

Tamworth Regional

Local Flood Emergency Sub Plan



TAMWORTH REGIONAL FLOOD EMERGENCY SUB PLAN

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

Volume 1 of the Tamworth Regional Flood Emergency Sub Plan

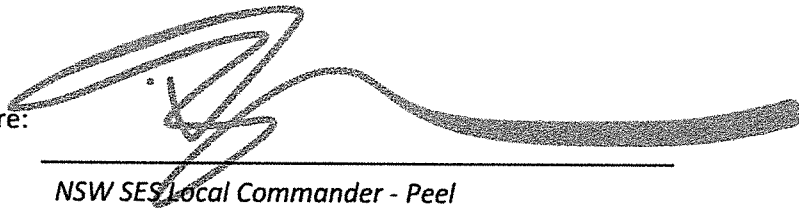
Version 3.0

AUTHORISATION

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

Authorised

Signature:



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Print Name:

Vicki Blinman

Date:

11.09.2023

Endorsed

Signature:



Chair, Local Emergency Management Committee

Print Name:

MURRAY RUSSELL

Date:

15/11/23

VERSION HISTORY

| Version Number | Description | Date |
|----------------|--|---------------|
| 1.0 | Tamworth City and Parry Shire Local Flood Plan | February 2000 |
| 2.0 | Tamworth Regional Flood Emergency Sub Plan | November 2013 |
| 3.0 | Tamworth Regional Local Flood Plan | October 2023 |

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

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

| Amendment Number | Description | Updated by | Date |
|------------------|---|---------------|------|
| 01 | Update of references to 'Flood Development Manual' – replaced with 'Flood Risk Management Manual' | Melissa Lloyd | |
| 02 | Update of wording in section 5.4 relating to flood warnings, to reflect the change to the Australian Warning System | Melissa Lloyd | |
| 03 | Update of wording from 'DPIE' to 'DPE' | Melissa Lloyd | |
| 04 | Recovery Operations – updated 6.22 reference from Resilience NSW to NSW Reconstruction Authority | Melissa Lloyd | |
| 05 | Insertion of text under Section 5.9.4 - "The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Functional Area Supporting Plan." | Melissa Lloyd | |

DISTRIBUTION LIST

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1 OUTLINE AND SCOPE

1.1 PURPOSE

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

1.2 AUTHORITY

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

1.2.2 This plan is a sub plan to the Tamworth Regional Local Emergency Management Plan (EMPLAN) and is endorsed by the Tamworth Regional 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 Tamworth Regional Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

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

1.4.2 The Council area is in the NSW SES North Western Zone and for emergency management purposes, is part of the New England Emergency Management Region.

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

1.4.4 In this plan a flood is defined as a relatively high water level which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves (including tsunami) overtopping coastline defences.

1.4.5 This plan outlines the local level arrangements for the management of downstream consequences of flooding due to dam failure, however it does not cover the management of flooding of an underground mine by inrush or other

cause, which should be covered by the Mine Emergency Sub Plan for the respective mine.

1.5 GOALS

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

- a. Protection and preservation of life.
- b. Establishment and operation of flood warning systems.
- c. Issuing of community information and community warnings.
- d. Coordination of evacuation and welfare of affected communities.
- e. Protection of critical infrastructure and community assets essential to community survival during an emergency incident.
- f. Protection of residential property.
- g. Protection of assets and infrastructure that support individual and community financial sustainability and aid assisting a community to recover from an incident.
- h. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

1.6 KEY PRINCIPLES

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

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

1.7 ROLES AND RESPONSIBILITIES

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

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

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

- a. The NSW SES Incident Controller (for local or zone level responsibilities during response operations).
- b. The NSW SES Zone Duty Commander (for regional level responsibilities outside of response operations).

1.8 PLAN MAINTENANCE AND REVIEW

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

- a. Ensuring that all supporting emergency services and functional areas, organisations and officers mentioned in it are aware of their roles and responsibilities.
- b. Conduct a minimum of one exercise every five years or within two years of the plan being reviewed.
- c. Reviewing the contents of the plan:
 - When there are changes which alter agreed plan arrangements.
 - When changes to land use strategic plans and policies increase the population at risk.
 - After a flood including recommendations from after action reviews, reports, or inquiries.
 - As determined by the NSW SES Commissioner.
- d. The plan is to be reviewed no less frequently than every five years or after a significant flood event.

1.9 SUPPLEMENTARY DOCUMENTS

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

- a. Flood Plan Glossary.
- b. NSW SES Dam Failure Notification Flowchart.
- c. NSW SES Resupply Flowchart.

2 OVERVIEW OF NSW FLOOD HAZARD AND RISK

2.1 THE FLOOD THREAT

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

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

| Dam Name | Owner | High Risk Dam |
|-----------------|------------------------------------|---------------|
| Chaffey Dam | Water NSW | No |
| Dungowan Dam | Tamworth Regional Council | No |
| Moore Creek Dam | NSW Department of Industry - Lands | No |
| Nixon Dam | Adam Cobot | No |
| Split Rock Dam | Water NSW | No |

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

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

3.2 LAND USE PLANNING

- 3.2.1 **Strategy:** Effective land use planning is a key focus for minimising the impacts of flooding. NSW SES will work with land use planning and consent authorities to inform and influence the consideration of the risks arising from flood, storm and tsunami, to prevent the creation of intolerable impacts of these hazards on the community.

Actions:

- a. NSW SES will provide strategic input about land use planning matters which have or will create significant flood risk to life and/or property due to flooding.
- b. NSW SES will provide responses to land use planning proposal referrals that have or will create significant flood risk to life and/or property due to flooding.

3.3 FLOODPLAIN RISK MANAGEMENT

- 3.3.1 **Strategy:** Advocate for consideration of emergency management in decision making to reduce risks to the existing community and minimise the growth in future, continuing and residual risk due to development through input to the flood 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.
- b. NSW SES will provide advice, support, technical resources, and training for NSW SES representatives to contribute effectively on local Flood Risk Management Committees.

4 PREPARATION

4.1 INTRODUCTION

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

4.2 FLOOD EMERGENCY PLANNING

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

Actions:

- a. Develop and review this NSW SES Local Flood Emergency Sub Plan as required. Local Flood Emergency Sub Plans outline the specific arrangements for management of flood events within an LGA and may include cross boundary arrangements.
- b. Review plans as per [Section 1.8](#).

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

4.3 FLOOD INTELLIGENCE SYSTEMS

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

Actions:

- a. Gather and assess flood information for the full range of flood types and severities.
- b. Collect, collate, and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk.
- c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

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

Actions:

- a. All levels of government work in partnership to develop and maintain flood warning infrastructure.
- b. NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the NSW State Flood Plan (see Section 1.9).
- c. NSW SES will recommend new warning services and changes to warning alert levels for gauges to the NSW and ACT Flood Warning Consultative Committee.
- d. The State Government, in partnership with Local Government, is responsible for developing and maintaining flash flood warning systems for local catchments where required.
- e. Tamworth Regional Council has developed and maintains a flash flood warning system for Nundle and Woolomin.

- f. Dam Owners will provide Dam Emergency Plans (where required) and consult with NSW SES on alert levels and messaging. Alert level definitions are listed in Dam Emergency Plans.
- g. NSW SES maintains a dedicated dam failure hotline and procedures to ensure priority dissemination of dam failure warnings.
- h. NSW SES develops and maintains warning and flood information products by:
 - Utilising flood intelligence data.
 - Developing warning and flood information products.
 - Continuously reviewing warning and flood information products.
 - Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW and ACT Flood Warning Consultative Committee and maintains Operational Readiness.
 - Participating in the development of public information and warning systems.
- i. Gauge owners adequately maintain flood warning gauges and systems, including those identified in the 'Service Level Specification' maintained by the Australian Bureau of Meteorology (Bureau) and those identified in the 'Provision and Requirements for Flood Warning in New South Wales' maintained by NSW SES.

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

4.6 COMMUNITY RESILIENCE TO FLOODING

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

Actions:

- a. Ensure ongoing recruitment and training of a diverse range of volunteers.
- b. Ensure pre-planning to facilitate the management of spontaneous volunteers and community members during a flood.

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

Actions:

- a. Partners with and engage communities to understand and manage the risks associated with floods, including providing business continuity guidance (NSW SES Business FloodSafe), family preparedness (NSW SES Home FloodSafe) and other engagement strategies.
- b. NSW SES will collate, assess and disseminate flood information to the community.
- c. Collaborate with individuals, businesses, government agencies and communities when developing flood intelligence, preparedness, and response information.
- d. Plan for floods collaboratively with communities through community and stakeholder participation and engagement.
- e. Collaborate with community sector and recognise the needs of individuals within communities who have an increased susceptibility during floods.

5 RESPONSE

5.1 INTRODUCTION

5.1.1 Flood response operations will begin:

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

5.2 INCIDENT MANAGEMENT ARRANGEMENTS

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

Actions:

- a. NSW SES uses the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response.
- b. Control of flood response will be at the lowest effective level and may be scaled to suit the incident.
- c. The NSW SES State Controller (or delegate) will appoint Incident Controllers and establish Incident Control Centres (see NSW SES facilities on map in Appendix A).
- d. The NSW SES Incident Controller, in consultation with participating supporting emergency services and functional areas will determine the appropriate

breakdown of an Area of Operations into Divisions and/or Sectors in accordance with the principles of AIIMS.

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

Actions:

- a. NSW SES will operate Incident Control Centre(s) as required.
- b. The NSW SES Incident Control Centre(s) will:
 - Control resources from 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.
 - Coordinate information flow, including warnings, public information, and social media.

5.2.3 **Strategy:** Provide effective liaison between 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 (EOC) as required.
- b. NSW SES will provide Liaison Officer(s) to EOC as required.
- c. Where possible EOC to be co-located with NSW SES Incident Control Centres for Flood Emergency Response.

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

Actions:

- a. The NSW SES Incident Controller will notify agencies of potential access issues between locations, for the consideration of pre-deploying of resources.
- b. 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 utilised, communicated and collected during and post a flood.

Actions:

- a. Information relating to the consequences of flooding, response strategies, situational awareness and operational updates will be distributed by NSW SES to supporting emergency services and functional areas listed under this Plan.
- b. All supporting emergency services and functional areas and Council will accurately record and report information relevant to their activities and any real time flood information (including road closure information) to the NSW SES Incident Controller. This may be in the form of a combined Emergency Operations Centre (EOC) report, or direct from agencies where an EOC has not been established.
- c. NSW SES may establish and operate a Joint Intelligence Unit to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information.
- d. Reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation will be coordinated by NSW SES. This may occur post impact and continue into the recovery phase.
- e. NSW SES may request Engineering to assist with the gathering of flood intelligence including (not limited to) maximum flood extents, peak flood heights, recording major flood damage at key high velocity locations and preparation of After-Flood Report.

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

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

5.4 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

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

Actions:

- a. The Bureau issues public weather and flood warning products before and during a flood. These may include:
 - Severe Thunderstorm Warnings – Detailed - issued for all capital cities and surrounding areas when individual severe thunderstorms are within range of the capital city radars.
 - Severe Thunderstorm Warnings - Broad-based - issued for the entire Australian State or territories affected highlighting broad areas where severe storms may occur within the next 3 hours.
 - Severe Weather Warnings with reference to heavy rainfall and/or storm surge.

- Flood Watches.
 - Flood Warnings.
- b. Councils will use the following established flash flood warning system for Nundle and Woolomin to provide warnings and information to NSW SES, key stakeholders, and the community.
 - c. Dam Owners will utilise the Dam Emergency Plan to provide warnings and information to NSW SES and communities (where appropriate).
 - d. NSW SES Incident Controllers will issue the following NSW SES Flood Warnings aligning to the Australian Warning Systems:
 - Advice
 - Watch and Act
 - Emergency Warning
 - e. NSW SES liaises with the Bureau to discuss the development of flood warnings as required.
 - f. NSW SES provides alerts and deliver flood information to affected communities using a combination of public information.
 - g. NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams.
 - h. Road closure information will be provided to the community through the following agencies/methods:
 - Local Government Council websites.
 - Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.
 - i. The Public Information and Inquiry Centre will be established by NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.
 - j. 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 including critical infrastructure through flood protection systems (e.g. sandbagging) to minimise entry of water into buildings.
- b. The raising or moving of household furniture and commercial stock/equipment.

5.6 ROAD AND TRAFFIC CONTROL

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

Actions:

- a. Tamworth Regional Council will coordinate the closure and reopening of council managed roads once inspections have been carried out by the relevant authority.
- b. Transport for NSW will coordinate the closure and reopening of the state road network.
- c. NSW Police Force may close and re-open roads but will normally only do so if the Tamworth Regional Council or Transport for NSW have not already acted and if public safety requires such action.
- d. NSW SES will assist with erecting road closure signs and barriers when time and resources permit.

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

Actions:

- a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989*.
- b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Local and Region EMPLAN's contain infrastructure inventories.

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

Actions:

- a. The Transport Services Functional Area is to coordinate the provision of information about the assessment and restoration of transport network infrastructure.
- b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).
- c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Public Safety Network.

- d. The Engineering Services Functional Area is to:
- Coordinate the assessment and restoration of critical public buildings for example hospitals.
 - Assessment and operation of flood protection levees.
 - Protection of property.
 - Construction and repair of levees.
 - Dam safety assessment and dam stability.
 - Water supply and sewerage operations.
 - Other critical infrastructure.
- e. The Functional Areas and Council will keep NSW SES informed of the status of utilities and infrastructure.

5.8 EVACUATION

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

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

Actions:

- a. Evacuations will take place when there is a risk to public safety. Circumstances may include:
- Evacuation of people when their homes or businesses are likely to flood.
 - Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access.
 - Evacuation of people where essential energy and/or utility services are likely to fail or where buildings have been or may be made uninhabitable.
- b. NSW SES will consider the following in evacuation decisions:
- Duration of evacuation.
 - Characteristics of the community.
 - Numbers requiring evacuation.
 - Availability of evacuation routes and transport.
 - The ability for existing levees or other flood protection works to fulfil their intended function.
 - Time available for evacuation.
 - Evacuee management requirements.
 - Resources and delivery of evacuation information.
 - Length of isolation.

- c. NSW SES Incident Controllers, planning and intelligence officers will carefully consider the risks involved in conducting evacuations.
- d. All evacuation decisions will be made as per the current NSW SES policies and procedures, and consistent with the NSW Evacuation Management Guidelines.
- e. Potential Evacuation Centres are located in Local EMPLAN.
- f. NSW Police Force will coordinate the provision of overall security for evacuated areas.

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

- a. NSW SES will control and coordinate the evacuation of affected communities.
- b. The NSW SES Commissioner (or delegate) will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.
- c. The NSW SES Commissioner (or delegate) will order any necessary evacuations and provide information to the community about when and how to evacuate.
- d. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the local EMPLAN and supporting plans.
- e. The Health Services Functional Area will coordinate the evacuation of hospitals, health centres and aged care facilities (including nursing homes) in consultation with NSW SES and Welfare Services.
- f. School administration offices (Government and Private) will coordinate the evacuation of schools in consultation with 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 Emergency Warning will be referred to 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. NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.
- b. The Welfare Services Functional Area will manage evacuation centres for affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan.

- c. Schools Administration (Government and Private) will manage the safety of students directly affected by flooding and will work with 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 NSW Police Force with the assistance of NSW SES and the Welfare Services Functional Area.
- e. NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible.
- f. Where the expected remaining number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the SEOCON may establish Major Evacuation Centres or Mass Care facilities.
- g. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by 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.

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

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

Actions:

- a. The Agriculture and Animal Services Functional Area will coordinate the welfare of livestock, pets, companion animals and wildlife including support to primary producers, animal holding establishments and community members.
- b. The Agriculture and Animal Services Functional Area role will coordinate the evacuation, emergency care of animals and assessment, humane destruction and disposal of affected animals, and supply of emergency fodder, water and aerial support where necessary.

The roles and responsibilities for Agriculture and Animal Services are outlined in the [*Agriculture and Animal Services Functional Area Supporting Plan*](#).

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

5.11 RESUPPLY

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

Actions:

- a. 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 support the delivery of mail to isolated communities but may not be able to do so according to normal Australia Post timetables.
- e. NSW SES will assist hospitals with resupply of linen and other consumables where able.
- f. NSW SES may request resupply assistance from supporting agencies.
- g. NSW SES may conduct resupply operations as per the designated resupply plan for the event.
- h. Where additional supplies are required Engineering Services Functional Area be requested to coordinate the supply of goods and services in response to and recovery from the emergency.

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

Actions:

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

- b. NSW SES will provide local suppliers with designated loading points. Resupply items are to be packaged by the supplier.
- c. Isolated households unable to afford resupply items will be referred to the Welfare Services Functional Area for assistance.

5.12 RETURN

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

Actions:

- a. The NSW SES Incident Controller will determine when it is safe to progressively return in consultation with the relevant Emergency Operations Controller and supporting agencies considering the ongoing risk to public safety.
- b. The NSW SES Incident Controller will specify the level of access to affected communities as the following:
 - Not suitable for access; or
 - Limited access by emergency services and response agencies; or
 - Limited access by residents and/or business operators; or
 - Full access.
- c. The NSW SES Incident Controller will issue an 'Advice Warning advising "Reduced threat: Return with Caution" when the immediate danger to life and property has passed for areas.
- d. NSW SES will facilitate the return of evacuees to their homes.

5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy:** Conclude response operations.

Actions:

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

5.14 POST IMPACT ACTIONS

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

Actions:

- a. NSW SES will continue to engage with communities after significant floods through convening one or more community forums, workshops or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically include other agencies such as the Bureau, Welfare Services and Tamworth Regional Council representatives.
- b. NSW SES will conduct After Action Reviews, at the conclusion of response operations, which will involve all stakeholders. Findings will be shared and incorporated into improved disaster resilience planning.
- c. NSW SES will provide information and data throughout the emergency response to inform community recovery. A report will be developed at the request of the SERCON at the conclusion of the response within an area. Should a response summary report be required it will include the following:
 - The emergency action plan in place at conclusion of the response emphasising any continuing activities including community meetings/ engagement activities.
 - Resources allocated to the emergency response and associated exit strategies.
 - Details of any areas or situations with potential to re-escalate the emergency.
 - A recommendation for the conclusion of NSW SES as lead agency to transition to NSW Reconstruction Authority as the lead agency for Recovery.
 - Any actions that are incomplete or outstanding.
 - Damage Assessment Data and Information obtained throughout the response phase which will further support the long-term recovery of communities.
- d. NSW SES will undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.

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

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

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

- 6.1.1 Recovery is the process of returning an affected community to its proper level of functioning after an emergency. It will generally commence simultaneously with the Response phase.
- 6.1.2 Recovery operations will be initiated and conducted as outlined in the NSW State EMPLAN and as further detailed in the NSW Recovery Supporting Plan.

6.2 NSW SES RECOVERY ROLE

- 6.2.1 **Strategy:** 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 NSW Reconstruction Authority to support applications to Treasury for Natural Disaster Relief and Recovery Arrangements.
 - d. NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a flood.
 - e. NSW SES and where required supporting agencies will assist with clean-up operations after floods, where possible when resources and personnel permit.
 - f. NSW SES may coordinate immediate relief in collaboration with SECON and SERCON.

7 ABBREVIATIONS

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

8 GLOSSARY

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

Readers should refer to EMPLAN Annex 9 – Definitions.

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

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

9 Appendix A – Map of Tamworth Regional Council Area



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Local Government Area of
Tamworth Regional Council



- Legend
- SES Headquarters
- Declared Dams
- Levees
- Rivers (Major)
- LGA
- Major Towns



Printed: 21/09/2021

10 Appendix B – Roles and Responsibilities

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

| AGENCY | RESPONSIBILITIES |
|--|---|
| Agriculture and Animal Services Functional Area | The roles and responsibilities for Agriculture and Animal Services are outlined in the Agriculture and Animal Services Supporting Plan and NSW State Flood Plan. |
| Australian Government Bureau of Meteorology | The roles and responsibilities for the Australian Government Bureau of Meteorology are outlined in the NSW State Flood Plan. |
| Caravan Park Proprietor(s) | <ul style="list-style-type: none"> • Prepare a flood emergency plan for the Caravan Park. • Ensure that owners and occupiers of movable dwellings are aware that the caravan park is flood liable by providing a written notice to occupiers taking up residence and displaying this notice and emergency management arrangement within the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: <ul style="list-style-type: none"> – Provide the manager of the caravan park with a contact address and telephone number in case of an emergency. – Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed and are maintained in proper working order). • Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to: <ul style="list-style-type: none"> – Ensure that they have spare batteries for their radios. – Listen to a local radio station for updated flood information. – Prepare for evacuation and movable dwelling (cabins) relocation. • Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. • Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers. |

| AGENCY | RESPONSIBILITIES |
|--|--|
| | <ul style="list-style-type: none"> • Secure any movable dwellings that are not able to be relocated to prevent floatation. • Inform NSW SES of the progress of evacuation and/or movable dwellings relocation operations and of any need for assistance in the conduct of these tasks. |
| Childcare Centres and Preschools | <ul style="list-style-type: none"> • When notified of possible flooding or isolation, childcare centres and preschools should. <ul style="list-style-type: none"> – Liaise with NSW SES and arrange for the early release of children whose travel arrangements are likely to be disrupted by flooding and/or road closures. – Assist with coordinating the evacuation of preschools and childcare centres. |
| Dams Safety NSW | The roles and responsibilities for Dams Safety NSW (formerly NSW Dam Safety Committee) are outlined in the NSW State Flood Plan. |
| Department of Defence | Arrangements for Defence Assistance to the Civil Community are detailed within the State EMPLAN (section 448). |
| Energy and Utilities Services Functional Area | <p>The roles and responsibilities for Energy and Utilities Services are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN).</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> • Assist NSW SES with identification of infrastructure at risk of flood damage where resources are available. • Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: <ul style="list-style-type: none"> – Provide advice to NSW SES of any need to disconnect power/gas/water/wastewater supplies or of any timetable for reconnection. – Advise 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 NSW SES to identify infrastructure at risk of flooding for incorporation into planning and intelligence. |
| Engineering Services Functional Area | The roles and responsibilities for Engineering Services are outlined in the Engineering Services Supporting Plan and NSW State Flood 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 for Floodplain Management Australia are outlined in the NSW State Flood Plan. |
| Fire and Rescue NSW | The roles and responsibilities for Fire and Rescue NSW are outlined in the NSW State Flood Plan. |
| Forestry Corporation of NSW | The roles and responsibilities for Forestry Corporation of NSW are outlined in the NSW State Flood Plan. |
| Health Services Functional Area | The roles and responsibilities for Health Services are outlined in the Health Services (HEALTHPLAN) Supporting Plan and NSW State Flood Plan. |
| Local Emergency Operations Controller (LEOCON) | <ul style="list-style-type: none"> • Monitor flood operations. • If requested, coordinate support for the NSW SES Incident Controller. |
| Local Emergency Management Officer (LEMO) | <ul style="list-style-type: none"> • If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations. |
| Marine Rescue NSW | The roles and responsibilities for Marine Rescue NSW are outlined in the NSW State Flood Plan. |
| NSW Ambulance | The roles and responsibilities for NSW Ambulance are outlined in the Health Services (HEALTHPLAN) Supporting Plan and NSW State Flood Plan. |
| NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission | The roles and responsibilities for NSW Department of Education, Association of Independent Schools of NSW, and National Catholic Education Commission are outlined in the NSW State Flood Plan. |
| NSW Department of Planning and Environment (Environment and Heritage Group) | The roles and responsibilities for NSW Department of Planning and Environment (Environment and Heritage Group) are outlined in the NSW State Flood Plan (referred to as DPIE EES). |
| NSW Department of Planning and Environment (Water) | The roles and responsibilities for NSW Department of Planning and Environment (Water) are outlined in the NSW State Flood Plan. |
| NSW Food Authority | The roles and responsibilities for NSW Food Authority are outlined in the Food Safety Emergency Sub Plan. |
| NSW National Parks and Wildlife Services | The roles and responsibilities for NSW National Parks and Wildlife Services are outlined in the NSW State Flood Plan. |
| NSW Police Force | The roles and responsibilities for NSW Police Force are outlined in the NSW State Flood Plan. |
| NSW Reconstruction Authority | The roles and responsibilities for NSW Reconstruction Authority are outlined in the NSW State Flood Plan. |

| AGENCY | RESPONSIBILITIES |
|---|--|
| NSW Rural Fire Service | The roles and responsibilities for NSW Rural Fire Service are outlined in the NSW State Flood Plan. |
| Owners of Declared Dams within or upstream of the LGA | The roles and responsibilities for Owners of Declared Dams are outlined in the NSW State Flood Plan. |
| Public Information Services Functional Area | The roles and responsibilities for Public Information Services are outlined in the Public Information Services Supporting Plan and NSW State Flood Plan. |
| SEOCON/SEOC | The roles and responsibilities for the SEOCON/SEOC are outlined in the NSW State Flood Plan. |
| Surf Life Saving NSW | The roles and responsibilities for Surf Life Saving NSW are outlined in the NSW State Flood Plan. |
| Tamworth Regional Council | <p data-bbox="507 822 687 853">Preparedness</p> <ul data-bbox="507 884 1433 1792" style="list-style-type: none"> <li data-bbox="507 884 1433 958">• Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented. <li data-bbox="507 981 1433 1093">• Develop and implement flood risk management plans in accordance with the NSW Government’s Flood Prone Land Policy and the Flood Risk Management Manual. <li data-bbox="507 1115 1433 1189">• Provide levee studies, flood studies and flood risk management studies to NSW SES. <li data-bbox="507 1211 1433 1285">• Maintain Dam Emergency Plans for the Dungowan Dam and provide copies to NSW SES. <li data-bbox="507 1308 1433 1382">• Provide information on the consequences of dam failure to NSW SES for incorporation into planning and flood intelligence. <li data-bbox="507 1404 1433 1478">• Coordinate the development of warning services for catchments prone to flash flooding (small catchments), where appropriate. <li data-bbox="507 1500 1433 1574">• Maintain council-owned flood warning networks and flood mitigation works. <li data-bbox="507 1597 1433 1671">• Participate in NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Sub Plans. <li data-bbox="507 1693 1433 1733">• Maintain a plant and equipment resource list for the council area. <li data-bbox="507 1756 1433 1792">• Contribute to community engagement activities. <p data-bbox="507 1814 635 1845">Response</p> <ul data-bbox="507 1877 1433 2002" style="list-style-type: none"> <li data-bbox="507 1877 1433 2002">• Subject to the availability of council resources, assist NSW SES with flood operations including: <ul data-bbox="550 1966 1193 2002" style="list-style-type: none"> <li data-bbox="550 1966 1193 2002">– Traffic management on council managed roads. |

| AGENCY | RESPONSIBILITIES |
|--------|--|
| | <ul style="list-style-type: none"> – Provision of assistance to 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. – Technical advice on the impacts of flooding. – Close and reopen council roads (and other roads nominated by agreement with Transport for NSW) and advise NSW SES, NSW Police Force and people who contact the council for road information. – Assist NSW SES to provide filled sandbags and filling facilities to residents and business in areas which flooding is expected. <ul style="list-style-type: none"> • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • Operate a flash flood warning system. • Operate flood mitigation works including critical structures such as detention basins and levees and advise NSW SES regarding their operation. • Manage and protect council-owned infrastructure facilities during floods. • Provide advice to NSW SES and the Health Services Functional Area during floods about key council managed infrastructure such as sewerage treatment and water supply. • Advise the Environmental Protection Authority of any sewerage overflow caused by flooding. • Work with NSW SES and NSW Department of Planning and Environment to collect flood related data during and after flood events. <p>Recovery</p> <ul style="list-style-type: none"> • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to State Government in accordance with the State Recovery Plan. |

| AGENCY | RESPONSIBILITIES |
|--|--|
| Telecommunications Services Functional Area | The roles and responsibilities for Telecommunications Services are outlined in the Telecommunications Services (TELCOPLAN) Supporting Plan. |
| Transport for NSW | <ul style="list-style-type: none"> • Transport for NSW coordinates information on road conditions for emergency services access. • Transport for NSW coordinates the management of the road network across all modes of transport. • Transport for NSW in conjunction will assist NSW SES with the evacuation of at-risk communities by maintaining access and egress routes. • Assist NSW SES with the communication of flood warnings and information provision to the public through Live Traffic and Social Media according to the VMS protocols and procedures. • Assist NSW SES with identification of road infrastructure at risk of flooding. |
| Transport Services Functional Area | The roles and responsibilities for Transport Services are outlined in the Transport Services Functional Area Supporting Plan and NSW State Flood Plan. |
| VRA Rescue NSW | The roles and responsibilities for VRA Rescue NSW are outlined in the NSW State Flood Plan. |
| Water NSW | The roles and responsibilities for Water NSW are outlined in the NSW State Flood Plan. |
| Welfare Services Functional Area | The roles and responsibilities for Welfare Services are outlined in the Welfare Services Functional Area Supporting Plan and NSW State Flood Plan. |

11 Appendix C – Community Specific Roles and Responsibilities

| | |
|---|---|
| Community Members | <p>Preparedness</p> <ul style="list-style-type: none"> • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood. • Households, institutions, and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees, and neighbours. • Have an emergency kit. • Be involved in local emergency planning processes. <p>Recovery</p> <ul style="list-style-type: none"> • Assist with community clean-up if required and able to do so. • Participate in After Action Reviews if required. |
| Aboriginal organisations or groups | <ul style="list-style-type: none"> • Act as the point of contact between NSW SES and the Tamworth community. • Inform the NSW SES Incident Controller about flood conditions and response needs. • Disseminate flood information, including flood and evacuation warnings, to the Tamworth community. • Tamworth Local Aboriginal Land Council (LALC) – 02 6766 9028 |
| Farmer Flood Warning Network | <ul style="list-style-type: none"> • Provide flood information to the NSW SES Incident Controller. • Distribute flood warnings and flood information provided by the NSW SES Incident Controller. |



HAZARD AND RISK IN TAMWORTH REGIONAL LGA

Volume 2 of the Tamworth Regional Flood Emergency Sub Plan

Last Update: August 2024



AUTHORISATION

The Hazard and Risk in Tamworth Shire has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process. The information contained herein has been compiled from the latest available technical studies.

