NSW STATE EMERGENCY SERVICE

Mid Coast Council

(Greater Taree)

Local Flood Emergency Sub Plan

FloodSafe

MIDCOAST COUNCIL FLOOD EMERGENCY SUB PLAN

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

Volume 1 of the MidCoast Council Flood Emergency Sub Plan

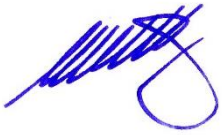
Endorsed by the MidCoast Council Local Emergency Management Committee

20 November 2023

AUTHORISATION

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

Authorised

Signature: 

NSW SES Deputy Zone Commander

Print Name: Stephen Leahy OAM

Date: 27th November 2023

Endorsed

Signature: 

Chair, Local Emergency Management Committee

Print Name: Peter Hatton

Date: 20 November 2023

PREVIOUSLY ENDORSED VERSION PRIOR TO LGA AMALGAMATION

The below table lists all previously endorsed versions of this plan.

Description	Date
Gloucester Shire Flood Emergency Sub Plan	April 2015
Gloucester Shire Local Flood Plan	October 2009
Great Lakes Local Flood Plan	December 2011
Greater Taree City Flood Emergency Sub Plan	Mar 2013
Greater Taree City Local Flood Plan	December 2012
Greater Taree City Local Flood Plan	August 2007

AMENDMENT LIST

Suggestions for amendments to this plan should be forwarded to:

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

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

Amendment Number	Description	Updated by	Date

DISTRIBUTION LIST

Available for general use and distribution on the NSW State Emergency Service website www.ses.nsw.gov.au

CONTENTS

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 MidCoast Council Local Government Area (LGA).

1.2 AUTHORITY

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

1.2.2 This plan is a sub plan to the MidCoast Council Local Emergency Management Plan (EMPLAN) and is endorsed by the MidCoast Council Local Emergency Management Committee (LEMC).

1.3 ACTIVATION

1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.

1.3.2 The MidCoast Council Emergency Management Plan (EMPLAN) is active at all times in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW State Emergency Service (NSW SES).

1.4 SCOPE

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

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

1.4.3 The plan sets out the MidCoast Council level emergency management arrangements for prevention, preparation, response and initial recovery for flooding in the MidCoast Council LGA. Hazard and Risk information can be found in Volume 2 of this document, and NSW SES Response Arrangements can be found in Volume 3.

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

1.4.5 The arrangements for dealing with episodes of coastal erosion by severe weather, are described in the NSW State Storm Sub Plan.

1.4.6 The arrangements for the emergency management of tsunami are dealt with in the NSW State Tsunami Emergency Sub Plan.

1.4.7 This plan outlines the local level arrangements for the management of downstream consequences of flooding due to dam failure, however it does not cover the management of flooding of an underground mine by inrush or other cause, which should be covered by the Mine 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 MidCoast Council are detailed within this plan, Appendix B and Appendix C.

1.7.3 Any agency with agreed responsibilities in this plan that are temporarily 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 MidCoast Council LGA. This is outlined in three Volume 2s – Hazard and Risk (prior to amalgamation): Greater Taree; Gloucester; Great Lakes.

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

Dam Name	Owner	Above safety threshold
Duralie Coal Auxiliary Dam 1	Duralie Coal Pty Ltd	No
Duralie Coal Auxiliary Dam No 2	Duralie Coal Pty Ltd	No
Duralie Coal Mine Water Dam	Duralie Coal Pty Ltd	No
Bootawa Dam	MidCoast Council	No

3 PREVENTION/ MITIGATION

3.1 INTRODUCTION

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

3.2 LAND USE PLANNING

3.2.1 **Strategy:** Effective land use planning is a key focus for minimising the impacts of flooding. 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 floodplain management program.

Actions:

a. NSW SES will provide coordinated and consistent emergency management advice to councils and other agencies in relation to the management of land that is subject to flooding or coastal inundation.

b. NSW SES will provide advice, support, technical resources and training for NSW SES representatives to contribute effectively on local Floodplain Management Committees.

4 PREPARATION

4.1 INTRODUCTION

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

4.2 FLOOD EMERGENCY PLANNING

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

Actions:

a. Develop and review this NSW SES Local Flood Emergency Sub Plan as required. Local Flood Emergency Sub Plans outline the specific arrangements for management of flood events within an LGA, and may include cross boundary arrangements.

b. Review plans as per Section 1.8.

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

4.3 FLOOD INTELLIGENCE SYSTEMS

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

Actions:

a. Gather and assess flood information for the full range of flood types and severities.

b. Collect, collate, and assess information on the characteristics of communities at risk and the potential effects of flooding on communities at risk.

c. Share flood intelligence information with supporting agencies.

4.4 DEVELOPMENT OF WARNING SYSTEMS

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

Actions:

a. All levels of government work in partnership to develop and maintain flood warning infrastructure.

b. NSW SES maintains a list of the requirements for flood warnings for flood gauges in NSW (including flood classifications, warning times required and key statistics) and can be found in the supplementary document to the NSW State Flood Plan (see Section 1.9). Gauges of relevance within the MidCoast Council LGA are also listed in the three Volume 3s of this plan (prior to amalgamation: Gloucester; Greater Taree; Great Lakes).

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. 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.

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

g. NSW SES develops and maintains warning and flood information products by:

- Utilising flood intelligence data.
- Developing warning and flood information products.
- Continuously reviewing warning and flood information products.
- Consulting with affected communities, key stakeholders, Dam Safety NSW and the NSW and ACT Flood Warning Consultative Committee, and maintains Operational Readiness.
- Participating in the development of public information and warning systems.

h. Gauge owners adequately maintain flood warning gauges and systems, including those identified in the 'Service Level Specification' maintained by the Bureau of Meteorology (Bureau) and those identified in the 'Provision and Requirements for Flood Warning in New South Wales' maintained by 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 as required.

b. NSW SES will provide Liaison Officer(s) to Emergency Operations Centres as required.

c. Where possible Emergency Operation Centres to be co-located with NSW SES Incident Control Centres for Flood Emergency Response.

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

Actions:

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. Dam Owners will utilise the Dam Emergency Plan to provide warnings and information to NSW SES and communities (where appropriate).

c. NSW SES Incident Controllers will issue the following NSW SES Flood Warnings aligning to the Australian Warning System:

- Advice;

- Watch and Act; and
- Emergency Warning.

d. NSW SES liaises with the Bureau to discuss the development of flood warnings as required.

e. NSW SES provides alerts and deliver flood information to affected communities using a combination of public information.

f. NSW SES may request supporting agencies redistribute NSW SES alerts and information, including through the provision of doorknocking teams.

g. Road closure information will be provided to the community through the following agencies/methods:

- MidCoast Council website;
- Transport for NSW 'Live Traffic' website: www.livetraffic.com or 'Transport InfoLine': 131 500. VMS messaging on roadways may also be used to advise motorists.

h. The Public Information and Inquiry Centre will be established by NSW Police Force where required to provide information regarding evacuees and emergency information. Contact details will be broadcast once the centre is established.

i. The Disaster Welfare Assistance Line will be established by Disaster Welfare Services where required to provide information on welfare services and assistance. Assistance line contact details will be broadcast once Disaster Welfare Services commence.

5.5 PROTECTION OF PROPERTY

5.5.1 **Strategy**: Coordinate the protection of property from destruction or damage arising from floods.

Action: NSW SES, supporting agencies, and community volunteers will assist the community (where resources are available, feasible and safe to do so) in:

a. The protection of properties 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. MidCoast 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 MidCoast Council or Transport for NSW have not already acted and if public safety requires such action.

d. NSW SES will assist with erecting road closure signs and barriers when time and resources permit.

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

a. The NSW SES Incident Controller may direct the imposition of traffic control measures into flood affected areas in accordance with the provisions of the *State Emergency Service Act, 1989* and the *State Emergency Rescue Management Act, 1989.*

b. The NSW SES Incident Controller may request the Local Emergency Operations Controller provide suitable personnel to assist with traffic coordination.

5.7 PROTECTION OF ESSENTIAL SERVICES

5.7.1 Arrangements for the protection of local assets are outlined in Volume 3 of this NSW SES local Flood Emergency Sub Plan. In addition, Local and Region EMPLAN's contain infrastructure inventories.

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

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; and

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 a 'Reduced Threat: Return with Caution' issued.

5.14 POST IMPACT ACTIONS

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

Actions:

a. 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 MidCoast 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 MidCoast Council Council(s) on post flood data collection analysis including review of flood intelligence where necessary.

