNCIL AREA

Overview

1. The Maitland local government area (Map 1) is a highly urbanised area located in the valley of the Hunter River in one of the most flood prone parts of New South Wales. Historically, flooding has been frequent and occasionally severe here, and the more serious floods have caused considerable damage. Extensive mitigation works has lessened the impacts of flooding, but large parts of Maitland remain liable to flooding, particularly in the rarer, more severe events.

The Hunter River System

2. The Hunter is the second largest coastal river in New South Wales, draining a catchment area of 21,000 sq km of which 17,500 sq km lies upstream of Maitland (see Map 2). The catchment is roughly circular in shape and is bounded by the Barrington Tops and the Mt Royal and Liverpool ranges in the north, the Great Dividing Range in the west and south-west and the Hunter Range in the south. The north-eastern and southern sections of the catchment are rugged and largely wooded, while the western portion is made up of comparatively open country. South-east of Scone the main river valley widens, and there are extensive floodplains all the way to the coast. At Maitland, the floodplain is more than 30 km wide and much of the land area is less than 10 metres above sea level.

3. The Hunter River and several major tributaries, including the Pages, Goulburn, Paterson and Williams rivers and the Wollombi Brook drain the catchment. The Hunter itself rises in the Barrington Tops at an altitude of about 1500 metres, and flows for about 220 km in a south-westerly direction to Denman, below which it is joined by the Goulburn River. From here, the river flows eastwards for some 250 km to reach the coast at Newcastle. On this stretch it is joined by the Wollombi Brook (Cockfighter River) upstream of Singleton and the Paterson and Williams rivers at Hinton and Raymond Terrace respectively.

4. In its lower reaches the Paterson River, which drains a catchment of more than 1000 square kilometres, forms part of the north-eastern boundary of the Maitland City Council area. Within the council area itself, the other main tributary to join the Hunter is Wallis Creek which drains a 400 square kilometre catchment including extensive swamplands (the Wentworth and Dagworth swamps) to the south of the Maitland urban area. Fishery (Swamp) Creek is a tributary of Wallis Creek which joins Wallis Creek in the South Maitland area. Both creeks rise in the Cessnock Council area.

5. The Williams River enters the Hunter at the point at which the Hunter River leaves the council area. The Williams drains a catchment of more than 1000 square kilometres above its confluence with the Hunter River.

6. The Lower Hunter valley in the Maitland area is characterised by large, welldefined floodplains and swamps. These areas are natural parts of the river system and act as reservoir space to accumulate periodic overflows. This floodplain storage capacity greatly modifies and retards the hydrograph of a flood coming down the river.

Floods in the Maitland Area

7. More than two hundred separate flood events have been recorded on the Hunter River at Maitland since the beginning of European settlement. Many of these have been of minor significance, but a few have been catastrophic in their impacts. The worst was in February 1955, when 11 lives were lost in the Maitland area, more than 130 dwellings were destroyed or had to be demolished. Severe damage was done to streets, bridges, railway installations and other elements of infrastructure. Flow velocities in this event were very high, as is the norm in severe floods in Maitland, and large areas were inundated including most of the central business district, much residential and other built-up land and extensive areas of farmland.

Weather Systems and Flooding

8. **Introduction.** Four major rainfall mechanisms are responsible for most of the flooding at Maitland. These produce floods of quite different characteristics in terms of seasonality and the contributions of the various tributaries. The four mechanisms are described in the following paragraphs.

9. **Monsoonal depressions.** Monsoonal depressions form over tropical Australia and move in a south-easterly direction, depositing heavy rain as they do so. Occasionally such depressions may penetrate as far south as the upper Hunter and Goulburn River valleys, as occurred in February 1955. These systems occur in the summer and autumn months. The February 1971 and March 1893 floods at Maitland also arose from weather systems of this type. In 1955 the Goulburn River above Kerrabee and the Hunter River above Muswellbrook contributed some 55 percent of the total flood volume. Significant contributions were also made by the Paterson, Allyn and Williams rivers, because of additional wet airflows along the coast, but the Wollombi Brook and the middle reaches of the Hunter downstream of Kerrabee and Muswellbrook contributed little.

East coast low-pressure systems. When these depressions are deep and slow 10. moving or stationary, a cool, moist south-easterly airstream produces heavy rain over the coast and this can be orographically enhanced as the air cools further over nearby hilly areas. This mechanism is especially prevalent in the autumn and winter months between March and July. Such systems tend not to penetrate far inland, rainfall totals falling off sharply away from near-coastal locations. One consequence of this is that flooding experienced at Maitland tends to have originated nearer to the city than is true of that produced by cyclonic depressions emanating from tropical Australia. Floods produced by this mechanism occurred in May 1913, June 1930, June 1949, August 1952 and May 1962. In both the 1930 and 1949 floods the Wollombi, Allyn, Paterson and Williams catchments contributed more than 65 per cent of the total flood volumes while very little water came from the Goulburn and upper Hunter catchments. A more recent example of flooding from such a system was in March 1995, when slight rises in the lower Hunter resulted from heavy rain over the catchments of the Paterson and Williams rivers.

11. **Ex-tropical cyclonic systems.** Ex-tropical cyclones originating in the Coral Sea and moving southwards along the Queensland and NSW coasts occasionally penetrate far enough south to bring heavy rain to the Wollombi, Paterson and Williams catchments. Ex-tropical cyclone Nancy, in February 1990, was recent example, heavy rains occurring when the low-pressure cell became stationary off the coast. On this occasion only nuisance flooding occurred in the Maitland area.

12. **Short-duration, high-intensity convective thunderstorms.** Thunderstorms can also cause localised flooding on minor creeks and in towns when local drainage systems surcharge. Such events, which are mainly confined to the summer months, do not create main-river flooding, however, since they last for very short periods and affect only limited areas. Flooding from these storms occurs as `flash' flooding with little warning.

Monthly Distribution of Flooding

13. All told, some 80 per cent of the floods recorded on the Hunter River at Maitland (including all of the severe ones) have occurred between the months of January and August.

16 15 14 13 12 11 10 Number of Floods 9 Maior Floods 8 Moderate Floods Minor Floods 7 6 5 4 3 2 0 September March AUGUST october POIN June JUNY May

14. The graph below shows the monthly distribution of floods at Maitland.

Figure 1 – Monthly Distribution of Floods above Minor Level: Maitland 1893–2001

Flood Frequencies

15. The frequency of flooding at Maitland has been very variable in an historical sense. There have been extended periods in which floods have been rare, minor by height or non-existent. For example between 1913 and 1920, 1931 and 1941, and 1957 and mid-1962 - and no floods above 11 meters Oakhampton Rail Bridge gauge (10.0m on the Belmore Bridge gauge) have been recorded since 1977.

16. There have also been periods in which numerous floods have occurred within a few years, some of them very severe. Between 1949 and 1956 there were 16 different floods experienced at Maitland, seven exceeding the 11.7 meters Oakhampton Rail Bridge gauge (10.65 metre mark on the Belmore Bridge gauge). In 1950 alone, there were seven separate floods. The period between 1971 and 1978 was also one of considerable flooding with ten separate flood events being recorded.

17. There appears to be no clear cyclic pattern, and the relative lack of large floods during the 1980s and 1990s should not be taken as implying that the flood threat has diminished.

18. The following graph (Figure 2) shows the floods last century, that peaked at Maitland above the major flood threshold of 11.8 meters Oakhampton Rail Bridge gauge (10.7 metres on the Belmore Bridge gauge). Note: Not all minor floods are shown.



Figure 2 – Floods at Maitland, 1910—2000

Peak Heights, Major Floods at Maitland

19. Since 1977 a number of floods, all of which peaked at levels below 11 meters Oakhampton Rail Bridge gauge (10 metres Belmore Bridge gauge), have been recorded at the gauge. The most significant of these were in March 1978, October 1985, June 1989, February 1990 and February 1992. These floods rank roughly between the 25th and 50th largest recorded at the Belmore Bridge gauge.

20. Long-term flood records suggest that a **moderate flood** (defined for Maitland as one reaching a gauge height of 10.1 meters Oakhampton Rail Bridge gauge or 9.1 metres at Belmore Bridge), occurs on average, once every two years. A **major flood** reaching 11.8 meters Oakhampton Rail Bridge gauge (10.7 metres at Belmore Bridge gauge) has been experienced about once every 13 years. In both cases, however, several floods reaching these levels may occur in a short period or, alternatively, none may be recorded for many years.

21. Very severe floods are rare. The 1955 flood at Maitland is thought to have been of a magnitude, which could occur on an average at only once in about 200 years. The 1820 flood, about which little is known, may have been almost as large. The 1955 flood approximates the 0.5% AEP (annual exceedance probability) event. This means that there is roughly a 0.5% chance each year of Maitland experiencing a flood which reaches or exceeds the height reached by the 1955 one.

22. The following table provides information on the numbers of floods exceeding particular levels since records began in 1820:

Levels (meters)	No of Floods	Average	Annual
At Belmore	Recorded	Recurrence	Exceedance
Gauge		Interval (years)	Probability (%)
All Floods	220 +		
10.7m	13	13	8
11.3	7	20	5
11.5	3	50	2
11.7	2	100	1
12m	1 or 2	200	0.5

Figure 3 –	Flood	Recurrence	Frequency	hv	Level.	1820-	-2001
rigure 5 –	rioou	Kecuitence	riequency	IJУ	Level,	1020-	-2001

Flow Characteristics and Times

23. The volume of water contributed by one river can have a marked effect on the flood pattern on other rivers. At the junction of the Paterson and Hunter rivers, flood waters from the Hunter can impede flow in the Paterson causing a worsening of the flood situation in the Phoenix Park, Morpeth, Goulburn Grove and Largs areas. Likewise high flow in the Williams River can cause the Hunter to back up and spill over into Duckenfield and Millers Forest.