Approved

Signature 

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VERSION LIST

The following table lists all previously approved versions of this Volume.

| Description | Date |
|---|---------------|
| Tamworth/Parry Local Flood Plan | February 2000 |
| Volume 2 Flood Hazard and Risk in Tamworth Regional LGA | August 2024 |
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| | |

AMENDMENT LIST

Suggestions for amendments to this Volume should be forwarded to:

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Amendments promulgated in the amendments list below have been entered in this Volume.

| Amendment Number | Description | Updated by | Date |
|------------------|-------------|------------|------|
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Document Issue: Version 3-02052016

1. The Flood Threat

1.1 OVERVIEW

The Tamworth Regional Local Government Area (LGA) is located in the New England Region of New South Wales, approximately 410 km north-west of Sydney and 580 km south of Brisbane. Approximately 63,080 people live in this LGA within a 9,894 km² land area. The LGA consists of several towns, villages and the regional city of Tamworth. Tamworth, Manilla, Bendemeer, Barraba, Nundle and Woolomin are all considered to be flood prone. Several other villages and localities within the LGA are subject to periodic flooding.

The Tamworth Regional Local Government Area (LGA) is contained within the broader Namoi River Basin. The Namoi River is one of the Murray-Darling Basin's major NSW sub-catchments. The river covers a total area of about 42,000 km² from the Great Dividing Range near Tamworth to the Barwon River near Walgett. (1)

The topography of the Namoi River basin, which includes both flat plains and hilly terrain, influences the way floods propagate. The relatively flat floodplains are prone to widespread flood inundation during heavy rainfall, while the narrow valleys and gorges of the upper catchment areas can experience rapid and intense flash floods. Major tributaries of the Namoi River include the Peel, the Manilla, and the Macdonald Rivers.

1.2 Peel River Basin

The Peel River is a major regulated tributary of the Namoi with a catchment area of approximately 3,080 km² (2). The catchment includes the Cockburn River (1,130 km²) and Goonoo Goonoo Creek (664 km²) catchments. Major tributaries of the Peel River are:

- I. Goonoo Goonoo Creek - 664 km²
 - II. Timbumburi Creek – 176 km²
 - III. Murroon Creek – 9.9 km²
 - IV. Boltons Creek – 27.5 km²
 - V. Tangaratta Creek - 176 km²
- The interdependence of these waterways may result in complex water flow. If all these waterways receive major inundation at the same time, the chances of major flooding in the Tamworth region are greatly increased.
 - The flood history of this region indicates that prolonged rainfall over the river basin is the cause of most of the major flooding in this area. However, the variable nature and volatility of the catchment area suggests that even short bursts of heavy rainfall in parts of the river basin may result in flash flooding, which can materialise with as little as 4-6 hours of warning. (3)

- The Peel River originates from the northern foothills of the Liverpool Range and meanders approximately 210 km until it converges with the Namoi River near Gunnedah.
 - The Cockburn River contributes roughly 40% of the annual discharge from the Peel, while Goonoo Goonoo creek and Dungowan Creek each contribute about 10%.
 - While the steeper upper reaches of the Peel and the Cockburn rivers remain forested, much of the watershed area has been transformed for agricultural purposes.
 - Chaffey Dam, the larger of the two water supply reservoirs on the Peel River upstream from Tamworth, governs a catchment area encompassing approximately 406 km².
 - An average of 100 mm of rain within a 48-hour timeframe across a typically dry Cockburn/Peel River catchment can cause the Peel River at the Tamworth Bridge gauge to reach a height of 3.2 m, assuming Chaffey Dam is at full capacity and releasing water.
- (3)

1.3 Cockburn River:

The Cockburn River is in the northern tablelands district of NSW. The river is a perennial river that is part of the Namoi catchment within the Murray–Darling basin.

- The river rises in the western slopes of the Moonbi Range near Limbri and then flows generally to the southwest, joined by four minor tributaries towards its confluence with the Peel River at Nemingha: dropping 109 m over its course of 33 km.
- The Cockburn River and the confluence of the Peel and Cockburn Rivers waterways traverse an area approximately 7 km in length.
- From upstream to downstream, the Cockburn River flows through or near the localities of Limbri, Moonbi, Kootingal, Tintinhull and Nemingha.
- A section of the great northern railway line runs along the valley of the Cockburn River.

1.4 Manilla River:

The Manilla River is a perennial stream which forms a part of the Namoi catchment located in the Murray–Darling basin. The river flows through the northern tableland region of New South Wales.

- The stream (referred to as a river) originates southwest of Barraba on the northern slopes of the Baldwin Range and drains a portion of the hill country on the western side of the New England highlands and the southern slopes of the Nandewar Range, flowing generally north and east to Barraba.
- The stream is joined by five minor tributaries and flows in a southerly direction towards its confluence with the Namoi River at the town of Manilla.
- Approximately 20 km south of Barraba, the Manilla River discharges into Split Rock Dam (storage volume 400 GL). From Split Rock Dam, the Manilla River drains southwards for

a further 25 km before it confluences with the Namoi River within the town of Manilla.
(4)

1.5. Macdonald River

The Macdonald River is a tributary of the Hawkesbury River (Dyarubbin) that originates on the Great Dividing Range's eastern slopes of the Mellong Range. It travels approximately 120 km east then south of the Hunter Valley before entering the Hawkesbury River at Wisemans Ferry.

- Close to its source, the Namoi River meets the Macdonald River, which flows through a large (3,075 km²) catchment area. The Macdonald River headwaters are in the Great Dividing Range approximately 70 km east of Tamworth. The river discharges through the towns of Woolbrook and Bendemeer upstream of the confluence with the Namoi River in the upper portion of the catchment, natural vegetation terrain predominates the extent of the river. (5)
- Downstream of the confluence with Womerah Creek, the breadth of the Macdonald River floodplain is typically between 300 m and 500 m due to the steep relief of the surrounding hills.
- Most of the residential development is situated along the eastern side of the Macdonald River floodplain, approximately 1-2 km upstream of the Hawkesbury River confluence.
- Between the years 1949 and 1955, the Macdonald River was ravaged by a series of devastating floods. The most recent significant recorded inundation occurred in August, 1990.

1.6. Goonoo Goonoo Creek

Goonoo Goonoo Creek originates in the Great Dividing Range, situated to the south and east of Tamworth.

- The creek makes its way towards the Peel River in Tamworth, undergoing a rapid descent in elevation as it flows northward across the Goonoo Goonoo plains.
- The creek is the principal instigator of flooding in Tamworth, with the capacity to generate floods of great magnitude even without the influence of other rivers or creeks.

1.7. STORAGE DAMS

Dam locations are shown on MAP 1 – Namoi River Basin.

Table 1: Prescribed Dams in Tamworth LGA.

Source: Dam Summery sheets.

| Chaffey Dam | |
|------------------------|---|
| Owner / Operator | WaterNSW |
| Description of Dam | Chaffey Dam is used for irrigation in the Peel Valley and water supply to Tamworth. The dam reaches a maximum height of 54 m and consists of an earth and rockfill embankment with a central impervious clay core with fine and coarse filter zones. The dam crest length is 430 m, and the crest width is 8 m. There is a 35 m wide auxiliary spillway with a 4.5 m fuse plug wall which was constructed in 2011 and an uncontrolled morning glory type spillway. Releases from the dam are made through a primary (1070 mm dia.) outlet or a secondary (610 mm dia.) outlet. The storage capacity of the dam at FSL (RL 518.60 m AHD) is 163,800 ML and the catchment area is 420 km ² . |
| Location | Situated on the Peel River, 43 km south east of Tamworth and 5 km above the village of Woolomin. Access is via the Nundle-Tamworth Road. The dam lies within the Tamworth Regional LGA and Namoi River valley. |
| Communities Downstream | Woolomin, Dungowan, Nemingha, Tamworth, Attunga, Somerton, Carroll, Gunnedah |
| Monitoring System | Monitoring of dam conditions is conducted weekly (at minimum) via instrumentation and on a daily basis visually by the Duty Officer. |
| Warning System | A manual warning system for residents of Woolomin exists via 2 towers equipped with audible sirens and messages controlled by the Dam Duty Officer. State Water also distributes telephone messages via the Early Warning System (EWS) for self-enrolled downstream landholders. |
| Other | Travel times from Chaffey Dam to start of Dam break flood wave: Woolomin - 0:50 (1:35 till peak) Dungowan - 1:30 (3:00 till peak) Piallamore - 2:50 (4:00 till peak) Nemingha - 3:20 (5:10 till peak) Tamworth - 4:25 (6:40 till peak) Attunga - 8:00 (1-:50 till peak) Somerton - 11:15 (15:10 till peak) |

| Dungowan Dam | |
|------------------------|---|
| Owner / Operator | Tamworth Regional Council |
| Description of Dam | <p>Dungowan Dam is a 31m high, 215m long earth fill embankment with the crest at RL 689.40 m. There are 3 spillways.</p> <ul style="list-style-type: none"> • Spillway A has a concrete sill level and automatic balanced gate. • Spillway B is an uncontrolled auxiliary ogee crested spillway. • Spillway C is a fuse-plug spillway. <p>The storage capacity of the dam at FSL (RL 682.84 m AHD) is 6,300 ML. The catchment area is 125 km²</p> |
| Location | Located on Dungowan Creek near Nundle lies within the Tamworth Regional LGA and Namoi River Basin. |
| Communities Downstream | Woolomin, Piallamore, Dungowan |
| Monitoring System | Telemetry, piezometer, seepage weirs, survey and precise levelling network to monitor the deformation and settlement of the embankment, site inspections. |
| Warning System | Telemetry with pre-set alert levels. |
| Other | The fuse plug is likely to fail at RL 688.7 m (between Amber and Red Alert levels). The valley below the dam is very tight with access very difficult during even minor flood conditions. Due to very short warning times and the difficult egress from the valley, special consideration should be given to early evacuation of residents. |

| Moore Creek Dam | |
|------------------------|---|
| Owner / Operator | Crown Lands – Department of Planning, Housing and Infrastructure |
| Description of Dam | Moore Creek Dam is a concrete arch dam with a gravity section on the left abutment and a free overfall spillway. It was constructed in 1898 with the purpose of supplying water to the city of Tamworth by way of a steel pipeline. |
| Location | Situated on Moore Creek |
| Communities Downstream | Scout hall, farm dwellings and buildings, local “Upper Moore Creek Road” providing access to local dwellings and scout camp. |
| Monitoring System | Water level monitoring station installed 21/6/2024 |
| Warning System | Satellite alert system – provides SMS and Email notification of trigger heights at white, amber and red. |
| Other | Dam is not built on a river, stream or watercourse |

| Split Rock Dam | |
|------------------------|---|
| Owner / Operator | WaterNSW |
| Description of Dam | <p>The purpose of the dam is to provide water supply for irrigation, stock, domestic, urban and industry in the Namoi River Basin.</p> <p>The dam has a 68 m high and 484 m long concrete-faced rock fill main embankment which has a small earth fill section on its right abutment. Split Rock Dam was upgraded in 2011/2012 with a 2 m raising of the crest of the main dam. The new level of the top of the parapet wall is RL 462.90 m AHD.</p> <p>There is an ungated spillway located in the right abutment. There are two earth fill Saddle Dams "A" & "B" located about 3.5 km north-west of the main embankment. The Saddle Dams have a total length of 2.8 km and are about 20 m in height. The outlet works are capable of discharging at a maximum rate of 6,050 ML/day. The storage capacity at FSL (RL 449 m AHD) is 397,370 ML and has a catchment area of 1,650 km². Split Rock Dam is operated in conjunction with Keepit Dam (located about 50 km downstream on the Namoi River).</p> |
| Location | Situated on the Manilla River, approximately 30 km upstream (north) of Manilla within the Tamworth Regional LGA and Namoi River Basin. |
| Communities Downstream | Manilla township and residents throughout the Manilla River Valley. |
| Monitoring System | Telemetry, routine visual inspections, seepage monitoring and yearly deformation survey. |
| Warning System | There is no warning system associated with this dam, however WaterNSW does utilise the Early Warning System (EWS) for notifying self-enrolled interested parties. |
| Other | In a sunny day failure scenario, there may only be a few hours' notice before flood waters reach Manilla. At full supply level 21.5 km ² of the catchment will be inundated. |

1.8. WEATHER SYSTEMS RAINFALL AND CATCHMENT BEHAVIOUR

- The Namoi River Basin experiences a wide array of weather systems, resulting in a diverse flooding pattern. For example, during the tropical cyclone season, which typically occurs from October through to March, the basin can experience heavy rainfall associated with cyclones or their remnants.
- These intense rain events can lead to widespread and prolonged periods of heavy precipitation, increasing the risk of riverine and flash flooding. The increase in storm frequency during this period is primarily due to the increase in energy provided by the sun during the warmer spring and summer months, coupled with spring and summer weather patterns that are favourable for storm growth.
- East Coast Low pressure systems generate storms which generally have much shorter life cycles than Tropical Cyclones, usually of the order of only a day or two. This weather system can generate significant rainfall and flooding around the Namoi River Basin areas.

Monsoons also bring heavy rain during the wet season, contributing to elevated river levels and flooding downstream.

- Mean annual rainfall varies significantly across the region from less than 495 mm per year in the west to over 1100 mm/year in the highlands to the east and south. The lowest amount of rainfall usually occurs from April to August, with Tamworth experiencing this dry period during April to May. The highest average rainfall typically occurs in the summer months (November to February). (2)
- A combination of the above-mentioned weather systems can result in prolonged heavy rainfall over the Namoi River basin catchment areas causing major flooding. Historical flood analysis data shows that most of the major flooding in the river basin happened because of these combined weather systems.
- Recent flood records in the Namoi Valley demonstrate no consistent pattern, except that they mainly occur during the wet season. This variability can be explained by the many sources of floodwater, the large catchment area, and the shifting locations of storm centres. The region's hydrology and topography also play a significant role in how weather systems contribute to flooding events.
- Prolonged widespread rain over the catchment and combined with a very intense short duration rainfall is critical for maximising flows. An average rainfall of 50-100 mm (which is not very usual) across the entire catchment, coupled with substantial saturation levels and strong river flows, holds the potential to trigger minor to moderate flooding. (6)

1.9. CHARACTERISTICS OF FLOODING

Riverine Flooding: Tamworth LGA

- Though the river systems can yield intricate flow patterns, a flood occurring solely within the Peel River, devoid of contributions from Goonoo Goonoo and/or Timbumburi Creek, does not generally lead to significant issues or cause water to course through the Wallamore Anabranche which is the entrance for the Timbumburi Creek to fall into the Peel River.
- In such a scenario it is usually unlikely that the Peel catchment would experience any major flooding apart from a flash flood at Tamworth.
- Interestingly, Goonoo Goonoo Creek can experience flooding independently of the Peel River's flooding conditions.
- Similarly, Timbumburi Creek can also undergo flooding without concurrent flooding in the Peel River or Goonoo Goonoo Creek.
- Intense rainfall over the river system for a prolonged period can cause riverine and flash flooding into the catchment areas of this river system.

- The storm that occurred on 28 November 2008 was caused by an intense burst of rainfall which, combined with elevated water levels in the Peel River, Namoi River Valleys and Macdonald River resulted in flooding in the region.

November 2008 flood analysis: Case study

The floodway within the Peel River system is characterised by a series of hydrograph observations taken at various river gauges along the course of multiple rivers and creeks. These observations reveal the dynamic nature of the flood's progression during significant rainfall event took place. To portray such complex flood behaviour, November 2008 flood analysis is used here. Here are some key points regarding the **November 2008** floodway:

Rise Timing Variation: The timing of the flood's rise at different locations is influenced by several factors, including the proximity of the gauge to the rainfall source, the catchment's time of concentration, and the flood wave's travel time.

Carroll Gap's Early Response: Surprisingly, the Carroll Gap gauge detected a rise as early as 6:15 p.m. on Friday evening, preceding any rise detected at Tamworth. This early response is attributed to heavy local rainfall in catchments between Carroll Gap and Tamworth, such as Sandy Creek and Tangaratta Creek.

Goonoo Goonoo Creek: The Goonoo Goonoo and Meadows Lane gauges are situated along Goonoo Goonoo Creek. A rapid rise was observed at Goonoo Goonoo gauge from 9 p.m. and at Meadows Lane gauge from 10:15 p.m., suggesting a flood wave travel time of about 1¼ hours between the two gauges. Meadows Lane's flattened hydrograph suggests a wider floodplain and hints at the role of farm dams in temporarily storing runoff.

Peel River: Gauges located upstream of the Peel River's junction with the Cockburn River, such as Kootingal and Mulla Crossing, displayed similar hydrograph shapes, with Kootingal's rise starting at 2:30 a.m. on Saturday.

Tamworth Area: The Piallamore and Tamworth Water Supply gauges on the Peel River started to rise sharply from about 10 p.m. due to heavy local rainfall. The rapid rise at Paradise Weir and Tamworth Bridge began around 9:30 p.m. and may have been influenced by a "fresh" from Goonoo Goonoo Creek, followed by very heavy rainfall in the Tamworth area.

Sequential Rises: The Paradise Weir and Tamworth Bridge gauges experienced a second rise from about 1:15 a.m. on Saturday, likely due to the arrival of floodwaters from Goonoo Goonoo Creek and Piallamore, with the Cockburn River flood arriving later.

Peel River Travel: The Peel River at Tamworth Bridge gradually rose to peak at about 9 a.m. The flood then travelled downstream to Carroll Gap, where it peaked approximately 10 hours later than at Tamworth Bridge.

Namoi River: The Namoi River at Gunnedah began rising on Saturday morning, reaching its peak on Sunday evening. The flood's rate of rise initially remained consistent and then slowed, presumably due to bank overtopping.

Minor Mooki Contribution: The Mooki River contributed a smaller volume compared to other rivers, with the Peel River being the primary source of floodwater to Gunnedah.

Macdonald River: The Macdonald River at Woolbrook began rising on Friday evening, with a steeper rate of rise from 10 p.m., peaking at 5:30 a.m. The Bendemeer hydrograph, covering a shorter period, exhibited a similar shape, peaking around 4 to 5 hours later than the Woolbrook hydrograph.

Source: Flood Intelligence Collection and Review for The Macdonald, Peel and Namoi Rivers, 2009 (7)

- Due to differences in flood levels among various rivers, the duration of water travel can exhibit notable discrepancies from one occurrence to another. Thus, the timeframes

could vary considerably (travel times in table 2 should be considered as estimations), as swifter flows may arise in some instances with slower flows in others.

- It is important to acknowledge that during periods of exceptionally intense flooding, the duration of flow could be briefer than indicated here.
- Similarly, instances where substantial water quantities swiftly enter a nearly empty river generally result in more rapid flows compared to gradual accumulation scenarios.

Table 2: Indicative Flow Travel Time

Source: Flood Intelligence Collection and Review for The Macdonald, Peel and Namoi Rivers, 2009 (7)

| Locations | Travel Time |
|----------------------------------|-----------------|
| Peel River | |
| Piallamore to Paradise Weir | 4 hours |
| Paradise Weir to Tamworth Bridge | 1 hour |
| Appleby to Bective | 5 hours |
| Bective to Somerton | 2 hours |
| Somerton to Carol gap | 5 hours |
| Manilla River | |
| Split Rock Dam WL to Manilla | 6-9 hours |
| Macdonald River | |
| Woolbrook to Bendemeer | 5-7 hours |
| Bendemeer to Retreat | 7 hours (peak) |
| Retreat to Manilla | 13 hours (peak) |
| Cockburn River | |
| Mulia Crossing to Kootingal | 1.25 hours |
| Kootingal to Tamworth Bridge | 2.25 hours |
| Goonoo Goonoo Creek | |
| Goonoo Goonoo to Meadows Lane | 1.25 hours |
| Meadows Lane to Tamworth Bridge | 3 hours |

Overland Flooding:

Heavy rainfall for a prolonged period has the potential to overwhelm urban drainage systems and cause significant localised flash flooding.

During the November 2008 deluge, heavy rainfall centred over the southern portions of Tamworth City, causing extensive local overland flooding. Since parts of the city are protected by levees against riverine flooding up to 1% AEP, riverine flood water could not combine with overland flood water to cause a major flood event. However, due to the flash inundation, the Oxley Highway at Hoss's Causeway (approximately 1 km east of Carroll) and the Kamilaroi Highway were reported closed.

1.10. FLOOD HISTORY

Tamworth:

- From 1840 up to the time when records commenced in January 1925, 2 major floods have been reported on the Peel River at Tamworth, in 1864 and 1910. The most severe of these early floods was the 1864 flood which was described as “Tamworth’s worst”. (2)
- Since 1925, Tamworth has seen two substantial floods in February 1955 and January 1962, which reached river levels of 7.16 m and 6.86 m, respectively. During the February 1955 flood, water levels in the Peel River remained elevated for approximately 4 days.
- Four other notable floods took place in February 1971, January 1974, January-February 1976 and January 1984. Historical flood patterns reflect the seasonal rainfall in this area during the summer months from November through to February.
- More recently, Tamworth experienced intense rainfall during the November 2008 storm which caused significant flooding resulting in the Peel River peaking at 6 m, recorded on the town gauge.
- A smaller flood was recorded in December 2010, during which the river's water level reached 5.51 m on the town gauge. The dates when the Peel River has peaked above the critical 4 m trigger level are summarised in the table below.

Table 3: Historic water level and discharge data for Tamworth

Source: Tamworth City Wide Flooding Investigation, 2019, Tamworth City Wide Flood Risk Management Study, 2022 (8)

| Year | Peak Height (m) | Peak Discharge (m ³ /s) | Year | Peak Height (m) | Peak Discharge (m ³ /s) |
|----------|-----------------|------------------------------------|----------|-----------------|------------------------------------|
| 1930 | 4.11 | 335 | 1991 | 5.28 | 529 |
| 1933 | 4.72 | 290 | 1992 | 4.95 | 161 |
| 1934 | 5.49 | 650 | 1996 | 4.60 | 315 |
| 1935 | 4.42 | 250 | 1997 | 5.20 | 452 |
| 1936 | 4.88 | 350 | 07/1998* | 5.99 | 1193 |
| 1937 | 4.57 | 240 | 2000 | 6.23 | 1451 |
| 1942 | 5.64 | 740 | 2004 | 5.74 | 1069 |
| 1945 | 5.03 | 410 | 2008 | 6.01 | 1251 |
| 1947 | 4.42 | 250 | 2010 | 5.51 | 7 |
| 1948 | 5.33 | 560 | 2011 | 5.23 | 919 |
| 1949 | 4.42 | 250 | 2016 | 4.34 | 469 |
| 07/1950* | 5.69 | 1100 | 2020 | 4.27 | Note |
| 08/1952* | 5.64 | 740 | 2021 | 5.35 | Note |
| 11/1954* | 5.18 | 410 | | | |

| | | | |
|----------|------|------|---|
| 02/1955* | 7.16 | 2390 | *Multiple data available for multiple flooding events in the same year. Data presented here is the highest peak for the year. |
| 02/1956* | 6.17 | 960 | |
| 10/1958* | 5.64 | 410 | Note: No discharge data is directly available from WaterNSW or from the flood studies. |
| 1962 | 6.86 | 2000 | |
| 1963 | 4.88 | 220 | |
| 1964 | 5.64 | 980 | |
| 1968 | 5.79 | 800 | |
| 1971 | 6.35 | 1330 | |
| 1974 | 5.18 | 560 | |
| 1975 | 4.60 | 220 | |
| 1976 | 6.27 | 1280 | |
| 05/1977* | 5.15 | 460 | |
| 1978 | 5.32 | 540 | |
| 01/1984* | 6.63 | 1590 | |
| 1985 | 4.6 | 379 | |
| 1989 | 4.7 | 365 | |
| 08/1990* | 5.8 | 1203 | |

Woolbrook and Bendemeer:

- Historically, Woolbrook village has been flooded when floodwater from Common Creek and the Macdonald River flow converged. Woolbrook and Bendemeer in the Macdonald River basin have experienced 2 significant floods since 1927, the first in 1962 and the second in 2008. (9)
- In 1962, the flood peaked at 8.1 m at the Woolbrook gauge and 8.2 m at the Bendemeer gauge, and the flow between the two gauges took 4-5 hours to traverse. The Woolbrook railroad embankment was eroded, AIF Memorial Hall was nearly submerged in water and the Watson residence was inundated to a depth of 0.46 m.
- The 1962 flood inundated several Bendemeer properties, including the Bendemeer Hotel and the New England Highway. At the MacDonald River, both Caroline Street and the Old New England Highway were submerged. The Bendemeer Bridge sustained extensive damage.
- It is believed that the November 2008 deluge was the second-highest flood ever recorded in this area. Rainfall in Woolbrook in this period was above average and set a record.
- In addition to the significant precipitation on the 19 November 2008, there were several days of minor precipitation, which made the catchment partially saturated prior to the heavy precipitation on 28-29 November 2008 that caused the flood.

Manilla:

- In February 1864, a major flood event killed 12 residents and destroyed homes and properties (Veness' store built in 1853 at the foot of Market Street). Anecdotally, a surveyor, Arthur Dewhurst, estimated that the flood apex was approximately 3 m higher than the previous record flood, which occurred in 1840. (5)
- Since flood gauging began in 1941, the Manilla catchment area has experienced 16 minor, 3 moderate, and 2 major flood events. The February 1955 flood was the worst since January 1910, but only 3 homes are believed to have been affected.
- The January 1964 inundation was preceded by 175 mm of precipitation which caused rapid surges in the Namoi and Manilla Rivers. The confluence of these 2 rivers caused the water level on River Street to rise, flooding approximately one third of Manilla with 2.4 m of water.
- A third of the population in North Manilla, Namoi Street, River Street, the lower extremities of Rowan and Market Streets, and West Manila's low-lying areas were forced to evacuate in January 1964 due to the worst flooding in that century.

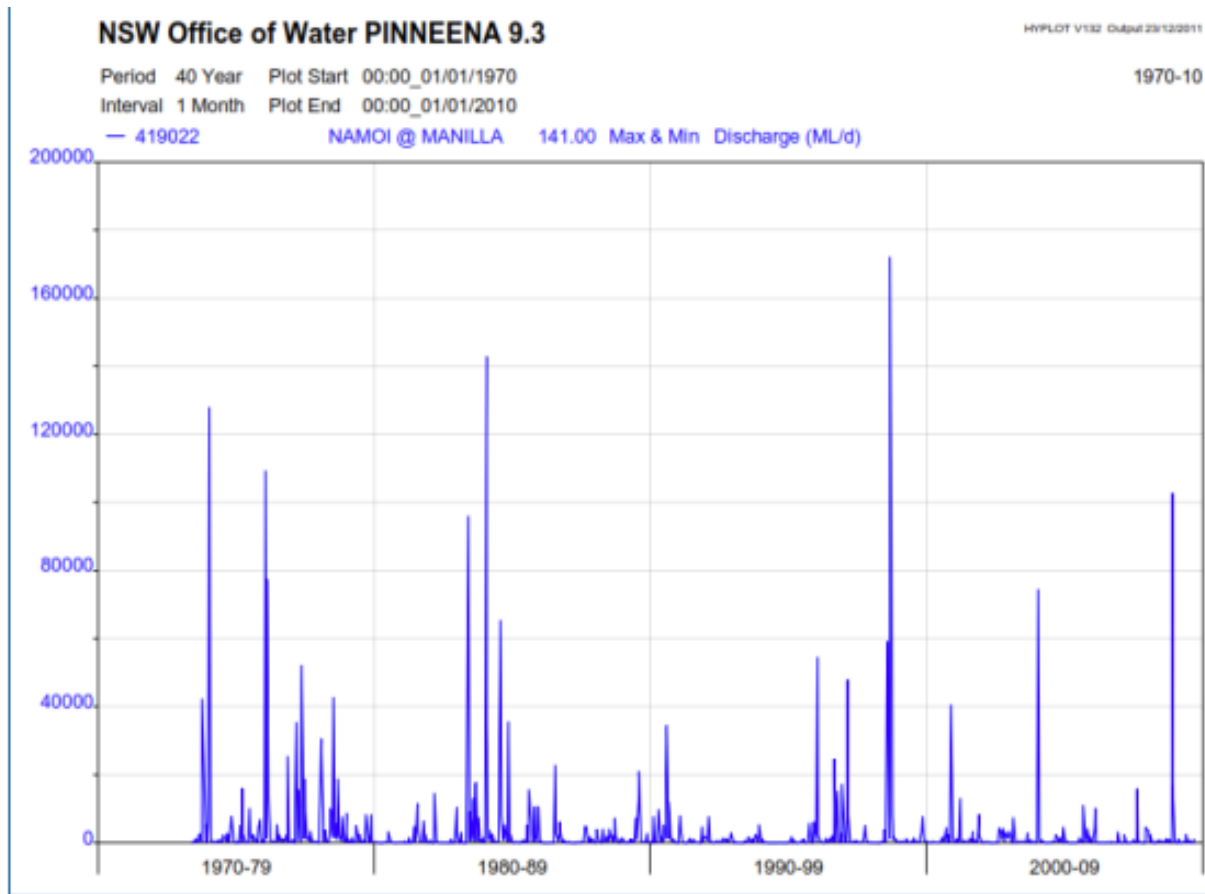
Table 4, overleaf, describes historical flood peaks in the Namoi Valley.