6 RECOVERY OPERATIONS

6.1 INTRODUCTION

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

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

6.2 NSW SES RECOVERY ROLE

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

6.2.2 **Actions**:

a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase.

b. NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies and general advice and assistance to the committee as a subject matter specialist and or expert.

c. NSW SES will provide information to 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 NSW Reconstruction Authority

7 ABBREVIATIONS

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

8 GLOSSARY

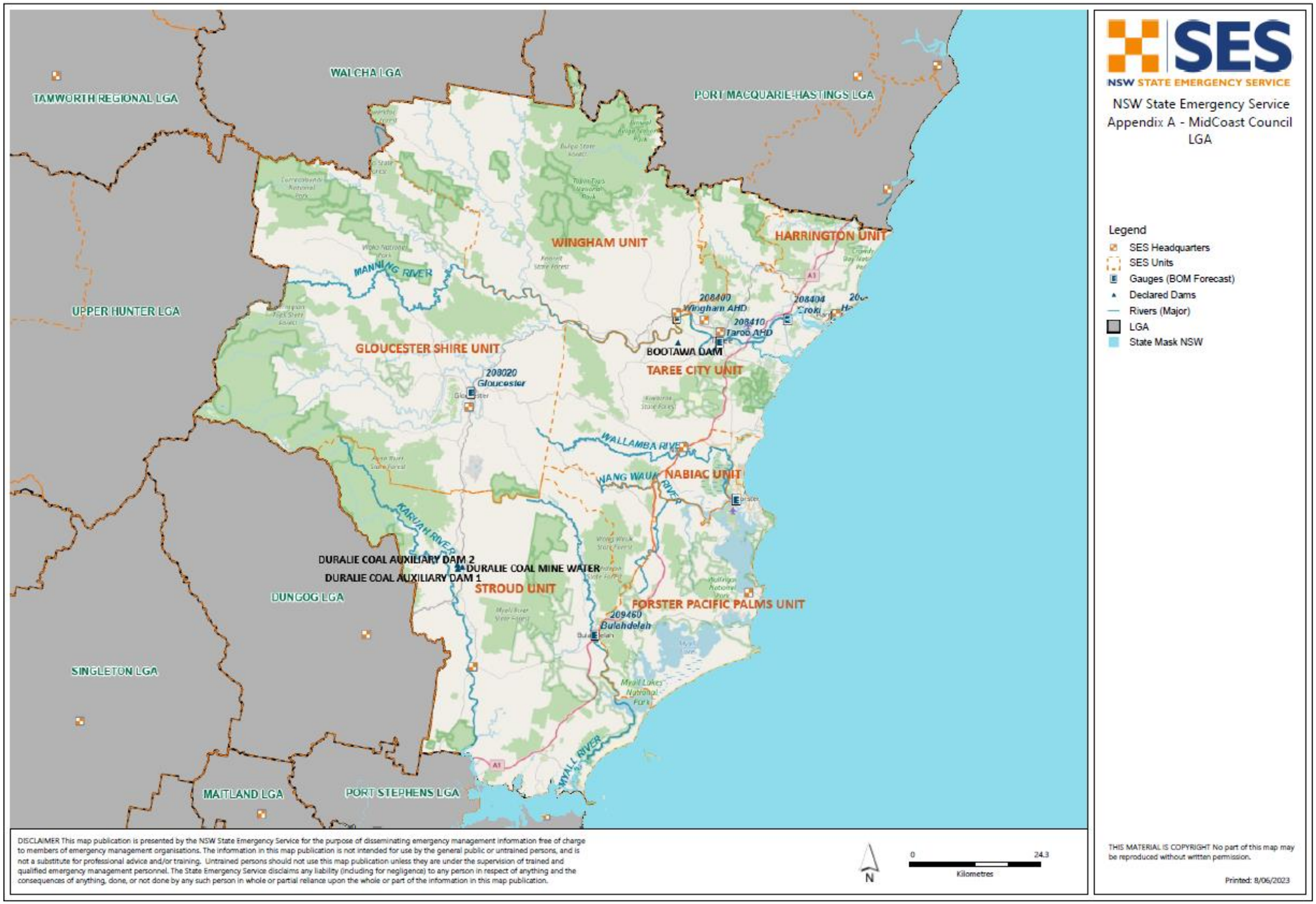
Common emergency service terminology can be found within the Australian Disaster Resilience Glossary.

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 MidCoast Council LGA



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.
MidCoast Council	**Preparedness** • Establish and maintain floodplain and coastal risk management committees and ensure that key agencies are represented. • Develop and implement floodplain risk management plans in accordance with the NSW Government's Flood Prone Land Policy and the Floodplain Development Manual. • Provide levee studies, flood studies and floodplain management studies to NSW SES. • Maintain Dam Emergency Plans for the MidCoast Council Bootawa Dam and provide copies to NSW SES. • Provide information on the consequences of dam failure to NSW SES for incorporation into planning and flood intelligence. • If required by council, coordinate the development of warning services for catchments prone to flash flooding (small catchments), where appropriate. • Maintain council-owned flood warning networks and flood mitigation works. • Participate in NSW SES-led flood emergency planning meetings, to assist in the preparation of Flood Sub Plans. • Maintain a plant and equipment resource list for the council area. • Contribute to community engagement activities. **Response** • Subject to the availability of council resources, assist NSW SES with flood operations including:

AGENCY	RESPONSIBILITIES
	– Traffic management on council managed roads. – 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. • Assist with making facilities available for domestic pets and companion animals of evacuees during evacuations. • Operate flood mitigation works including critical structures such as detention basins and levees and advise 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. **Recovery** • Provide for the management of health hazards associated with flooding including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. • Provide services, assistance and advice to State Government in accordance with the State Recovery Plan.
Caravan Park Proprietor(s)	• Prepare a flood emergency plan for the Caravan Park. • Ensure that owners and occupiers of movable dwellings are aware that the caravan park is flood liable by providing a written notice to

AGENCY	RESPONSIBILITIES
	occupiers taking up residence and displaying this notice and emergency management arrangement within the park. • Ensure that owners and occupiers of movable dwellings are aware that if they are expecting to be absent for extended periods, they should: – Provide the manager of the caravan park with a contact address and telephone number in case of an emergency. – Leave any movable dwelling in a condition allowing it to be relocated in an emergency (i.e.: should ensure that the wheels, axles and draw bar of the caravans are not removed and are maintained in proper working order). • Ensure that occupiers are informed of Flood Information. At this time, occupiers should be advised to: – Ensure that they have spare batteries for their radios. – Listen to a local radio station for updated flood information. – Prepare for evacuation and movable dwelling (cabins) relocation. • Ensure that owners and occupiers of caravans are aware of what they must do to facilitate evacuation and movable dwelling relocation when flooding occurs. • Coordinate the evacuation of people and the relocation of movable dwellings when floods are rising and their return when flood waters have subsided. Movable dwellings will be relocated back to the caravan park(s) by owners or by vehicles and drivers arranged by the park managers. • Secure any movable dwellings that are not able to be relocated to prevent floatation. • 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	• When notified of possible flooding or isolation, childcare centres and preschools should. – 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).

AGENCY	RESPONSIBILITIES
Energy and Utilities Services Functional Area	The roles and responsibilities for Energy and Utilities Services are outlined in the Energy and Utility Services Supporting Plan (EUSPLAN). Roles and responsibilities in addition to the Supporting Plan are: • Assist NSW SES with identification of infrastructure at risk of flood damage where resources are available. • Facilitate local utility service distribution providers (electricity, gas, water, wastewater) to: – Provide advice to 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.
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)	• Monitor flood operations. • If requested, coordinate support for the NSW SES Incident Controller.
Local Emergency Management Officer (LEMO)	• If requested by the NSW SES Incident Controller, advise appropriate agencies and officers of the start of response operations.

AGENCY	RESPONSIBILITIES
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities for Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
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.
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.

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	• 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	**Preparedness** • Understand the potential risk and impact of flooding. • Prepare homes and property to reduce the impact of flooding. • Understand warnings and other triggers for action and the safest actions to take in a flood.

	• Households, institutions and businesses develop plans to manage flood risks, sharing and practicing this with family, friends, employees and neighbours. • Have an emergency kit. • Be involved in local emergency planning processes. **Recovery** • Assist with community clean-up if required and able to do so. • Participate in After Action Reviews if required.

Greater Taree City Council

NSW STATE EMERGENCY SERVICE

HAZARD AND RISK IN GREATER TAREE CITY

Volume 2 of the Greater Taree City Local Flood Plan

Last Update: December 2014

FloodSafe

AUTHORISATION

The Hazard and Risk in Greater Taree City 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

Manager Emergency Risk Management

Date: 21/10/14

Approved

NSW SES Mid North Coast Region Controller

Date: 11/12/14

Tabled at LEMC

Date:

CONTENTS

LIST OF TABLES

VERSION LIST

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

Description	Date
Greater Taree City Local Flood Plan endorsed	August 2007
Greater Taree City Local Flood Plan endorsed	August 2007

AMENDMENT LIST

Suggestions for amendments to this Volume should be forwarded to:

The Local Controller

NSW State Emergency Service

P.O. Box 1011, TAREE NSW 2430

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

Amendment Number	Description	Updated by	Date
1	Updated peak height listings and design flood levels for Wingham	E. O'Shannessy	26/04/2017
2	Updated consequences to match updated design flood levels for Wingham	M. de Deuge	07/03/2018

1 THE FLOOD AND COASTAL EROSION THREAT

1.1 LANDFORMS AND RIVER SYSTEMS

1.1.1 The Greater Taree City Council area comprises of the Manning River catchment and small sections of the Camden Haven River and Hastings River catchments MAP 1 - Manning River basin. Information on flooding in the Manning River catchment is discussed below. For information on the Hastings and Camden Haven river catchments refer to the Port Macquarie Hastings Flood Emergency Sub Plan.

1.1.2 The Manning River, situated approximately 290 kilometres north of Sydney, drains an area of approximately 8200 square kilometres (1). From its entrances at Harrington and Old Bar, the river extends inland for a distance of about 175 kilometres to the Great Dividing Range (1). The elevation of the valley varies from almost mean sea level along the coastal areas downstream of Taree to more than 1500 metres in the Barrington Tops area. The principal tributaries of the Manning are the Avon, Rowleys, Little Manning (1), Barrington, Gloucester, Barnard, Nowendoc, Number Two and Lansdowne Rivers and Dingo Creek (2).