24. Thus the Williams and Paterson rivers can contribute to flow in the Hunter and exacerbate flood problems along it. Flooding on the Hunter can also hold up

discharge from the Wallis Creek system causing an accumulation of water in the South Maitland-Louth Park area and a rise in levels there.

25. Partly because of variations in flood levels on different rivers, water travel times can vary significantly from event to event. The times listed below need to be regarded, therefore, as approximations only, with flows occurring more quickly in some events and more slowly in others. Particularly in periods of very severe flooding, however, it should be noted that flow times might be **shorter** than shown here. Equally, it is known that situations in which large volumes of water suddenly enter an almost empty river tend to produce much faster flows than situations in which the build-up is gradual.

Station	Distance Flow Ti (km) (hrs & m	
Hunter River		
Elderslie - Greta	19	2:15
Greta - Maitland	23	4:30
Maitland - Morpeth	8	2:30
Morpeth - Hinton	3	0:15
Hinton - Raymond Terrace	18	2:00
Raymond Terrace - Hexham	14	1:30
Singleton - Maitland	58	10:00-12:00
Wollombi Brook (Cockfighter River)		
Wollombi - Broke	42	4:30
Broke - Bulga	21	2:15
Bulga - Singleton	64	6:45
Paterson River		
Gresford - Paterson	29	3:00
Paterson - Hinton	21	2:15
Gostwyck - Hinton	40	8:00—12:00
Williams River		
Dungog - Clarence Town	35	3:30
Clarence Town - Seaham	27	3:00
Seaham - Raymond Terrace	11	1:15

Flood Flow Times for Individual River Reaches

Figure 4 – Flood Flow Times for Individual Reaches

26. The **shortest** flow times in the Hunter River are likely to be those associated with a failure of Glennies Creek Dam, which is located in the Singleton local government area. In the highly unlikely event that this dam were to fail, it is expected that water from it could **begin to reach** locations within the Maitland local government area within the following times after failure had occurred:

a.Luskintyre Bridge: 6 hours

- b. Belmore Bridge: 9 hours
- c. Morpeth: 11 hours

d. Woodberry: 15 hours

Flood Mitigation Measures

27. Considerable flood mitigation works, comprising levees, floodgates, spillways, diversion banks and velocity controls, have been carried out within Maitland. These works are based on the premise that inundation of the floodplain cannot be prevented but that it can be reduced in frequency and severity with considerable social and economic benefit. The works have been designed to give protection to the low-lying urban communities of Central Maitland, Lorn, South Maitland and East Maitland from all but very severe floods and to keep minor floods away from rural areas. The elements of the flood mitigation system are shown on Map 3.

28. The mitigation works protecting the built-up areas operate as follows. Smaller floods are contained within the banks of the river, and when in larger events this is no longer possible, the floodwaters are gradually spilled into the natural flood basins along the river. As the river rises still further, in the case of major floods, excess water is led as safely as possible through defined flood ways so that the flow of the floodwater is impeded as little as possible. Land is then restored to normal production after floods as a result of the provision of drainage channels and floodgate outlets.

29. The aims of the flood mitigation scheme in Maitland, are, therefore, to reduce the frequency of flooding as far as practicable, to reduce the period of inundation, and to control the direction and velocity of floodwaters so that damage to land and property can be minimised. These aims have been sought by means of riverbank protection using rock support and by the construction of levee banks, spillways, drains and floodgates.

30. It must be stressed that these measures have not entirely eliminated the flood vulnerability of Maitland. The levee banks have been built to confine smaller floods to the river, but they will be overtopped in the more severe events. It is anticipated that the spillways will carry floodwater, on average, once in every twenty years and that the flood ways will come into operation when this occurs (at a flood height of approximately 11.0 metres at the Belmore Bridge gauge). The main flood ways are designed to operate as follows:

31. The Oakhampton floodway, a natural flood channel, bypasses Maitland to the west and carries floodwaters from the river above Maitland into a temporary storage area in Louth Park and along the Wallis and Fishery creeks into the Dagworth and Wentworth swamps. After temporary storage of floodwater, the swamps drain back to the main river through Fishery and Wallis creeks. The Oakhampton scheme consists of two spillways and a series of control banks. These controls reduce the velocity of flow through the floodways.

32. The Bolwarra floodway bypasses Maitland to the north and consists of the spillway, a number of control banks and the Lorn diversion bank. The control banks have similar functions to those in the Oakhampton floodway. The Lorn diversion bank deflects floodwaters away from Lorn and diverts the main body of flow towards the lower land of Bolwarra flats.

33. The East Maitland floodway returns flow to the main river from Fishery and Wallis creeks and areas south of Maitland (the Dagworth and Wentworth swamps).

34. It should be noted that while the levee system was tested by the 1971 flood and proved to be effective in mitigating that event, the possibility of levee **failure** prior to overtopping (for example because of flood waters scouring their foundations) should not be ignored. Were failure to occur, inundation would take place at lesser heights than would otherwise be anticipated.

Extreme Events

35. The flood mitigation works constructed within the council area are designed to control flooding and to confine it as far as possible to rural areas, but they cannot be expected to contain huge floods as severe as or more severe than the flood of 1955. Such flooding could occur as a result of particularly extreme weather events of the kinds described above, or, more remotely, as a consequence of the failure of the Glennies Creek Dam. Dam failure is extremely unlikely, however, and it is more probable that a very severe or extreme flood in the Maitland area would result from `natural' flooding. Several thousand people could have to leave their homes in the event of such a flood.

Glennies Creek Dam

36. This dam is a 67-metre high concrete-faced rock fill structure located on Glennies Creek (a tributary of the Hunter River) upstream of Camberwell. A very slight chance exists that the dam could fail at some time in the future as a result of overtopping during a massive rain event. It should be noted that a flood large enough to cause failure by overtopping is believed likely to occur only once in 100,000 years at the site of the dam.

37. If failure should take place, a huge flood would develop in the valley of the Hunter River. This flood would be of a larger scale and more devastating in its consequences than the record 1955 flood, and the mitigation works would be overwhelmed. For Maitland the impacts would be catastrophic and the risk to the lives of thousands of people would be very real. Up to about 12,000 of the people of Maitland, most of them residents of urban areas would have to leave their houses.

38. Should the dam fail the floodwaters could begin to reach the western part of the council area, near the Luskintyre Bridge, six hours after failure. The level of the swollen river would rise very rapidly and large areas of low-lying land would be quickly inundated. It is impossible to determine with precision how high the water could go or just where the inundation lines would be, but the flooding would almost certainly be more severe than that which occurred in 1955.

39. Given the rapidity of onset of such a flood the primary response activity - the evacuation of people in its path - would need to be mounted with high efficiency. Because of the relatively short warning time that would be available, evacuation operations would need to proceed as far as possible using **local** resources. The movement and accommodation of people within the Maitland City Council area would be contained very largely within the local government area. However, if early reaction was achieved and prior flooding had not already closed the escape routes it would be desirable that as many residents as possible should leave the city for flood-free areas outside its boundaries.

40. Another likely feature of the response, given the rapid rise in water levels that would be associated with dam failure flooding, is that significant rescue operations would be required. Thereafter, once flooding had actually occurred, several communities would have become islands or would be cut off from road access and would need to be resupplied with basic commodities.

Chichester Dam

41. Failure of the Chichester Dam, upstream of Dungog on the Williams River, would cause flooding of rural areas in the eastern parts of the Maitland City Council area (Duckenfield, Millers Forest and Dockyard) or exacerbate pre-existing flooding there.

42. The chances of such failures are, however, extremely small.

ANNEX B - EFFECTS OF FLOODING ON THE COMMUNITY

General

1. Most of the land area of the Maitland City Council area is low-lying and flat to gently undulating, and much of it is floodplain territory. The range of flood heights is considerable here, the record flood of 1955 having reached a level at the Belmore Bridge gauge more than 6 metres above the locally-defined minor flood level at which nuisance flooding begins to occur. Given the topography and the range of flood heights which can be experienced, the extent of the area which is inundated can vary greatly from flood to flood.

2. In the relatively less significant events, only rural areas in the floodplain proper are subjected to inundation, the urban portions of the council area being either on higher ground or being protected by levees. As flood waters rise the extent of the rural land that is inundated gradually increases. Urbanised areas remain unaffected initially, although they can be cut off from certain directions or completely isolated by flooding over low sections of roads. Apart from some backwater flooding after the spillways begin to operate, significant inundation is not expected of suburban areas or towns until a very severe flood approaching the level of the 1955 flood occurs.

3. In a repeat of the 1955 flood, whole suburban communities would be inundated including the entire Lorn-Central Maitland-South Maitland area.

4. Very severe floods of a greater severity than the 1955 event, whether occurring naturally or because of a failure of Glennies Creek dam, would overwhelm the flood mitigation system and lead to widespread inundation of urban territory that has never previously experienced it.

Areas of Potential Flood Impact

5. Low-lying swampland areas and areas on the floodplains of the Hunter and Paterson rivers and Fishery and Wallis creeks are subject to frequent and complete or near-complete inundation. In most of these areas, inundation occurs in floods more frequent than the 20% AEP (once-in-five-years) event. Some may experience flooding when the minor flood level (6.1 metres) is reached at the Belmore Bridge gauge. These areas include:

- a. Howes Lagoon,
- b. Brush Farm,
- c. Brisbanefield,
- d. Berry Park,
- e. Golden Grove,
- f. Belleview,

- g. Pitnacree,
- h. Raworth,
- i. Duckenfield,
- j. Millers Forest,
- k. Dockyard,
- l. Mindaribba,
- m. Dunmore,
- n. Narrowgut,
- o. Kings Island,
- p. Smiths Island,
- q. Phoenix Park,
- r. Midlorn,
- s. Mount Dee,
- t. Louth Park, and
- u. the vicinity of Gilleston Heights.