Table 4: Historical Flood Peaks, Namoi Valley gauges (Up to 2008)

Source: Flood Intelligence Collection and Review for The Macdonald, Peel and Namoi Rivers, 2009 (7)

| Date | Woolbrook (Macdonald R.) | Bendemeer (Macdonald R.) | Goonoo Goonoo (Goonoo Goonoo Ck) | Mulla Crossing (Cockburn R.) | Paradise Weir (Peel R.) | Tamworth Bridge (Peel R.) | Carroll Gap (Peel R.) | Carroll (village) (Namoi R.) | Breeza (Mooki R.) | Gunnedah (Namoi R.) |
|--------------|-----------------------------|-----------------------------|-------------------------------------|---------------------------------|----------------------------|------------------------------|--------------------------|---------------------------------|----------------------|------------------------|
| Source(s): | 1,2,5 | 6 | 1,2,3,5 | 1,2,5 | 7 | 1,2,5 | 1,2,5 | 4,8 | 1,2,3,5 | 1,2,3,4 |
| Feb 1864 | | | | | | | | | | 9.85 ^h |
| Jul 1900 | | | | | | | | | | 8.96 |
| Mar 1908 | | | | | | | | | | 8.65 |
| Jan 1910 | | (-9.10 [*]) | | | | 6.93 | | 9.60 [*] | | 9.40 |
| Jul 1920 | | | | | | | | | | 7.93 |
| Jul 1921 | | | | | | | | | | 8.23 |
| Jul 1942 | 4.11 | | | | | 5.64 | 5.87 | | | 7.93 |
| Jul 1950 | 4.01 | | | | | 5.56 | 5.74 | | | 8.38 |
| Nov 1950 | 3.07 | | | | | 5.46 | 5.74 | | | 8.10 |
| Feb 1955 | 6.15 | | | 5.18 | 6.01 | 7.16 | 10.39 | 9.90 ^{*g} | ~6.40 | 9.60 |
| Oct 1955 | 4.42 | | | | 5.18 | 5.79 | 6.32 | | | 8.47 |
| Feb 1956 | 5.33 | | | 5.02 | 5.49 | 5.94 ^b | 7.39 | | | 8.84 |
| Jan 1962 | 8.10 | 8.20 | | 6.88 | 5.94 | 6.93 ^c | 6.68 | 8.99 | | 8.05 |
| Jan 1964 | 4.72 | | | 4.62 | 5.52 | 5.64 | 6.22 | 9.60 | 4.06 | 8.69 |
| Jan-Feb 1971 | 4.80 | | 6.74 | 3.96 | | 6.20 ^d | 7.22 | 9.45 | 6.78 | 8.98 |
| Jan 1974 | 3.95 | | 6.10 | 2.62 | 4.60 | 5.33 | 5.68 | 8.43 | 6.32 | 8.59 ⁱ |
| Jan 1976 | 4.93 | | 6.03 | 3.56 | 6.00 | 6.30 ^e | 7.30 | 8.97 | 6.36 | 8.78 ^j |
| May 1977 | | | | | 4.33 | 5.15 | 5.44 | | 5.85 | 8.00 |
| Jan 1984 | 5.31 | | 7.22 ^a | 5.46 | 6.11 | 6.60 ^f | 7.88 | 9.30 | 6.34 | 8.84 ^k |
| Jul 1984 | 3.70 | | | | 5.03 | 5.12 | 5.35 | | | 8.00 |
| Jul 1998 | 5.15 | | 6.13 | 3.71 | 5.92 | 5.92 | 6.97 | 7.78 | 7.20 | 8.84 |
| Sep 1998 | 4.62 | | | 3.55 | | 5.40 | | 9.11 | | 8.50 |
| Nov 2000 | 4.97 | | 6.69 | 3.86 | 6.17 | 6.26 | 7.44 | | 7.10 | 8.87 |
| Jan 2004 | 5.54 | | ~4.3 | 5.53 | 6.06 | 5.74 | 6.41 | | 3.31 | 7.10 |
| Nov 2008 | 6.86 [#] | 7.10 | 6.03 [#] | 5.80 | 6.08 [#] | 6.01 | 7.55 | | 3.67 | 7.82 |

Figure 1: Flood record at Manilla Bridge
 Source: Manilla FRM study, 2018



Nundle and Woolomin

- Prior to the construction of Chaffey Dam, Nundle and Woolomin experienced regular flooding. Significant flooding events took place in these areas in January 1910, February 1955, February 1971 and January 1976. In the January 1984 flood event Woolomin was inundated by Duncans Creek despite negligible Peel River flows below Chaffey Dam. (10)
- The flood event of November 2000 is regarded as a record flood at Nundle and Woolomin. As a result of heavy rainfall (115 mm between 8 pm and 6 am, 19 and 20 November) the upper Peel River floodwaters began to flow across the floodplain at Nundle backed up by another strong flow from Oakenville Creek causing major flooding.
- Prior to the flood on the 19 November 2000 Chaffey Dam was already over 100% of its Effective Full Storage Volume and eventually commenced spilling via the morning glory spillway at about midnight on the 20 November. The outflows coincided with high flows in Duncans Creek, which started to break out of its banks and flooded Woolomin.
- Almost all these floods occurred during the wettest months (November to February) when summer cyclonic weather systems typically move south from the tropics.

- Nundle is subject to significant flash flooding due to the rapid rate-of-rise, high velocity flows and very high debris loads which characterise the Peel River in the vicinity of the town. (10)

Barraba:

- The town of Barraba is located upstream of the junction of the Manilla River and Connors Creek (combined catchment area 568 km²).
- February 1955 flood and January 1964 flood are considered 2 of the major floods in this area. (11)
- More recent flood events took place in 1971, 1974, 1984, 1998, 2003 and in 2004. Of all the flood events, the January 1964 flood is considered the worst in 100 years.
- During the 1964 flood, over 175mm of rain caused rapid rise in the Namoi and Manilla Rivers inundating much of the low-lying parts of Manilla and forcing the evacuation of an estimated one third of the population.

1.11. EXTREME FLOODING

The flood prevention efforts in the LGA aim to reduce flooding, but they can't stop prevent floods like that which occurred in 1955 (peak height recorded at the Tamworth gauge: 7.16 m) at Tamworth and in 1962 at Bendemeer (peak height recorded at Bendemeer gauge: 8.2 m).

2. Effects on the community

2.1. LGA COMMUNITY PROFILE

Table 5: Housing and Population data
 Source: Australian Bureau of Statistics, 2021

| Census of Housing and Population | Tamworth Regional | Manilla | Bendemeer | Tamworth | Nundle | Barraba |
|--|-------------------|--------------|------------|---------------|------------|--------------|
| Total Persons | 63,070 | 2,014 | 486 | 35,415 | 314 | 1,035 |
| Aged 0-4 yrs | 3,829 | 107 | 20 | 2,222 | 13 | 36 |
| Aged 5-14 yrs | 8,877 | 242 | 54 | 4,835 | 35 | 92 |
| Aged 65 + yrs | 12,525 | 591 | 138 | 7,018 | 95 | 423 |
| Who do not speak English well | 518 | 4 | 0 | 472 | 0 | 0 |
| Have a need for assistance (profound/severe disability) | 4,204 | 223 | 33 | 2,624 | 15 | 148 |
| Living alone (Total) | 6,724 | 303 | 64 | 4,431 | 52 | 240 |
| Residing in caravans, cabins or houseboats or improvised dwellings | 146 | 32 | 0 | 161 | 13 | 0 |
| No Motor Vehicle | 1,395 | 56 | 3 | 1,151 | 7 | 47 |
| Rented via State or Housing Authority | 874 | 4 | 0 | 835 | 3 | 10 |
| Unoccupied Private Dwellings | 2,298 | 126 | 58 | 1,300 | 0 | 118 |
| Average persons per occupied dwelling | 2.4 | 2.2 | 2.3 | 2.3 | 1.9 | 1.8 |

2. Tamworth

3.1. TAMWORTH COMMUNITY OVERVIEW

- The city of Tamworth lies on the Peel River in the headwaters of the Namoi River basin. The Peel River has a catchment area of about 4,700 km², which includes the Cockburn River (1,130 km²) and Goonoo Goonoo Creek (664 km²) catchments. (2)
- According to the Australian Bureau of Statistics, 2021, the resident population of the Tamworth community is 35,415.
- Tamworth attracts thousands of tourists every year in January during the annual Country Music Festival. January is also one of the wettest months for Tamworth.
- Most of the CBD is protected by levees. However, the riverside sporting fields, west of the CBD experience regular inundation during large flood events.

3.2. Characteristics of flooding

- Tamworth experiences both riverine flooding and occasional flash flooding. Notably, two significant floods occurred in 1955 and 1962, with the Peel River reaching peak levels of 7.16 m and 6.86 m at the Tamworth gauge, respectively. A more recent flood event took place in November 2008, resulting in both riverine and flash flooding, with the water level reaching a peak of 6 m at the Tamworth gauge.
- When the catchment becomes saturated and the drainage system can no longer handle heavy rainfall, Tamworth may encounter minor to moderate flash flooding. Commercial properties in the southern end of Roderick Street and on Peel Street west of O'Connell Street, within the Tamworth CBD, are vulnerable to flash flooding during storms.

3.3. Flood Behaviour

200-year ARI event

- Minor overtopping of the Taminda Levee will occur at a 200-year ARI level in the vicinity of the roundabout at the intersection of Ebsworth Street and Plain Street.
- Existing development at Oxley Vale on the northern overbank of the Peel River is not impacted by flooding up to a 200-year ARI level. The sewage treatment ponds located on the southern overbank of the Peel River opposite Oxley Vale are also protected from flooding for events with ARI's up to 200 years.

100-year ARI event

- The width of flow in a 100-year ARI event reduces from approximately 1.5 km upstream of the Goonoo Goonoo Creek confluence to less than 500 m adjacent to the CBD Levee, leading to a deepening of the floodwater and an increase in flow velocities in the narrower section of the floodplain.
- Widths of flow increase to 1.5 km downstream of the Taminda Levee and reach about 2.2 km in width in the vicinity of the sewage treatment plant. (2)

- While overtopping of the Western Levee does not occur for events up to a 100-year ARI, the CBD Levee will be overtopped at its most downstream end at this level.
- Parts of the Paradise Tourist Park, which is located on the northern bank of the Peel River adjacent to the Paradise Weir stream gauge, are affected at the 100-year ARI level.
- Existing residential development located on the Goonoo Goonoo Creek floodplain generally lies outside the extent of a 100-year ARI flood, except for several properties which are located along Kurrawan Street north (downstream) of Calala Lane.
- Minor flooding also occurs at a 100-year ARI level around a homestead that is located immediately to the east of Barnes Gully on the southern (upstream) side of Calala Lane.
- Existing residential development located on the Timbumburi Creek floodplain generally lies above a 100-year ARI level, apart from several properties that are located on the left bank of the creek along Flinders Street north (downstream) of Gunnedah Road.
- Floodwater also surrounds several dwellings that are located on the Timbumburi Creek floodplain north (downstream) of Wallamore Road.

20-year ARI event

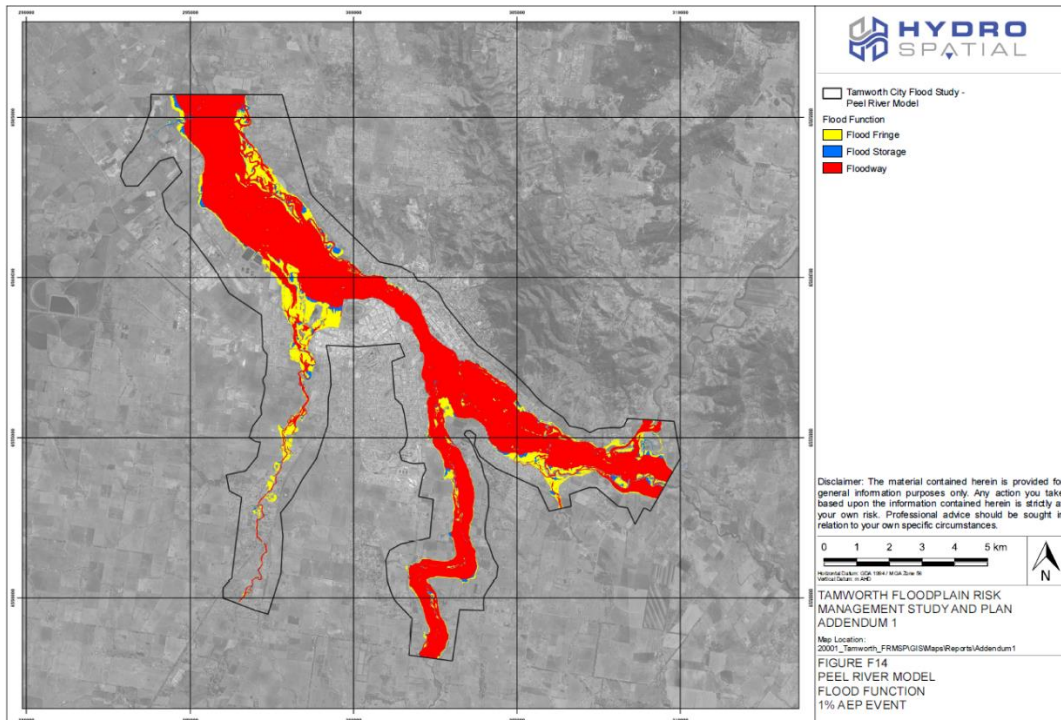
- Residential and commercial development located along the southern side of Ebsworth Street upstream of the main northern railway is impacted by flooding at the 20-year ARI level, with depths of inundation in several properties exceeding 1 m.
- Parts of the Austin Tourist Park, which is located on the northern bank of the Peel River near its confluence with the Cockburn River are also impacted by floodwater at the 20-year ARI level.

Hydraulic categories:

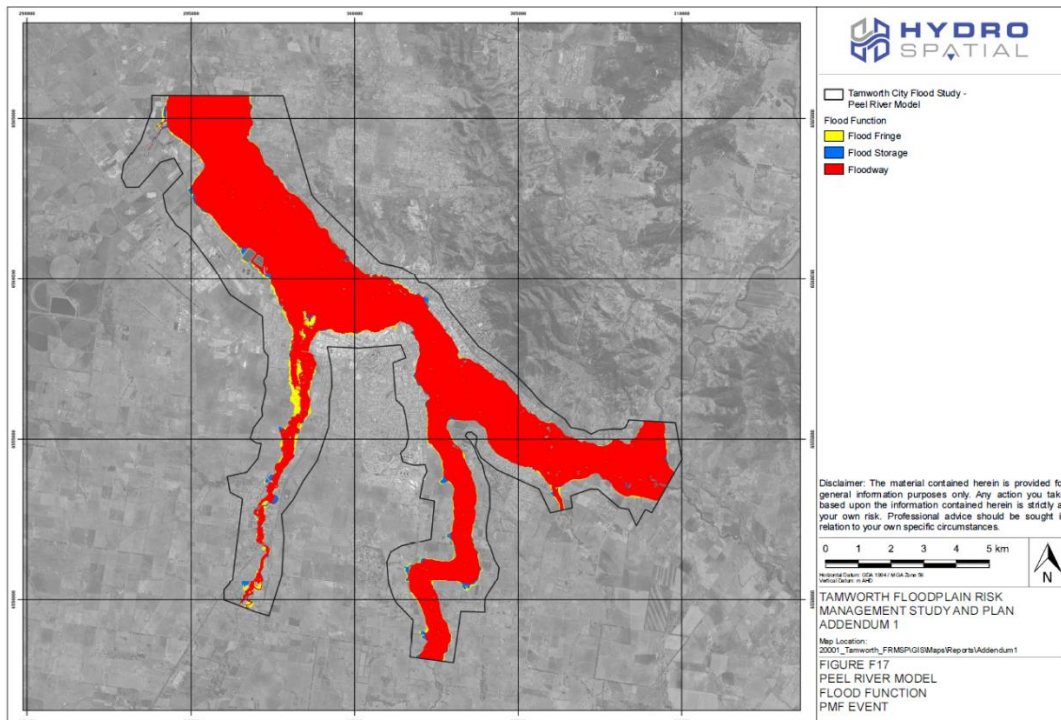
- Floodway is usually described as those areas where a significant portion of the flood flow is conveyed and where partial blockage will negatively affect flood behaviour to a substantial extent. (2)
- Flood storage is described as those areas where floodwaters temporarily get stored during the passage of a flood.
- Flood fringe is described as the remaining area affected by flooding, excluding the floodway and flood storage areas.

Due to the wide, flat nature of the floodplain around Tamworth, much of the area affected by mainstream flooding in a 100-year ARI event functions as a floodway. Flood fringe areas are therefore confined to the edges of flood affected areas. Flood storage areas are generally confined to detention basins, the ponding areas behind the city levees and farm dams. (2)

Map 1: Peel River model flood function 1% AEP event
 Source: Tamworth city wide FRM study, 2022



Map 2: Peel River model flood function PMF AEP event
 Source: Tamworth city wide FRM study, 2022



3.4. Classification of Floodplain

Map 3: Tamworth Sub sectors

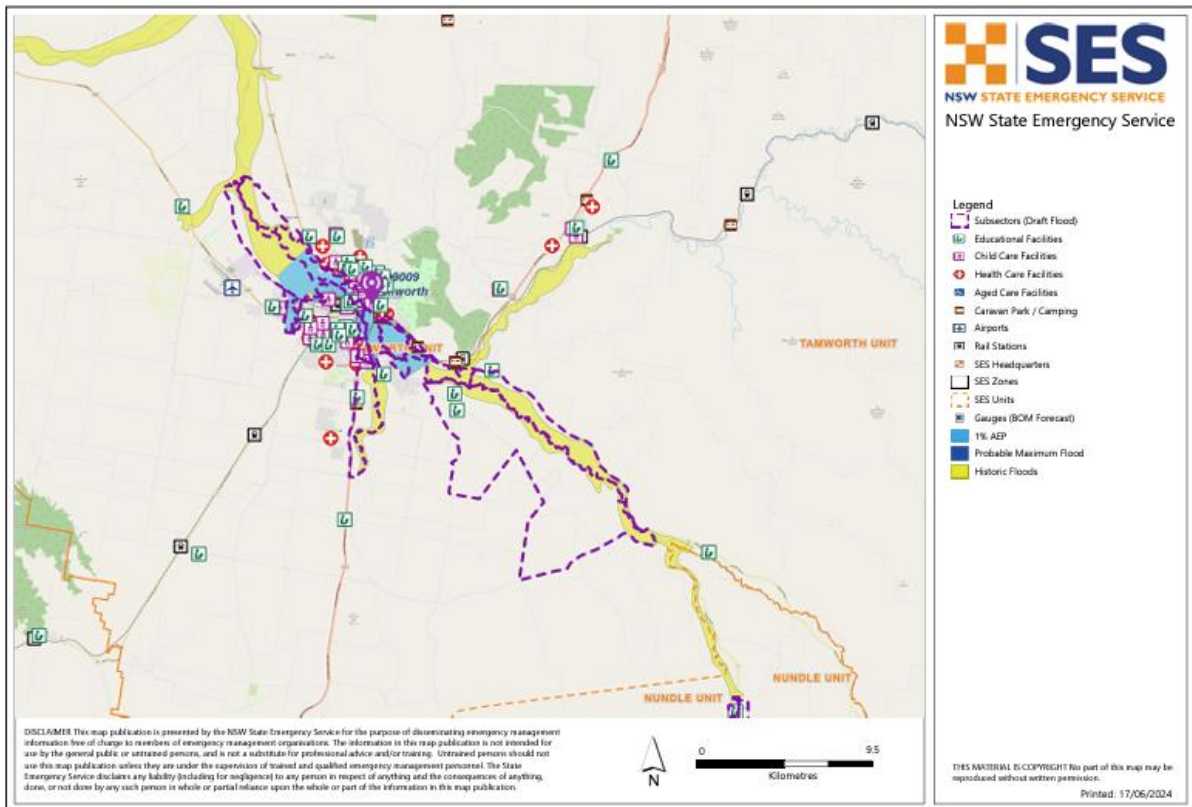


Table 6: Tamworth Floodplain classification Table

| Object ID | Polygon Name | Dwelling Estimate/People Live in there | Flood plain Type |
|-----------|-----------------------------|--|--------------------|
| 81164 | Tamworth Wallamore B | 28/77 | Rising Road Access |
| 84022 | Tamworth-Wallamore A | 3/9 | Low Flood Island |
| 83203 | Westdale-Timbumbury Creek A | 55/151 | Rising Road Access |
| 84021 | Westdale-Timbumbury Creek B | 6/16 | Rising Road Access |
| 83619 | Westdale-Timbumbury Creek C | 1/3 | Rising Road Access |
| 94 | Tamworth-Carter Street | 4/8 | Low Flood Island |
| 97132 | Tamworth-Gipps Street | 11/18 | Low Flood Island |
| 97133 | Tamworth-Ebsworth Street | 135/244 | Rising Road Access |
| 97134 | Tamworth-Western Levee | 147/249 | Rising Road Access |
| 97135 | Tamworth-Graham Street | 36/72 | Rising Road Access |
| 96 | King George Avenue | 24/46 | Low Flood Island |
| 80507 | Tamworth- Queen Street | 142/324 | Rising Road Access |
| 80725 | Tamworth -Scott Road | 4/10 | Low Flood Island |
| 81965 | Tamworth-Nundle Road | 46/126 | Rising Road Access |
| 95 | Tamworth- Cross Park Road | 12/27 | Low Flood Island |
| 53632 | Tamworth- Calala | 130/348 | High Flood Island |
| 80723 | Tamworth - Barnes Gully A | 53/105 | Rising Road Access |

3.5. Inundation

Table 7: Gauge height and consequences

| | | |
|--------------|-----------------|--------------|
| Minor | Moderate | Major |
|--------------|-----------------|--------------|

| Class | Height | Consequences |
|------------|-----------|---|
| MIN | 3.00 | <ul style="list-style-type: none"> Water breaks out of the Peel River and enters the Jewry Street Car parks. During the Country Music Festival this area could be used by unauthorised campers. |
| MOD | 4.20 | <ul style="list-style-type: none"> Water enters the riverside car park and sporting fields. The CBD levee flood gates must be closed by this height. Tamworth Regional Council requires at least two hours' notice before this height is reached. The flood gates are manually operated and locked. |
| MOD | 4.60 | <ul style="list-style-type: none"> O'Briens Lane and Carter Street closed. The only access from Nemingha to Calala is via Tamworth City. Water over the causeway closes Cross Park Road. Once this occurs, the evacuation route for residents in the Cross Park area is lost. |
| MOD | 5.00 | <ul style="list-style-type: none"> Shut the Taminda levee gates at Barnes Street. |
| MOD | 5.15 | <ul style="list-style-type: none"> Peak height. In the 1977 event, Goonoo Goonoo Creek was in flood and combined with the Peel River flood, localised flooding occurred in the CBD due to stormwater back up. In the 1998 event Scott Road (New England Hwy By-pass) and Calala Road were also closed. |
| MOD | 5.51-5.70 | <ul style="list-style-type: none"> King George V Avenue flooded. This is the evacuation route for about 12 rural residential houses. There is also a need to ensure that livestock and machinery has been moved to a safe locality before this height. |
| MAJ | 6.00 | <ul style="list-style-type: none"> Bridge Street affected by flooding at the corner of Ebsworth Street in the vicinity of Barnes Gully at the Ibis Styles Tamworth. The road should be closed but access may be permitted under Police escort. The establishment of a SES forward control post incorporating operational and rescue staff, a flood rescue boat and a rescue vehicle must be finalised before this occurs. Likewise, the Police and other emergency services have to deploy elements to both sides of the bridge. |
| MAJ | 6.01 | <ul style="list-style-type: none"> Peak height. Houses in King George V Avenue and lower portion (camping area) of Paradise Caravan Park flooded. |
| MAJ | 6.63 | <ul style="list-style-type: none"> The following roads were closed: Bridge Street (by Barnes Gully at Ibis Styles Tamworth), Calala Lane, parts of Kurrawan Street and Flinders Street. |

| | | |
|-----|------|---|
| MAJ | 6.84 | <ul style="list-style-type: none"> • 5% AEP flood level. |
| MAJ | 8.14 | <ul style="list-style-type: none"> • Estimated 1% AEP flood. Approx. 379.26m AHD. • A1% AEP flood event may result in the following impacts: • Minor overtopping of the Taminda Levee is possible in the vicinity of the roundabout at the intersection of Ebsworth Street and Plain Street. • Parts of the Paradise Tourist Park which is located on the northern bank of the Peel River adjacent to the Paradise Weir stream gauge may be affected. • Several properties located along Kurrawan Street north (downstream) of Calala Lane could be impacted. • Minor flooding may occur around the homestead that is located immediately to the east of Barnes Gully on the southern (upstream) side of Calala Lane. • Several properties that are located on the left bank of the Timbumburi Creek along Flinders Street north (downstream) of Gunnedah Road may be impacted. (Flood Study, 2019). |
| MAJ | 8.94 | <ul style="list-style-type: none"> • Estimated 0.5 % AEP Flood event (200-year ARI flood event), approx. 379.60 m AHD. |
| MAJ | 9.14 | <ul style="list-style-type: none"> • CBD levee crest height, 380.06 m AHD. Above this height, flood water will likely breach the top of the concrete wall levee at Bridge Street. |

3.6. Isolation

- Thibault Street, Wise Street, and Hilton Streets are affected separately by Goonoo Goonoo Creek. Residents along these roads and the places within the surrounding network are prone to isolation. Evacuation in these areas may be required.
- Some of the properties at the back of the Westdale Park close to Wallamore Road and Flinders Street are prone to isolation.