1.1.3 The valley consists of four main topographic zones; plateau areas, deeply dissected uplands, alluvial valleys and coastal riverine plains. The Manning River Basin is bounded on the north east by the Hastings River, on the north west by the Peel River, on the South and South West by the Hunter River and on the south east by the Karuah River. In general, major streams in the valley commence in the plateau or dissected uplands and flow easterly or south-easterly through alluvial valleys, and in the lower section of the valley, the Manning River traverses the coastal riverine or flood plain zone (2).

1.1.4 The Manning River rises in the Mount Royal Range about 15 kilometres north from Barrington Tops and soon enters the dissected upland areas, passing through mountainous and heavily forested country, traversing waterfalls and rapids in its steep descent to the alluvial valleys (2).

1.1.5 The western section of the valley is drained by the Barnard River, which also rises in the mountainous country at elevation from 1000-1200 metres. The main tributary of the Barnard is the Myall River, which rises 25 kilometres North West of the Nowendoc River at an altitude of 1500 metres, and travels through steep terrain in a south-easterly direction to join the Barnard River (2).

1.1.6 The central section of the valley is drained by the Nowendoc, and its tributaries the Cooplacurripa, Mummel and Number One Rivers, all of which rise in the mountainous and heavily forested country at altitudes ranging between 1300-1500 metres. The Barrington and Gloucester Rivers drain the south western sector of the valley. Both these streams rise and travel through steep and hilly country, with the general elevation of the land being about 1000 metres (2).

1.1.7 The lower north eastern sections of the valley are drained by the Dingo and Cedar Party Creeks and the Lansdowne River, the latter of which enters the flat coastal flood plain area of the Manning at Coopernook (2).

1.1.8 Below Taree, the lower Manning River flows through a wide floodplain before entering the Pacific Ocean at Harrington and Farquhar Inlet. The topography in these areas has the general characteristics of natural levee banks falling to low lying, poorly drained swampy areas (2).

1.1.9 The main river channel splits downstream of Taree as it passes around Dumaresq Island into channels known as the North and South Passages. These channels re-join downstream of the island and flow on to Harrington. Subsidiary channels, known as the South Channel and Scotts Creek, leave the southern banks of the South Passage, joining and flowing to the Pacific Ocean north of Old Bar at Farquhar Inlet, which alternates between being open and closed to the ocean (1). The North Passage is joined by the Dawson and Lansdowne Rivers and flows into the Pacific Ocean at Harrington (1).

1.1.10 The main river channels of the lower Manning, together with the local connecting creeks such as Scott's, Cattai, Ghinni Ghinni, Tappin and Saltwater Creeks, form a delta system and consequently a series of islands – Dumaresq, Mamboo, Jones, Oxley, Charleys, Cabbage Tree and Mitchell's Islands (1).

1.1.11 The Manning River is subject to a tidal influence up Abbotts Falls, approximately three kilometres upstream of Wingham (1).

1.2 STORAGE DAMS

Bootawa Dam

1.2.1 The only major dam structure is the Bootawa Dam which is an off-stream storage facility owned and operated by Mid Coast Water. It is located South-South-East of the township of Wingham MAP 1 - Manning River basin.

1.2.2 The dam has a capacity of 2,200 mega litres and storage area of 26.3 hectares and 16 metres deep. Bootawa Dam does not have any mitigating effect on flooding as it is purely an off stream storage facility reliant solely on pumping from the river which does not occur during times of flood (3).

1.2.3 Further information can be obtained from the Dam Safety Emergency Plan for Bootawa dam (DSEP) (3).

Table 1: Prescribed Dams in Greater Taree City LGA; summary of information about each storage (4).

Bootawa Dam	
Owner / Operator	MidCoast Water
Description of Dam	Storage capacity of 2280 ML, with a side channel spillway crest level of RL 53.74 m AHD.
Location	Off-creek storage dam, 8km west of Taree on an un-named

	minor tributary of the Manning River.
Communities Downstream	Nine properties (on Storage Dam Road and Bootawa Dam Road, Bootawa) are at risk of dambreak inundation identified in the dam safety emergency plan.
Monitoring System	Daily monitoring occurs for seepage and a series of hydraulic piezometers monitor downstream and upstream conditions monthly. Under flood conditions the gauge is read hourly.
Warning System	NSW SES is responsible for warning and issuing evacuation orders to downstream residents upon receipt of notification of Flood warning and Emergency response (also known as Amber and Red) alerts respectively. A Protection Response is issued at 53.94m AHD (similar to a "white alert"). The Flood Warning response is identified as 54.14m AHD. The Emergency Response is identified as 54.54m AHD.
Other	The Storage level at the main embankment (i.e. imminent failure flood level) is 54.96m AHD, with a maximum flood level of RL 56.7m AHD.

1.3 WEATHER SYSTEMS AND FLOODING

1.3.1 Heavy rain which produces floods in the Greater Taree City council area may come from the following types of weather systems (2):

a. **East Coast Low-Pressure Systems**. E.g. such as the June 2011 flood event. East Coast low-pressure systems that travel along the coast, usually in a southerly direction and during the cooler months, direct moist on-shore winds over the Manning River catchment. Orographic uplift of these air masses once they hit the Great Dividing Range often produces heavy rainfall. Along the coast, oceanic storm surges and large waves may also result from East Coast low-pressure systems and their associated gales and storm-force winds. Such conditions may lead to incursions of seawater onto land, which is usually not flooded, and to the retarding of flood flows from eastward –flowing streams and coastal lakes. Erosion of sand dunes may also occur endangering properties and exposing landward areas to seawater inundation. These effects are most apparent if storm surge conditions occur during periods of spring or extreme tides.

b. **Ex-Tropical Cyclones**. Rain depressions originating as tropical cyclones in the Gulf of Carpentaria or Coral Sea move southwards sometimes causing flooding in the Manning River catchment. Usually such flooding

occurs in the months from January to April. In coastal areas high seas, large waves and storm surge conditions may occur in addition to extremely heavy rain and may be associated with the erosion of sand dunes in addition to flooding.

c. **Monsoonal Low-Pressure Systems**. Monsoonal low-pressure systems move across the Great Dividing Range from northern Australia, usually during the late summer months and autumn months. These systems are indicated on weather maps as elongated low-pressure troughs stretching from the Northern Territory to the north coast of NSW.

d. **Frontal Systems**. Sequences of fronts cross the valley from west to east, usually in the winter months. The individual fronts are not usually associated with very heavy rainfalls but the cumulative effect of a series of them over a period of some weeks may produce flooding. This flood-producing mechanism is uncommon.

e. **Thunderstorms**. High-intensity, short duration, convective thunderstorms occur frequently over the Greater Taree City Council area, especially during the summer months. The rain from such storms may cause town drainage systems or minor creeks to surcharge, creating local flooding in low-lying areas. No rise in the Manning River is likely from such events.

1.3.2 The average annual rainfall over the Manning Valley is 1179mm. The highest annual rainfall is experienced in the north-eastern sector of the valley near Comboyne where the average annual rainfall is 1630mm. The driest area of the valley is along the middle and upper sections of the Manning where rainfall is less than 1000mm per year. The wettest period in the year occurs from December to April. Along the coast the wet period may extend until June. August, September and October are the driest months. Very heavy rainfalls may be experienced when depressions are located off the north coast of New South Wales or when tropical low pressure systems move over the catchment from the north western area of the State in summer. During such periods, rainfalls of 250mm in 24 hours are not uncommon (5).

1.4 CHARACTERISTICS OF FLOODING

1.4.1 The Manning River can rise quickly. During the 1978 flood rates of rise as high as 1.5 metres per hour occurred at Wingham and upstream with rises of about 0.4 metres per hour occurring at Taree (6). The rate of rise during the 2011 flood was slower, with up to 0.5 metres per hour at Killawarra and Belbowrie Bridge and up to 0.3 metres per hour in Taree West (1).

1.4.2 The floodplains to the north of the Pacific Highway have the potential to store a significant volume of floodwater. There are large areas of low-lying land to the west of the town of Coopernook and on the Moto floodplain. Rising flood levels in the Manning River result in flood waters filling these low areas through the back-up of Ghinni Ghinni Creek and the Lansdowne River. In extreme flood events the Pacific Highway may be overtopped and significant

volumes of flood water may flow from the Manning River across the highway and onto the eastern and southern floodplains at 2.87m on the Croki gauge (2). In particular, the highway between the Harrington Road turn off south to the Coopernook River Bridge (observed in June 2011) (1).

1.4.3 Flood behaviour varies across the floodplain. Flooding of the upper floodplains above Croki is influenced primarily by rainfall, whilst the lower floodplains below Croki are influenced by rainfall, river entrance conditions and oceanic affects including tides and storm surge. Oceanic influences and the effects of entrance conditions are greatest at Harrington, Manning Point and Old Bar. The following table lists the estimated ocean levels for various probabilities (7).

Table 2: Estimated ocean levels for various probabilities

AEP	ARI	Height (m AHD)
1%	1 in 100 years	2.26
2%	1 in 50 years	2.18
5%	1 in 20 years	1.90

1.4.4 High flood velocities can be experienced in the upper catchment as far downstream as Taree. In particular high velocity flooding can be experienced on the Wingham Peninsula and Taree Estate. Velocities reduce below Taree due to the backwater nature of flooding. The only exception being in the immediate vicinity of the river channel where it can cause damage to riverbanks and structures located upon the floodplain (7).