6. Some dwellings in these areas are built on mounds or have raised foundations and in serious floods could be surrounded by water for a few days. In such circumstances, resupply and medical evacuation operations are likely to be necessary. Other rural areas which are subject to partial inundation include:

- a. Luskintyre
- b. Maitland Vale
- c. Hillsborough
- d. Windermere
- e. Oswald
- f. Rosebrook
- g. Gosforth
- h. Aberglasslyn
- i. Oakhampton
- j. St Peters

7. In general, flooding in these areas occurs less frequently and only in more severe floods than is the case for the previous list.

8. In total, there are more than 400 dwellings (1,300 people) in rural areas on the floodplain in the Maitland City Council area downstream of Bolwarra Heights and Lorn on the Hunter River's northern bank and downstream of Horseshoe Bend on its southern side. Access to high ground during floods is poor for most of these people and there is a significant risk of loss of life due to the depth and velocity of floodwaters.

9. Urban areas that could be subject to inundation, for the most part partial and in rare and severe events only are listed below. Those that could experience total inundation in a severe flood are identified. In some cases the flooding in events up to and including those as severe as the 1955 flood would be limited, affecting only a few lower-lying properties. Extreme floods more severe than the 1955 flood could, however, cause substantial inundation of areas not previously flooded.

10. These areas include:

- a. Largs;
- b. Bolwarra;
- c. Lorn (total);
- d. Central Maitland (total);
- e. South Maitland (total);
- f. Rutherford;
- g. Telarah;
- h. Raworth;
- i. Morpeth;
- j. Tenambit;
- k. Metford;
- l. Thornton; and
- m. Woodberry.

Effects of Floods of Different Sizes

11. Flood effects in events exceeding the major flood level 11.8 meters Oakhampton Rail Bridge gauge (10.7 metres at the Belmore Bridge gauge) are complex, depending not only on the peak height reached by a particular flood but also its speed of rise. This section describes the probable effects of floods **peaking at levels at and above 11.8 metres** Oakhampton Rail Bridge gauge The following points must be noted:

- a. Up to the level at which the Bolwarra and Oakhampton spillways begin to overtop at a height of 12.3 meters Oakhampton Rail Bridge gauge (11.0 metres at the Belmore Bridge gauge), flooding is directly linked to the gauge height at Belmore Bridge. Above that level, flood impacts depend primarily on the levels reached in the floodways and swamps, **not** on the level at the gauge.
- b. As the heights noted below imply, the Belmore Bridge gauge is relatively insensitive to the effects of flooding at heights above 11.0 metres. That is, large increases in flow volume and dramatic changes in the impacts of flooding occur with only small increases in flood height. This results from the substantial flows, which are directed down the floodways. However, the Belmore Bridge gauge is the traditional reference gauge for the residents of Maitland, and accordingly the flood effects noted below are reported in terms of heights relative to that gauge (Delete). Because of the greater sensitivity of the Oakhampton Railway Bridge gauge, the relevant (equivalent) heights at this gauge are also given.

12. The following chart shows the comparative heights of Belmore and Oakhampton Rail Bridge gauge.



Figure 5 – Gauge Height Correlation – Oakhampton Bridge to Belmore Bridge

13. The effects described below are those expected in floods predicted to peak about two days after the first significant rise from about the 4.0 meters Oakhampton Rail Bridge gauge. Such floods represent the **normal** rate of rise and time to peak for Hunter River floods at Maitland. Floods rising significantly faster or slower can also

occur, however, and their effects vary from those described on the succeeding pages in the following ways:

- a. Faster-rising floods produce less flow down the floodways and therefore have smaller impacts at the various peak gauge heights. In such floods, the swamps will not be filled to the same extent, and the timing of the effects relative to peaks will be **later** than shown below. In some instances, in fact, the effects will not occur at all.
- b. Slower-rising floods involve more extended periods of flow into the swamps and hence greater volumes of water. Therefore, the timing of the effects will be **earlier** than shown below. However this would be balanced by the longer time which such floods will take to reach their peak levels.

14. The Bureau of Meteorology will include advice in its Flood Warnings if flooding is expected to be substantially different from normal.

15. The effects described are based on the assumption that the mitigation system operates as planned. Failure of the spillways (for example, by erosion) would allow water to pass down the floodways earlier than intended and flood effects would therefore occur earlier than shown below as well as at lower peak heights. Failure of the Lorn riverside (Bolwarra) and Maitland (crib wall) levees protecting Lorn and Central Maitland respectively (see Map 3) would admit water to these areas early and at high velocity as occurred in 1955. In this context it should be noted that the mitigation system handled the 1971 flood as designed and without failures.

16. Each set of effects indicated below relates to the **peak level** in the particular flood referred to. The information is approximate because all floods are different, **but** it gives an indication of the **consequences** of a flood reaching a particular level, where possible in terms of the **timing** of those consequences relative to time of peak.

17. Because of the differences between flood events in the timing of the effects, potential impacts should be obtained from the following pages **for the specified flood peak as predicted** by the Bureau of Meteorology.

18. The effects noted are mainly those in the Central Maitland area (including the Central Business District), South Maitland, Horseshoe Bend and Lorn.

19. Flooding on Wallis and Fishery creeks is not considered. Nor is local flooding or backwater flooding in the Hunter River caused by inflows from the Paterson River.

20. Peak Level - 11.8 metres Oakhampton Rail Bridge (10.7 meters Belmore):

- a. Substantial areas of rural land on the floodplain will be inundated and some buildings in low-lying areas will experience over-floor inundation (see list of rural areas, pp 32-33).
- b. Some minor roads will be cut.
- c. No urban areas are expected to experience inundation.
- d. Water will not flow over the Oakhampton and Bolwarra spillways.

21. 12.3 metres Oakhampton Rail Bridge (11.0 meters Belmore):

- a. The peak flows will be approximately 2800 cubic metres per second (cusecs).
- b. This flood represents a flood lower than the 5% AEP event and would be similar in size to the flood of March 1977.
- c. Flows would be about to occur over the Oakhampton and Bolwarra spillways.
- d. All major roads (Belmore Rd, High St, the New England Hwy and the Maitland-Kurri Kurri Rd) are expected to remain open.

22. 12.6 metres Oakhampton Rail Bridge (11.2 metres Belmore):

- a. The peak flow will be approximately 3000 cusecs.
- b. Water will flow over the Oakhampton spillway toward Veterans Flat and Mount Dee and over the Bolwarra spillway towards Kings Island about three hours **before** the peak is reached.
- c. Access from Lorn to Bolwarra via Belmore Rd will be cut by fast-flowing water about one hour **after** the peak is reached.
- d. The New England Hwy will be closed between the Maitland Railway roundabout and the Private Trezecinski Bridge about one hour **after** the peak is reached.
- e. The Maitland-Kurri Kurri Rd will be cut near the Fishery Creek crossing about one hour **after** the peak is reached.
- f. The railway line to the west of Maitland Station will be closed about one hour **after** the peak is reached.
- g. Buildings outside the ring levee in low-lying parts of South Maitland will be inundated.

23. 12.7 metres Oakhampton Rail Bridge (11.3 metres Belmore):

- a. The peak flow will be approximately 3500 cusecs.
- b. This flood represents the 5% AEP event and would be similar in size to the flood of February 1971.
- c. Water will flow over the Oakhampton and Bolwarra spillways about six hours **before** the peak is reached.
- d. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of

Maitland Station will be cut about three hours **before** the peak is reached.

- e. Les Darcy Dr will be cut near the Wallis Ck crossing about 14 hours **after** the peak is reached, and low-lying areas of East Maitland will be inundated.
- f. Buildings outside the ring levee in low-lying parts of South Maitland will be inundated.
- g. Overtopping of the ring levees protecting Central Maitland, Horseshoe Bend and part of South Maitland will be imminent.

24. 12.8 metres Oakhampton Rail Bridge (11.35 metres Belmore):

- a. The peak flow will be approximately 4000 cusecs.
- b. Water will flow over the Oakhampton and Bolwarra spillways about seven hours **before** the peak is reached.
- c. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about five hours **before** the peak is reached.
- d. Les Darcy Dr will be cut about ten hours **after** the peak is reached, lowlying areas of East Maitland being inundated.
- e. Overtopping of the ring levee will occur about 24 hours **after** the peak is reached and buildings will be inundated in the Central and South Maitland and Horseshoe Bend areas by backwater flooding.

25. 13.0 metres Oakhampton Rail Bridge (11.4 metres Belmore):

- a. The peak flow will be approximately 4800 cusecs.
- b. Water will flow over the Oakhampton and Bolwarra spillways about eight hours **before** the peak is reached.
- c. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about six hours **before** the peak is reached.
- d. Les Darcy Dr will be cut about six hours **after** the peak is reached, low-lying areas of East Maitland being inundated.
- e. Overtopping of the ring levee will occur about 18 hours **after** the peak is reached.
- f. The railway line east between the Maitland and East Maitland stations will be cut about 24 hours **after** the peak is reached. When this occurs,

the only evacuation route remaining open from Lorn and Central Maitland is the Long Bridge to Rutherford.

g. About 300 buildings will be inundated, including more than 250 in the Central and South Maitland areas and the remainder in Horseshoe Bend.