Table 8: Duration water level remained above critical RL 4m level, Historic flood events- 1933 to 2008.
 Source: East and North Tamworth Drainage Study, Vol 1, 2021

| Date of Historic Flood | Date/Time(24hr) Water Level First Rose Above RL 4 m | Maximum Water Level Recorded on Tamworth Gauge (m) | Date/Time(24hr) Water Level First Dropped Below RL 4 m | Duration Water Level Above RL 4 m (hours) |
|------------------------|---|--|--|---|
| January 1996 | 25/01/1996 1900 Hours | 4.6 | 26/01/1996 0515 Hours | 10.25 |
| February 1997 | 13/02/1997 1945 Hours | 5.2 | 14/02/1997 0145 Hours | 6 |
| June 1998 | 23/06/98 0330 Hours | 4.2 | 23/06/1998 0600 Hours | 2.5 |
| July 1998 | 21/07/1998 0315 Hours | 5.61 | 22/07/1998 1300 Hours | 33.75 |
| | 28/07/1998 0345 Hours | 5.99 | 29/07/1998 1230 Hours | 32.75 |
| August 1998 | 08/08/1998 0830 Hours | 5.28 | 09/08/1998 0330 Hours | 19 |
| September 1998 | 05/09/1998 1700 Hours | 5.28 | 06/09/1998 1500 Hours | 22 |
| November 2000 | 18/11/2000 2130 Hours | 5.43 | 19/11/2000 1645 Hours | 19.25 |
| | 20/11/2000 0600 Hours | 6.23 | 21/11/2000 1200 Hours | 30 |
| January 2004 | 17/01/04 0645 Hours | 5.74 | 17/01/2004 2345 Hours | 17 |
| November 2008 | 29/11/2008 0100 Hours | 6.0 | 29/11/2008 2300 Hours | 22 |

3.7. Flood Mitigation Systems

Table 9: Levees in Tamworth; summary of information
 Source: Tamworth City Levees Internal Drainage Study

| CBD Levee | |
|-----------------------------|---|
| Location | Located in the Namoi River Basin along the Peel River, starting from Bligh Street and ending at Murray Street in Tamworth. |
| Type of Levee (ring etc.) | Partial/Levee System |
| Owner | Tamworth Regional Council |
| Design Height and freeboard | 4.2 m in height. Sections of reinforced concrete wall were constructed along the top of the levee in 1996-97 at locations where the available footprint prevented the raising of the existing earth embankment. |
| Overtopping Height | 9 m |
| No. of properties protected | CBD and Inner West South. |

| | |
|--|--|
| Known low points | Across Brisbane Street and the pedestrian footbridge located opposite the southern end of Fitzroy Street. |
| Location and sequence of inundation | The CBD Levee possibly gets overtopped at its downstream end at events above the 100-year ARI. |
| Consequences of levee overtopping or failure | In a PMF flood event, several streets and properties behind the CBD levee could possibly be inundated as a result of overtopping. If that happens a significant portion of Peel Street and the adjacent area will possibly be inundated including a portion of Bligh St, O'Connell St, Macquarie St, Dowe St, Brisbane St, Fitzroy St, White St, Hill St, Roderick St and Murray St. |
| Deficiencies | Unknown |

The Western Levee

| | |
|--|--|
| Location | Located in the Peel River portion on the eastern side of Goonoo Goonoo Road and Mathews Street. |
| Type of Levee (ring etc.) | Partial/ Levee System. |
| Owner | Tamworth Regional Council |
| Design Height and freeboard | The levee is an earth embankment type of construction and is up to 5.6 m in height |
| Overtopping Height | Unknown |
| No. of properties protected | The Western Levee could possibly be overtopped in an 1% AEP flood event. Up to the 1% AEP the levee remains as a protective barrier for a sizeable portion of Goonoo Goonoo Rd and the properties behind it. |
| Known low points | Unknown |
| Location and sequence of inundation | Unknown. |
| Consequences of levee overtopping or failure | Gonoo Goonoo Road and a significant portion of other streets (Alice Street, Degance Street, and Larool Street) become flooded during a PMF. |
| Deficiencies | Unknown |

Taminda Levee

| | |
|-----------------------------|---|
| Location | The levee runs from the Main Northern Railway Line Tamworth to Jewry Street Taminda. |
| Type of Levee (ring etc.) | Partial/levee system |
| Owner | Tamworth Regional Council |
| Design Height and freeboard | The Taminda levee comprises two relatively short sections of reinforced concrete block wall which are located along the northern side of Ebsworth Street between Barnes Street and Plain Street. An earth |

| | |
|--|--|
| | embankment also runs from Plain Street around the northern and western sides of the Tamworth Racecourse before joining high ground at Jewry Street. |
| Overtopping Height | 9 m |
| No. of properties protected | Unknown. |
| Known low points | Unknown |
| Location and sequence of inundation | Minor overtopping of the Taminda Levee will occur at the 100-year ARI level in the vicinity of the roundabout at the intersection of Ebsworth Street and Plain Street. |
| Consequences of levee overtopping or failure | In a 1% AEP flood event a substantial portion of Jewry St and Ebsworth St are flooded. Additionally, a sizable portion of Lockheed St, Anson St., Avro St., Plain St., Belmore St., Denison St., Crown St, may be inundated. In a PMF level flood event, Bunnings Warehouse, Tamworth City Rural Fire Brigade may also be flooded. |
| Deficiencies | Unknown. |

3.8. Consequences of dam failure

Dungowan Dam

A dam break assessment was completed by Hunter H2O in November 2013. The valley downstream of the dam contains many rural dwellings within the floodplain which will be impacted by a failure of the dam. The valley below the dam features restricted access which is very difficult to manage even during minor flood conditions. Due to the very short warning times and the difficult egress from the valley, special consideration should be given to the early evacuation of residents. A summary of the key dam break assessment results is shown in the below Table.

Table 10: Key Dungowan Dam break assessment results.
Source: Dungowan Dam safety emergency plan 2021

| Dambreak Scenario | Inundated Dwellings | Potential Loss of Life (PLL) | Incremental PLL |
|-------------------------------------|---------------------|------------------------------|-----------------|
| Sunny Day Failure | 20 | 7.0 | 7.0 |
| Dam Crest Flood – No Failure | 30 | 0.1 | - |
| Dam Crest Flood - Dambreak | 35 | 3.0 | 2.9 |
| Probable Maximum Flood – No Failure | 33 | 0.1 | - |
| Probable Maximum Flood - Dambreak | 40 | 8.0 | 7.9 |

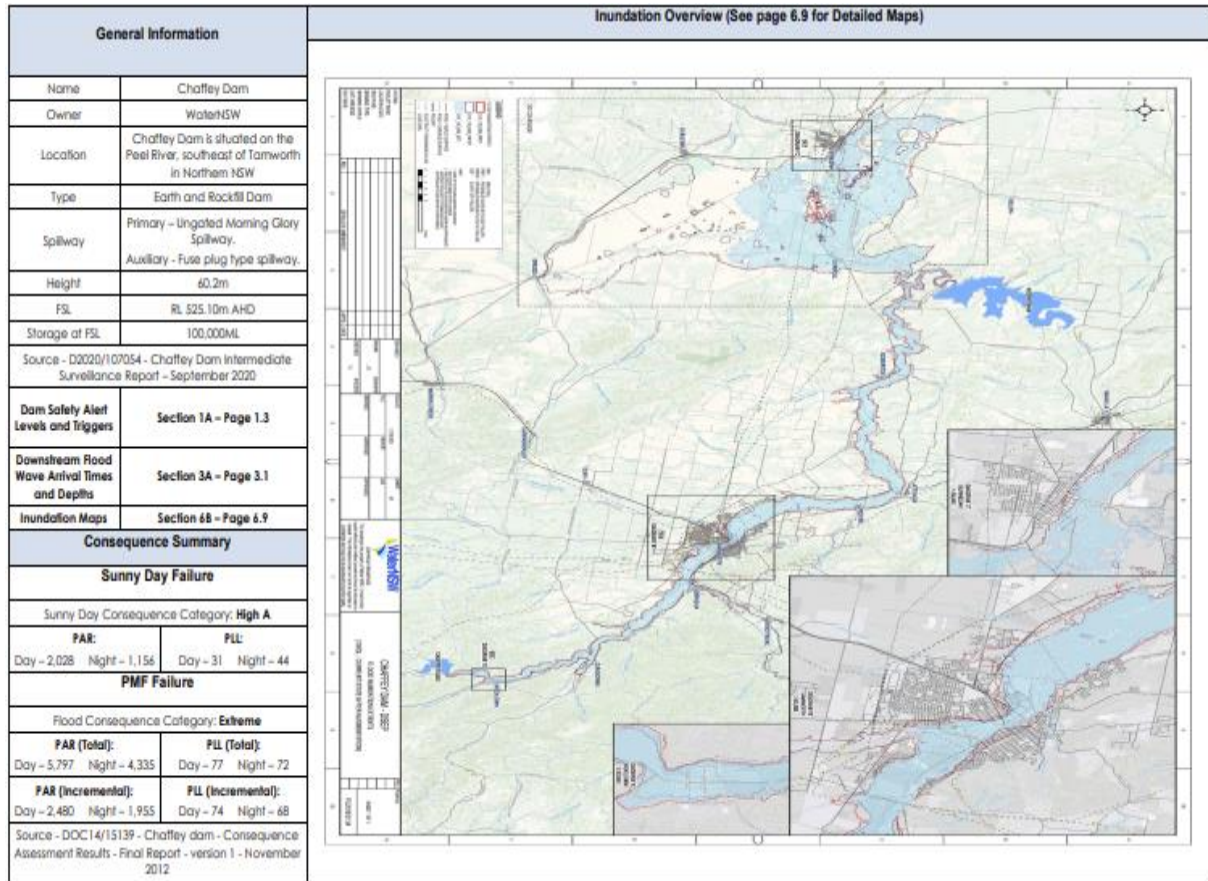
Note: *Dungowan Dam safety emergency plan 2021* can be accessed in [here](#)

Chaffey Dam

Situated on the Peel River 43 km south east of Tamworth and 5 km above the village of Woolomin. Normal access is via Nundle-Tamworth Road. The dam lies within the Tamworth Regional LGA and Namoi River valley. Communities in danger of inundation

are- Woolomin, Dungawan, Nemingha, Tamworth, Attunga, Somerton, Carroll, Gunnedah.

Figure 2: Inundation Overview
 Source: Chaffey Dam Emergency Plan 2022



For a sharper image please find page 1.4 and 6.11 of the Chaffey Dam Emergency Plan. The plan can be accessed [here](#).

Moore Creek Dam

The outflow of the dam flows into Moore Creek initially westwards through an undeveloped gorge, before flowing southwards and entering a plain where farmhouses and other infrastructure is present.

The only roads likely to be affected are Upper Moore Creek Road and Moonbi Gap Road. Homes close to these roads within the flood plain may also be affected. The Lynchwood Scout Hall and Camp at the upper end of Upper Moore Creek Road would also potentially be affected. Table 11, overleaf, describes the incident level and potential impacts.

Table 11: Dam Failure impacts
Source: Moore Creek Dam Emergency Plan 2023

| Incident | Potential Impacts |
|---|---|
| Sunny Day Dam failure | No properties are placed at risk, however swimmers using the river and river banks adjacent to the Lynchwood Scout Hall and Camp may be placed at risk. |
| Dam Failure (coinciding with Dam Crest – 1:250 AEP flood) | <ul style="list-style-type: none"> Lynchwood Scout Hall and Camp will be inundated Limited sections of Moore Ck Road and Moonbi Gap Road Bridge across Moore Creek servicing Moonbi Gap Road No dwelling that have not been affected by natural flooding will be affected by the dambreak flood |
| Dam Failure (coinciding with PMF) | <ul style="list-style-type: none"> Lynchwood Scout Hall and Camp will be inundated Limited sections of Moore Ck Road and Moonbi Gap Road Bridge across Moore Creek servicing Moonbi Gap Road A number of dwellings will be affected by the PMF flood without a dambreak event. One or two of these dwellings will be marginally more affected by the dambreak flood |

More information could be found in the dam emergency plan in [here](#).

Split Rock Dam

Situated on the Manilla River, approximately 30 km upstream (north) of Manilla, the dam lies within the Tamworth Regional LGA and Namoi River Basin. Manilla township and residents throughout the Manilla River Valley are the communities downstream of the dam. It should be noted that dam break resulting from extreme rainfall would be preceded by flooding many times more destructive than from a flood equivalent to the flood of record. The following table summarises the key characteristics of the PMF flood wave as it moves downstream for both non-failure and failure scenarios.

Table 12: Approximate Flood Wave Depths and Arrival Times from Split Rock Dam in a “PMF Flood” Failure condition.

Source: Split Rock Dam Emergency Plan, 2022

| LOCATION | Max height (m) | Max Level (m AHD) | Discharge (m ³ /sec) | Time to Peak (hours) |
|------------|----------------|-------------------|---------------------------------|----------------------|
| D/S of Dam | 42.1 | 437.63 | 111,711 | 29h |
| Manilla | 27 | 365.98 | 84,201 | 31h |

Flood wave arrival and peak times have been calculated for locations downstream of Split Rock Dam for both Sunny Day Failure and PMF Flood Failure events. Approximate Flood Wave Travel Times from Split Rock Dam to Manilla in a “Sunny Day” would be 2

hours and 15 minutes at the start of the dam break. It roughly takes 4 hours and 50 minutes when reach its peak.

Table 13: Flood Wave Travel Times from Split Rock Dam in a “Sunny Day” failure condition.
 Source: Split Rock Dam Emergency Plan, 2022

| Location | Start of Dam-break Flood Wave (hours) | Peak of Dam-break Flood Wave (hours) |
|----------|---------------------------------------|--------------------------------------|
| Manilla | 2h15min | 4h50min |

For further details the Split Rock Dam Emergency Plan, 2022 could be found in [here](#).

3.9. Properties at Risk

Table 14: Properties at Risk

| Polygon | Property |
|-------------------------|--|
| Tamworth -Calala | Farrer Memorial Agricultural High School |
| | Tamworth Centre For Crop Improvement |
| Tamworth-Nundle Road | Nemingha Public School |
| Tamworth - Barnes Gully | Good start Early Learning Calala |
| Tamworth- Queen Street | Caravan Park |

3.10. Other Considerations

Country Music Festival

- The Tamworth Country Mustic Festival is held every January, for a period of 10 days. During the festival period up to 60,000 people may visit Tamworth and the surrounding region.
- During the festival visitors to the city have the option of camping (tents and caravans) on fields and park land located within the Riverside and Gipps Street sporting fields adjacent to the Peel River, west of the CBD.
- January in Tamworth is typically characterised by hot weather with frequent storms and occasionally prolonged rain events. If the Peel River flow at the Tamworth Gauge reaches 3 m as the result of a storm or prolonged precipitation in the catchment area, minor inundation may occur in the riverside precinct parking lots.
- If the Peel River reaches 4 m at the Tamworth gauge, the parking lot and sports fields adjacent to the river begin to flood. Tents and caravans utilised by festival attendees must now be relocated to secure locations.

4. Manilla

4.1. COMMUNITY OVERVIEW

Manilla is a small town, located on the Fossickers Way 45 km northwest of Tamworth and 27 km northeast of the historic village of Somerton.

- Manilla was established in the 1850s at the junction of the Namoi River and the Manilla River.
- According to the Australian Bureau of Statistics 2021 Census, 2386 individuals reside in the suburbs and localities of Manilla. There are 570 individuals under the age of 19 and 677 individuals older than 65. (12)
- The ancestry profile of the Manilla community consists of 46.4% Australian, English 41.4%, Australian Aboriginal 14.3%, Scottish 9.8% and Irish 8.8%.
- Since 1941, this region has experienced more than 16 "minor" floods, 3 "moderate" floods, and 2 "major" floods. On 25 February 1955 and 14 January 1964, significant major floods occurred.

4.2. Characteristics of Flooding

- Manilla is prone to riverine flooding. According to an analysis of historical flood data, most of the significant floods were caused by heavy rainfall in the Manilla, Namoi, and Macdonald River basins and their tributaries. However, overland flooding is not uncommon in the region. Manilla may experience overland flooding as the result of significant local precipitation.

4.3. Flood Behaviour

- Most of the floodplain affected by mainstream flooding, functions as a floodway. In a 20% AEP event, flow is mostly contained to the river channels. Some spillages onto the floodplain could be expected around Lloyd Street in North Manilla. (4)
- In a 1% AEP event, flooding would be expected in North Manilla. Widespread flooding would also be expected at Lloyd, Charles and Manilla Streets. South and east of the confluence, areas of River Street would be inundated as would the Dewhurst and Rowan Street areas of town. Flood depths vary, from shallow depths along the edge of the floodplain to depths of more than 5 to 10 m closer to the creek channel. West of the Namoi and Manilla Rivers, small areas of the floodplain would be inundated. (5)
- In larger events, several areas exist where flood runners could develop in the floodplain. This is particularly evident on the southern flood plain on the Namoi River and along River Street near the oval.
- In a PMF event, widespread flooding would be expected. Flood depths would be more than 10 m, immediately adjacent to the creeks.

Map 4: Manilla flood map 1% AEP flood event
Source: Manilla Flood Study 2012



4.4. Classification of Floodplain

Large areas of the floodplain can be designated as high hazard, on account of deep flow and/or rapid flow velocities. This includes areas of town along River Street and areas of North Manilla.

Map: 5: Manilla Subsector Mapping

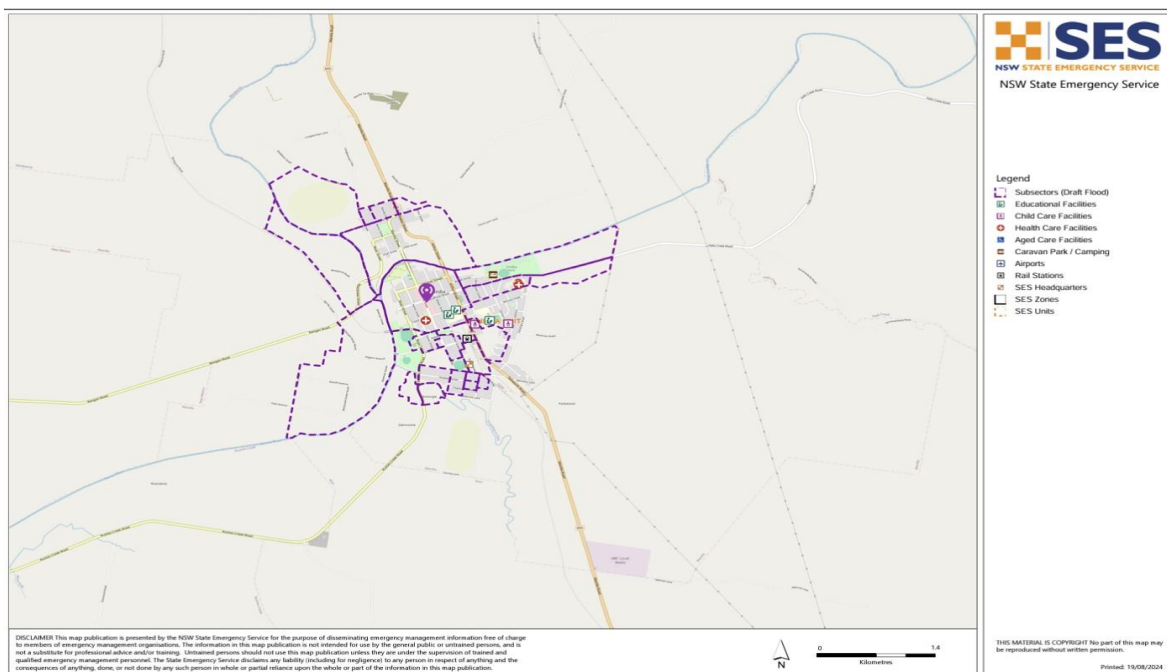


Table 15: Manilla Floodplain classification Table

| Object ID | Polygon Name | Dwelling Estimate/Population Est. | Flood plain Type |
|-----------|-----------------------------|-----------------------------------|--------------------|
| 97913 | Manilla-Middleton Road | 2/4 | Low Flood Island |
| 93240 | Manilla Wimborne Road | 17/37 | Low Flood Island |
| 93645 | Manilla - Manilla Street | 34/68 | Rising Road Access |
| 97479 | Manilla-River Street- North | 8/17 | Low Flood Island |
| 96695 | Manilla-Progress Lane-North | 23/43 | Rising Road Access |
| 97103 | Manilla-Barraba Street | 2/4 | Rising Road Access |
| 93239 | Manilla South Park Avenue | 17/37 | Rising Road Access |
| 93243 | Manilla-Market Street | 352/700 | Rising Road Access |
| 95186 | Manilla-Arthur Street | 64/129 | Rising Road Access |
| 95183 | Manilla-Namoi Street | 20/33 | Rising Road Access |
| 95184 | Manilla Alexander Lane | 43/82 | High Flood Island |
| 95185 | Manilla-Station Street | 11/21 | Rising Road Access |
| 93242 | Manilla Stoddart Street | 50/94 | Low Flood Island |
| 97486 | Manilla-Champion Street A | 39/69 | Rising Road Access |
| 97487 | Manilla-South Street | 14/27 | Low Flood Island |
| 96696 | Manilla-Chapman Street B | 13/23 | Rising Road Access |
| 97488 | Manilla-Flourmill Road | 9/17 | Rising Road Access |
| 94725 | Manilla-Rushes Creek Road B | 2/4 | Rising Road Access |
| 95182 | Manilla-Rushes Creek Road A | 4/10 | Rising Road Access |
| 97480 | Manilla-Chaffey Park | 28/57 | Low Flood Island |
| 97482 | Manilla-Halls Creek Road | 6/13 | Low Flood Island |
| 97481 | Manilla-Kennedy Street | 61/125 | Rising Road Access |

4.5. Inundation

The major overland flooding areas are: (5)

- Residential properties at risk of flooding at South Street.
- Church Street gets flooded mostly along the northern edge of the railway embankment and overflows. Only a few properties in this area are mildly inundated by the flood fringe.
- Overflow from east of Arthur Street towards South Street, are inundated in events larger than the 5% AEP.

Table 16, overleaf, shows the inundation during riverine flooding. (13)

Table 16: Inundation as per gauge height
 Source: Flood Intelligence Card Manilla 419022

| | | Minor | Moderate | Major |
|-------|---------------------------------|--|----------|-------|
| Class | Height (m) Manilla 419022 | Consequences | | |
| MIN | 6.10 | <ul style="list-style-type: none"> Water begins to affect low lying houses on the north and west side of the river. | | |
| MAJ | 11-12 | <ul style="list-style-type: none"> Water enters low lying houses and the main street of town. Other streets that may be affected are: River, Namoi, Manilla and Dewhurst Streets. | | |
| MAJ | 12-13 | <ul style="list-style-type: none"> A total of 42 homes would need evacuation. Evacuation routes are via Manilla and Strafford Streets. At 12.9 m, water may enter the Showground, low ground at North Manilla, houses at the bottom of Bowman St, River, Dewhurst, Namoi, Manilla, Market and Lloyd Streets. All roads closed to the north remain open to the east, west and south. Access to and from West Manilla remains open via Manilla railway bridge. | | |
| MAJ | 13-14 | <ul style="list-style-type: none"> Water covers approximately 300 m of the main street. At the Manilla Bridge it is up to 2 m deep. Manilla to Barraba Road closed at Main Bridge. No detours available. All roads to the north close. Roads may still be open to the east, west and south, except for the Manilla-Keepit Dam Road. Pedestrian access to and from West Manilla remains open via the Manilla railway bridge which is no longer operational. <p>Water may affect:</p> <ol style="list-style-type: none"> River Street; The Showground; Houses at the bottom of Bowman Street; Dewhurst Street; Namoi Street; Manilla Street; Market Street, and Lloyd Street. <ul style="list-style-type: none"> 36 houses from East Manilla would need to be evacuated. | | |

4.6. Isolation

Floodwaters tend to rise quickly and isolate communities and properties for several days. Many houses can be inundated in flood events necessitating evacuations. As per the Flood Information Card (FIC), at the height of 12-13 m in Manilla gauge, a total of 42 homes would

require evacuation. Evacuation routes are via Manilla and Strafford Streets. At the height of 13-14 m, 36 houses from East Manilla would need to be evacuated.

4.7. At Risk Facilities

Major Overland Flooding (MOF) would be expected to occur when local rainfall events result in flooding within Manilla township, potentially at times when the Manilla River is not in flood, or before flood peaks in the Manilla River arrive. These events are likely to be characterised as ‘flash flooding’ in nature and have a shorter duration than riverine floods.

Table 17: At risk properties in Manilla

Source: Manilla FRM study, 2018

| Flood Event (AEP) | Number of residential properties | Number of commercial properties | Number of residential properties | Number of commercial properties |
|-------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|
| | Mainstream Flooding | | MOF Flooding | |
| 20% | 0 | 0 | 43 | 8 |
| 10% | 0 | 0 | 50 | 9 |
| 5% | 0 | 0 | 54 | 10 |
| 2% | 3 | 0 | 61 | 12 |
| 1% | 33 | 4 | 64 | 13 |
| PMF | 567 | 91 | 173 | 22 |

Table 18: At risk facilities in Manilla (by Sub Sector)

Source: SES GEMS Mapping

| Object ID | Polygon Name | Key Facilities |
|-----------|------------------------|--|
| 93243 | Manilla-Market Street | St Michael's Catholic Primary School Manilla Multi-Purpose Service Manilla Central Primary School Catholic Church Anglican Church Manilla Fire Station Manilla Post Office |
| 95186 | Manilla-Arthur Street | Multitask Long Day Care |
| 97481 | Manilla-Kennedy Street | Multi-Purpose Service Community Health Centre |
| 97480 | Manilla-Chaffey Park | Manilla River Gums Caravan Park |
| 95185 | Manilla Station Street | Manilla SES Unit |

5. Barraba

5.1. Community Overview

- The township of Barraba is located on the southern bank of the Manilla River. The river drains to Split Rock Dam, approximately 100 km north-west of Tamworth. The catchment area of Split Rock Dam is approximately 771 km². The catchment area is primarily rural, with several small towns located within the catchment. (11)
- The Manilla River generally has a deep, well-defined channel with a wide floodplain particularly towards Barraba.
- According to the Australian Bureau of Statistics 2021 Census, there are 1,562 people living in Barraba and surrounds. Of this population, 120 people are between the ages of 0 to 14 and 547 people are 65 or older.
- As per the 2021 census, the most common ancestral backgrounds among the communities in this region were Australian, English, Australian Aboriginal, Scottish, and Irish.

5.2. Characteristics of Flooding

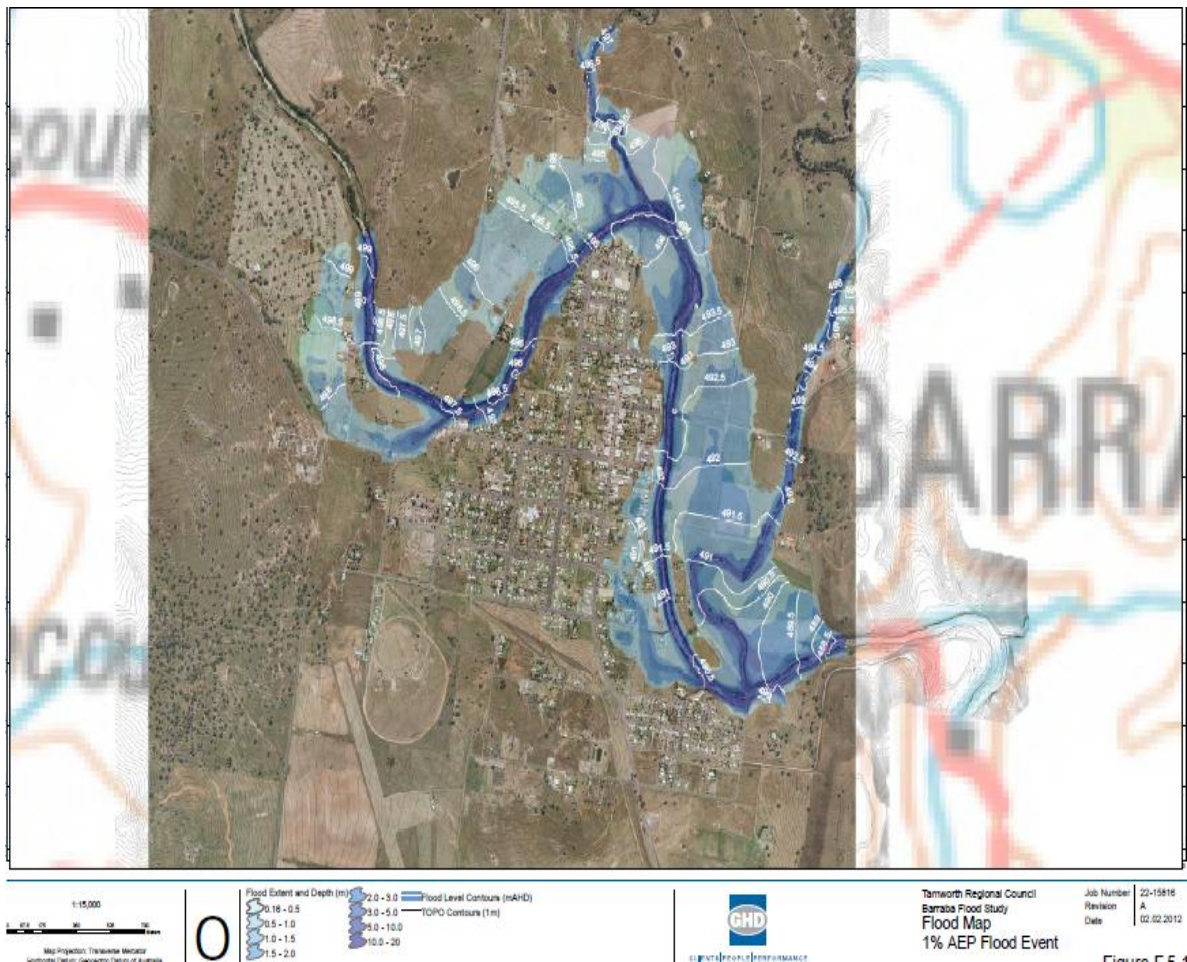
- Barraba is prone to riverine flooding. Available rainfall and river gauging data shows that major floods were associated with heavy rain fall on the Manilla, Namoi, and Macdonald River basins and their tributaries.