1.4.5 The duration of flooding varies across the catchment. In the upper reaches the high velocities and rapid rises of floods are usually associated with rapid falls. On the coastal floodplain downstream of Taree, inundation and water logging can persist for weeks or even months after a flood due to the poor natural drainage system.

1.4.6 A flood peak at Mount George can occur within 12 to 24 hours of a concentrated burst of upstream rainfall and then take from seven to nine hours to reach Taree. Some indicative travel times which are only estimates and may vary considerably, particularly during extreme events are as follows in table 2 (1).

Table 3: Indicative flow travel time for the Manning and Lansdowne Rivers (1). ~ indicates an approximation.

From	To	Time (hrs)
Gloucester	Bundook	10 hours
Bundook	Taree	10 to 15 hours
Bundook	Wingham	7 to 12 hours
Mt George	Wingham	4 to 6 hours
Mt George	Killawarra	~2.25 hours (1)
Killawarra	Wingham	~2.5 hours (1)
Wingham	Taree West	~2.5 hours
Wingham	Taree	3 – 4.5 hours (1)

From	To	Time (hrs)
Taree	Cundletown	1 to 3.5 hours (1)
Taree	Harrington	8.5 hours (1)
Cundletown	Croki	1 to 4.5 hours (1)
Croki	Harrington	3 to 8.5 hours (1)
Lansdowne	Croki	~30 hours (1)

1.5 FLOOD HISTORY

1.5.1 The Manning River has a long recorded history of flooding. Significant floods occur irregularly and have occurred in 1866, 1875, 1895, 1929, 1930, 1968, 1976, 1978, 1990, 1995, 2010 and 2011 (1). The largest floods on record occurred in 1866, 1929 and 1978. The respective peak flood levels were 5.15, 5.6 and 5.45m AHD at Macquarie St, Taree; and 15.5, 14.9 and 14.9m AHD at Wingham Bridge (1) (Table 4; Figure 2).

Table 4: Major flood history and peak heights (metres) at Mt George, Wingham, Taree and Croki 1866 to 2011

Date	Mt George	Wingham 208400	Taree	Croki
7/1866		15.73	5.15	
2/1929		14.85	5.6	
06/1930		12.63	5.1	
2/01/1950	10.06			
19/02/1956	10.82			
29/02/1956	10.59			
1/03/1956			4.56	
01/1968	11.05	12.99	4.33	
2/03/1976		12.28		
20/03/1978	13.11	14.88	5.45	2.81
4/02/1990		12.73	4.28	
06/2011	12.24	12.24	4.5	2.14

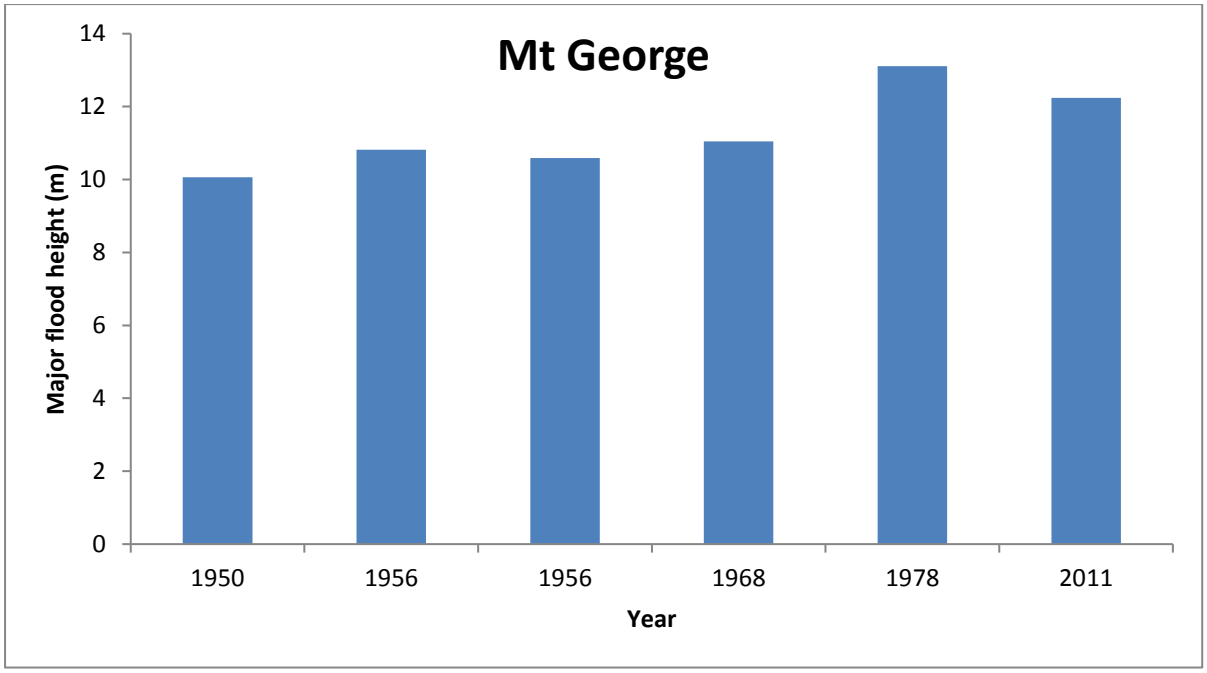


Figure 1: Flood peak heights and history for the Manning River Mt George Gauge from 1866 to 2013

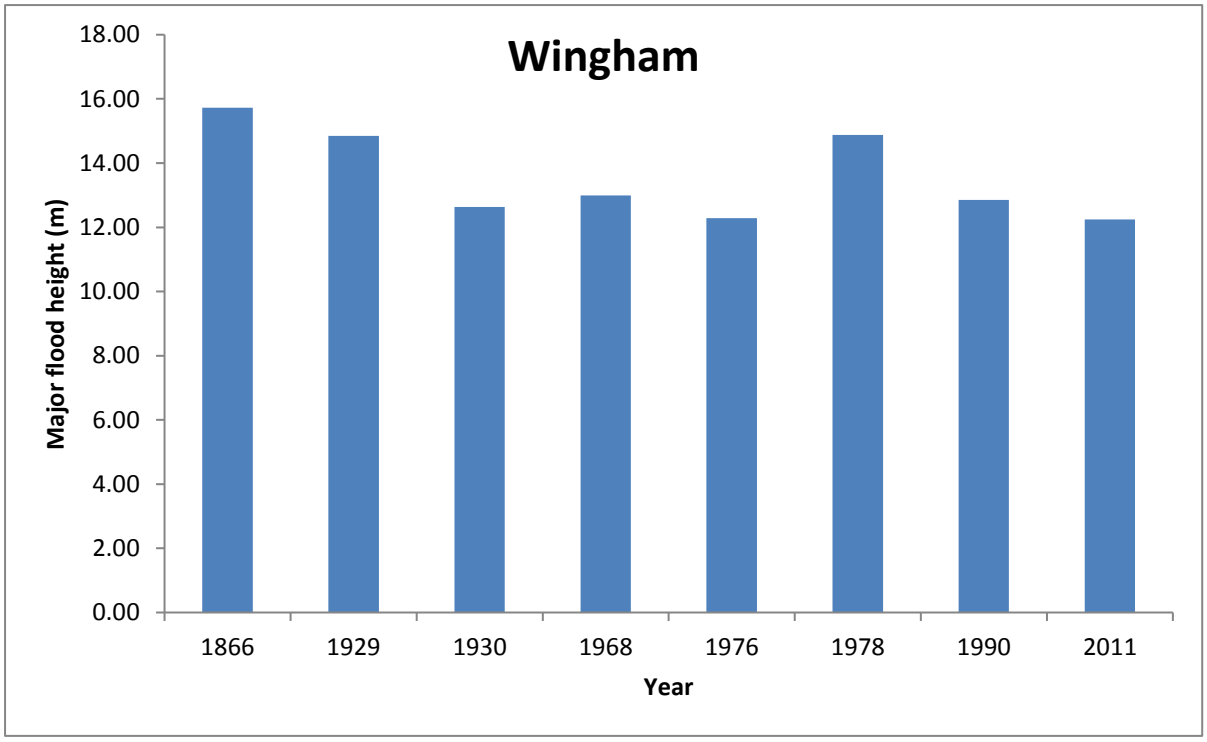


Figure 2: Major flood peak heights and history for the Manning River Wingham Gauge from 1866 to 2013