26. 13.5 metres Oakhampton Rail Bridge (11.5 metres Belmore):

- a. The peak flow will be about 5500 cusecs.
- b. This flood represents the 2% AEP event.
- c. Water will flow over the Oakhampton and Bolwarra spillways about 12 hours **before** the peak is reached.
- d. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about eight hours **before** the peak is reached.
- e. Overtopping of the ring levee will occur about three hours **before** the peak is reached.
- f. Les Darcy Dr will be cut about the time the peak is reached, low-lying areas of East Maitland being inundated.
- g. The railway line between the Maitland and East Maitland stations will be cut about 12 hours **after** the peak is reached.
- h. The Long Bridge will be cut about 24 hours **after** the peak is reached.
- i. More than 600 buildings will be inundated, including about 500 in the Central and South Maitland areas and more than 100 in Horseshoe Bend.
- j. Inundation by backwater flooding will be imminent in Lorn.
- k. Note: All evacuation routes from Central and South Maitland, Horseshoe Bend and Lorn will be cut by a flood reaching this level. Therefore, a complete evacuation of these areas may be required when a flood is forecast to reach 13.5 meters Oakhampton Rail Bridge gauge (11.5 metres Belmore Bridge gauge). It is anticipated that approximately 12 hours warning of a level of 13.5 meters Oakhampton Rail Bridge gauge, would be available.

27. 13.9 metres Oakhampton Rail Bridge (11.6 metres Belmore):

a. The peak flow will be approximately 6500 cumecs.

- b. Water will flow over the Oakhampton and Bolwarra spillways about 18 hours **before** the peak is reached.
- c. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about ten hours **before** the peak is reached.
- d. The Long Bridge will be cut about six hours **before** the peak is reached.
- e. The railway line between the Maitland and East Maitland stations will be cut about four hours **before** the peak is reached.
- f. Overtopping of the ring levee will occur about four hours **before** the peak is reached.
- g. Inundation will begin in Lorn about four hours **before** the peak is reached.
- h. Les Darcy Dr will be cut at about the time the peak is reached, lowlying areas of East Maitland being inundated.
- i. About 750 buildings will be inundated, including more than 550 in the Central and South Maitland areas, 150 in Horseshoe Bend and a small number in Lorn.

28. 14.2 metres Oakhampton Rail Bridge (11.7 metres Belmore):

- a. The peak flow will be approximately 8000 cusecs.
- b. This flood represents the 1% AEP flood.
- c. Water will flow over the Oakhampton and Bolwarra spillways about 20 hours **before** the peak is reached.
- d. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about 12 hours **before** the peak is reached.
- e. The Long Bridge will be cut about ten hours **before** the peak is reached.
- f. The railway line between the Maitland and East Maitland stations will be cut about eight hours **before** the peak is reached.
- g. Inundation will begin in Lorn about eight hours **before** the peak is reached.
- h. Les Darcy Dr will be cut about six hours **before** the peak is reached, low-lying areas of East Maitland being inundated.
- i. Overtopping of the ring levee will occur about six hours **before** the peak is reached.

 j. About 850 buildings will be inundated, including about 650 in the Central and South Maitland areas, nearly 200 in Horseshoe Bend and a small number in Lorn. In this flood, nearly all the buildings in the Central and South Maitland areas and Horseshoe Bend will be flooded.

29. 14.8 metres Oakhampton Rail Bridge (12.0 metres Belmore):

- a. The peak flow will be approximately 10,800 cusecs.
- b. This flood represents the 0.5% AEP flood and would be close to the magnitude of the 1955 flood in terms of flow. Because of the mitigation scheme and other changes to the local environment since 1955, however, the levels that would be experienced in the different parts of Maitland may be quite different from those that were experienced on that occasion.
- c. Water will flow over the Oakhampton and Bolwarra spillways about 24 hours **before** the peak is reached.
- d. Overtopping of the ring levee will occur about 18 hours **before** the peak is reached.
- e. Belmore Rd, the New England Hwy west of the Maitland Station roundabout, the Maitland-Kurri Kurri Rd and the railway line west of Maitland Station will be cut about 16 hours **before** the peak is reached.
- f. Inundation will begin in Lorn about 16 hours **before** the peak is reached.
- g. The Long Bridge will be cut about 16 hours **before** the peak is reached.
- h. Les Darcy Dr will be cut about 15 hours **before** the peak is reached, low-lying areas of East Maitland being inundated.
- i. The railway line between the Maitland and East Maitland stations will be cut about 14 hours **before** the peak is reached.
- j. About 1300 buildings will be inundated, including about 950 in the Central and South Maitland areas, nearly 200 in the Horseshoe Bend and about 150 in Lorn. The Central and South Maitland areas and Horseshoe Bend would be virtually completely flooded, but more than half the buildings of Lorn would be expected not be have been inundated.

30. **19.1 metres Oakhampton Rail Bridge (14.6 metres Belmore):** This flood represents an estimate of the PMF (Probable Maximum Flood) at Maitland. It has an estimated peak flow of 24,000cumecs. The height is a **theoretical** one representing the worst flood possible at Maitland given the most severe combination of meteorological and hydrological conditions that could occur. Well before this height was reached, all buildings in Central Maitland, South Maitland, Horseshoe Bend and Lorn would have been inundated along with some in lower lying areas of Telarah and East Maitland and other built-up areas within the city.

31. The chance of a flood approaching the severity of the PMF at Maitland is extremely remote. Institutions that may be Flood Affected

32. The following institutions in the Maitland City council area may need to be closed or evacuated during floods:

Institution	Sector	Inundation in 1% AEP Flood	Inundation in PMF
Childcare Centres, Pre-schools a	nd Playgroups		
Maitland Nursery School Cathedral St. Maitland	Lorn-Maitland	Yes	Yes
Churches of Christ Play Group St Pauls Hall Devonshire St Maitland	Lorn-Maitland	Yes	yes
Maitland Family Care Cottage	Lorn-Maitland	No	
Maitland Day Care Centre Presbyterian Hall, Free Church St	Lorn-Maitland	Yes	
Lorn Play Group Lutheran Hall, Roxburgh Street, Lorn	Lorn-Maitland	Yes	
St Peters Caritas Play Group St Peters Caritas Church Hall, Banks St, East Maitland	East Maitland - Tenambit	No	Yes
East Maitland Play Group, St Peters Youth Centre, William St, East Maitland	East Maitland – Tenambit	No	Yes
Rutherford Kindy and Long Day Care Regiment Rd, Rutherford	Rutherford – Telarah	No	No
Bolwarra Play Group St Augustines Hall, Paterson Rd, Bolwarra	Largs-Bolwarra	No	No
Infants and Primary Schools			
St Johns Primary School 12 Victoria St, Maitland	Lorn-Maitland	Yes	
Maitland Public School Elgin St, Maitland	Lorn-Maitland	Yes	
Nillo Infants' School Belmore Road, Lorn	Lorn-Maitland	Yes	
Linuwel School for Rudolf Steiner Ed. Morpeth Rd, East Maitland (also secondary school)	East Maitland – Tenambit	No	
St Josephs Primary School King St, East Maitland	East Maitland – Tenambit	No	No
East Maitland Primary and Infants Sch. William St, East Maitland	East Maitland – Tenambit		
Lochinvar Public School New England Highway, Lochinvar	Lochinvar	No	No
Bolwarra Public School	Largs-Bolwarra	No	No

Institution	Sector	Inundation in 1% AEP Flood	Inundation in PMF
Bolwarra Rd, Bolwarra			
Largs Public School	Largs-Bolwarra	No	No
Hunter St, Largs			
Millers Forest Public School	Beresfield-	Yes	Yes
Martins Wharf Rd, Millers Forest	Woodberry		
Woodberry Primary School	Beresfield-	No	Yes
Lawson Ave, Woodberry	Woodberry		
High Schools			
St Marys High School	Lorn-Maitland	Yes	Yes
2 Grant St, Maitland			
St Peters High School	Lorn-Maitland	Yes	Yes
9 Free Church St, Maitland			
Linuwel School for Rudolf Steiner Ed.	East Maitland –	No	
Morpeth Rd, East Maitland	Tenambit		
(also primary school)			
Nursing Homes and Hostels			
Benholme, nursing home and hostel	Lorn-Maitland		Yes
Regent St, Maitland			
Other Institutions			
Maitland Court House (holding cells)	Lorn-Maitland	Yes	
Sempil St, Maitland			
Maitland Police Station (holding cells)	Lorn-Maitland	Yes	
Caroline Pl, Maitland			
Maitland Senior Citizens Centre	Lorn-Maitland	Yes	
Grant St, Maitland			
Maitland Neighbourhood Centre	Lorn-Maitland	Yes	
Sempil St, Maitland			
Shell Caravan Park	Lorn-Maitland	Yes	
High St, Maitland			
CoachStop Caravan Park	Lorn-Maitland	Yes	
Anzac St, Maitland			



SES RESPONSE ARRANGEMENTS FOR MAITLAND CITY

Volume 3 of the Maitland City Local Flood Plan

Last Update: February 2003



ANNEX C - GAUGES MONITORED BY THE MAITLAND CITY SES LOCAL HEADQUARTERS

Station	AWRC	Stream	Flood	Classif	ication	Туре
	No		Min	Mod	Maj	
Muswellbrook	210002	Hunter	7.2	8.0	10.5	Telemeter*
Singleton	210001	Hunter	10.0	11.5	13.0	Telemeter*
Oakhampton Rail Bridge	210426	Hunter	7.0	10.2	11.8	Telemeter*
Belmore Bridge	210041	Hunter	6.1	9.1	10.7	Telemeter*
Morpeth	210430	Hunter				Telemeter
Gostwyck Bridge	210902	Paterson	9.1	10.7	12.2	Telemeter *
Paterson Rail Bridge	210406	Paterson	6.1	7.6	9.1	Telemeter
Hinton	210409	Paterson				Telemeter
Victoria Bridge	210443	Wallis Creek				
Testers Hollow	10373	Wallis Creek				
Wallis Creek	210428	Wallis Creek				
Dunmore Bridge	210409	Paterson River				Telemeter

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

Television Stations:

Station	Location
NBN	Newcastle
ABC	Sydney
Prime	Sydney
Ten	Sydney

Radio Stations:

Station	Location	Frequency	Modulation
2HD			
KOFM			
2 NUR FM			
New FM			
NX FM			
ABC			
Rhema FM			

Newspapers:

Name	Location
Newcastle Herald	Newcastle
Maitland Mercury	Maitland

Other Agencies:

- a. Maitland SES
- b. NSW Police Force, Lower Hunter Local Area Command Headquarters, Maitland
- c. Department of Land and Water Conservation, Newcastle
- d. Department of Community Services, Newcastle and Maitland
- e. NSW Fire Brigades, Newcastle and Maitland
- f. Rural Fire Service, Cessnock and Maitland

- g. Agriculture NSW, Tocal
- h. NSW Ambulance Regional Northern Communication Centre, Charlestown
- i. Roads and Traffic Authority, Newcastle
- j. National Roads and Motorists' Association, Newcastle
- k. State Rail Authority, Broadmeadow
- l. Energy Australia, Wallsend
- m. Hunter Water Corporation, Newcastle
- n. Telstra, Newcastle
- o. Agility, Newcastle
- p. Hunter Catchment Management Trust, Tocal
- The SES Local Controller arranges further dissemination of SES Flood Bulletins to other agencies within the Maitland City Council area.