5.3. Flood Behaviour

- In a 20% AEP event, flow is mostly contained to the river channels. Some spillages onto the floodplain could be expected in Lillies and Star Lanes floodplain areas. (11)
- In events up to the 5% AEP event floor levels of properties are not expected to be inundated across the floodplain.
- In a 1% AEP event, significant flooding would be expected in the floodplains north and east of Barraba, the Cherry Street area and Bridge Street near the Barraba Bridge. Widespread flooding would be expected in the floodplain areas of Lillies and Star Lanes.
- In a PMF event, the Orchard, Alice Street and Cherry Street areas go under water.
- Flood depths vary, from shallow depths along the edge of the floodplain to depths more than 5 to 10 m near the creek (Barraba, Mille and Connors Creek) channels. Flow velocities associated with the river channel and immediately adjacent floodplain, are high, around 2 m/s (meter/second) and greater.
- There are several areas in the northern and southern floodplains, where flow velocities are in the order of 1 m/s to 2 m/s. Further away from the main channels, the flow velocities are much lower at around 0.5 to 1 m/s. (11)

- Most of the floodplain areas have been designated as high hazard areas. This designation encompasses various parts of the town, especially those along Cherry Street and within the northern and eastern floodplains.
- In a larger flood event such as 1% AEP or a PMF (Probable Maximum Flood), the town and adjacent areas to the creek will experience extensive flooding. Flood depths would be more than 10 m, immediately adjacent to the creeks and for extensive areas of the floodplain.
- In a PMF event, it appears that a floodplain breach could occur in the vicinity of Orchard and Alice Streets, with overflow moving toward Cherry Street.

Map 6: Barraba flood map-1 % AEP flood event
Source: Barraba Flood Study, 2012



Map 7: Barraba flood map-PMF flood event
Source: Barraba Flood Study, 2012

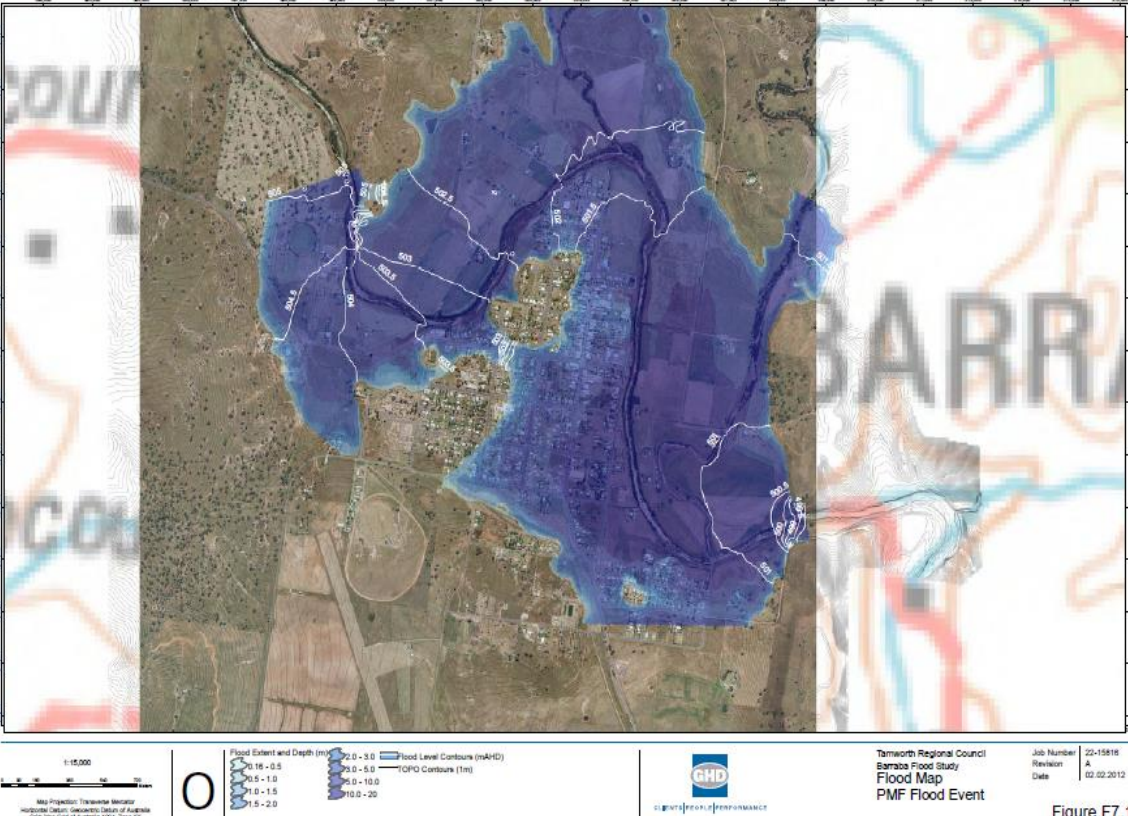


Figure F7.1

5.4. Classification of Floodplain

Map 8: Barraba Sub Sectors mapping

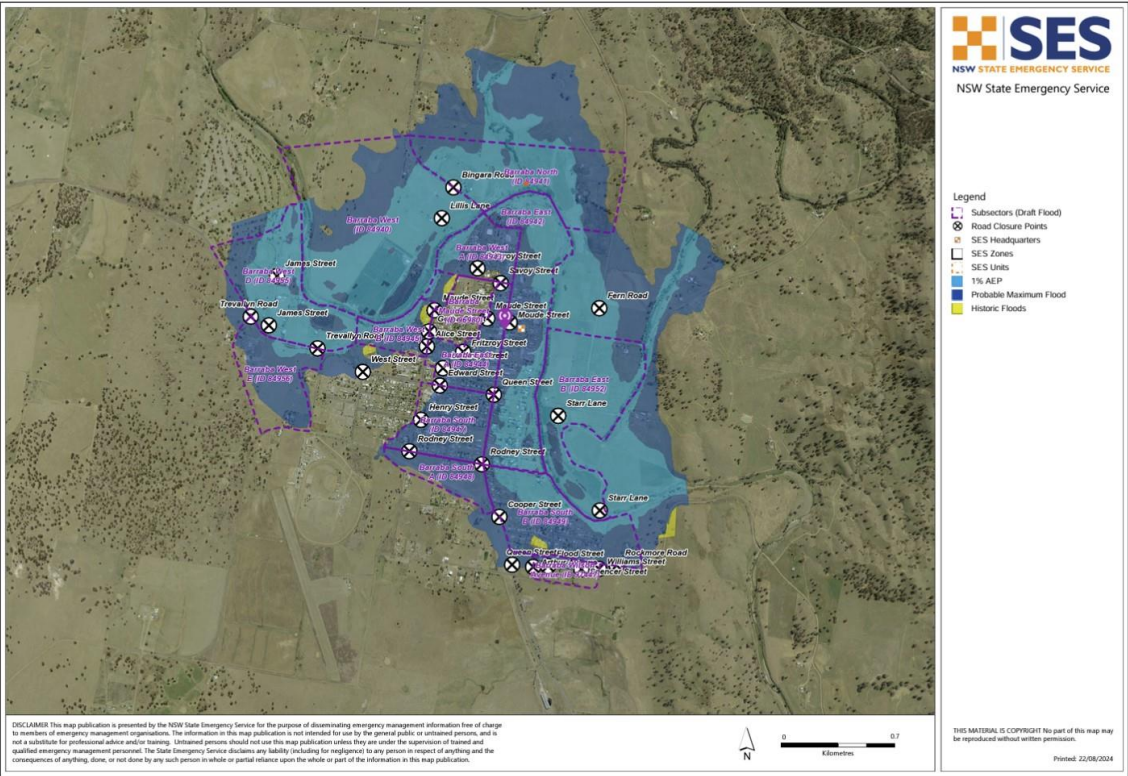


Table 19: Classification of Flood Plain Table

| Object ID | Polygon Name | Dwelling Estimate/Population estimate | Flood plain Type |
|-----------|---------------------------|---------------------------------------|--------------------|
| 84940 | Barraba- Lillis Lane | 9/17 | Low Flood Island |
| 84955 | Barraba James Street | 12/23 | Low Flood Island |
| 84956 | Barraba Bullied Street | 3/6 | Rising Road Access |
| 84945 | Barraba Alice Street | 32/55 | Rising Road Access |
| 84943 | Barraba- Linden Street | 41/63 | Rising Road Access |
| 84941 | Barraba Recreation Ground | 1 | Low Flood Island |
| 96980 | Barraba Maude Street | 46/66 | High Flood Island |
| 84942 | Barraba-Queen Street | 128/186 | Low Flood Island |
| 84952 | Barraba Starr Road | 6/11 | Low Flood Island |
| 84944 | Barraba Edward Street | 100/164 | Rising Road Access |
| 84947 | Barraba Fitzroy Street | 117/172 | Rising Road Access |
| 84948 | Barraba Rodney Street | 10/13 | Rising Road Access |
| 84949 | Barraba South B | 119/179 | Low Flood Island |
| 97447 | Barraba-Wilson Avenue | | Rising Road Access |

5.5. At Risk Facilities

Table 20: Barraba- at risk facilities (by Sub Sector)

| Object ID | Polygon Name | Property |
|-----------|------------------------|---|
| 84943 | Barraba- Linden Street | Caravan Park |
| | | Barraba Community Centre |
| 84942 | Barraba-Queen Street | Barraba Rural Fire Brigade |
| | | Barraba SES |
| | | Barraba Library |
| | | Barraba Police Station |
| | | Barraba Pre School |
| | | Barraba Caravan Park |
| 84947 | Barraba Fitzroy Street | Richardson House (Health Care Facility) |
| | | Barraba Multi-Purpose Service ((Health Care Facility) |
| | | Barraba Pre-school |

6. Bendemeer

6.1. Community Overview

- Bendemeer is located beside the Macdonald River approximately 42 km north-east of Tamworth, off the New England Highway. (9)
- The catchment has an area of about 1140 km². The shape of the catchment is narrow, from the upper reaches in the hills southeast of Woolbrook, through to Bendemeer, and downstream through the rural locality of Retreat to the confluence with the Namoi River at Warrabah National Park, located northeast of Manilla.
- According to the Australian Bureau of Statistics 2021, there are 486 people residing in Bendemeer. Out of this population, 141 individuals are aged between 0 and 19, and 140 people are 65 years old or older. (12)
- According to the 2021 census, there were 204 people with Australian ancestry, 210 with English ancestry, 48 with Australian Aboriginal ancestry, 56 with Scottish ancestry and 46 with Irish ancestry.

6.2. Characteristics of Flooding

Bendemeer is susceptible to sporadic riverine inundation. Based on the available rainfall and river gauging data, a design peak flow analysis indicates that the town would usually be inundated by a flood event with an AEP between 5% and 1%.

6.3. Flood Behaviour

- Much of the Bendemeer floodplain to the east of Caroline Street is designated as floodway. In addition, Caroline Street itself becomes a floodway between the 5% and 1% AEP events. (9)
- The residential areas west of Caroline Street are designated as flood storage and flood fringe areas.
- In a 5% AEP event, Caroline Street and many portions of town are unsafe for vehicles, children and the elderly. In such a scenario, old buildings would be susceptible to structural damage.

6.4. Classification of Floodplain

Map 9: Bendemeer Subsectors

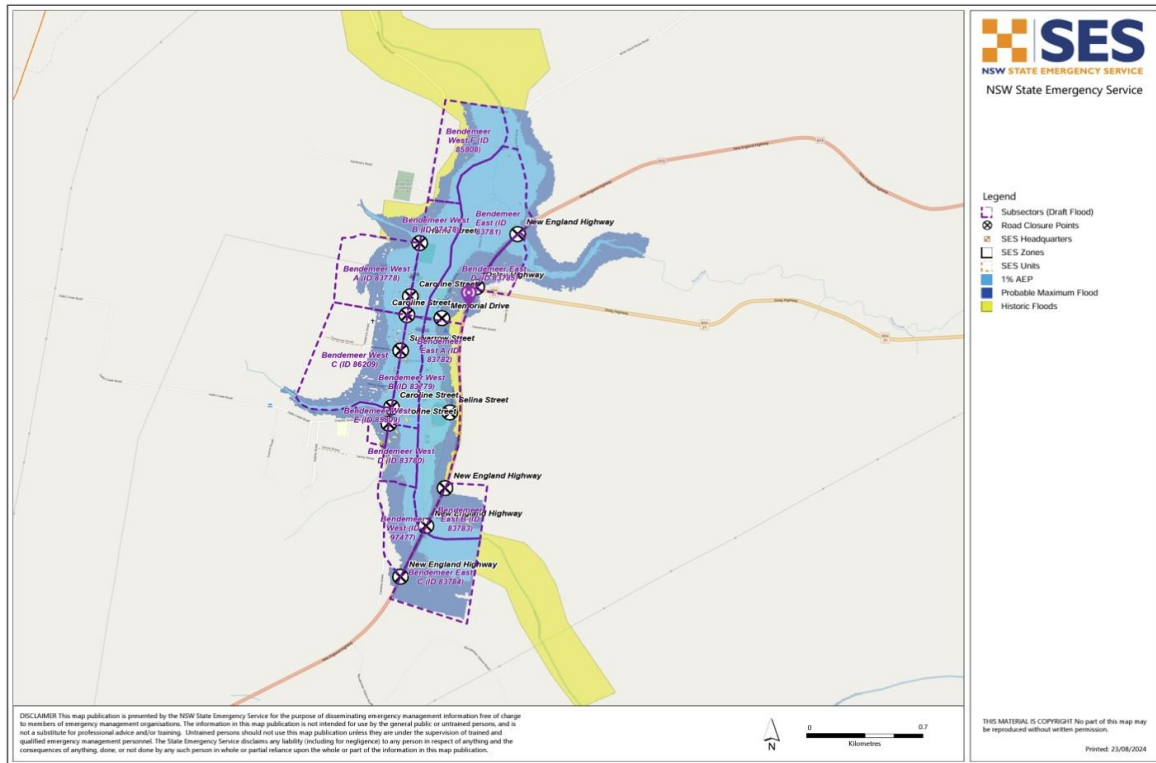


Table 21: Bendemeer Flood Plain Classification

| Object ID | Polygon Name | Dwelling Estimate/People Est | Flood plain Type |
|-----------|---------------------------|------------------------------|------------------------|
| 85808 | Bendemeer Meriono Street | 10/18 | Over Land Escape Route |
| 83778 | Bendemeer Aurora Street | 21/40 | Overland Escape Route |
| 83779 | Bendemeer Sports ground | 17/25 | Low Flood Island |
| 86209 | Bendemeer Fredrick St. | 38/71 | Overland Escape Route |
| 85809 | Bendemeer Charles Street | 8/15 | Rising Road Access |
| 83780 | Bendemeer West D | 7/13 | Overland Escape Route |
| 83779 | Bendemeer Caroline Street | | Low Flood Island |
| 83781 | Bendemeer Memorial Drive | 11/20 | Low Flood Island |
| 83784 | Bendemeer East C | 1/2 | Low Flood Island |
| 83783 | Bendemeer East B | 1/2 | Low Flood Island |
| 83782 | Bendemeer Tourist Park | 1/2 | Low Flood Island |
| 83785 | Bendemeer Oxley Highway | 1/2 | Rising Road Access |
| 97477 | Bendemeer West | 11/16 | Over Land Escape Route |

6.5. Inundation

- **Bridge flooding:** The Bendemeer low-level bridge becomes flooded regularly up to and including a 20% AEP event. In a 20% AEP event, the water rises 2 m over the low-level bridge, which is situated at a height of 810.2 m AHD (Australian Height Datum). Meanwhile, the high-level bridge's deck is positioned at 814.2 m AHD and would become submerged in an event roughly equal to the 5% AEP event. (9)
- **Caroline Street flooding:** In a 5% AEP flood event, Caroline Street experiences flooding. This involves water overflowing between Suwarrow Street and Henry Street, as well as from Aurora Street to the north. In addition, water spilling also occurs over Caroline Street near the low-level bridges close to Havannah Street.
- **Overland Flow:** During 5% AEP events, a path for excess water is formed in the low-lying areas between Fredrick Street and Caroline Street after Caroline Street gets overtopped.
- **Oval Flooding:** In a 10% AEP event the oval may inundate.
- **PMF Flooding:** In a PMF flood event, a larger portion of Caroline Street and the New England Highway goes under water. In addition, Memorial Drive portions of Selina Street, Charles Street, Henry Street, Suwarrow Street, Havana Street and Home Street may experience flooding.

Table 22: Dwellings likely to experience over floor flooding.

Source: Bendemeer FRM Study 2016. (9)

| Flood Event (AEP) | Number of residential properties affected | Number of commercial properties affected | TOTAL |
|-------------------|---|--|-------|
| 20% | 0 | 0 | 0 |
| 10% | 1 | 0 | 1 |
| 5% | 8 | 0 | 8 |
| 2% | 18 | 3 | 21 |
| 1% | 26 | 5 | 31 |
| PMF | 74 | 5 | 79 |

6.6. At Risk Facilities

Table 23: Bendemeer At risk facilities (by Sub Sector)

| Object ID | Polygon Name | Properties at Risk |
|-----------|--------------------------|------------------------------|
| 97477 | Bendemeer West | Bendemeer Rural Fire Brigade |
| | | Bendemeer Hotel |
| 83778 | Bendemeer Aurora Street | Police Station |
| 86209 | Bendemeer Fredrick St. | Holly Innocents (Church) |
| | | The Chappel Bendemeer |
| 85809 | Bendemeer Charles Street | Bendemeer Town Hall |
| 83781 | Bendemeer Memorial Drive | War Memorial Park |

6.7. Other Considerations

The Bendemeer Rodeo & Camp Draft is an annual event held in February. The event is held at the Bendemeer Showground, which is susceptible to inundation at the 10% AEP and below.

7. Nundle and Woolomin

7.1. COMMUNITY OVERVIEW

NUNDLE

- Nundle and Woolomin are in the upper Peel River catchment, which is part of the Namoi River basin located within the Murray-Darling system. (10)
- Nundle is approximately 27 km (by river) downstream from the headwaters of the Peel River below the Great Dividing Range. The total Nundle catchment area is approximately 234 km², with Oakenville Creek contributing 14 km².
- According to the 2021 Census, a total of 482 people live in Nundle. Within this population 82 people are within 0-19 years of age and 156 people are 65 years old or above. (12)
- Approximately 10% of residents at Nundle do not have a motor vehicle.

WOLOMIN

- Woolomin is located at the junction of the Peel River and Duncans Creek, approx. 7 km downstream from Chaffey Dam. The catchment area at Woolomin is approx. 539 km², 76% of which is regulated by the dam.
- According to the 2021 Census, a total of 260 people live in Woolomin. Among these people 61 are within 0-19 years of age and 64 are 65 years old or above. (12)
- Approximately 5% of residents in Woolomin do not have a motor vehicle.
- The 5 largest ancestry groups live within these communities are Australian, English, Australian Aboriginal, Scottish, and Irish.
- Most of the population in Nundle and Woolomin speak only English.

7.2 Characteristics of Flooding

Historical flood data analysis shows that Nundle and Woolomin have both experienced major and minor riverine flooding. Nundle township is also affected by flash flooding in creeks draining the Hanging Rock area to the east, including Oakenville Creek. Woolomin can be flooded from Duncans Creek despite negligible flows from the Peel River below Chaffey Dam.

7.3 Flood Behaviour

The Nundle and Woolomin Flood Study 2012 found that the November 2000 flood which impacted both Nundle and Woolomin was a particularly large flood approximating a 100-year ARI event. The 2010 flood at Nundle was smaller than a 20-year ARI event.

Due to the relatively narrow widths of the valleys at both Nundle and Woolomin there is no significant difference in the widths of the 20-year to 100-year ARI floods. Larger flows are reflected in increased flood depths rather than broader flow patterns. This situation results in extreme flood levels being much higher than the 100-year flood levels especially at Nundle where the floodplain is further constricted just downstream of the township.

The potential for longer duration flooding at Woolomin is due to the routing of the flood wave through Chaffey Dam. Woolomin flooding is also influenced by flows emanating from Duncans Creek and the relative timing of the flood peak in the Peel River downstream of Chaffey Dam and the flood peak from Duncan Creek, can have a significant impact on flood behaviour in the town.

7.4 Classification of Floodplain

Refer maps 10 and 11, overleaf.

Map 10: Nundle Subsectors



Table 24: Classification of Flood Plain (Nundle)

| Object ID | Polygon Name | Dwelling Estimate/People Est | Flood plain Type |
|-----------|------------------------|------------------------------|--------------------|
| 84933 | Nundle Hall Street | 33/69 | Low Flood Island |
| 86209 | Nundle Gill Street | 28/53 | Rising Road Access |
| 84931 | Nundle Buchanon Street | 15/30 | Rising Road Access |

Map 11: Woolomin Subsectors

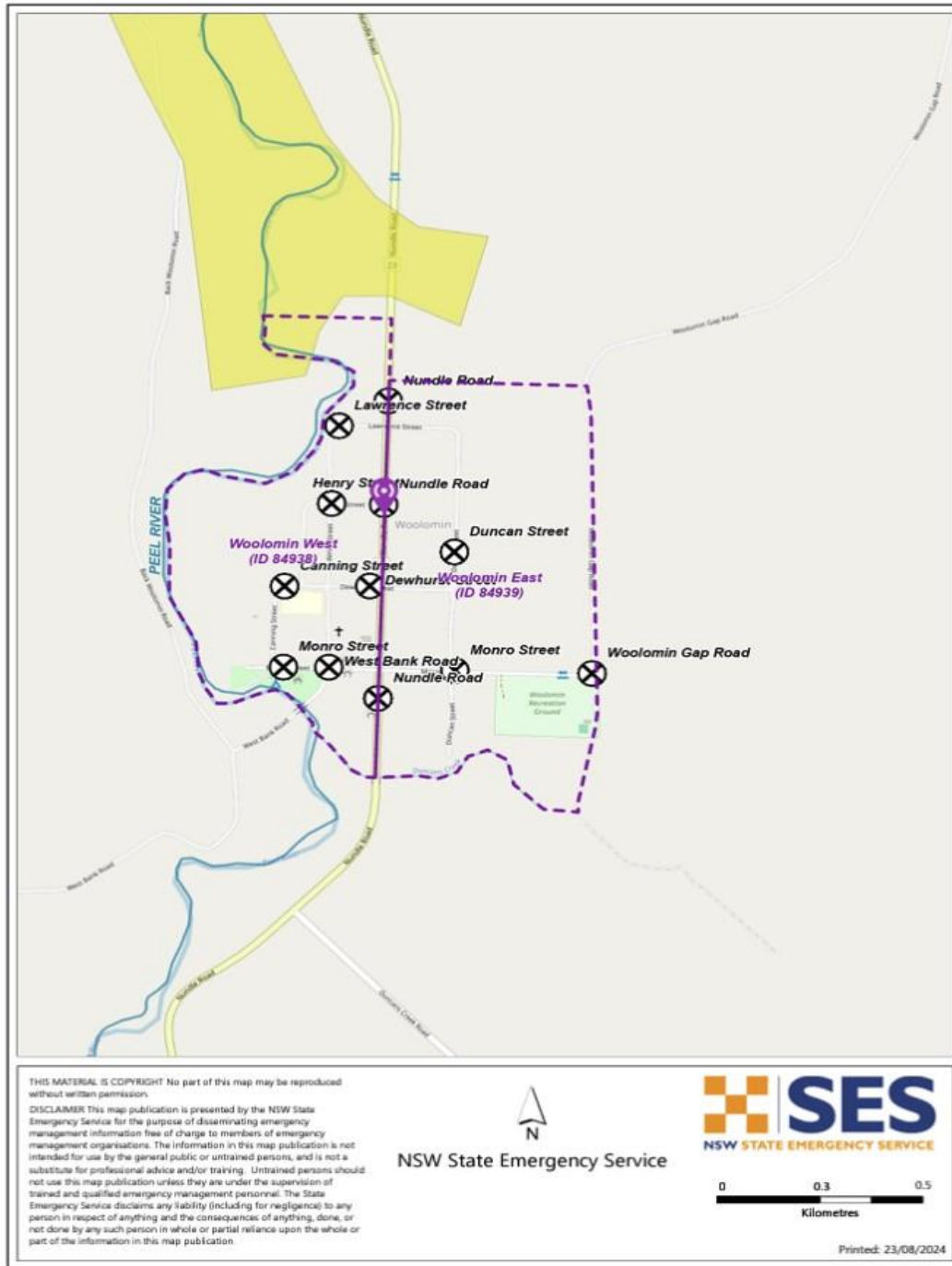


Table 25: Classification of Flood Plain (Woolomin)

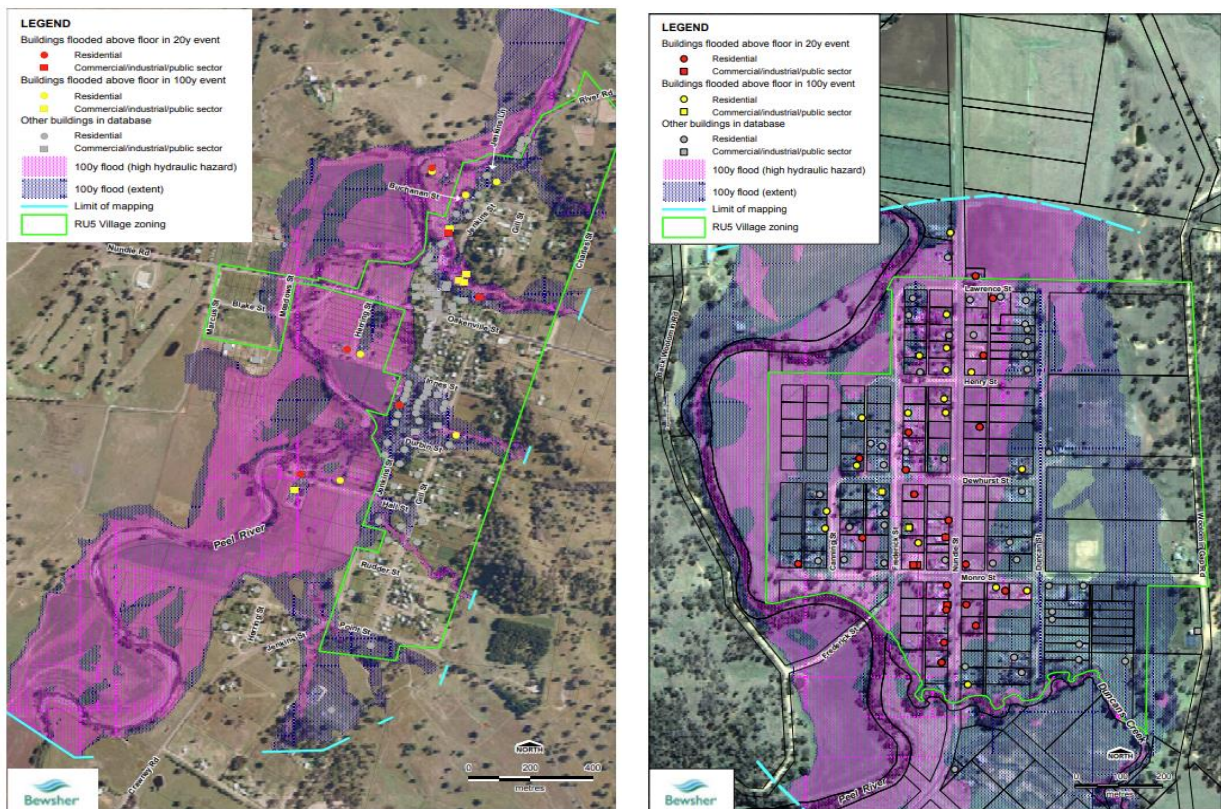
| Object ID | Polygon Name | Dwelling Estimate/ People Est | Classification |
|-----------|---------------|-------------------------------|------------------|
| 84938 | Woolomin West | 55/99 | Low Flood Island |
| 84939 | Woolomin East | 52/106 | Low Flood Island |

7.5 Early Warning System

Tamworth Regional Council and Water Technology Pty Ltd created a Flood Early Warning System for Nundle and Woolomin. Using Bureau of Meteorology rain forecast, radar, and river level data, the system predicts the flows in Duncans Creek at Woolomin and the Peel River at Nundle and Woolomin, assisting the Council and the NSW State Emergency Service in responding to inundation.

7.6 Inundation

For Nundle, 95 buildings are within the modelled PMF extent, comprising 63 residential and 32 commercial/industrial/public buildings. For Woolomin, 87 buildings are within the PMF extent, comprising 81 residential and 6 others. The distribution of buildings expected to be flooded above floor level in the 20 year and 100-year events is shown below.