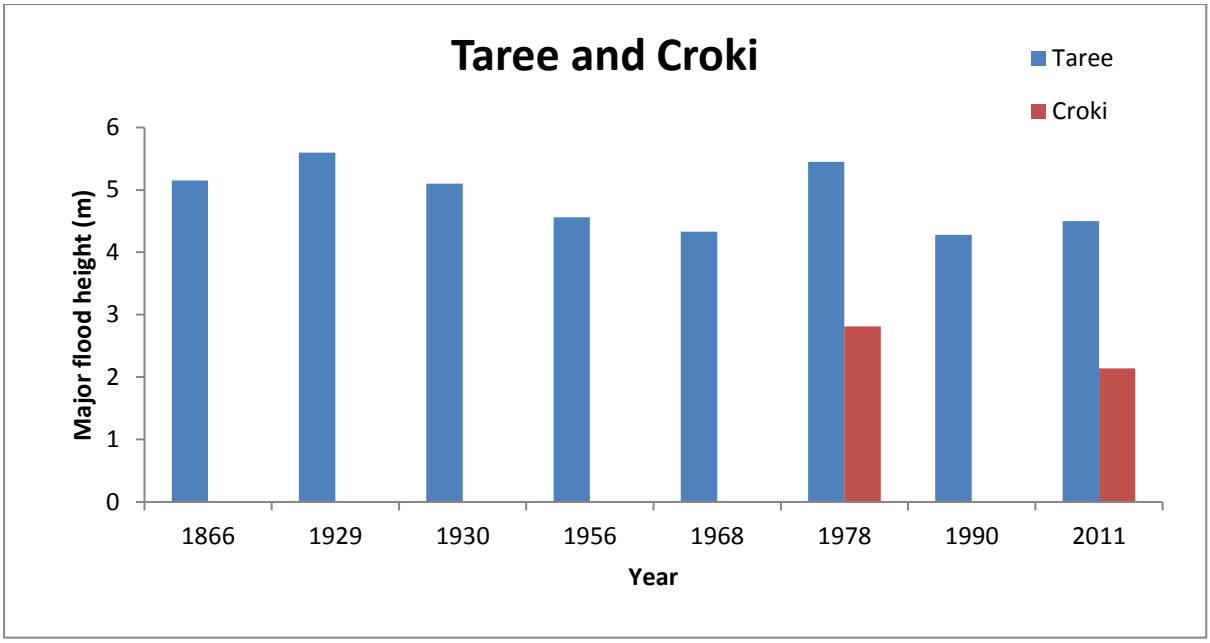


Figure 3: Flood peak heights and history for the Manning River Taree and Croki gauges from 1866 to 2013

1.5.2 The 2011 flood is estimated to be in the order of a 5% AEP flood magnitude, with four days of over 400mm of rain in the Upper Manning catchment. It still resulted in the closure of a number of roads, damage to power and sewerage infrastructure and isolation of approximately 700 properties and an estimated 26545 persons in the Taree LGA (Table 5) (1).

Table 5: Number of dwellings and population isolated in each community in the June 2011 flood event (1)

Location	Population	Dwellings
Cattai	400	22
Croki	60	20
Cundletown	700	24
Dumaresq Island	200	10
Harrington	1410	87
Lansdowne-Coopernook	600	70
Manning Point	250	56
Oxley	400	57
Pampoolah	400	84
Taree	16660	166
Taree Estate	100	21
Tinonee	700	5
Wingham	4665	81

1.6 FLOOD MITIGATION SYSTEMS

1.6.1 An embankment is located at the top of Fothering Park on Victoria St, Taree (MAP 3 -). It has a crest height of 4.94 m AHD, and protects the central business district from inundation up to a flood height of 4.63 metres on the Taree Traffic Bridge gauge. When the embankment overtops, flooding of the

CBD will occur in Pulteney and Victoria streets. Low lying businesses in Victoria Street, Albert Lane, Albert Street and the southern end of Commerce Street, and the Chapman Street Carpark may be inundated around 4.6m on the Taree Traffic Bridge gauge (1). This CBD area is also impacted by backflow from the local drainage systems.

1.7 EXTREME FLOODING

1.7.1 On very rare occasions, flooding of extreme proportions can occur. Extreme floods can reach far greater heights than any previously recorded, flooding areas without any previous flood history. In addition, such floods are generally both faster to rise and more dangerous in terms of depth and velocity than previous floods. The PMF rate of rise would be in the order of 2.1m/s at Wingham (8).

1.7.2 Design flood heights up to the PMF are summarised in Table 6.

Table 6: Design flood heights for various probabilities (1)

Location	PMF	1% AEP	2% AEP	5% AEP
Wingham (9)	24.04	14.51	13.89	12.45
Taree Traffic bridge	9.7	5.68	5.36	4.63
Croki (m AHD)	5.9	3.07	2.87	2.46
Harrington (m AHD)	2.9	2.26	2.10	1.89
Lansdowne	12.1	11.3	11.0	10.5

1.8 COASTAL EROSION

1.8.1 The following locations have property at risk of coastal erosion and are shown on MAP 12 - :

a. Old Bar Beach (10)

2 EFFECTS ON THE COMMUNITY

2.1 COMMUNITY PROFILE

Table 7: Census of Housing and Population data (2011). Data presented within this Volume of the Local Flood Plan is current as at the time of the 2011 census (11)

Census Description	Greater Taree (C)	Taree	Wingham	Old Bar	Harrington
Total Persons	46,541	17,679	5,952	4,275	2,922
Aged 0-4 yrs	2,653	1,111	348	285	129
Aged 5-14 yrs	6,025	2,247	834	527	277
Aged 65 + yrs	10,464	4,230	1,283	1,013	946
Of Indigenous Origin	2,501	1,430	242	139	79
Who do not speak English well	78	43	7	0	7
Have a need for assistance (profound/severe disability)	3,572	1,677	424	304	266
Living alone (Total)	5,011	2,280	615	455	378
Living alone (Aged 65+)	2,450	1,153	297	228	237
Residing in caravans, cabins or houseboats or improvised dwellings	328	31	9	12	100
Occupied Private Dwellings (Households)	18,161	7,028	2,297	1,711	1,268
No Motor Vehicle	1,419	890	190	94	76
Caravan, cabin, houseboat or improvised dwelling	199	23	7	3	66
Rented via State or Housing Authority	597	523	67	0	0
Rented via Housing Co-Op or Community Church Group	187	103	16	11	3
No Internet Connection	5,352	2,450	755	433	407
Unoccupied Private Dwellings	2,789	697	184	274	401
Average persons per occup dwelling	2.4	2.3	2.4	2.3	1.7
Average vehicles per occup dwelling	1.6	1.5	1.7	1.6	1.5

Census Description	Diamond Beach	Lansdowne	Tinonee	Wallabi Point	Hallidays Point
Total Persons	1,681	1,248	1,054	753	684
Aged 0-4 yrs	98	71	55	60	31
Aged 5-14 yrs	229	187	171	94	84
Aged 65 + yrs	284	219	162	93	224
Of Indigenous Origin	36	69	31	24	3
Who do not speak English well	0	0	0	3	0
Have a need for assistance (profound/severe disability)	76	92	67	35	32
Living alone (Total)	120	87	87	49	47
Living alone (Aged 65+)	56	43	32	17	33
Residing in caravans, cabins or houseboats or improvised dwellings	83	0	0	0	0
Occupied Private Dwellings (Households)	632	438	391	278	261
No Motor Vehicle	11	10	9	6	9
Caravan, cabin, houseboat or improvised dwelling	47	0	0	0	0
Rented via State or Housing Authority	0	0	0	0	0
Rented via Housing Co-Op or Community Church Group	3	0	0	0	3
No Internet Connection	97	115	77	40	45
Unoccupied Private Dwellings	226	26	41	34	129
Average persons per occup dwelling	2.5	2.7	2.6	2.6	2.4
Average vehicles per occup dwelling	1.7	2.0	1.8	2.0	1.7

Census Description	Coopernook	Manning Point
Total Persons	521	206
Aged 0-4 yrs	31	11
Aged 5-14 yrs	67	17
Aged 65 + yrs	108	89
Of Indigenous Origin	24	6
Who do not speak English well	0	0
Have a need for assistance (profound/severe disability)	36	24
Living alone (Total)	64	42
Living alone (Aged 65+)	30	26
Residing in caravans, cabins or houseboats or improvised dwellings	0	0
Occupied Private Dwellings (Households)	200	97
No Motor Vehicle	3	13
Caravan, cabin, houseboat or improvised dwelling	0	0
Rented via State or Housing Authority	0	0
Rented via Housing Co-Op or Community Church Group	3	0
No Internet Connection	69	47
Unoccupied Private Dwellings	26	62
Average persons per occup dwelling	2.4	1.8
Average vehicles per occup dwelling	1.7	1.1

2.2 SPECIFIC RISK AREAS - FLOOD

2.2.1 Numerous areas scattered across the Manning River floodplain are susceptible to flooding and are described in the following sections. Table 8 shows the number of properties inundated over-floor during various design floods.

2.2.2 In addition to areas at risk of flooding, numerous rural properties and communities including Wingham, Taree, Harrington, Crowdy Head, Manning Point, Old Bar, Tinonee, Mt George and Lansdowne can be become isolated necessitating resupply. Johns River, in the Camden Haven Catchment is also susceptible to flooding. For details regarding Johns River see the Port Macquarie Hastings Local Flood Plan.

Table 8: Number of properties flooded over-floor or isolated for various design floods in each community (1)

Location	5% AEP	2% AEP	Isolated in June 2011 (approx. 1% AEP)
Cattai	3	12	22
Croki	12	15	20
Cundletown	7	18	24
Dumaresq Island	0	9	10
Harrington	16	60	87
Lansdowne-Coopernook	11	43	70
Manning Point	23	51	56
Oxley	15	41	57
Pampoolah	37	67	84
Taree	54	121	166
Taree Estate	13	19	21
Tinonee	4	5	5
Wingham (1)	5	35	81
Wingham (7)	50	94	118

WINGHAM

2.2.3 Wingham is the second largest urban centre in the Greater Taree City council. The town is situated upon the Manning River near the upper limit of tidal influence. Three other watercourses, Stoney Creek, Cedar Party Creek and Dingo Creek also influence flooding in this area (7) (MAP 2 -).