ANNEX E - TEMPLATE EVACUATION WARNING MESSAGE

EVACUATION WARNING MESSAGE FOR [ENTER NAME OF AREA]

Date/Time of Issue:

Authorised By:

The Bureau of Meteorology has pr	redicted a flood level of	[] me	tres at
[] (place) at [] (<i>time</i>).	This means that
[] (describe areas) may	be inunda	ted.

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

To prepare for evacuation, you should:

- Raise belongings by placing them on tables, beds and benches. Put electrical items on top. Some items may be able to be placed in ceilings.
- Gather medicines, personal and financial documents and mementos together to take with you.
- Listen to radio stations [] for further information and to confirm this warning.
- If possible, check to see whether your neighbours need help.
- Make arrangements for care of pets or 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 [].
- So that you can be accounted for, it is important that you register at the evacuation centre.
- After registering, you may go to the house of a friend or relative. Alternatively, accommodation will be arranged for you.
- The Police will provide security for your property while you are away.

ANNEX F - EVACUATION ARRANGEMENTS FOR THE MAITLAND CITY COUNCIL AREA

Situation

1. In most floods within the Maitland City Council area, no evacuations are necessary. Floods approaching the magnitude of the 1955 event, however, would require large-scale evacuations from the Lorn, Central Maitland and South Maitland areas. Extreme floods more severe than the flood of 1955 could lead to very large-scale evacuations involving up to about 12,000 people. Serious floods above 12.6 meters Oakhampton Rail Bridge (11.2meters on the Belmore gauge), may isolate some rural communities living in the flood plain.

2. The Maitland City council area has been divided into nine sectors for the purposes of flood response. This annex sets out the general arrangements for the management of evacuations from Maitland City. Evacuation arrangements that are specific to each sector are set out in Annexes G to O.

Mission

3. The SES is to arrange and control the evacuation of areas at risk of flooding in order to ensure the safety of residents.

Execution

4. **Control.** During floods evacuations will be controlled by the NSW SES.

5. **Conduct.** Evacuations will be controlled by the Maitland City SES Local Controller and conducted by SES, Rural Fire Service and Police personnel with the assistance of members of Maitland service clubs (Apex, Lions etc.). Evacuations will be conducted in four phases:

- a. Phase 1 Warning.
- b. Phase 2 Withdrawal.
- c. Phase 3 Shelter.
- d. Phase 4 Return.

6. **Operational Sectors.** For the purpose of managing flood response operations and evacuations during severe floods, the Maitland City LGA will be divided into operational sectors as follows:

- a. Lorn Maitland Sector (Annex G).
- b. East Maitland Tenambit Sector (Annex H).
- c. Lochinvar Sector (Annex I).

- d. Rutherford Telarah Sector (Annex J).
- e. Largs Bolwarra Sector (Annex K).
- f. Gillieston Heights Sector (Annex L).
- g. Morpeth Raworth Sector (Annex M).
- h. Thornton Sector (Annex N).
- i. Beresfield Woodberry Sector (Annex O).

7. Tasks.

a. Maitland City SES

- Coordinate doorknocking operations.
- With the assistance of the Transport Services Coordinator, coordinate the provision of transport for evacuees without their own means of transport.

b. NSW Police Service

- Control traffic at the traffic control points nominated below.
- As requested by the Maitland City SES Local Controller, assist with the doorknocking of specific households where the residents refuse to evacuate.
- Coordinate the registration of evacuees.
- Provide security to evacuated areas.

c. **Rural Fire Service**

- Assist with doorknocking.
- d. NSW Fire Brigades
 - Assist with doorknocking.

e. Maitland City Council

- Assist the NSW Police with traffic control.
- f. Service Clubs
 - Assist with doorknocking.
- g. **Department of Community Services**
 - Establish evacuation centres.

8. **Coordinating Instructions.**

- a. **The decision to evacuate.** The responsibility for issuing any general evacuation order during flooding rests with the Maitland City SES Local Controller who exercises his/her authority in accordance with Section 22(1) of The State Emergency Service Act 1989. However, the decision to evacuate will usually be made after consultation with the Local Emergency Operations Controller and the Lower Hunter SES Division Controller.
- b. **When evacuation should occur.** As far as possible, evacuation will be carried out before inundation occurs.
- c. **Self-motivated evacuation.** Some people will make their own decision to evacuate earlier and move to alternative accommodation using their own transport. These evacuees will be advised, via the media, to inform the Police or SES of their evacuation and their temporary address.

d. **Evacuation triggers.**

- A small number of dwellings outside the levee system may require evacuation from approximately 12.6 meters Oakhampton Rail Bridge gauge (11.2 metres on the Belmore gauge).
- A large number of evacuations will be required from Lorn, Central and South Maitland if the levees are predicted to be overtopped. This is expected to be the case if a gauge height of 12.8 meters Oakhampton Rail Bridge gauge (11.35 metres is predicted for the Belmore Bridge gauge).

9. **Phase 1 – Warning:**

- a. **Evacuation warnings.** On the receipt of flood warnings predicting peak heights of 12.7 meters Oakhampton Rail Bridge gauge and above (11.3 metres Belmore Bridge gauge) the Maitland City SES Local Controller will consult as necessary to determine the level of the threat and the need to consider evacuations. As soon as possible after the decision to evacuate is made, the Maitland City SES Local Controller will issue evacuation warnings to the 'at risk' residents, indicating what people should do before evacuating and when actually doing so.
- b. **Content of Evacuation Warnings.** A template guide to the content of evacuation warning messages is at Annex E. These are disseminated via:
 - The radio and TV stations listed in Annex D.
 - Door-knocks by emergency service personnel.
 - Public address systems from emergency service vehicles.

- Telephone.
- Two-way radio.
- SES Flood Bulletins.

10. Phase 2 – Withdrawal:

- a. **Introduction.** Withdrawal involves the actual removal of the community/individuals from dangerous or potentially dangerous areas to safer areas.
- b. **Movement.** Evacuees are to be encouraged to move using their own transport where possible. The Maitland City SES Local Controller will arrange transport for those people without their own vehicles.
- c. **Evacuation routes.** Evacuation routes are described in the Annexes for each Sector (Annexes G to O) along with locations of expected route closures.
- d. **Special Needs Groups.** There is a large proportion of elderly residents, households without cars and/or one-parent families within the Maitland City LGA.
- e. **Animals.** Assistance animals (guide dogs, hearing assistance animals, etc) will remain in the care of their owners throughout the evacuation. This includes transport and access into evacuation centres etc. Due to safety restrictions, it may not be possible to allow companion animals to accompany their owners when being transported via aircraft or flood rescue boats. NSW Agriculture will make separate arrangements for the evacuation and care of companion animals.
- f. **Doorknocking.** Field teams conducting doorknocks will record and report back the following information back to the Operations Centre:
 - Addresses and locations of houses doorknocked and/or evacuated.
 - The number of occupants.
 - Details of support required (such as transport, medical evacuation, assistance to secure house and/or property and raise or move belongings).
 - Details of residents who refuse to comply with the evacuation order.
- g. **Refusal to evacuate.** Field teams should not waste time dealing with people who are reluctant or refuse to comply with any evacuation order. These cases should be referred to the Local Emergency Management Operations Controller who will arrange for Police to ensure their evacuation.

- h. **Security.** The NSW Police will provide security for evacuated premises.
- i. **Helicopter Landing Points.** The following locations are suitable for use as helicopter landing points.

Helicopter Landing Point	Coordinates	Sector
Car park bounded by Church, Moore	S32 44.1	Lorn-Maitland
and Albion streets, Maitland.	E151 33.1	
Lorn Park Oval	S32 44.6	Lorn-Maitland
Nillo St, Lorn	E151 33.3	
Robin's Oval, Maitland Park	S32 43.5	Lorn-Maitland
Blomfield St, South Maitland	E151 33.5	
Anzac Park	S32 44.9	East Maitland – Tenambit
Cnr King and John streets, East	E151 35.3	
Maitland		
Lochinvar Oval	S32 42.4	Lochinvar
Robert Rd, Lochinvar	E151 27.3	
Rutherford Oval, Corner Alexandra	S32 42.9	Rutherford-Telarah
Ave and Weblands St, Rutherford	E151 31.7	
Telarah Oval	S32 43.7	Rutherford-Telarah
Clark Street, Telarah	E151 32.2	
Tocal Agricultural College	S32 37.7	Largs-Bolwarra
Tocal Rd, Tocal	S151 35.4	
Bolwarra Heights Lookout	S32 42.2	Largs-Bolwarra
-	E151 35.0	_
Gillieston Heights Sports Complex	S32 45.7	Gillieston Heights
Fanning St, Gillieston Heights	E151 31.4	
The Morpeth Conference Centre	S32 43.7	Morpeth-Raworth
Metford Rd, Morpeth	E151 37.2	
Thornton Oval,	S32 46.7	Thornton
Taylor Ave, Thornton	S151 28.5	
Woodberry Oval	S32 47.7	Beresfield-Woodberry
Lawson Ave, Woodberry	E151 39.8	

j. **Aerial Drop Zones.** The following locations are suitable for use as aerial drop zones for emergency resupply.