Map 12-13: Inundation Map for, Nundle and Woolomin (Left to Right).
 Source: Nundle and Woolomin Flood Study, 2012

7.7 At Risk Facilities

Table 26: At risk Facilities (by Sub Sector)

| Area | Object ID | Polygon Name | Properties at Risk |
|----------|------------------------|---------------------------|--|
| Nundle | 84935 | Nundle Gill Street | Nundle Court House Museum |
| | | | Nundle Police Station |
| | | | Nundle Library |
| | 84933 | Nundle Hall Street | Nundle Water Treatment Plant |
| 84931 | Nundle Buchanon Street | Nundle Public School | |
| | | Nundle Public School P& C | |
| Woolomin | 84938 | Woolomin West | Woolomin Public School |
| | | | St Mary's Anglican Church |
| | | | Woolomin Memorial Hall |
| | | | Woolomin Duncan Creek's Rural Fire Service |
| | | | Woolomin Public School |

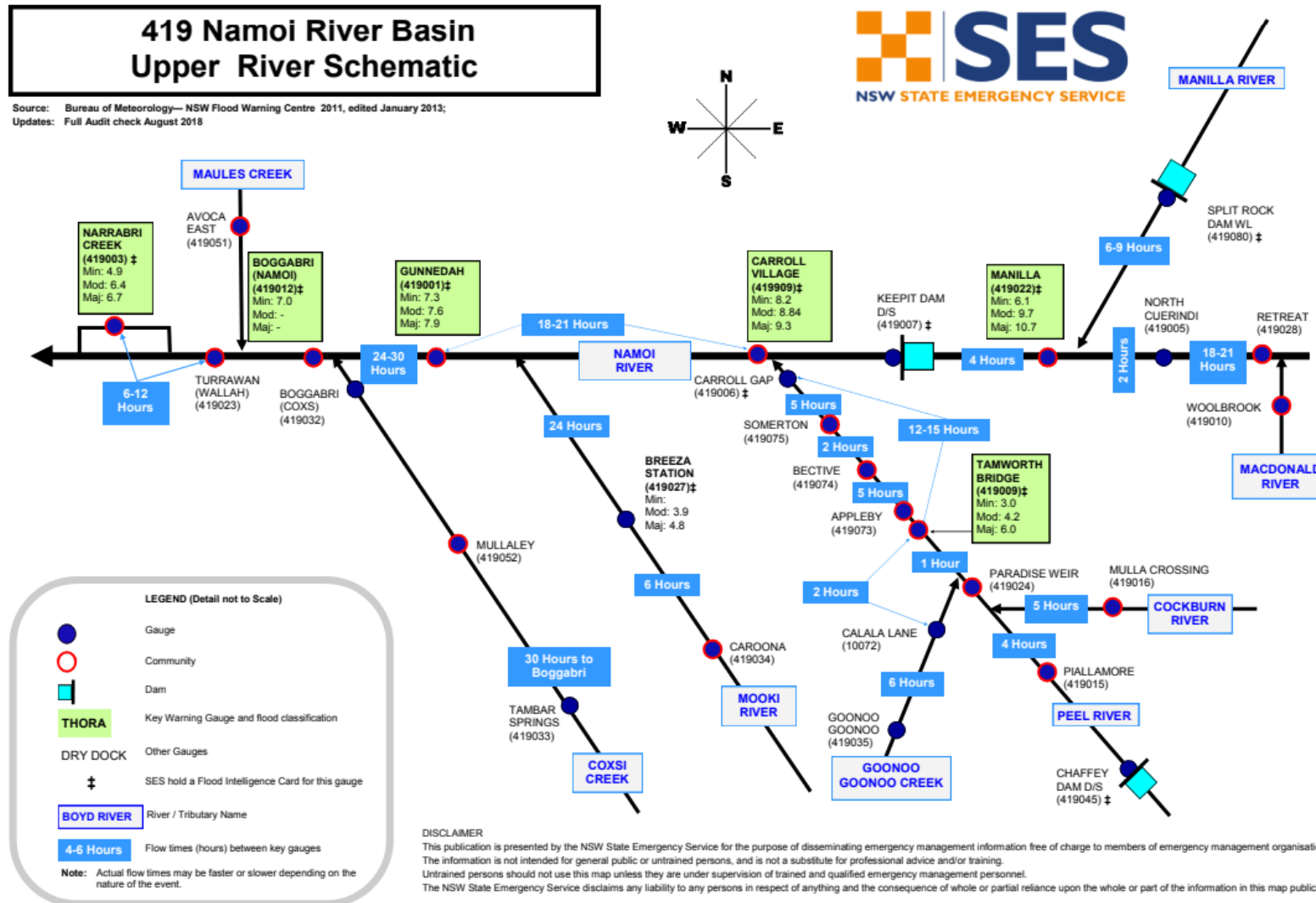
8 Road Closure

() Indicates Gauge Height

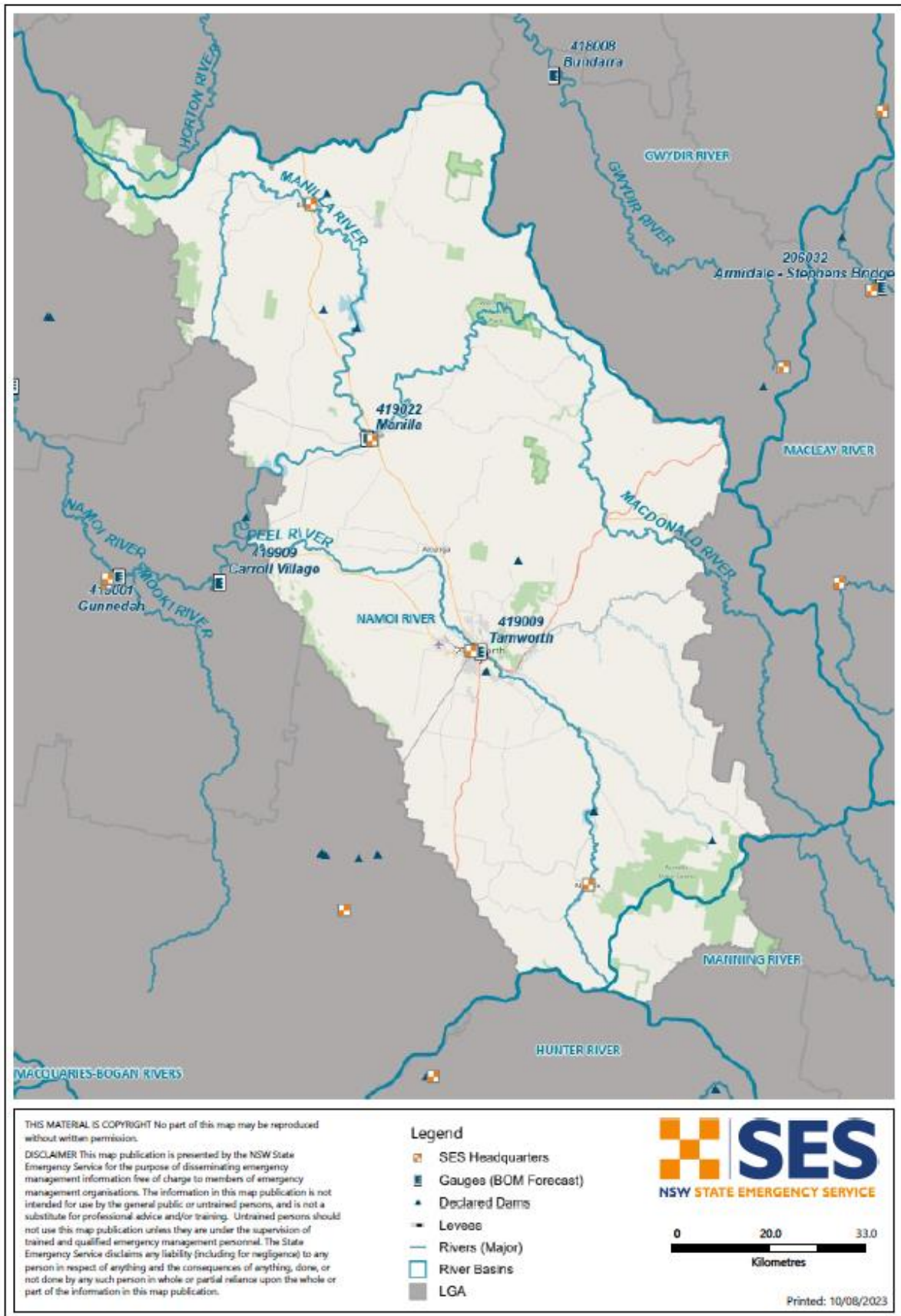
Other roads as per historical data (GEMS)

| Tamworth | |
|--|--|
| Bridge Street at the junction with Ebsworth Street (6 m) | Carter Street (4.60 m) |
| Jewry Street | Ebsworth Street |
| Scott Road (New England Highway bypass) | Solander Drive |
| Oxley Highway) at Timbumburi Creek | King George V Avenue (5.51-5.70 m) |
| Gunnedah Road (Oxley Highway) at Murroon Creek | Locks Lane |
| Wallamore Road at Timbumburi Creek | Burgmanns Lane |
| Somerton-Manilla Road at Peel River | Fishers Lane at the Sandy Creek bridge |
| Calala Lane (6.63 m) | Bourke Street (4.20 m) |
| O'Briens Lane near the Peel River (4.60 m) | Kurawan and Flinders St (6.7 m) |
| Duri-Dungowan Road between Loomberah Road and Tongues Lane (Reedy Creek) | |
| Limbri-Weabonga Road | |
| Manilla (Gauge height 13 – 14 m) | |
| River Street, | Manilla Road |
| Street to the Showground | Manilla Street, |
| Bowman Street | Market Street |
| Dewhurst Street | Lloyd Street. |
| Arthur Street, Namoi Street | Rushes Creek Road |
| Barraba | |
| Queen Street | Cherry Lane |
| Clifton Lane | Henry Street |
| Barraba Station Road | Lillis Lane |
| Travallyn Road | Fitzroy Street |
| Bendemeer | |
| Caroline Street (6.60 m) | Airlie Stock Route Road (6.60 m) |
| Havannah Streets (7.10 m) | New England Highway |
| Selina Street | Aurora Street (7.30 m) |
| Nundle | |
| Jenkins Street | Hall Street |
| Herring Street | Durbin Street |
| Meadow Street | Buchanon Street |
| Woolomin | |
| Nundle Road | Fredrick Street |
| Canning Street | Dewhurst Street |
| Henry Street | Lawrence Street |

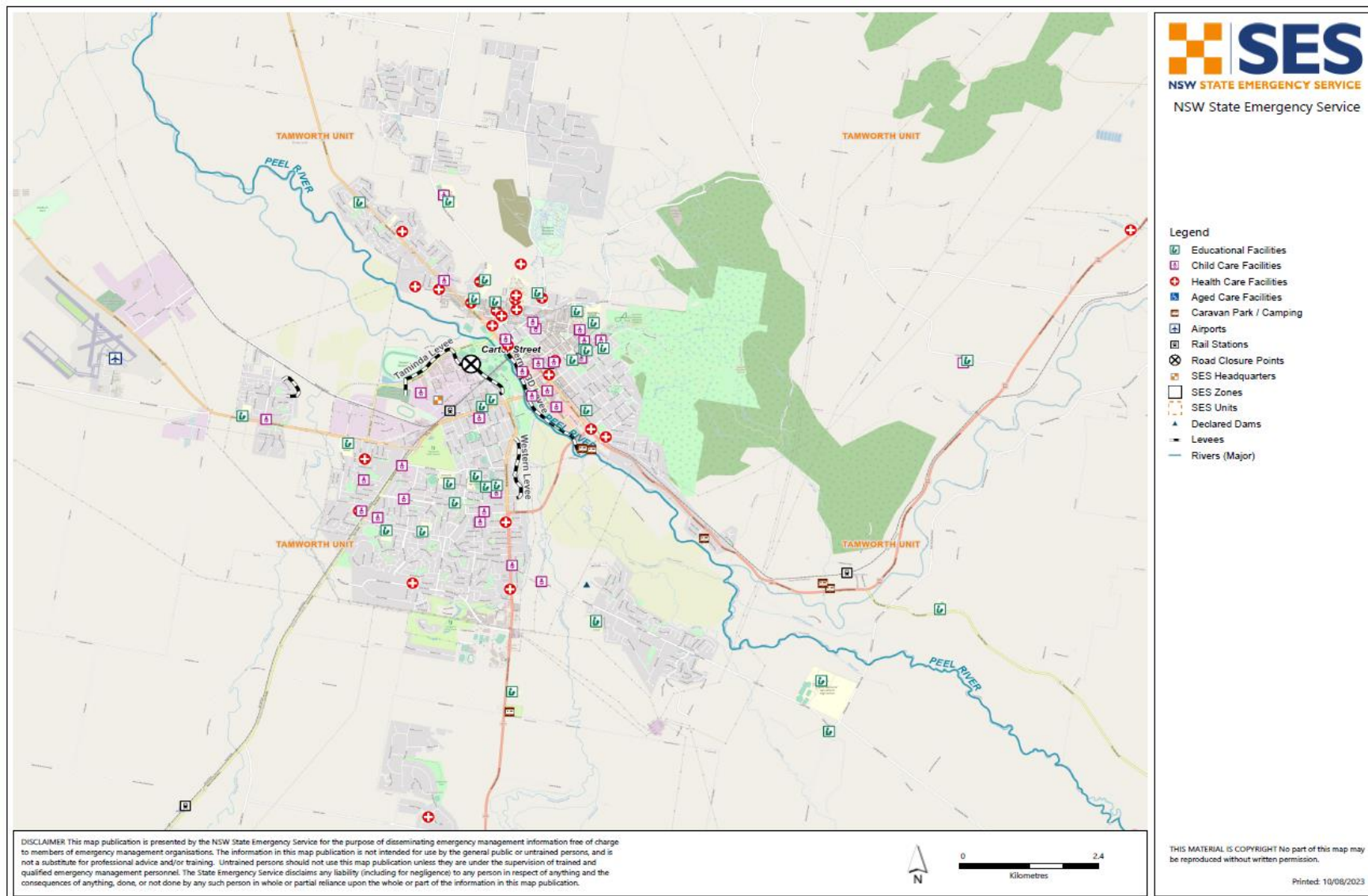
ANNEX 1: NAMOI River Basin Schematic



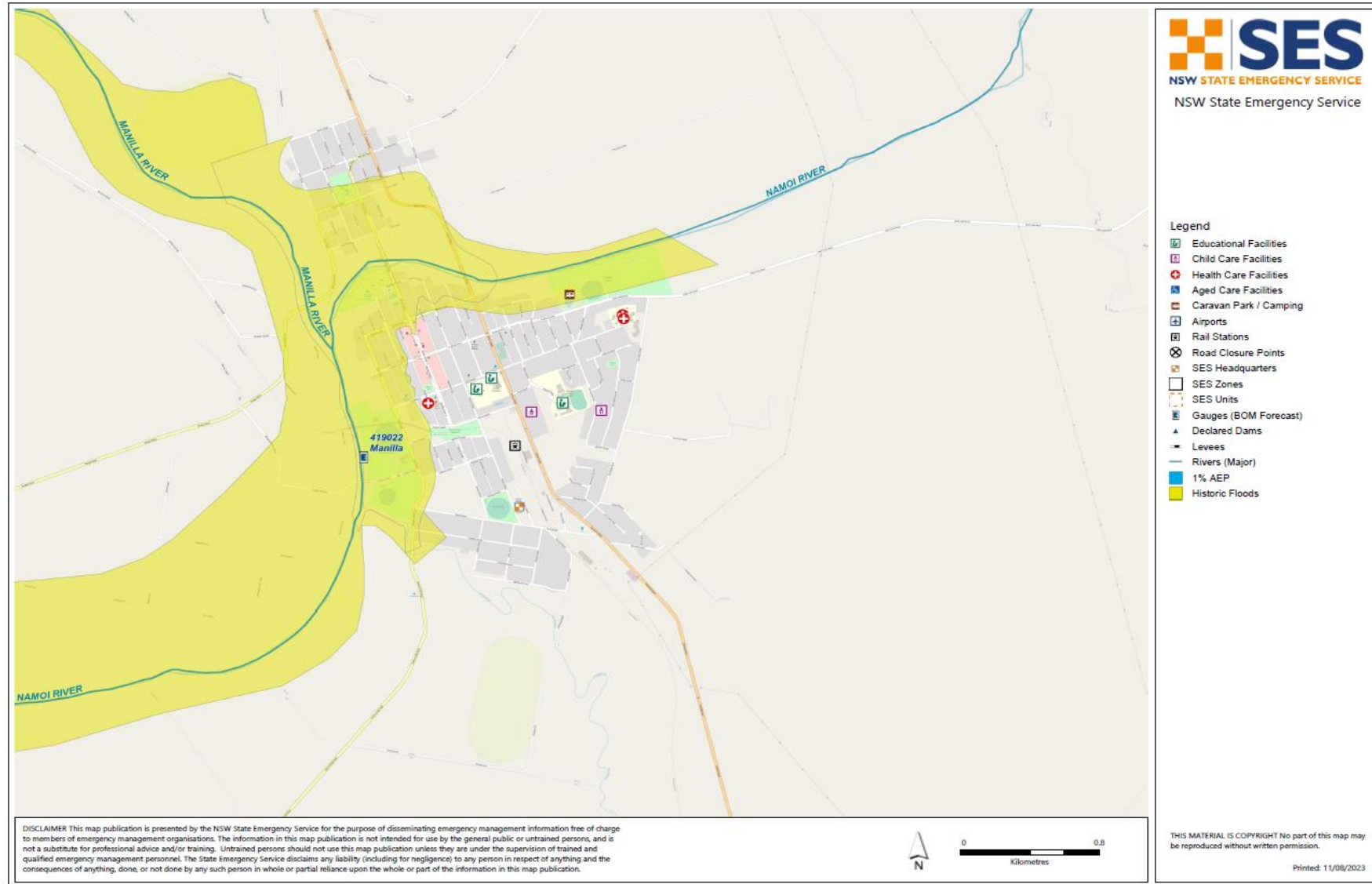
MAP 1: NAMOI River Basin



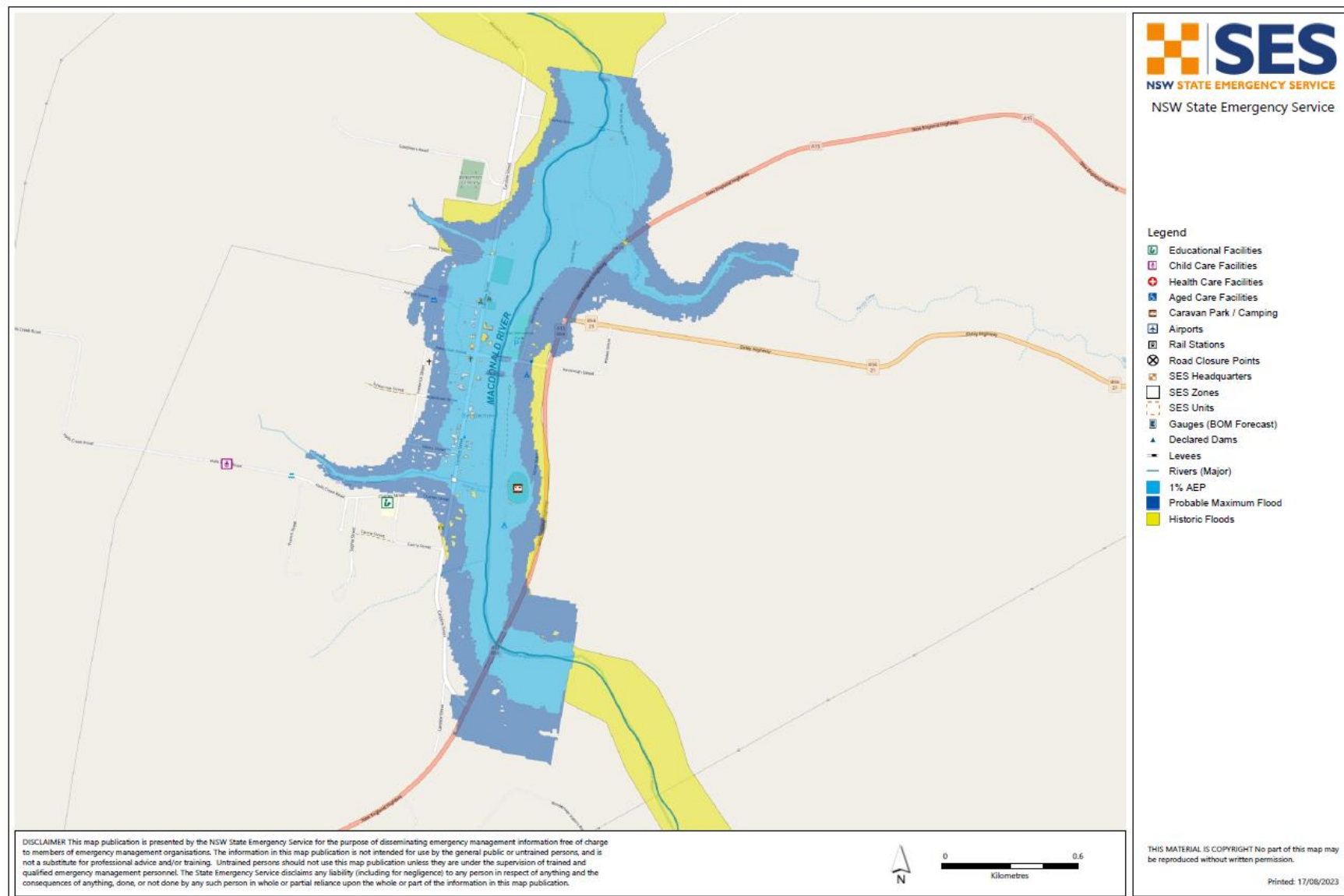
MAP 2: Tamworth Town Map



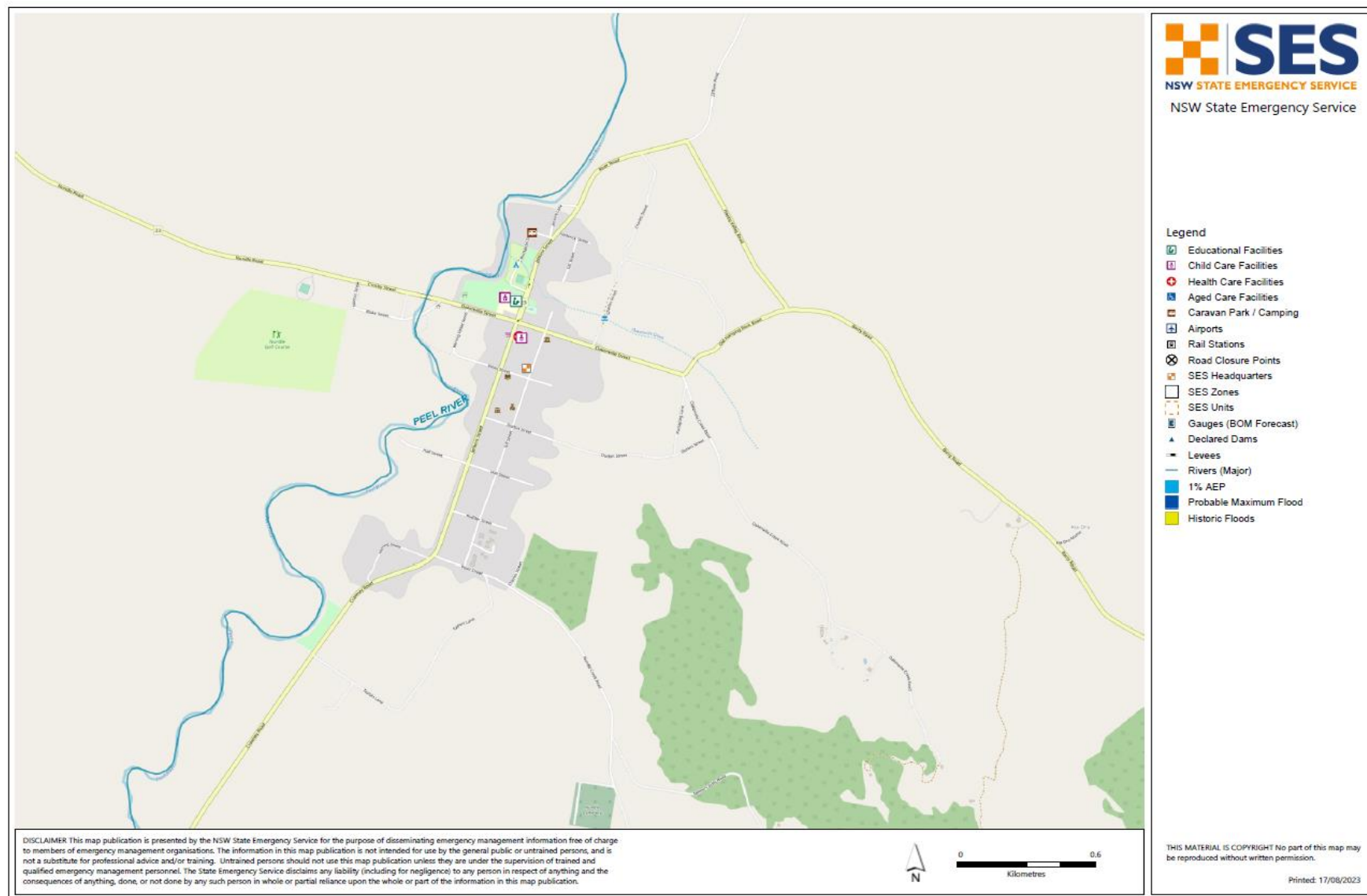
MAP 3: Manilla Town Map



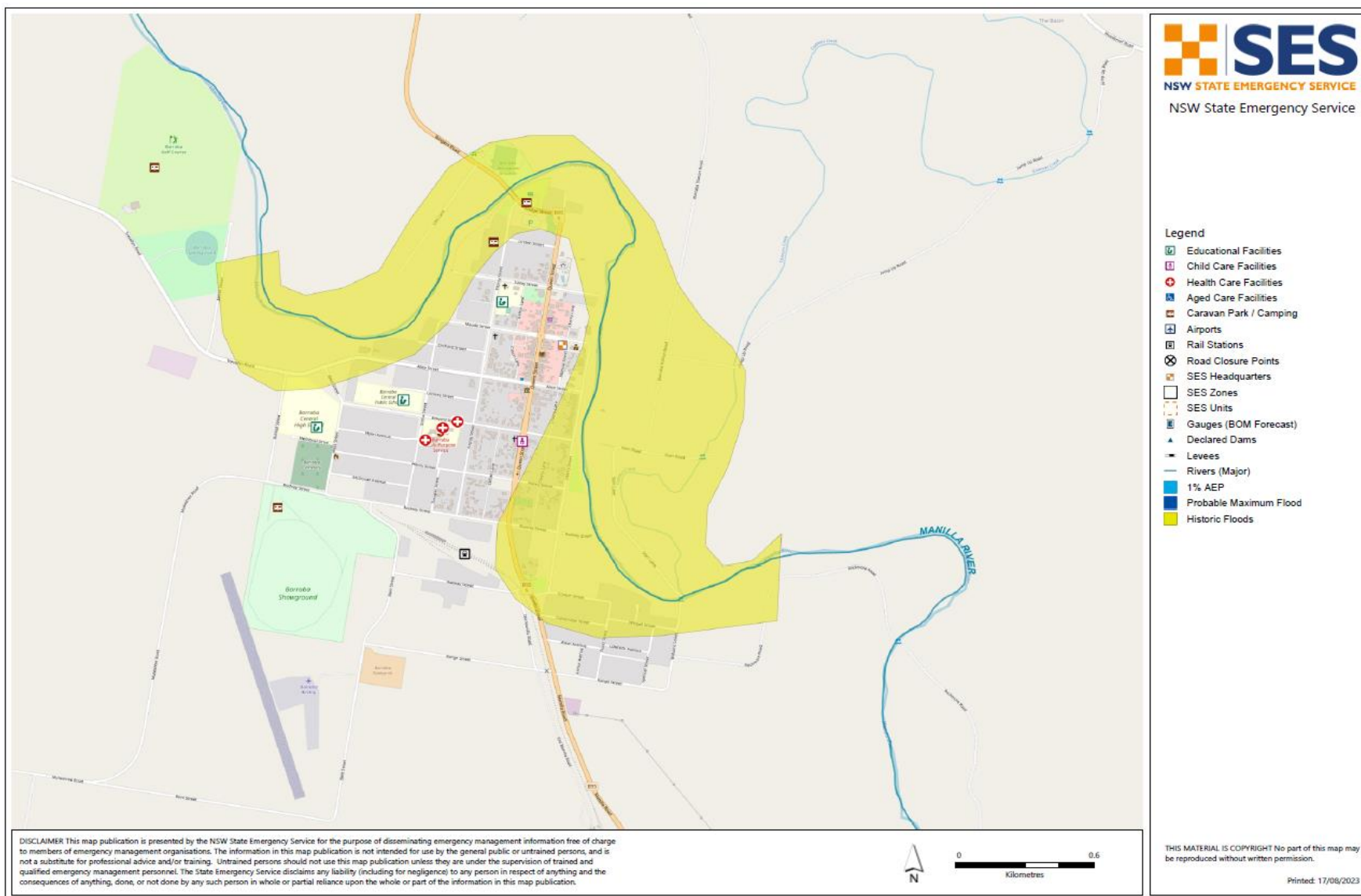
MAP 4: Bendemeer Town Map



MAP 5: Nundle Town Map



MAP 6: Barraba Town Map



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SES RESPONSE ARRANGEMENTS FOR TAMWORTH REGIONAL

Volume 3 of the Tamworth Regional Local Flood Plan

Last Update: February 2000

**ANNEX C TO THE
TAMWORTH/PARRY LOCAL FLOOD PLAN**

ANNEX C - GAUGES MONITORED BY TAMWORTH/PARRY SES

| Station | AWRC No | Stream | Flood Classification | | | Type |
|--------------------------|---------|---------------------|----------------------|------|------|-----------|
| | | | Min | Mod | Maj | |
| Goonoo Goonoo | 410935 | Goonoo Goonoo Creek | | | | Telemeter |
| Scott's Road | 10344 | Goonoo Goonoo Creek | | | | Manual |
| Calala Lane | 10072 | Goonoo Goonoo Creek | | | | Manual |
| Nemingha | 10263 | Cockburn River | | | | Manual |
| Mulla Crossing | 419016 | Cockburn River | | | | Telemeter |
| Limbri | 419054 | Swamp Oak Creek | | | | Manual |
| Chaffey Dam Storage | 419069 | Peel River | | | | Telemeter |
| Tamworth Water Supply | 419070 | Peel River | | | | Telemeter |
| Piallamore | 419015 | Peel River | | | | Telemeter |
| Attunga | 419046 | Peel River | | | | Manual |
| Paradise Weir | 419024 | Peel River | | | | Telemeter |
| Appleby | 419073 | Peel River | | | | Telemeter |
| Bective | 419074 | Peel River | | | | Telemeter |
| Somerton | 419075 | Peel River | | | | Telemeter |
| Tamworth Bridge (Note 1) | 419009 | Peel River | 3.00 | 4.20 | 6.00 | Telemeter |

Note:

1. The Bureau of Meteorology provides flood warnings for the Tamworth Bridge gauge.

**ANNEX D TO THE
TAMWORTH/PARRY LOCAL FLOOD PLAN**

ANNEX D - DISSEMINATION OF SES FLOOD BULLETINS

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

Television Stations:

| | |
|----------|----------|
| Prime TV | Tamworth |
| NBN TV | Tamworth |
| ABC | Tamworth |
| NRTV | Tamworth |

Radio Stations:

| | |
|------|----------|
| 2TM | Tamworth |
| 2NU | Tamworth |
| 2MO | Tamworth |
| 2VM | Moree |
| 2CR | Orange |
| 2AD | Armidale |
| 2DU | Dubbo |
| 2WEB | Bourke |

Newspapers:

The Northern Daily Leader, Tamworth

ANNEX E - GUIDE TO THE CONTENT OF EVACUATION WARNING MESSAGES

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

ANNEX F - EVACUATION OF CAMP SITES DURING THE COUNTRY MUSIC FESTIVAL

SITUATION

Tamworth City Council allows camping on the Council Reserves adjacent to the Peel River, Jewry and Carter Streets during the Country Music Festival. These reserves are on the floodplain and are subject to flooding at short notice following persistent heavy rain.