2.2.4 Wingham is located approximately 45 kilometres upstream along the Manning River at the confluence of Cedar Party Creek. It has a population of 5,313 (11) with approximately 350 of which reside in Wingham Peninsula (12). A large portion of Wingham is elevated high above the floodplain. Some portions, including the Wingham Peninsula, consist of undulating river terrace at a general elevation of less than 12 metres. There are also portions of central

and northern Wingham where tributary drainage gullies feeding Cedar Party creek are now part of the urbanised area (7).

2.2.5 Wingham is divided into two flood emergency response planning sectors;

a. The Wingham community is bound by Wynter Street to the east, Gorman Creek to the north and the Manning River to the south.

b. Wingham Peninsula is defined by the confluence of Cedar Party Creek and the Manning River, consisting of Wingham Peninsula east of Wynter Street.

Cultural and Linguistic Diversity

2.2.6 Wingham Township and Wingham Peninsular have 218 indigenous residents recorded and some residents that have difficulty understanding the English language. There are no known programs in place to assist them (11).

Schools and childcare centres

2.2.7 The following schools and childcare centres are at risk of isolation at 10m with access to the evacuation centre remaining (7) (1).

a. Schools

- Wingham High School, 9 Rowley St, Wingham (Peninsula).
- Wingham Brush Primary School, Isabella St, Wingham.
- Murray Road Public School, 157 Murray Rd, Wingham.
- St Josephs Primary School, Church Lane, Wingham.

b. Childcare centres

- Cuddlepie Early Childhood Learning Centre, Queen Street, Wingham.

Facilities for the aged and/or infirm

2.2.8 The following facilities are at risk of isolation at 10m with access to the evacuation centre remaining (7):

a. Frank Whiddon Masonic Homes (Wingham Court) Primrose Street Wingham. This location is also at risk of flooding around 12m.

b. Wingham Community Hospital which is primarily a convalescence facility.

Utilities and Infrastructure

2.2.9 The following utilities and infrastructure are at risk of flooding (1) (7):

a. Wingham sewerage treatment works and pump stations in East Combined Street, Primrose St, Coroma Place and Wingham Road (13).

b. Concrete road bridge Wherrol Flat Road, Stoney Creek Bridge, Cedar Party Creek Bridge, Bight Bridge and other low lying bridges in the area.

c. The rail line is reported to close at 14.88 metres cutting the North South rail link.

d. Substations supplying Wingham CBD and Wingham Services Club in the Laneway behind Wingham Services Club; supplying Wingham Fire and Police Stations on the cnr of Bent and Farquhar St; and the Sewerage Treatment Works on Combined Street (14).

2.2.10 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.11 The Wingham community (excluding Wingham Peninsula) is classified as having rising road access (RRA) to an evacuation centre located on a High Flood Island (HFI) during the 5%, 1% and PMF events (1).

2.2.12 Wingham Peninsula is classified as RRA during the 5% and 1% events, becoming an overland refuge area and Low Flood Island (LFI) during a PMF event (1).

Inundation

2.2.13 The Wingham Township is covered primarily from the Bureau of Meteorology Flood Gauge 208400 located at the Bight Bridge. An additional gauge is located at Mt George giving advance warning of 4 to 6 hours (1).

2.2.14 Classification of flooding at Wingham Gauge is summarised in Table 9.

Table 9: Summary of gauge heights and classification for Wingham gauge (9).

Min	Mod	Major	5% AEP	2% AEP	1% AEP	0.5% AEP	PMF
4.9m	8.9m	11.9m	12.45m	13.89m	14.51m	15.53m	24.04m

2.2.15 Wingham Court Nursing Home lower level units, and low lying parts of Isabella and Flett Street become inundated around 12.7m.

2.2.16 During a 1% AEP (14.51m) event, 6 properties face a flow depth and velocity that would likely lead to partial or complete destruction. 31 properties can be expected to experience a very large depth of flood water up 4 metres posing a risk to life (7). In 1978 at least 30 of these were evacuated.

2.2.17 In a PMF event (24.04 m) large portions of Wingham are inundated, including all of Wingham Peninsula, with an evacuation centre and township on a HFI remaining (7);

a. 8 properties are isolated very early, before adequate warning based on river levels is available, necessitating possible evacuation prior to river level rise (this is as a direct result of the Cedar Party Creek influence).

b. 51 properties would have less than 3 hours to evacuate after the Major Flood level was reached at Bight Bridge.

c. 94 properties would have at least 3 hours to evacuate after the Major flood level was reached.

2.2.18 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.19 Isolation from Tinonee occurs when the Bight Bridge is overtopped at 5m. Upstream of Wingham, the main road to Nowendoc can be cut at McQueens low level bridge at Number One. The low level bridge at Tiri, near the junction of the Gloucester and Manning Rivers can be cut by relatively low levels of flooding (1).

2.2.20 The Wingham township becomes completely isolated when the Cedar Party Bridge is overtopped at 10m to the east, along with Stoney Creek (Peter Garret Bridge) to the north, and Gloucester Road (Wingham to Gloucester) at Dingo Creek to the west (1).

2.2.21 Isolation of the Wingham Township is normally of short duration (3-5 days) and resupply may be required for general provisions after 2 days (2).

2.2.22 Communities and isolated farms in the upper catchment above Wingham may become isolated for a considerable amount of time (5 days to 5 weeks) with some residents requiring resupply. Many upper catchment residents are prepared for extended isolation and require minimal assistance (2).

Characteristics of flooding

2.2.23 Flooding in Wingham occurs as a consequence of riverine and overland water flow towards the Manning River system. Cedar Party and Dingo Creeks enter into the system around the township (7).

2.2.24 During early stages of flooding, Cedar Party Creek has a greater effect on flood heights upstream of Wynter Street Bridge (7).

2.2.25 The ultimate level of inundation is influenced by backwater flow from the Manning River (7).

2.2.26 Wingham Peninsula is particularly hazardous, with flood depths exceeding 8.1m in a 14.3m flood to 14m in a PMF (8). Flood velocities may exceed 2 m per second for a 14.3m to 3.8m per second in a PMF. The rate of rise is estimated to be up to 2.1m/h for a PMF (8).

Flood Mitigation Systems

2.2.27 There are no known flood mitigation systems for Wingham, including the Peninsula.

Dams

2.2.28 There is no direct flooding consequence in Wingham of Bootawa dam failure.

Other Considerations

2.2.29 There are numerous community events that occur during the year, resulting in up to a 60% increase in population, and a large attendance by families with children;

- January Wingham Summertime Rodeo
- February – March Wingham Show
- April-May Wingham Beef Week
- May – June Bonnie Wingham Scottish Festival
- July Wingham Rodeo
- October Akoostik Festival (Wingham)
- November Wingham Campdraft
- December Wingham Street Christmas Carnival

TAREE

2.2.30 Taree is located on the northern bank of the Manning River, at the confluence of Browns Creek and the divergence of the Manning River into the north and south passages, including Taree Estate, and Chatham (MAP 3 -).

2.2.31 Taree has a population of 15848. It has an aging population, with approximately 36% of the population over 55 years old (11).

Cultural and Linguistic Diversity

2.2.32 1369 persons in Taree are identified as Aboriginal and/or Torres Strait Islander. Over 52 persons in Taree have identified that they do not speak English well or at all (11).

Schools and childcare centres

2.2.33 The following schools and childcare centres are at risk of isolation from 4.63m and flooding within the PMF (15):

a. **Schools**

- Chatham Public School, 17 Chatham Avenue, Taree.
- St Clares High School, Davis Street, Taree.
- St Joseph's Primary School, St Joseph's Drive, Taree.

b. **Childcare centres**

- Children's Haven, 15 Chatham Ave, Taree.

Facilities for the aged and/or infirm

2.2.34 The following facilities are at risk of flooding in a 1% AEP flood (5.68m, i.e. above the Major flood classification):

a. Bushland Place retirement village, Gipps Street, Chatham (220 persons).

Utilities and Infrastructure

2.2.35 The following utilities and infrastructure are at risk of flooding (2):

a. Martin Road Bridge Manning River Drive.

b. Taree Show Ground Muldoon Street Taree.

c. Fig Tree Bridge.

d. Ambulance Depot in Marathon Street (at around 4.68m).

e. Sewer pump stations at River Street, Prince Street, Lansdowne Road, Munghi Close, Bayview Crescent, Amaroo Drive, Bent Street, Mackay Street, Albert Street, Chapman Place, Cornwall Street, Gipp Street, at the Racecourse and two on Old Punt Road (13).

f. Substations supplying critical sewerage pump located behind Bundarra Close at 100 Edinburgh Drive, Taree; RFS and NSW SES on Muldoon St; supplying the Ambulance station on Elizabeth Ave; main supply Taree

and surrounding feeders on Whitbread St; Supply to Essential Energy Depot; supply to critical sewerage pump at the end of Cornwall St; Commerce St supplying the Police Boys Club; York St supplying Manning Base Hospital; Cnr Wynter and Pulteney St supplying Taree Fire Station; Albert Street supplying Taree Police Station; Zone sub near cnr Kanangra Dr and Bushland Dr (14).

2.2.36 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.37 Flood prone areas of Taree are classified as RRA to a HFI Evacuation Centre during the 5% and 1% AEP and PMF (4.63, 5.68 and 9.7m respectively) floods. Taree West becomes a LFI beyond 4.3m (1).