Aerial Drop Zone	Coordinates	Sector
Cooks Square Park	S32 45.2	East Maitland – Tenambit
Brisbane St, East Maitland	E151 34.9	
Lochinvar Oval	S32 42.2	Lochinvar
Robert Rd, Lochinvar	E151 27.4	
Norm Chapman Oval	S32 42.8	Rutherford-Telarah
New England Hwy, Rutherford	E151 31.2	
Bolwarra Sports Complex	S32 42.6	Largs-Bolwarra
-	E151 34.1	

F-5

Maitland City Local Flood Plan, February 2003. A Sub-Plan of the Maitland Local Disaster Plan

Gillieston Heights Sports Complex	S32 45.7	Gillieston Heights
Fanning St, Gillieston Heights	E151 31.4	
The Morpeth Conference Centre	S32 43.7	Morpeth-Raworth
Metford Rd, Morpeth	E151 37.2	
Allan and Don Lawrence Field	S32 46.3	Thornton
Government Rd, Thornton	E151 38.9	
Woodberry Oval	S32 47.7	Beresfield-Woodberry
Lawson Ave, Woodberry	E151 39.8	

k. **Airstrips**. Maitland Airport. Maitland Airport could experience inundation or become inaccessible during a severe flood. At the height of the 1955 flood, some of the airport was flooded and flood waters 0.5 metres deep over the New England Hwy adjacent to the airport made it inaccessible. Other unlicensed airstrips are located at Luskintyre, Tocal and Beresfield (Steggle's Airstrip).

11. Phase 3 – Shelter:

a. **Evacuation centres.** The usual purpose of evacuation centres is to meet the immediate needs of victims, not to provide them with accommodation. Evacuees will be advised to go to or be taken to the nearest accessible evacuation centre, which may initially be established at the direction of the Maitland City SES Local Controller but managed as soon as possible by the Department of Community Services. Any or all of the following sites may be used as evacuation centres:

Centre	Address	Evacuees
Hunter Institute of Technology	Corner Ferraby Dr and New	Lorn-Maitland Sector
(TAFE), Maitland Campus	England Hwy, Metford	
Maitland High School	High St,	Lorn-Maitland Sector
	East Maitland	
Rutherford High School	Avery St,	Lorn-Maitland and
	Rutherford	Rutherford-Telarah
Telarah Public School	Russell St,	Lorn-Maitland and
	Telarah	Rutherford-Telarah
Maitland High School	High St,	East Maitland – Tenambit
	East Maitland	north of the Hwy
Hunter Valley Grammar School	Ashtonfield	East Maitland – Tenambit
		south of the Hwy
St Joseph's College	New England Hwy,	Lochinvar Sector
	Lochinvar	
Tocal Agricultural College	Tocal Rd,	Largs-Bolwarra Sector
	Tocal	
Bolwarra Public School		Largs-Bolwarra Sector
Seventh Day Adventist School	Cessnock Rd,	Gilleston Heights Sector
	Gillieston Heights	

Maitland City Local Flood Plan, February 2003. A Sub-Plan of the Maitland Local Disaster Plan
Centre	Address	Evacuees
Morpeth Public School	Close St,	Morpeth-Raworth Sector
	Morpeth	
Thornton Public School	Taylor Ave,	Thornton Sector
	Thornton	
Francis Greenway High School	Lawson Ave,	Beresfield-Woodberry
	Woodberry	

- b. Action on arrival. On arrival, evacuees will be:
 - registered;
 - medically checked, if necessary; and
 - provided with their immediate welfare needs.
- c. **Registration.** The NSW Police Force will ensure that all evacuees are registered on arrival at the designated evacuation centres and details of the registrations are to be sent to the Lower Hunter Local Area Command Headquarters by the quickest means available.
- 12. Phase 4 Return:
 - a. Once it is considered safe to do so, the Maitland City SES Local Controller will authorise the return of evacuees to their normal or alternative place of residence. This decision will be made in consultation with appropriate officers in regard to matters such as the electrical safety of buildings.
 - b. The return will be controlled by the Maitland City SES Local Controller and may be conducted, at his/her request, by DoCS.

Administration and Logistics

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

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

15. **Animal Shelter Compounds.** Animal shelter compounds will be set up for the domestic pets and companion animals of evacuees. NSW Agriculture will establish these animal shelter compound facilities.

Control Arrangements

16. **Control.** Small-scale evacuations will be controlled by the Maitland City SES Local Controller. If the evacuation operations escalate beyond the capabilities of local resources control may be handed over to the Lower Hunter SES Division Controller.

ANNEX G - LORN-MAITLAND SECTOR

General

1. The Lorn-Maitland sector includes:

- a. The Maitland Central Business District and adjacent residential areas.
- b. Lorn and Midlorn.
- c. South Maitland and Louth Park.

2. The Lorn – Maitland Sector has a population of approximately 4,200 distributed as follows:

- a. 2,700 (1,300 dwellings) in central Maitland.
- b. 1,400 people (500 dwellings) in Lorn.
- c. 700 people (280 dwellings) in South Maitland.
- d. 150 people (50 dwellings) in Louth Park (Wallis Creek lowlands).

Sector Control

3. Sector control will be established at the Maitland City SES Local Headquarters.

Flood Mitigation

4. A number of levees and control structures protect areas within the sector. The Maitland riverside levee (the "Crib Wall") and the ring levee protect Central and South Maitland from floods up to approximately 12.8 meters Oakhampton Bridge gauge (11.35 metres at the Belmore Bridge gauge). Flooding above this height will cause backwater flooding across the ring levee from the south and many dwellings will be inundated to floor level and beyond.

5. Lorn is protected from direct inundation from the Hunter River by the Lorn riverside levee. Floods that peak at about 13.5 meters Oakhampton Bridge gauge (11.5 metres on the Belmore Bridge gauge), however, are expected to begin to enter Lorn as backwater flows across Sharkies Lane. In a flood which peaks at about 14.8 meters Oakhampton Bridge gauge (12.00 metres Belmore Bridge gauge), some 150 dwellings could be inundated and in an even larger flood it is likely that virtually all dwellings would be inundated above floor level. The rural area of Midlorn has a population of 30 in about 10 dwellings, some of which would require evacuation before floodwaters began to enter Lorn.

6. The South Maitland residential area is mostly located within the ring levee, which offers protection against floods up to those which peak at about 12.8 meters Oakhampton Bridge gauge (11.35 metres at the Belmore Bridge gauge). Flooding at this height would cause backwater flooding and the inundation of most dwellings above floor levels. Dwellings located outside the ring levee, including those in the Louth Park area would begin to be affected at slightly lower areas. Flooding from Wallis and Fishery creeks could require evacuation operations to be mounted in this area regardless of the situation on the Hunter River.

Evacuation

7. Evacuations are likely to become necessary in floods expected to peak at 12.8 meters Oakhampton Bridge gauge, with large numbers of evacuations necessary in floods with peaks significantly higher.

Evacuation Centres

8. The following institutions will be established as evacuation centres:

Centre	Address	Evacuees
Hunter Institute of Technology	Corner Ferraby Dr and New	People evacuated by road
(TAFE), Maitland Campus	England Hwy, Metford	to the east
Maitland High School	High St, East Maitland	People evacuated by rail
		to the east
Rutherford High School	Avery St, Rutherford	People evacuated by road
		to the west
Telarah Public School	Russell St, Telarah	People evacuated by rail
		to the west

Evacuation Routes

- 9. The possible evacuation routes residents in this sector are:
 - a. From Central Maitland:
 - Les Darcy Dr (New England Hwy) to East Maitland and Metford.
 - New England Hwy to Rutherford and Telarah.
 - Long Bridge to Rutherford and Telarah.
 - Rail from Maitland Station to Telarah Station (buses to transport to Telarah Public School).
 - Rail from Maitland and High St Stations to Victoria St Station (buses to transport to Maitland High School).
 - b. From Lorn:
 - Belmore Bridge to High St, the Long Bridge and the New England Hwy to Rutherford.
 - Belmore Bridge to High St and Les Darcy Dr to Metford.
 - c. From South Maitland:
 - Les Darcy Dr and New England Hwy to Metford.
 - Rail from Maitland and High St Stations to Victoria St Station (buses to transport to Maitland High School).
 - d. From Louth Park:
 - Louth Park Rd to South Maitland, then via Les Darcy Dr and New England Hwy to Metford.
 - Mt Vincent Rd to New England Hwy to Metford.

Evacuation Route Closures

10. A number of closures can affect the evacuation routes at the following locations:

- a. Belmore Road, northwards from Lorn to Bolwarra. This route will be cut by water from overtopping of the Bolwarra levee (12.3 meters Oakhampton Bridge gauge). Rail access to the west and road access by the New England Hwy to Rutherford and Telarah is expected to be lost in a flood that peaks at about 12.5 metres Oakhampton Bridge gauge.
- b. Les Darcy Dr, eastwards from Central Maitland will be cut in a flood with a peak at the 12.8 meters Oakhampton Bridge gauge.
- c. The railway line eastwards from Maitland is cut in a flood that peaks at 11.4 metres.
- d. Access via the Long Bridge to Rutherford and Telarah is expected to be lost in a flood with a peak at about 13.5 meters Oakhampton Bridge gauge.