At 3.80 metres on the Tamworth Bridge Gauge (AWRC Number 419009), water breaks out of the Peel River and enters the Jewry Street car parks. During the Country Music Festival this area is used as a camping area for as many as 1,000 people in tents.

At 4.20 metres, water enters the riverside car park and sporting fields. During the Country Music Festival, this area is used by as many as 10,000 people in tents and caravans.

MISSION

To evacuate campers on Council Reserves at risk of flooding.

EXECUTION

General Outline

On the receipt of a flood warning predicting a river height of 3.80 meters or greater, all campers occupying the Council Reserves adjacent to the Peel River, Jewry and Carter Streets will be evacuated and relocated to alternative sites around Tamworth.

Action to be Taken on Receipt of a Flood Alert/Warning

Immediately, upon receiving advice that the Peel River will reach or exceed 3.80 metres at the Tamworth Bridge gauge, notify:

- a. Tamworth Local Area Commander.
- b. Environmental Health Manager – Tamworth City Council.
- c. Chairperson of the Tamworth LEMC.

Action to be Taken on Decision to Evacuate

If the decision is made to evacuate the camp sites, the Operations Inspector (Oxley Local Area Command) will:

- a. Arrange for Police vehicles with public address systems fitted to patrol all areas where people are congregating and broadcast evacuation warnings.
- b. Arrange for evacuation warnings to be disseminated via local radio and TV media outlets (Radio: 2TM, FM 92.9, Festival Radio and ABC. TV: Prime and NBN).
- c. Contact all licensed premises and entertainment venues and arrange to have evacuation warning placed over the public address systems.
- d. Arrange for SES and Council staff to be in attendance at all sites to facilitate orderly relocation.
- e. Arrange for reception at the alternative sites.
- f. Provide available police officers to assist SES and Council staff with evacuation.

Relocation Centres

Campers evacuated from the Council Reserves are to be relocated to the following alternative sites:

- a. Chaffey Park,
- b. Chauvel Park,
- c. Belmore Park, and
- d. The South Tamworth Sporting Complex near the intersection of the New England Highway (Goonoo Goonoo Road) and Greg Norman Drive.

COMMAND AND SIGNAL

Control Arrangements

Evacuations are to be controlled by the Tamworth/Parry SES Local Controller (or at his/her request, the Tamworth LEOCON using the Operations Inspector Oxley Local Area Command).

ANNEX G - ACTIONS TO BE TAKEN ON ISSUE OF CHAFFEY DAM FAILURE ALERT

Chubb New England Security on the activation on any alarm is to notify the Tamworth/Parry SES Local Controller.

| Alert | Transmitted to | Actions | Subsequent Actions |
|--------------|---|---|---|
| White | <ul style="list-style-type: none"> • Chubb New England Security. • Tamworth/Parry SES Control Room. • Department of Water Resources. | <p>Tamworth-Parry SES Local Controller to advise:</p> <ul style="list-style-type: none"> • Peel Local Emergency Operations Controller. • Namoi Division SES Headquarters. • Nundle Shire SES Local Controller. • SES Wardens. • Co-ordinator Tamworth Disaster Welfare Service. • Tamworth Local Emergency Management Officer. <p>SES Local Controller to check on the 30 residences and 3 stations at Woolomin and Dungowan townships to:</p> <ul style="list-style-type: none"> • Advise them of the alert. • Check to numbers to be evacuated. • Check potential evacuation problems. | <p>Namoi SES Division Headquarters will advise SES State Headquarters.</p> |
| Amber | As above. | <p>Tamworth-Parry SES Local Controller to advise above persons plus:</p> <ul style="list-style-type: none"> • Tamworth City Council. • Parry Council. • NSW Ambulance Service (Tamworth). | <p>Namoi SES Division Headquarters will advise:</p> <ul style="list-style-type: none"> • Gunnedah SES Local Controller. • SES State Headquarters. |

| Alert | Transmitted to | Actions | Subsequent Actions |
|-------------|---------------------------|---|---|
| | | <ul style="list-style-type: none"> • Telecom (Tamworth). • State Rail Authority. • Pacific Power (where). • Road Transport Authority • Media. SES Local Controller to check the 33 locations downstream of the dam to: <ul style="list-style-type: none"> • Confirm/advise them of the alert. • Remind the residences to prepare for evacuation. | |
| | Residences below the dam. | Residents prepare to evacuate on red alert. | |
| Red | As above. | Tamworth-Parry SES Local Controller to advise above persons plus: <ul style="list-style-type: none"> • Tamworth Base Hospital. SES Local Controller to check the residents downstream of the dam to ensure they have received the red alert and are evacuating. | To be classified as an emergency operation and controlled by the Local Emergency Operations Controller. (1) (Police) |
| Dam Failure | As above. | Tamworth/Parry SES Local Controller to advise: <ul style="list-style-type: none"> • Local Emergency Operations Centre. • Namoi SES Division Headquarters. | Namoi SES Division Headquarters to advise SHQ. (Police) |
| All Clear | As above. | SES Local controller to advise above persons. | All agencies involved in disseminating earlier alerts to advise residents at threat and/or evacuees that "all clear" has been issued. |

ANNEX H - ARRANGEMENTS FOR FLOOD LIABLE CARAVAN PARKS

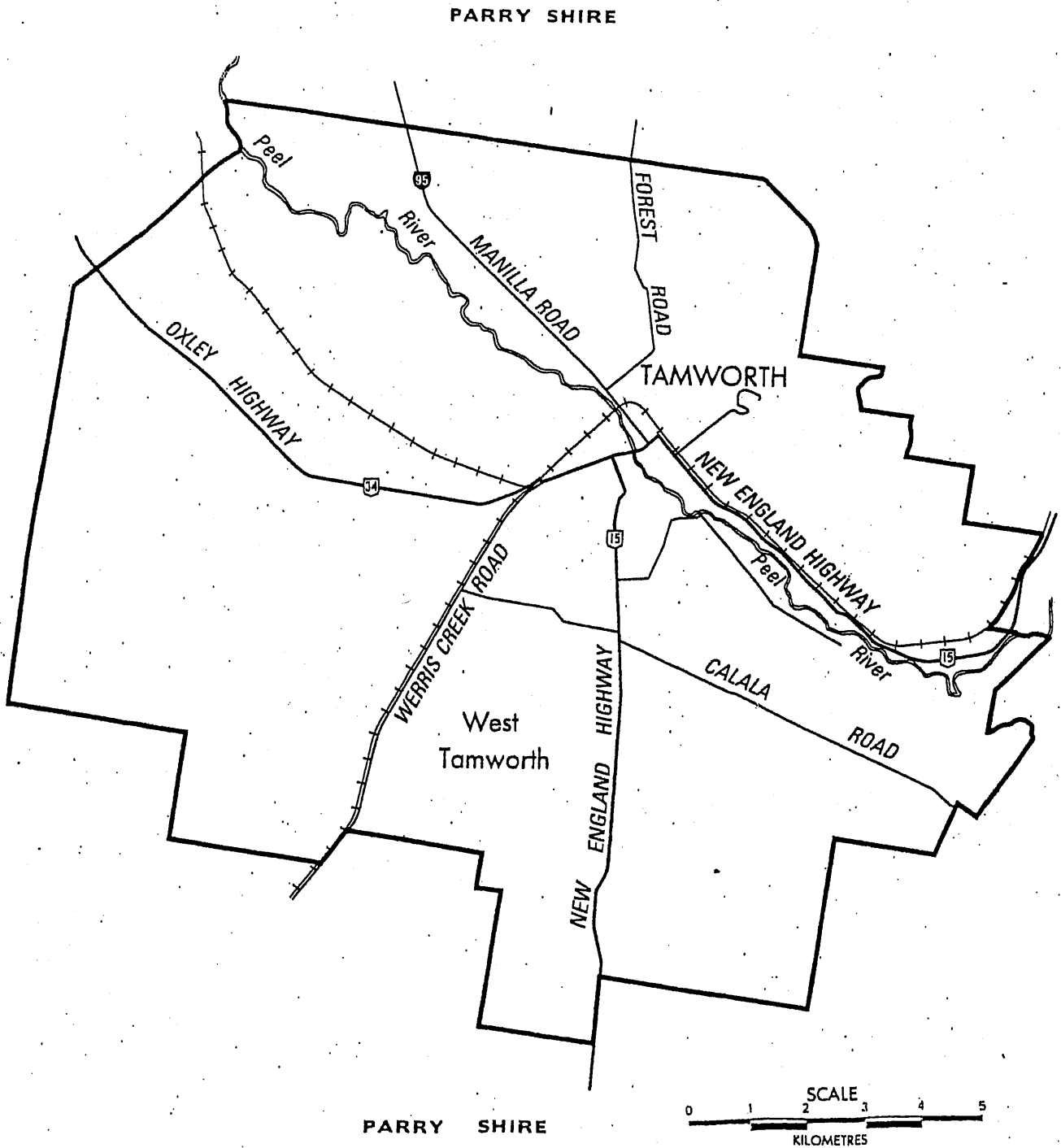
This Annex is to be finalised by the Tamworth/Parry SES Local Controller in consultation with the Tamworth City and Parry Shire Councils and the park proprietors.

At minimum, this Annex should indicate that there are council-operated licensing regulations for caravan parks which relate to public safety and the removal of vans during periods of flooding, and should list by location the caravan parks known to partly or wholly flood liable. Note that van movement is the responsibility of park proprietors, but agency help can be indicated.

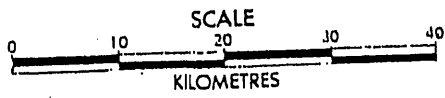
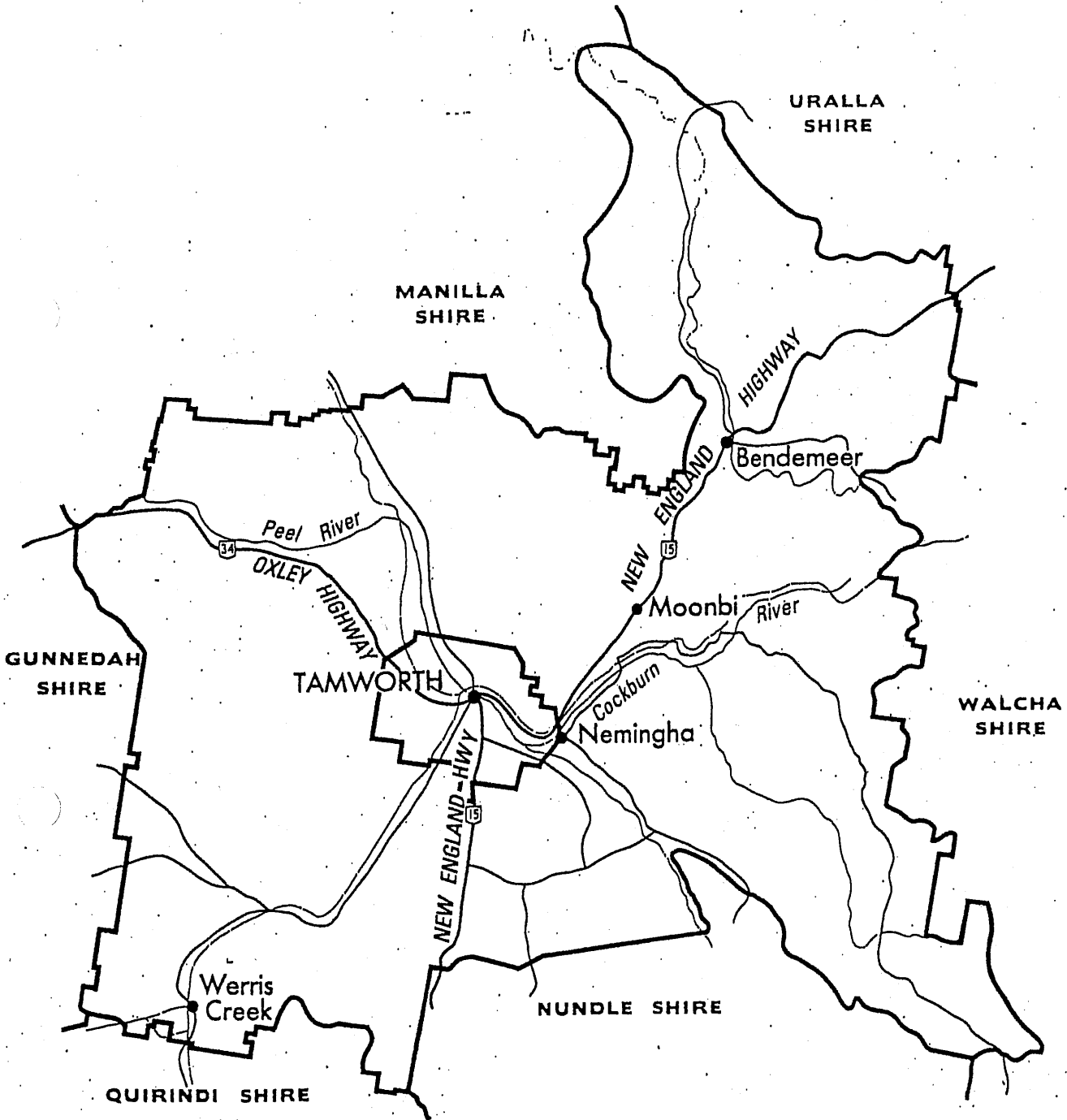
Additional material could include, where available/or appropriate:

- a. Description of each park (heights at which inundation begins, floods whole parks; numbers of permanent vans/cabins, number permanently inhabited, numbers of permanent vans which can be easily removed, casual van sites, tent sites; indication of possible total population of park at specified peak periods).
- b. Advising procedures (whereby caravan park manager is informed of coming flood and likely severity).
- c. Warning procedures (passage of messages to park occupiers and van owners).
- d. Arrangements for evacuation and van relocation.
- e. Arrangements for return of occupants and vans].

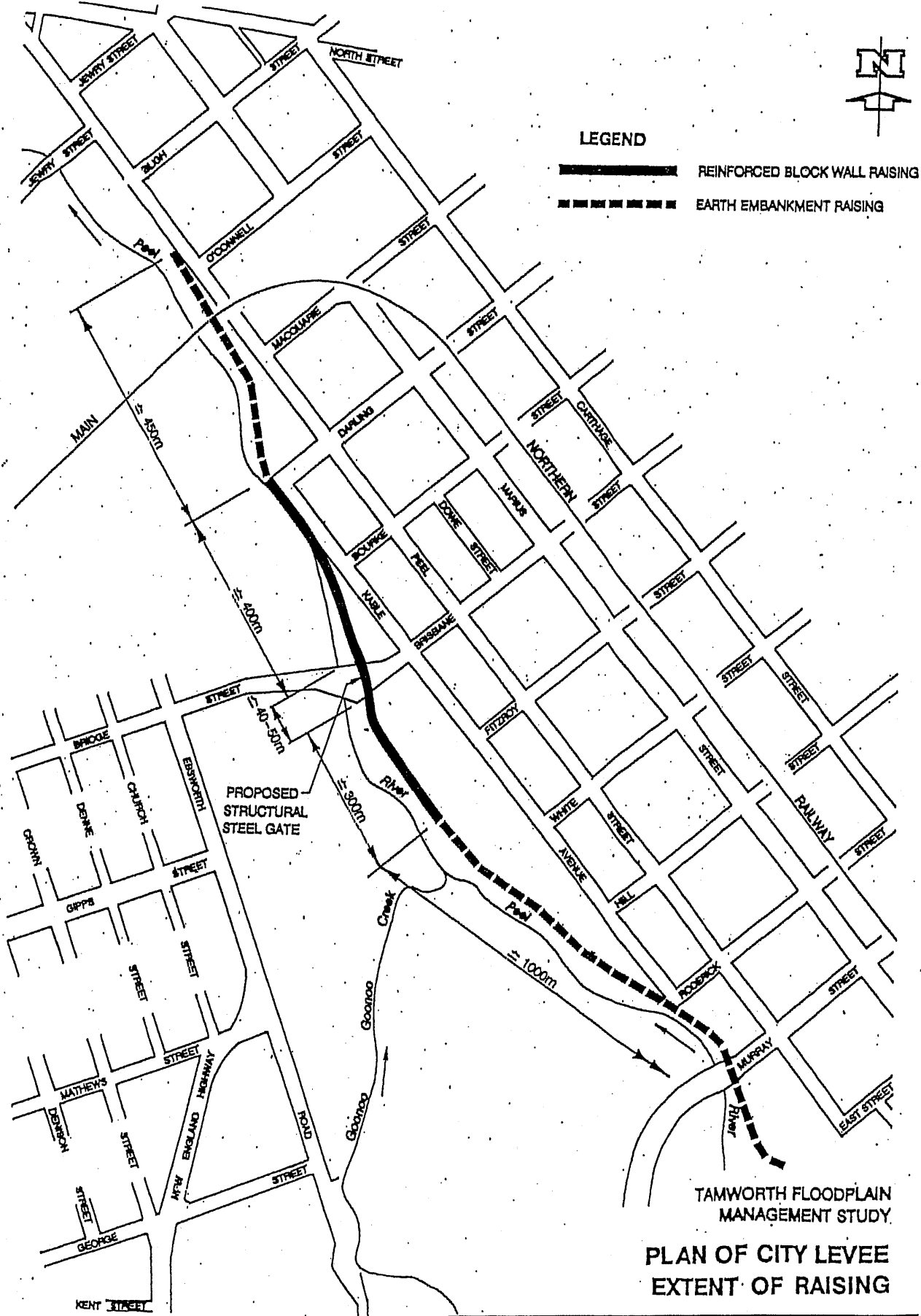
MAP 1 – TAMWORTH CITY COUNCIL AREA



MAP 2 – PARRY SHIRE



MAP 3 – PLAN OF CITY LEVEE; TAMWORTH CITY



MAP 4 – DEFINITION OF FLOODPLAIN; TAMWORTH CITY

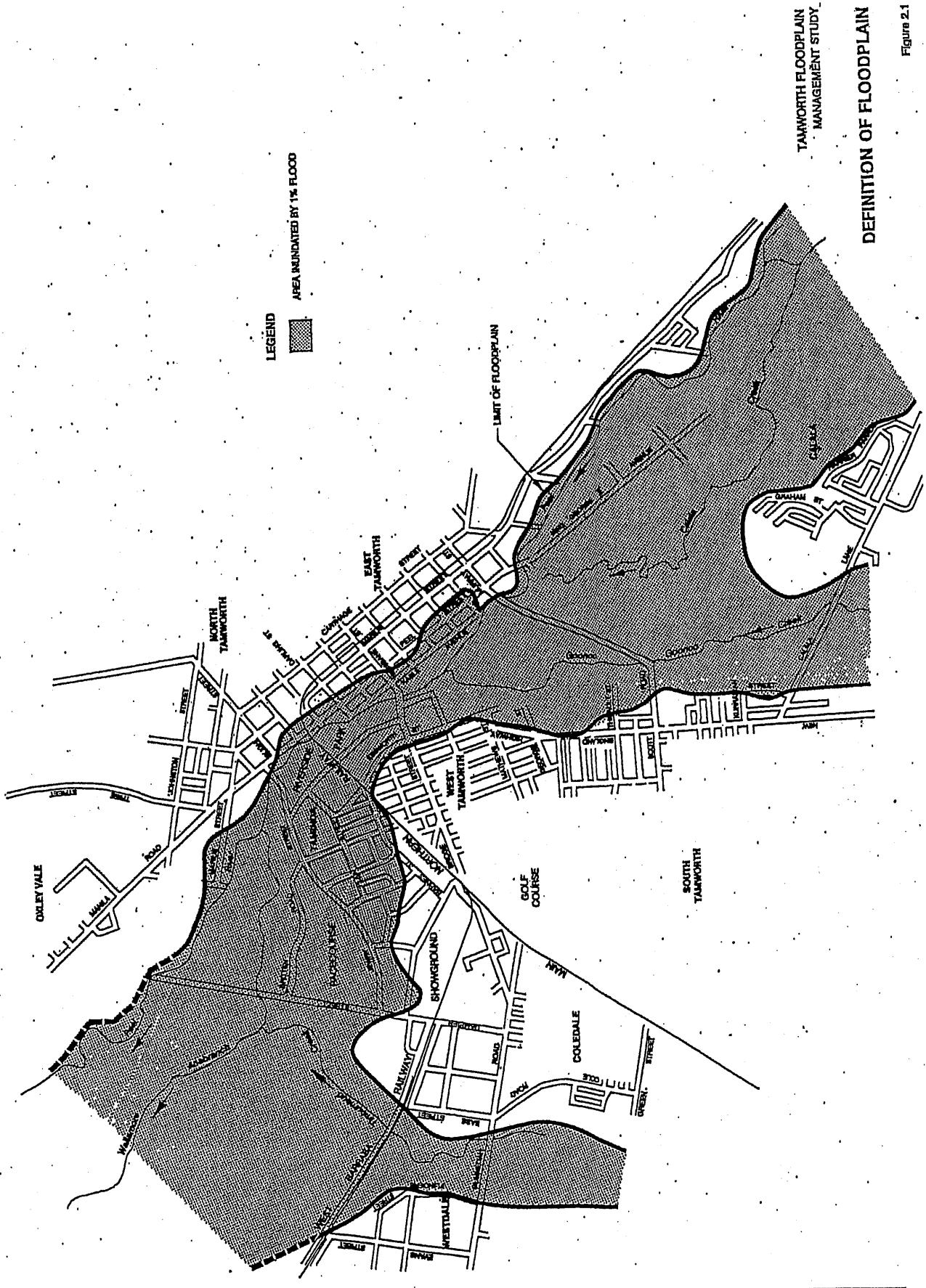
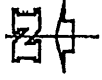