Inundation

2.2.38 The Taree community utilises the warnings provided by the Bureau for Taree Traffic Bridge Gauge. Classification of flooding at Taree Bridge Gauge is summarised in Table 10.

Table 10: Flood classification and heights at Taree Traffic Bridge Gauge.

Min	Mod	Major	5% AEP	2% AEP	1% AEP	PMF
1.8m	2.4m	3.7m	4.63m	5.36m	5.68m	9.7m

2.2.39 At the Minor Flood Level (1.8m);

a. Low lying grazing land is flooded in Taree Estate.

b. The Council Car Park, River Street, Library and Council chambers may commence inundation.

2.2.40 Initial over floor flooding commences from 3.68 metres in Taree Estate (1).

2.2.41 Taree CBD is protected by an embankment along Victoria Street up to a flood level of 4.28m on the Taree Traffic Bridge Gauge (1).

2.2.42 During a flood of approximately 4.6m (5% AEP) (1);

a. Approximately 54 houses may experience flooding (20 of which would be over-floor) in Taree.

b. Approximately 13 houses in Taree Estate may experience over floor flooding.

2.2.43 During a flood in the order of 5.68 m (1% AEP) (15);

a. Parts of the CBD may experience high hazard flooding with low points inundated to a depth of 3m. It is estimated that 100 businesses and 66 houses would be flooded over floor (1).

b. In the North Taree area 29 businesses and 52 houses are likely to be flooded over floor, some to a depth of 2 metres (1).

c. In Taree Estate (Taree West), a total of 21 houses may be flooded over floor.

2.2.44 In a PMF, substantial flooding is expected to occur across Taree West and Taree Central (including Chatham Public and Primary School, St Joseph's Primary, Chatham Shopping Centre and a substantial number of properties).

2.2.45 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.46 In floods of 4.63m (5% AEP equivalent i.e. above the Major flood classification level) Mid North Coast Events Taree can become isolated as Manning River Drive Closes at Dawson's River.

2.2.47 The airport becomes affected from 5.43m. Development of the Highway bypass may have reduced this isolation, but this is not yet determined (1).

2.2.48 Taree Estate becomes isolated at 4.3m as Figtree Bridge becomes inundated (Taree Gauge) (1). Residents within lower lying rural areas are generally located on earthwork mounds or higher ridges of land due to planning requirements but some may inundate from 3.68m including egress via property access roads; Edinburgh Road is likely to be affected from 5% AEP (4.63m) and greater floods isolating the remaining properties (1).

Characteristics of flooding

2.2.49 The majority of Taree CBD and Taree Estate is flood Prone and likely to experience high hazard flooding consisting of deep fast flowing flood waters to depths of 3m in a PMF (1).

2.2.50 Flooding in North Taree is affected by the Manning River, Dawson River and Browns Creek (1).

2.2.51 Taree East is affected by backwater flooding and local flooding from Browns Creek. Some areas may be flooded to depths exceeding 2m (15).

2.2.52 In Taree West, flooding can be up to 2m in a PMF with high velocities; however flood peaks are usually only short duration (15).

Flood Mitigation Systems

2.2.53 Victoria Street has an embankment, with a design height of 4.63 m (plus 300mm freeboard resulting in a crest height of 4.94 m AHD). When the embankment overtops, flooding of the CBD will occur in Pulteney and Victoria streets. Low lying businesses in Victoria Street, Albert Lane, Albert Street and the southern end of Commerce Street and the Chapman Street Carpark should be prepared for evacuation if the level is expected to exceed 4.63m (1). It should be noted that it is not a registered levee, and consequently not appropriately maintained to withstand this height.

Dams

2.2.54 There are no known consequences in Taree CBD of Bootawa Dam or any other dam failure.

Other Considerations

2.2.55 There are numerous community events that occur in Taree during the year that cause an increase in population and risk including:

- January Manning River Aquatic Festival
- January Manning River Summer Festival
- January Tagged Fish Round Up
- January Taree Summer Regatta
- February-March Manning Marathon Sailing Regatta
- February-March NSW Rowing Championships
- February-March Artisans Expo
- Easter Taree Aquatic Powerboat Easter Spectacular
- April-May River City Classic BMX competition
- April-May The Wedding Party
- April-May Autumnfest
- April-May Weekend on Wheels
- April – June Taree District Eisteddfod
- June EnviroFair
- June Junior Rodeo
- July Women's master Hockey
- August Flair Fashion Awards
- October Taree Show
- November Taree Arts Council Major Production

2.2.56 Easter and a Christmas holidays are identified peak seasons for tourists, with up to a 60% increase in population in the Greater Taree LGA (16).

TINONEE AND HILLVILLE

2.2.57 Tinonee is located south-west of Taree on the Manning River. It has a population of 1052 (11) (MAP 4 -).

2.2.58 Hillville is located southwest of Tinonee, backing onto Kiwarrak State Forest and is predominantly rural properties. The residential population is estimated to be 279. It has 39% of its population aged 55 and older (11).

Cultural and Linguistic Diversity

2.2.59 Hillville and Tinonee had 9 and 31 Aboriginal or Torres Strait Islander residents respectively (11), with no identified residents without proficient English in Hillville and 10 not stating their proficiency in Tinonee (11).

Schools and childcare centres

2.2.60 The following school is at risk of flooding and/or isolation.

a. Tinonee Public School, Manchester Street, Tinonee is identified as being located within the 1% AEP flood extent (5.68m on the Taree Traffic Bridge Gauge).

2.2.61 No Child Care Centres have been identified as at risk

Facilities for the aged and/or infirm

2.2.62 No facilities for the aged or infirm are identified as at known risk of flooding and/or isolation.

Utilities and Infrastructure

2.2.63 The following utilities are at risk of isolation or inundation:

a. Sewer pump stations at Peveril St, Manning River Drive, Cotton St, and Manchester St (13).

b. Substations at Tall Ships Reserve and Cotton St, Tinonee supplying critical sewerage pumps (14).

2.2.64 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.65 HFI, with RRA to an evacuation centre located on the HFI from 3.68m on the Taree Traffic Bridge Gauge.

Inundation

2.2.66 Tinonee utilises the warnings provided for Wingham gauge and Taree Traffic Bridge Gauge. Classification of flooding is summarised in Table 10 and Table 9.

2.2.67 In 2011 (with a peak height of 12.24m at Wingham) two properties were identified as flooded of the main dwelling in Claxton Street, and a further

three properties reported minor property flooding in Bucketts Way, Winter Street and Hutchinson Street in Tinonee (1).

2.2.68 In a flood of around 4.5m at the Taree gauge (below the 1% AEP), approximately 5 houses may be flooded over floor.

2.2.69 Hillville experienced minor flooding in 2011 in Hillville Road, Marylands Close and Careys Road (for up to 120 hours), as well as Bucketts Way, Deans Creek (1).

2.2.70 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.71 Water may begin to cross Bucketts Way at Deans Creek Road, potentially cutting access from Tinonee East to Taree and the Pacific Highway at 3.2m on the Taree gauge (a Moderate flood). At 5m on the Wingham gauge the Bight Bridge inundates, isolating the town (a Minor flood) (1).

Characteristics of flooding

2.2.72 Flooding in Tinonee is experienced from the Manning River, as it meanders east of the community and inflow from Peg Leg Creek to the north west and Deans Creek to the south east of Tinonee. It is a floodway or flood fringe based on flow depth and velocities with depths around 2m in a 1% flood (15).

2.2.73 Hillville is impacted by Snakes Creek and Bo Bo Creek inflows from the surrounding hinterland.

Flood Mitigation Systems

2.2.74 There are no known mitigations systems in Tinonee.

Dams

2.2.75 Nine properties (on Storage Dam and Bootawa Dam roads) are at risk of inundation if Bootawa Dam fails. Refer to the Dam Safety Emergency Plan for Bootawa Dam (4) and Section 1.2 of this Volume of the Greater Taree Local Flood Plan for more detail.

2.2.76 Access routes to Bootawa Dam along Bootawa Dam and Storage Dam Roads may be cut if dam failure occurs (3).

Other Considerations

2.2.77 No specific festivals or other considerations have been identified for Tinonee.

OXLEY AND MITCHELLS ISLANDS

2.2.78 Oxley Island is a very large area to the north of Bohnock, and east of Pampoolah comprised of rural properties. It is surrounded by the Manning river north and south arms and Scotts Creek (MAP 5 -). It has a population of 301 persons, 25% of which are aged 14 years or younger, and 30% of which are aged 55 years or older (11).

2.2.79 Mitchells Island is located on the lower floodplain on the coast to the east of Oxley Island and surrounded by the northern arm of the Manning River and Scotts Creek. It has a population of 445, with 40% of the population aged 55 years or older (11) (MAP 5 -).

2.2.80 The Islands are joined by narrow bridges on the Manning Point Road at Bohnock and Scott's Creek.

Cultural and Linguistic Diversity

2.2.81 Oxley Island and Mitchells Island have 6 and 24 identified Aboriginal and/or Torres Strait Islander residents respectively. Mitchells Island has no reported persons that do not have proficiency in English; however three (3) Oxley Island residents identified that they do not speak English well or not at all (11).