11. In floods peaking at 13.9 meters, Oakhampton Bridge gauge or higher, all evacuation routes will be cut. In floods that peak at 14.2 meters Oakhampton Bridge gauge or higher, all routes will be cut **before** the peak level is reached.

Traffic Control

12. Traffic flow at the following key intersections will need to be controlled to ensure free movement of evacuees' vehicles and emergency vehicles:

- a. Hospital roundabout, New England Hwy.
- b. Maitland Railway Station roundabout, Les Darcy Dr and Church St.
- c. Intersection of Les Darcy Dr and High St.
- d. Belmore Bridge.

Helicopter Landing Points

13. Possible helicopter landing points are located at:

LP	Coordinates
Car park bounded by Church, Moore	S32 44.1 E151 33.1
and Albion streets, Maitland	
Lorn Park Oval	S32 44.6 E151 33.3
Nillo St, Lorn	
Robin's Oval, Maitland Park	S32 43.5 E151 33.5
Blomfield St, South Maitland	

Institutions Affected

14. The following institutions could be affected by flooding:

Institution	Address	
Maitland Nursery School	Cathedral St	
	Maitland	
Churches of Christ Play Group	St Pauls Hall, Devonshire St	
	Maitland	
Maitland Family Care Cottage	4 Bonar St	
	Maitland	
Lorn Play Group	Lutheran Hall, Roxburgh Street	
	Lorn	
Nillo Infants' School	Belmore Road	
	Lorn	
St Johns Primary School	12 Victoria St	
	Maitland	
St Marys High School	2 Grant St	
	Maitland	
St Peters High School	9 Free Church St	
	Maitland	
Maitland Public School	Elgin St	
	Maitland	
"Benholme" Nursing Home and Hostel	Regent St	
	Maitland	
Maitland Court House (Holding Cells)	Sempil St	
	Maitland	
Maitland Police Station (Holding Cells)	Caroline Pl	
	Maitland	
Maitland Senior Citizens Centre	Grant St	
	Maitland	
Maitland Neighbourhood Centre	Sempil St	
	Maitland	
Maitland Day Care Centre,	Presbyterian Hall, Free Church St	
	Maitland	
The CoachStop Caravan Park	Anzac St	
	Maitland	
Shell Caravan Park	High St	
	Maitland	

ANNEX H - EAST MAITLAND – TENAMBIT SECTOR

General

1. The East Maitland-Tenambit sector includes East Maitland, Tenambit and the rural area of Pitnacree (see Map 6).

2. This area has both residential and retail/commercial buildings. Numerous lowlying buildings in the western portion of the area (including Pitnacree) and a few to the south of the Maitland Golf Course could be inundated in floods less severe than the 1955 flood. In that event, flooding occurred some distance to the east of Melbourne St.

3. In an extreme event larger than that of 1955, up to 500 dwellings (1,500 people) could be at threat.

Sector Control

4. A Sector Control Point will be established at East Maitland Court House, John St, East Maitland. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centres

5. Evacuation centres for the East Maitland – Tenambit Sector are listed in the following table:

Centre	Address	Evacuees
Maitland High School	High St, East	Residents north of the
	Maitland	New England Hwy
Hunter Valley Grammar School	Ashtonfield	Residents south of the
		New England Hwy

Evacuation Routes

6. Evacuation routes are readily available, except for residents of Pitnacree and areas west of Melbourne St who would need to evacuate in the early stages of a severe flood event.

7. Movement to the **west** will be severely affected in floods peaking at about 12.7 metres Oakhampton Bridge Gauge, and people wishing to travel in this direction would need to do so early in a flood predicted to peak at this level or higher.

Helicopter Landing Point

8. Anzac Park, corner King and John streets, East Maitland (S32 44.9 E151 35.3).

Aerial Drop Zone

9. Cooks Square Park, Brisbane St, East Maitland (S32 45.2 E151 34.9).

Institutions Affected

10. The institutions that are affected are listed in the following table:

Institution	Address	
Linuwel School for Rudolf Steiner Education	Morpeth Rd	
	East Maitland	
St Josephs Primary School	King St	
	East Maitland	
East Maitland Primary and Infants' School	William St	
	East Maitland	
St Peters Caritas Play Group	St Peters Caritas Church Hall	
	Banks St, East Maitland	
East Maitland Play Group	St Peters Youth Centre	
	William St, East Maitland	

ANNEX I - LOCHINVAR SECTOR

General

1. The Lochinvar Sector includes the rural areas of Lochinvar, Luskintyre, Windermere and Oswald (see Map 7).

2. This Sector contains about 100 people (35 dwellings) who would need to be evacuated in the event of an extreme flood. Very small numbers may require evacuation in lesser floods.

3. The areas at risk are the rural communities of Luskintyre, Windermere and Oswald.

4. If the residents of Luskintyre do not evacuate at an early stage, they will be advised to stay within their own area, with residents of low-lying areas moving to nearby elevated areas.

5. In addition, approximately 650 people from the East Branxton-Greta area in the Cessnock Council area would be evacuated to Lochinvar in the event of extreme flooding.

Sector Control

6. A Sector Control Point will be established at Lochinvar Rural Fire Service Headquarters, Robert Rd, Lochinvar. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centre

7. St Joseph's College, New England Hwy, Lochinvar.

Evacuation Routes

8. Local roads and the New England Hwy to Lochinvar.

Institutions Affected

9. The Lochinvar Public School (New England Hwy, Lochinvar) could be affected in an extreme flood.

Helicopter Landing Point and Aerial Drop Zone

10. Lochinvar Oval, Robert Rd, Lochinvar (S32 42.4 E151 27.3).

ANNEX J - RUTHERFORD - TELARAH SECTOR

General

1. The Rutherford-Telarah Sector includes the urban areas of Rutherford and Telarah and the rural areas of Aberglasslyn, Gosforth, Oakhampton and Mount Dee (see Map 8).

2. Approximately 2,100 people (700 dwellings) would be at risk in a flood that was more severe than the 1955 flood. Small numbers of people living in low-lying areas adjacent to the Oakhampton floodway may require evacuation in lesser floods.

Sector Control

3. Sector control will be established at the Maitland City SES Local Headquarters.

Evacuation Centres

- 4. Evacuation centres are located at:
 - a. Telarah Public School, Russell St, Telarah.
 - b. Rutherford High School, Avery St, Rutherford.

Evacuation Routes

- 5. The evacuation routes for the Rutherford Telarah Sector are:
 - a. Gosforth residents via Anambah Rd.
 - b. Aberglasslyn and Oakhampton residents via Aberglasslyn Rd.
 - c. Mount Dee residents by Junction St and Elizabeth St.
 - d. Within Rutherford and Telarah by the local street system.

Helicopter Landing Points

- 6. Possible helicopter landing points are located at:
 - a. Rutherford Oval, Corner Alexandra Ave and Weblands streets, Rutherford (S32 42.9 E151 31.7).
 - b. Telarah Oval, Clark Street, Telarah (S32 43.7 E151 32.2)

Aerial Drop Zone

7. Norm Chapman Oval, New England Hwy, Rutherford (S32 42.8 E151 31.2).

Institutions Affected

8. The Rutherford Kindy and Long Day Care (Regiment Rd, Rutherford) could be affected in an extreme flood.

ANNEX K - LARGS - BOLWARRA SECTOR

General

1. The Largs-Bolwarra Sector includes the urban areas of Bolwarra, Bolwarra Heights and Largs and the rural areas of Dunmore, Golden Grove, Belleview, King Island, Narrowgut, the Flat Rd area, Maitland Vale, Melville, Hillsborough, Rosebrook and Mindaribba (see Map 9).

2. Approximately 1,100 people (370 dwellings) would be at risk in an extreme flood. Small numbers of people from the rural areas may require evacuation in floods less severe than the 1955 flood.

Sector Control

3. A Sector Control Point will be established at Bolwarra Public School. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centres

- 4. Evacuation centres for the Largs Bolwarra Sector are:
 - a. Tocal Agricultural College, Tocal Rd, Tocal.
 - b. Bolwarra Public School.

Evacuation Routes

- 5. The evacuation routes available for this sector are:
 - a. Bolwarra to Tocal via Tocal Rd (Note: Low points on this road will require temporary engineering work to be done by Maitland City Council).
 - b. Maitland Vale, Melville, Rosebrook and Hillsborough to Tocal via Maitland Vale Rd and Tocal Rd.
 - c. Golden Grove, Belleview, King Island, Dunmore, Narrowgut and the Flat Rd area to Largs via Paterson Rd, Morpeth Rd and Largs Ave.

Traffic Control

6. Traffic will need to be controlled at the following key locations, to ensure free movement of evacuees' vehicles and emergency vehicles:

- a. Intersection of the Largs-Morpeth Rd with Hunter St.
- b. Intersection of Paterson Rd and Victoria Rd.
- c. Tocal Rd at Tocal College.

- d. Intersection of Maitland Vale Rd and Tocal Rd.
- e. Intersection of Paterson Rd and Dunmore Rd.

Helicopter Landing Points

- 7. Possible helicopter landing points are located at:
 - a. Tocal Agricultural College, Tocal Rd, Tocal.
 - b. Bolwarra Heights Lookout.