Figure 2.1

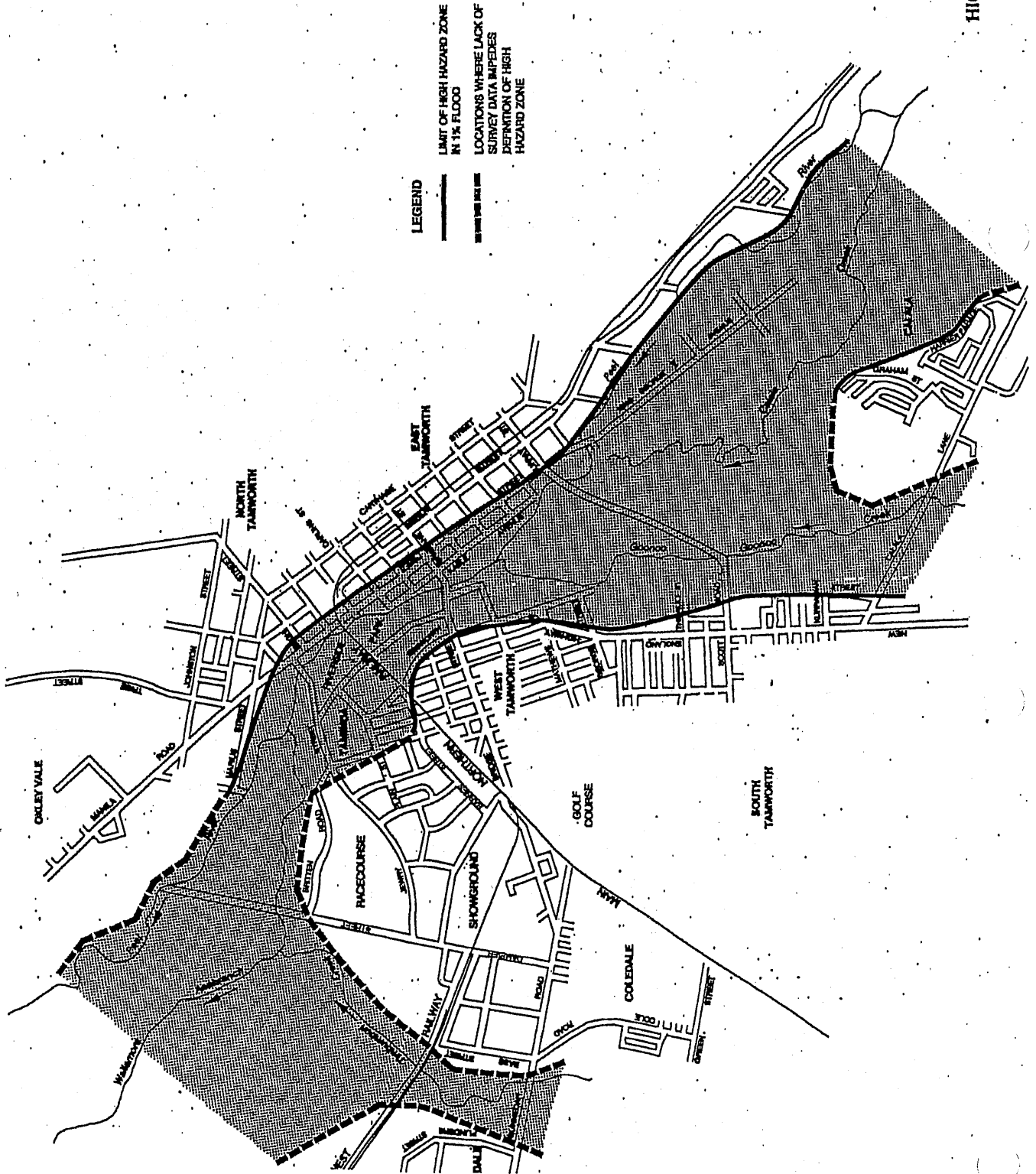
MAP 5 – HIGH HAZARD ZONE; TAMWORTH CITY



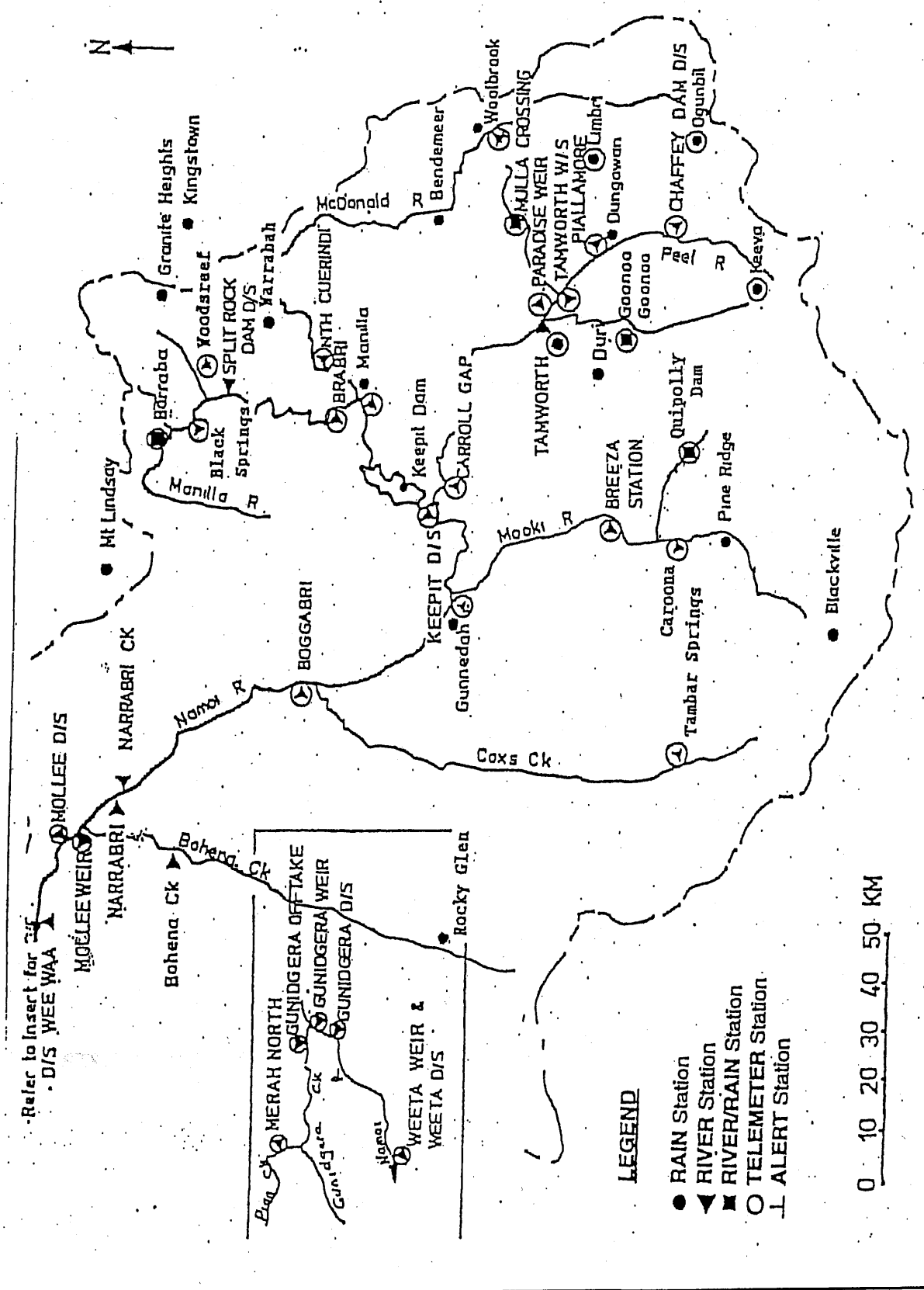
TAMWORTH FLOODPLAIN
MANAGEMENT STUDY

HIGH HAZARD ZONE

Figure 2.F



MAP 6 – NAMOI RIVER BASIN



**ANNEX F TO THE
TAMWORTH/PARRY LOCAL FLOOD PLAN**

**ANNEX F – Country Music Festival Camping Areas Flood
Response Plan**

SITUATION:

In recognition of the increased demand on local facilities during the Tamworth Country Music Festival, *Tamworth Regional Council* allows camping on the Council Reserves adjacent to the Peel River, Jewry and Carter Streets during the Country Music Festival. These reserves are on the floodplain and are subject to flooding at short notice following sufficient rain in the Peel River Catchment.

At **3.80 metres** on the Tamworth Bridge Gauge (AWRC Number 419009), water breaks out of the Peel River and enters the Jewry Street car parks on the Manilla side of the street. During the Country Music Festival this area may be occupied by unauthorised *Campers*.

At **4.20 metres**, water enters the riverside car park and sporting fields. During the Country Music Festival, this area is used by as many as 5,000 people in tents, caravans and camper vans.

MISSION:

To ensure the safety of *Campers* along the Peel River within Tamworth who are at risk due to flooding.

EXECUTION:

Flood Watch

A Flood Watch is issued by the *Bureau of Meteorology* if they have reason to believe that the forecast weather conditions could lead to flooding.

An example of when a FLOOD WATCH would be issued is if the *Bureau of Meteorology* was forecasting heavy rainfall in a catchment within a 24 or 48 hour period.

ACTION to be taken upon receipt of a FLOOD WATCH:

The *Tamworth Local SES Controller* will notify:

- a. The *Local Emergency Operations Controller (LEOCON)* for Tamworth Regional Council area.
- b. Tamworth Regional Council's *Country Music Festival Operations Manager*
- c. The *Department of Community Services Tamworth Area Emergency Liaison Officer*
- d. *Tamworth Local Emergency Management Officer* (who in turn is to immediately notify all other members of the *Local Emergency Management Committee*)

The *Local Emergency Management Officer (LEMO)* will:

- a. Convene a meeting of the *Local Emergency Management Committee* to receive a report and advice from the *Tamworth Local SES Controller* in regards to the flood threat and to undertake planning for operational activity.

The *Namoi Region SES Controller* will:

- a. Arrange for Flood Watch Information Bulletins to be disseminated via local radio and TV media outlets (Radio: *2TM, FM 92.9, Festival Radio* and *ABC*. TV: *Prime* and *NBN*).

The *Tamworth SES Local Controller* will:

- a. Arrange for all necessary preparations to be undertaken for the possibility of an evacuation of *Campers* from the Tamworth Floodplain.

NOTE: Unless the FLOOD WATCH is very specific about the location and timing of forecast flooding, it is unlikely that *Campers* would be given evacuation instructions at this stage.

- b. Depending on the content of the FLOOD WATCH and how specific it is to the Peel River at Tamworth, consider closing the Tamworth Floodplain to any additional *Campers* until such time as the threat of flooding has abated.

Should the decision be made to close the floodplain to any additional *Campers* an 'alternate site' will need to be made available by *Tamworth Regional Council*. This 'alternate site' will also need to be

made available to those *Campers* on the floodplain who may wish to relocate on their own accord.

- c. Consider relocation of *Campers* on the floodplains most vulnerable areas such as any *Unauthorised Campers* on the Manilla side of Jewry Street, or *Campers* on the lower areas of Paradise Caravan Park and those on the lower levels of the river banks generally.

A check should also be conducted to ensure there are no camps located inside camping exclusion zones. Any persons found camping within exclusion zones should be reported to *Council*.

- d. Consider the issue of additional safety advice to campers including specific information related to the current FLOOD WATCH.

NOTE: An SES 'FloodSafe' brochure specific to the Country Music Festival camping is usually issued to *Campers* at the time of their initial arrival at the Riverside camping grounds.

ACTIONS on receipt of a FLOOD WARNING:

On receipt by the SES of a 'FLOOD WARNING' issued by the *Bureau of Meteorology* or intelligence indicating a ***predicted flood height*** of 3.80 metres or greater, ALL *Campers* will be evacuated from the affected camp grounds.

The *Tamworth SES Local Controller* will:

- a. Liaise with the *LEOCON* regarding the co-ordination of the evacuation of campers on the Tamworth Floodplain
- b. Notify the *Tamworth Regional Council Country Music Festival Operations Manager*
- c. The Department of Community Services Tamworth Area Emergency Liaison Officer
- d. Notify *Tamworth Regional Council Local Emergency Management Officer* who in turn will immediately notify all other members of the *Tamworth Local Emergency Management Committee* and request all emergency services provide a liaison officer to Tamworth SES.

The *Namoi Region SES Controller* will:

- a. Arrange for FLOOD WARNINGS to be disseminated via local radio and TV media outlets (Radio: *2TM, FM 92.9, Festival Radio* and *ABC*. TV: *Prime* and *NBN*).

ACTIONS to be taken on DECISION TO EVACUATE:

If the *Tamworth SES Local Controller* decides to EVACUATE the camping grounds ;

The *Tamworth SES Local Controller* will:

- a. Arrange for *SES* or vehicles fitted with public address systems, to broadcast evacuation orders on the affected Camping Grounds or request *Police* or another Emergency Service to undertake such
- b. Provide *SES volunteers* for the evacuation of the campers
- c. Arrange for *Council Staff* to be in attendance at all sites to facilitate orderly relocation.
- d. Request *Department of Community Services* and *Tamworth Regional Council* staff to be in attendance for reception of evacuees at the alternative sites.
- e. Request available personnel and resources from Local Emergency Management Committee members such as the Rural Fire Service and NSW Fire Brigade to assist with the evacuation
- f. Request *Police* vehicles with public address systems fitted to patrol all areas where people are congregating and broadcast evacuation warnings
- g. Arrange for bus transport of campers without own transport from the Riverside camping grounds to the relocation centres (alternative sites). Pick up points for these campers on the perimeter of the floodplains should be arranged. These would typically be in the vicinity of the intersections of Carter & Bridge St and Plain & Ebsworth Streets.

The *Namoi Region SES Controller* is to:

- a. Arrange for evacuation warnings to be disseminated via local radio and TV media outlets (Radio: *2TM, FM 92.9, Festival Radio* and *ABC*. TV: *Prime* and *NBN*).

The *Local Area Commander (LAC)* for *Oxley Local Area Command* will;

- a. Provide available police officers to assist *SES, Council staff* and other *Emergency Service Personnel* with the evacuation.

- b. Arrange for *Police* vehicles with public address systems fitted to patrol all areas where people are congregating and broadcast evacuation warnings.
- c. Contact all licensed premises and entertainment venues and arrange to have evacuation warnings placed over the public address systems.
- d. Implement appropriate Traffic Control measures (particularly on Bridge Street) to ensure the timely evacuation of *Campers* from the Carter Street Camping Grounds.
- e. If requested by the *Tamworth SES Local Controller*, arrange for *Police Vehicles* fitted with public address systems to broadcast evacuation orders on the Carter Street Camping Grounds

Relocation Centres (Alternative Sites):

Campers evacuated from flood affected Council Reserves are to be relocated to the following 'Alternative Sites' as confirmed by *Tamworth Regional Council*:

- a) Chaffey Park
- b) Chauvel Park
- c) Belmore Park
- d) Hyman Park

Other locations such as the Tamworth Regional Sporting Complex area near to the TRECC (Tamworth Regional Entertainment & Convention Centre) at the intersection of the New England Highway (Goonoo Goonoo Road) and Greg Norman Drive may also be utilised by agreement between *Police, SES and Council*, as required.

A Map showing the location of the Relocation Centres (Evacuation Points) a) to d) above and the Tamworth Regional Entertainment & Convention Centre (which is surrounded by the Tamworth Regional Sporting Complex) is included as Appendix 1 to this Sub plan.

NOTE:

Example Evacuation Maps / Information Brochures which will be provided to evacuees are also attached. These maps may change as needs arise so are included as a guide only.

COMMAND AND SIGNAL

Control Arrangements

Evacuations are to be controlled by the Tamworth SES Local Controller. The evacuation is conducted with the assistance of the Tamworth Local Emergency Management Committee.

An *SES Site Commander* will be appointed to coordinate the evacuation from the Carter Street Camping Grounds and will establish a Command Post within the camping grounds.

RETURN OF CAMPERS

Following an evacuation of campers from the Tamworth Floodplain, the *Tamworth SES Local Controller* will determine when the risk of flooding has abated sufficiently for the consideration of the return of campers to the Tamworth Floodplain.

The actual decision to permit campers back onto the flood affected camping areas will be made and publicised by *Tamworth Regional Council*.



Appendix I - Flood Evacuation Points

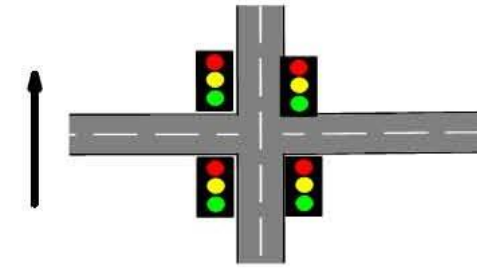
Evacuated to Belmore Park

YOU ARE HERE

Belmore Park Evacuation Area

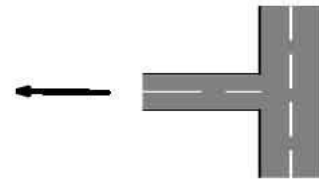
START

1.



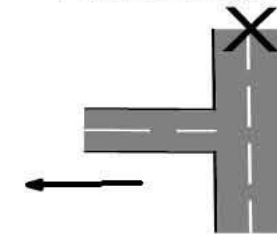
Crn Ebsworth Street and Bridge Street
Travel Straight ahead

2.



Turn Left

3.



Turn Left
Follow signs to Emergency
Evacuation Centre

FINISH

YOU ARE HERE

Evacuated to Chauvel Park



START

1.

Travel to Jewry Street roundabout

Turn left

2.

Travel 2.53 km to Gunnedah Road

Turn Left

3.

Travel 850m to Werris Creek Rd Roundabout

Turn Right

4.

Travel 1.6 Km to Hillvue Rd turn off

Turn left --follow sign to Emergency Evacuation Centre

FINISH

Chauvel Park Evacuation Area

EMERGENCY CONTACT INFORMATION

To report an accident or incident requiring 'urgent' assistance from either:

Police / Ambulance / Fire Brigade **Dial '000'**

The Operator may need the following details:

Your location: **Chauvel Park, Tamworth**
Street name: **Waree Drive**
Nearest cross street: **Kyilla Street**

If you are suffering hardship or welfare issues as a result of the evacuation please contact:

Department of Community Services **1800 018 444**
6768 4600

If you require 'non-urgent' Police assistance while staying at the Evacuation Area:

Tamworth Police Station **6768 2999**

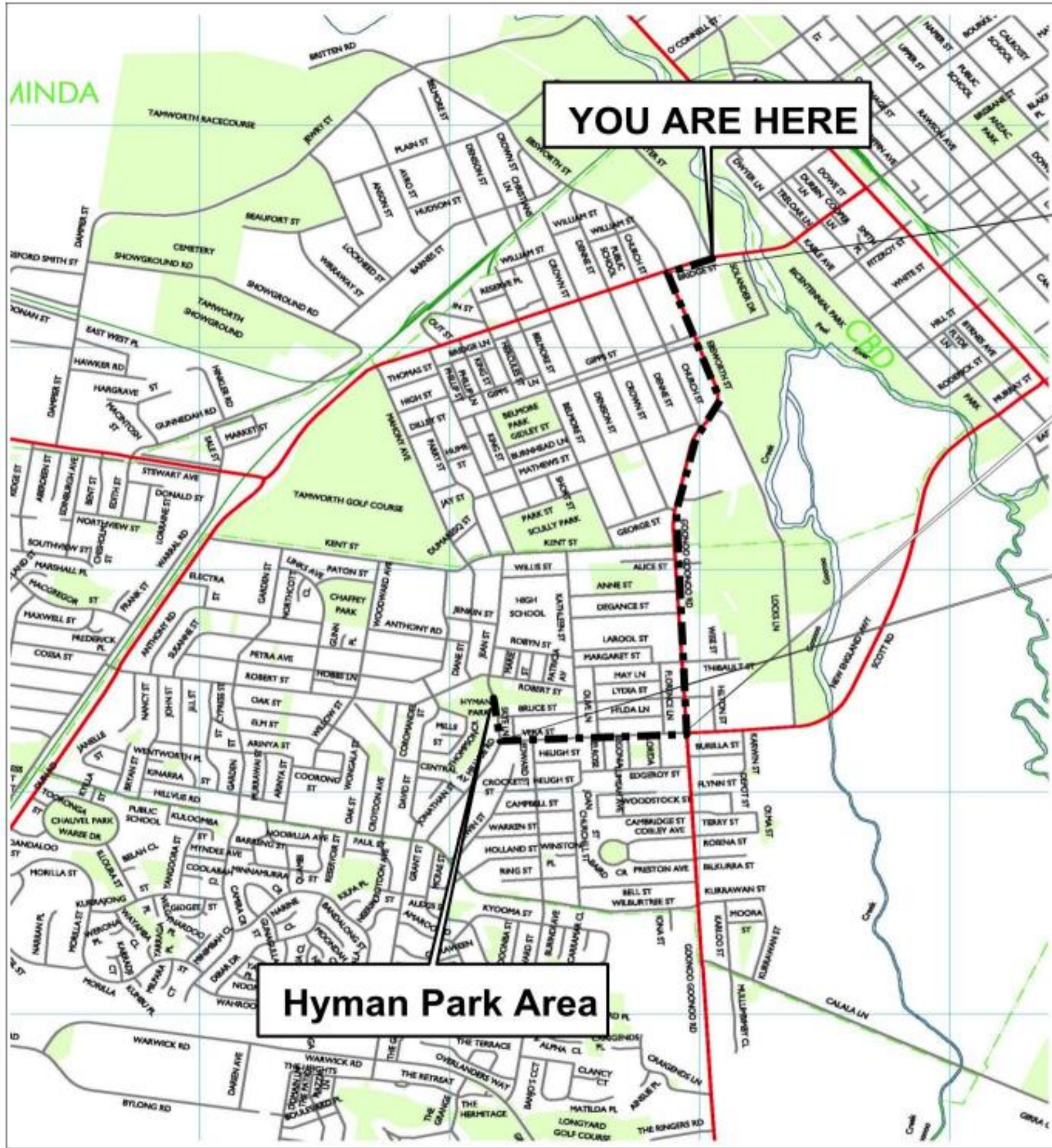
For Flooding, Storm Damage or Evacuation assistance:

SES (State Emergency Services) **132 500**

Other general and support information is available from:

Tamworth Regional Council **6767 5555**

Evacuated to Hyman Park

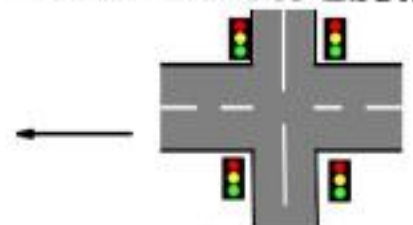


YOU ARE HERE

Hyman Park Area

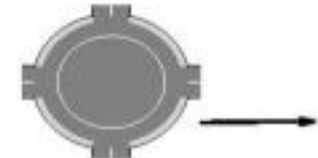
START
1.
2.
3.
FINISH

1. Travel 180m to Ebsworth Street



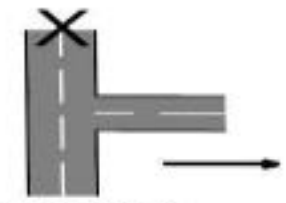
Turn Left

2. Travel 2.1km to Vera Street



Turn Right

3. Travel 700m to Hillvue Road



Turn Right
Follow signs to Evacuation Area

EMERGENCY CONTACT INFORMATION

To report an accident or incident requiring 'urgent' assistance from either:

Police / Ambulance / Fire Brigade **Dial '000'**

The Operator may need the following details:

| | |
|------------------------------|-----------------------------|
| Your location: | Hyman Park, Tamworth |
| Street name: | Jean Street |
| Nearest cross street: | Robert Street |

If you are suffering hardship or welfare issues as a result of the evacuation please contact:

| | |
|---|---------------------|
| Department of Community Services | 1800 018 444 |
| | 6768 4600 |

If you require 'non-urgent' Police assistance while staying at the Evacuation Area:

| | |
|--------------------------------|------------------|
| Tamworth Police Station | 6768 2999 |
|--------------------------------|------------------|

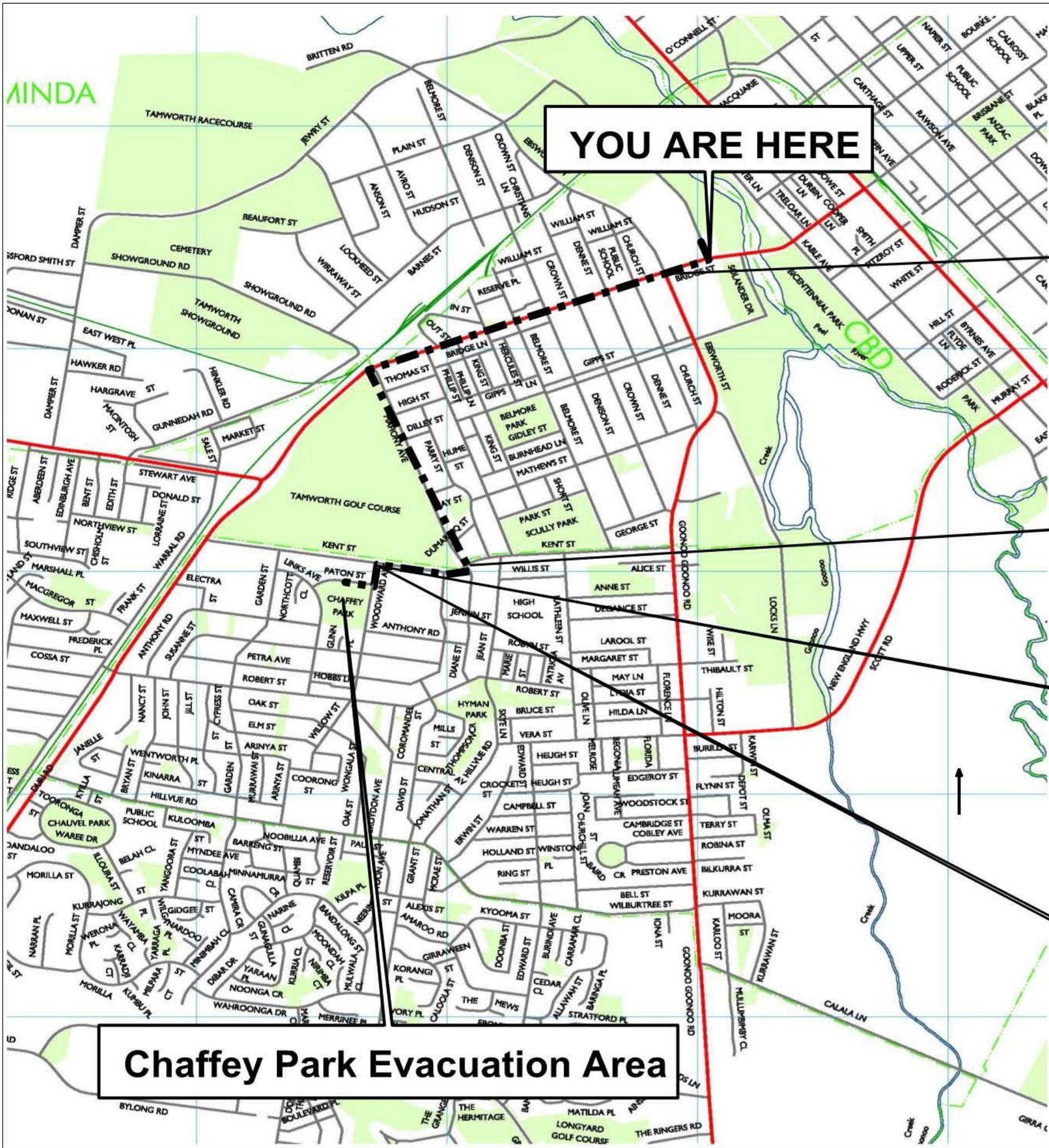
For Flooding, Storm Damage or Evacuation assistance:

| | |
|---------------------------------------|----------------|
| SES (State Emergency Services) | 132 500 |
|---------------------------------------|----------------|

Other general and support information is available from:

| | |
|----------------------------------|------------------|
| Tamworth Regional Council | 6767 5555 |
|----------------------------------|------------------|

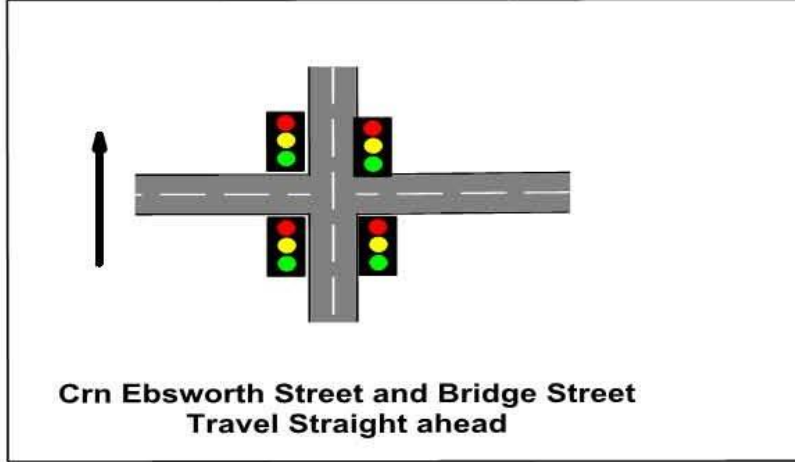
Evacuated to Chaffey Park



YOU ARE HERE

Chaffey Park Evacuation Area

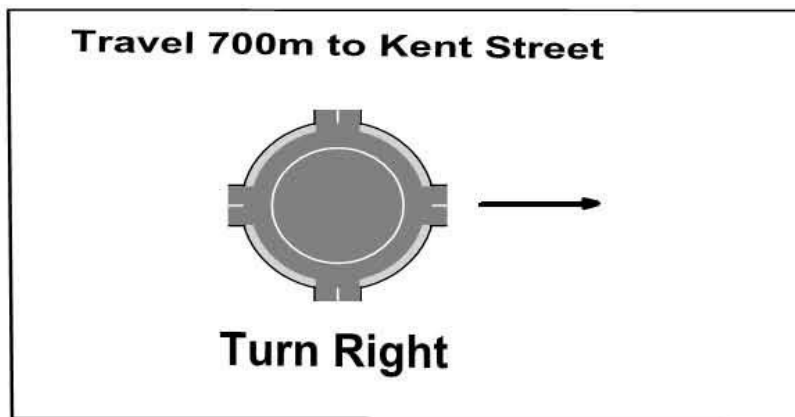
START
1.



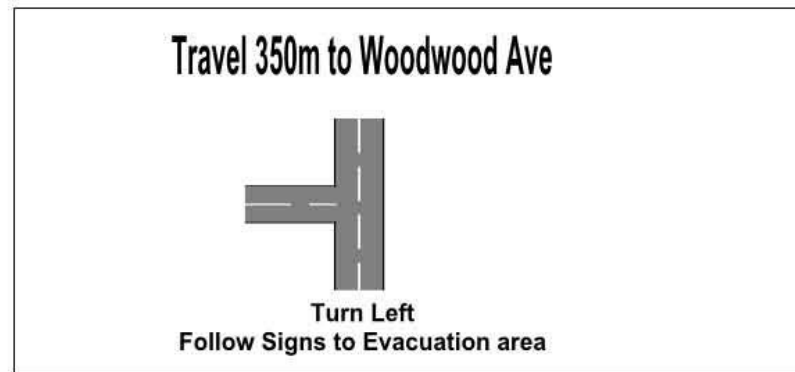
2.



3.



4.



FINISH

EMERGENCY CONTACT INFORMATION

To report an accident or incident requiring 'urgent' assistance from either:

Police / Ambulance / Fire Brigade **Dial '000'**

The Operator may need the following details:

| | |
|------------------------------|-------------------------------|
| Your location: | Chaffey Park, Tamworth |
| Street name: | Links Avenue |
| Nearest cross street: | Paton Street |

If you are suffering hardship or welfare issues as a result of the evacuation please contact:

| | |
|---|---------------------|
| Department of Community Services | 1800 018 444 |
| | 6768 4600 |

If you require 'non-urgent' Police assistance while staying at the Evacuation Area:

| | |
|--------------------------------|------------------|
| Tamworth Police Station | 6768 2999 |
|--------------------------------|------------------|

For Flooding, Storm Damage or Evacuation assistance:

| | |
|---------------------------------------|----------------|
| SES (State Emergency Services) | 132 500 |
|---------------------------------------|----------------|

Other general and support information is available from:

| | |
|----------------------------------|------------------|
| Tamworth Regional Council | 6767 5555 |
|----------------------------------|------------------|