Aerial Drop Zone

8. Bolwarra Sports Complex.

Airstrip

9. Tocal Airstrip.

Institutions

- 10. The following institutions could become flood liable in an extreme flood:
 - a. Bolwarra Public School, Bolwarra Rd, Bolwarra.
 - b. Largs Public School, Hunter St, Largs.

ANNEX L - GILLIESTON HEIGHTS SECTOR

General

1. The Gillieston Heights Sector includes Gillieston Heights and the surrounding rural area (see Map 10).

2. Areas around Gillieston Heights can be affected by flooding on Wallis and Fishery creeks. In a Hunter River flood large enough to cause significant flows over the Oakhampton spillway, the flood storage areas south of Maitland (the Dagworth and Wentworth swamps) will be flooded.

3. The township can be cut off from Maitland by inundation of the Cessnock Rd near South Maitland, and from Kurri Kurri at Testers Hollow.

4. Up to 20 dwellings in the sector's rural areas (50 people) could require evacuation in a very severe or extreme flood. Very few would need to evacuate in lesser events.

5. Evacuations are not likely from Gillieston Heights, though it could be inaccessible by road for a few days in a very severe flood.

Sector Control

6. If necessary, a Sector Control Point will be established at the Amenities Building, Gillieston Heights Sports Complex, Fanning St, Gillieston Heights. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centre

7. Seventh Day Adventist School, Cessnock Rd, Gillieston Heights.

Evacuation Routes

8. Any evacuations will be via local roads.

Helicopter Landing Zone and Aerial Drop Zone

9. Gillieston Heights Sports Complex, Fanning St, Gillieston Heights (S32 45.7 E151 31.4).

ANNEX M - MORPETH RAWORTH SECTOR

General

1. The Morpeth-Raworth Sector includes the township of Morpeth, the suburb of Raworth and the rural areas of Phoenix Park, Brush Farm, Berry Park, Duckenfield and Brisbanefield (see Map 11).

2. This Sector contains approximately 500 people whose houses would be at risk in the event of a severe flood.

3. About 150 dwellings would be involved. Some of these are in low-lying parts of Morpeth town itself, but most are in surrounding rural areas (Phoenix Park, Brush Farm, Duckenfield and Brisbanefield) on the floodplain of the Hunter River.

4. Many of those living in the rural areas would need to evacuate in the event of flooding of a lesser magnitude than that experienced in 1955.

Sector Control

5. If necessary, a Sector Control Point will be established at the Morpeth Police Station, George St, Morpeth. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centre

6. Morpeth Public School, Close St, Morpeth.

Evacuation Routes

- 7. The evacuation routes for this sector are:
 - a. From Phoenix Park via the Largs-Morpeth Rd.
 - b. From Brush Farm via Brush Farm Rd.
 - c. From Duckenfield and Brisbanefield via Duckenfield Rd.
 - d. Within Morpeth using local street system.

Road Closures

8. Road blocks to restrict traffic to evacuees' vehicles and emergency vehicles will be required as follows:

- a. Intersection of Cumberland St and Morpeth Rd.
- b. Intersection of Metford Rd and Ribee St, at the Tenambit Tavern.
- c. Morpeth Bridge.

Helicopter Landing Point and Aerial Drop Zone

9. The Morpeth Conference Centre, Metford Rd, Morpeth

ANNEX N - THORNTON SECTOR

General

1. The Thornton Sector includes the suburb of Thornton and the rural areas served by Raymond Terrace Rd and McFarlanes Rd (see Map 12).

2. This Sector contains about 50 people (15 dwellings) in rural areas north of Thornton who would need to evacuate in floods of lesser magnitude than the 1955 flood.

3. In an extreme flood, it is possible that a small number of dwellings in low-lying parts of Thornton itself could require evacuation.

4. Flooding in the Woodberry Swamp and on the Hunter River floodplain could close Thornton Rd and Raymond Terrace Rd and cut Thornton off from all road access.

5. Rail access should remain until the line is cut at Hexham.

Sector Control

6. If necessary, a Sector Control Point will be established at the Thornton Public Hall, Taylor Ave, Thornton. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centre

7. Thornton Public School, Taylor Ave, Thornton.

Evacuation Routes

8. From rural areas via Raymond Terrace Rd and Government Rd to Thornton - within Thornton by the town's street system.

Helicopter Landing Point

9. Thornton Oval, Taylor Ave, Thornton.

Aerial Drop Zone

10. Allan and Don Lawrence Field, Government Rd, Thornton. .

ANNEX O - BERESFIELD-WOODBERRY SECTOR

General

1. The Beresfield-Woodberry Sector includes the suburbs of Woodberry (Maitland City LGA and Beresfield (Newcastle City LGA) as well as the rural areas of Millers Forest and Dockyard (Maitland LGA) (see Map 13).

2. The sector contains more than 200 people (70 dwellings) in the Millers Forest area who would need to evacuate in the event of flooding of a lesser magnitude than that which was experienced in 1955.

3. A similar number of people in low-lying parts of Woodberry could be affected in an extreme flood.

4. Millers Forest Public School, Martins Wharf Rd, Millers Forest, could be affected in flooding less severe than that of 1955.

5. In an extreme flood, the Woodberry Primary School in Lawson Ave could be affected.

Sector Control

6. If necessary, a Sector Control Point will be established at the Beresfield Police Station, Lawson Ave, Beresfield. A Sector Controller nominated by the Maitland City SES Local Controller will control operations in the sector.

Evacuation Centre

7. Francis Greenway High School, Lawson Ave, Woodberry.

Evacuation Routes

8. From rural areas, via Raymond Terrace Rd and Woodberry Rd to Woodberry - within Woodberry using the town's internal street system.

Traffic Control

9. Road blocks to restrict traffic to evacuees' vehicles and emergency vehicles will be required as follows:

- a. Intersection of Woodberry Rd and Inlands Lane.
- b. Intersection of Woodberry Rd and Redbill Dr.
- c. Intersection of Raymond Terrace Rd and Nelson's Plain Rd.

Helicopter Landing Point

10. Francis Greenway High School, Lawson Ave, Woodberry.

Aerial Drop Zone

11. Woodberry Oval, Lawson Ave, Woodberry.

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

General

- 1. The following caravan parks are flood liable:
 - a. Coach Stop Caravan Park, Anzac Street, Maitland.
 - b. Maitland Caravan Park, High Street Maitland.

Advising Procedures

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

- a. Made aware that the caravan park is flood liable by:
 - Handing a printed notice to occupiers taking up residence. The notice will indicate that the caravan park is liable to flooding.
 - Displaying this notice prominently in each van.
- b. Made aware that if they are expecting to be absent from their vans for extended periods, they should:
 - Provide the manager with a key, in a sealed envelope, to the van.
 - Provide a contact address and telephone number.
 - Inform the manager if a vehicle will be required to relocate the van during flood time.
 - 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 Maitland City 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. 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 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. Vans are to be moved to locations as directed by the SES Controller.

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

- 6. Caravan park managers will:
 - a. Ensure that their caravan park is capable of being evacuated within 8 Hours.
 - b. Advise the Maitland City 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 Maitland City SES Local Controller when the evacuation of the caravan park has been completed.
 - e. Provide the Maitland City SES Local Controller with a register of people that have been evacuated.

Return of Occupants and Vans

7. The Maitland City SES Local Controller, 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. Council and SES personnel will assist if available.

ANNEX Q - DETAILS OF THE DAM-FAILURE WARNING AND EVACUATION SYSTEM FOR GLENNIES CREEK AND CHICHESTER DAM

1. Glennies Creek Dam is situated on Glennies Creek a tributary of the Hunter River. Should the Glenies Creek dam fail, its effects would begin to reach the western area of the Maitland LGA (Luskintyre area) about 6 hours and Belmore 9 hours after failure.

- The Glennies Creek Dam failure threat is considered to be small.
- Glennies Creek Dam failure flooding would produce flood levels more severe than the 1955 flood.
- The Maitland Flood mitigation structures would be overwhelmed in this event.
- Given the rapid onset of such a flood, a rapid evacuation of up to 12000 people from the urban areas of Maitland would need to occur, using local resources.
- Due to the rapid approach of such a flood the primary reponse will be evacuation of residents.
- The movement and accomodation of the evacuated residents would be contained mainly in the Maitland LGA.
- A dam failure warning system is installed on the Glennies Creek dam.
- 2. Chichester dam is situated on the William River, upstream from Dungog. Should the Chichester dam fail, its effects would be seen only on the Rural areas in the eastern areas of the Maitland LGA.
 - Areas of inundation would include Duckenfield, Millers Forest and Dockyard.
 - Chichester Dam failure would exacerbate pre-existing flooding in these areas.
 - These rural areas would become isolated.
 - Chichester Dam Failure threat is considered to be small.



MAP 1 - MAITLAND CITY COUNCIL AREA

Maitland City Local Flood Plan, February 2003. A Sub-Plan of the Maitland Local Disaster Plan

MAP 2 - THE HUNTER RIVER BASIN



Maitland City Local Flood Plan, February 2003. A Sub-Plan of the Maitland Local Disaster Plan





Maitland City Local Flood Plan, February 2003. A Sub-Plan of the Maitland Local Disaster Plan



MAP 4 - MAITLAND CITY OPERATIONAL SECTORS



MAP 5 - LORN-MAITLAND SECTOR



MAP 6 - EAST MAITLAND-TENAMBIT SECTOR



MAP 7 - LOCHINVAR SECTOR

_Largs-,Bolwarra Rutherford Telarah _orn-Maitland Sounda

MAP 8 - RUTHERFORD-TELARAH SECTOR

MAP 9 - LARGS-BOLWARRA SECTOR





MAP 10 - GILLESTON HEIGHTS SECTOR

MAP 11 - MORPETH-RAWORTH SECTOR







XIII


MAP 13 - BERESFIELD-WOODBERRY SECTOR