Schools and childcare centres

2.2.82 The following schools and childcare centres are at risk of flooding and/or isolation.

a. Schools

- Oxley Island Public School, 74 Oxley Island Road, Oxley Island may become isolated in flooding above the 5.68m (1% AEP) flood height.
- Mitchells Island Public School, 1222 Manning Point Road, Mitchells Island is located outside of PMF, however may be isolated in a Major flood.

b. No Childcare centres have been identified at risk.

Facilities for the aged and/or infirm

2.2.83 There are no identified facilities are at known risk of flooding and/or isolation.

Utilities and Infrastructure

2.2.84 There are no utilities at risk of flooding in Oxley and Mitchell Islands.

2.2.85 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.86 The sector is characterised by both low and HFIs with areas of farmland that are easily inundated. The area is made up of low density rural properties with

minimal access routes therefore becoming overland refuge areas. The residents are largely independent and require little support during events (1).

Inundation

2.2.87 Oxley Island utilises flood warnings from the Bureau for the Taree Traffic Bridge gauge (Table 10).

2.2.88 Mitchells Island also utilises the Croki gauge (Table 11) to monitor flooding.

2.2.89 Oxley Island properties have high ground which remains flood free. In 2011 (4.5m at Taree Traffic Bridge Gauge), properties in Alans Lane, Ferry Road, Cowans Lane, Lauries Lane, and Manning Point Road experienced flooding for up to 96 hours; however no dwellings were reported as being affected. During a 1% AEP (5.68m), 57 properties may be flooded above the floor in Oxley Island (1).

2.2.90 Mitchells Island has some flood prone rural properties. In 2011 (2.14m on the Croki gauge), 11 properties were flooded, however no main dwellings were affected (1).

2.2.91 Larger floods are possible, and consequences are likely to be on a larger scale in these conditions.

2.2.92 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.93 Properties on Oxley Island are prone to isolation, when Manning Point Road (1.8m at Taree Traffic Bridge) and Old Bar Road (before 4.5m at Taree Traffic Bridge) close. Isolation of the sector area is normally of short duration (3-5 days) and resupply into the area may not be required as it is not unusual for the residents to be independent (2).

Characteristics of flooding

2.2.94 Flooding may occur from the Manning River or Scotts Creek.

2.2.95 The two Islands in this sector are comprised of rural properties with some high ground that is completely flood free. In the floodway areas the hazard is high, characterised by fast flowing floodwaters and long evacuation distances that will close early.

2.2.96 The area has advanced notification of impending riverine flooding due to the lag time of around 36 hours from river rise in Gloucester to water arrival. Localised rainfall will produce overland flooding of farmland earlier (2).

2.2.97 In the floodway areas on Mitchells Island the hazard is high, characterised by fast flowing floodwaters and long evacuation distances (2).

2.2.98 The hazard is also high on Oxley Island, as a consequence of the 1m depth exceedance and 2m/s velocities (15).

Flood Mitigation Systems

2.2.99 There are no identified flood mitigation systems in the Lower Manning Islands area.

Dams

2.2.100 There are no known consequences of Bootawa dam failure in the Lower Manning Islands area.

Other Considerations

2.2.101 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase of up to 60% in population in the Greater Taree Council area (16).

CROKI, MOTO, CATTAI CREEK, JONES ISLAND AND COOPERNOOK (LOWER MANNING)

2.2.102 Croki and Moto are small villages located approximately ten kilometres north-east of Taree (MAP 6 -). They have a combined population of 290, 39% of which are aged 55 years or older (11). Croki also contains a caravan park.

2.2.103 Coopernook is a small village located approximately 12 kilometres north of Taree (MAP 6 -). It has a population of 519 people; with 34% of residents aged 55 years or older and 20% aged 14 years or younger (11). The majority of properties located along the road from Coopernook towards Lansdowne are farmland.

2.2.104 Cattai is a rural area on the road to Harrington (MAP 6 -). It has a population of 690, with 28% of residents are aged 55 years and older and 23% aged 14 years or younger (11).

Cultural and Linguistic Diversity

2.2.105 Moto, Coopernook, and Cattai have 12, 30 and 7 identified Aboriginal and/or Torres Strait Islander residents and no residents have identified that they do not have a proficiency in English (11).

Schools and childcare centres

2.2.106 The following schools and childcare centres are at risk of flooding and/or isolation (2).

a. Schools

- Coopernook Public School

b. Childcare centres

- Flying Fox Mobile Pre Schools, St Lukes Church Hall, West Street Coopernook

Facilities for the aged and/or infirm

2.2.107 There are no aged care facilities identified as at known risk of flooding and/or isolation.

Utilities and Infrastructure

2.2.108 The following utilities and infrastructure are at risk of inundation:

a. Sewer pump stations at Macquarie St and George Gibson Drive, Coopernook (13).

b. Zone substation on West St, Coopernook (14).

2.2.109 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.110 Croki is classified as a LFI in the 5% floods up to the PMF. The entire village is located in a high hazard area and may become completely inundated during major floods (1).

2.2.111 Moto is classified as a LFI in the 5% floods up to the PMF. The entire village is located in a high hazard area and may become completely inundated during major floods (1).

2.2.112 Coopernook is classified as RRA area in 5% and 1% (2.46 and 3.07m respectively) floods, becoming an area with overland escape route in a PMF (1).

Inundation

2.2.113 The area utilises flood warnings provided by the Bureau for Taree Traffic Bridge gauge (Table 10) and the Lansdowne gauge (Table 12). Therefore arrival time from Taree flood gauge to Croki varies between 2 to 4 hours. Croki has its own flood gauge (208404) although few levels are available. These are summarised in Table 11.

Table 11: Summary of Croki flood levels for design floods

5% AEP	2% AEP	1% AEP	PMF
2.46m	2.87m	3.07m	5.90m

2.2.114 Croki – In a 5% AEP (2.46m) flood, the entire village may become entirely inundated (1).

a. In 2011 (2.14m Croki gauge), Barton St Croki, Croki Road Jones Island, Pacific Highway Jones Island and the intersection of Barton Street and the Pacific Highway Jones Island (for several days) were inundated. Four houses reported minor inundation on Barton Street and Young Street, with only one reporting inundation to the main dwelling (1).

b. The majority of Croki becomes inundated around 2.46m.

c. During a 1% AEP (3.07m at Croki) event 20 properties may be flooded above floor level, including the caravan park. Farm land adjacent to the village is also prone to flooding.

2.2.115 Moto - During a 1% AEP (3.07m at Croki) event flooding occurs over Moto Road – Ghinni Ghinni Creek area are generally deeper than 1 metre but of low velocity (1).

2.2.116 Coopernook - Flooding may be experienced over West and Macquarie Streets and the old Pacific Highway.

a. Coopernook Hotel experiences flooding of the ground floor at approximately 1.1 metres. Evacuation during a flood event may be affected by flooding of the George Gibson Drive in the vicinity of Coopernook Creek; however extensive land flooding occurs prior to this.

Alternate routes (e.g. Macquarie Street) are likely to provide a suitable egress route if George Gibson Drive is impassable (1).

b. From 2m on the Lansdowne gauge, low lying areas become inundate and some rural properties isolated (1).

c. In June 2011 (2.14m at Lansdowne) the new Pacific Highway had water across some of the north bound lanes. Coralville Road and Crowdy Bay Road encountered flooding, and minor property inundation occurred on Coralville Road, Harrington Road and North Moto Road. Eleven properties may become inundated between Lansdowne and Coopernook at this height (1).

d. Seventy (70) properties may become inundated between Lansdowne and Coopernook in a 1% AEP flood between (3.07m Croki) (1).

Isolation

2.2.117 Isolation will occur prior to over floor flooding in Croki. Evacuation from Croki during a flood event would be undertaken towards the Pacific Highway via Barton Street. Barton Street has a minimum ground level of between 0.7 to 1.0m and is likely to become inundated prior to the residential properties within Croki. This is the evacuation route, and is generally closed around 1.2m on the Croki gauge. Similarly Croki Road becomes inundated from 1.5m, also a section of the evacuation route (2).

2.2.118 In Coopernook, flooding of George Gibson Drive occurs from around 1.8m on the Croki Gauge. Macquarie Street may close around 3.07m at Croki gauge, isolating Coopernook. The Pacific highway in the vicinity of Two Mile Creek may isolate the community during a PMF event (5.9m), after substantial inundation has already occurred (2).

Characteristics of flooding

2.2.119 These areas are subject to both riverine and overland flooding from Lansdowne River and/or Manning River. The Manning River joins with the Lansdowne River and its tributaries (2).

2.2.120 In Coopernook the depth of flooding is regularly less than one metre and flow velocities are low (1).

2.2.121 Croki village is a high hazard area (1).

Flood Mitigation Systems

2.2.122 There are privately owned flood gates located in the Coopernook area near to the Coopernook Pub. They are operated independently by the owner (1).

Dams

2.2.123 There are no known consequences in the Lower Manning of Bootawa Dam failure.

Other Considerations

2.2.124 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase in population (up to 60%) (11).

LANSDOWNE

2.2.125 The town of Lansdowne is located to the north of Taree on the banks of the Lansdowne River and Cross Creek (MAP 7 -). It has a population of approximately 630. Hampton Court is prone to overland flooding during heavy rainfall. Intermittent inundation of access roads may occur during rainfall events. It is an aging community, with 34% of the population over the age of 55 (11).

Cultural and Linguistic Diversity

2.2.126 There are 48 identified Aboriginal residents in Lansdowne and all residents identified proficiency in English (11).

Schools and childcare centres

2.2.127 No schools and childcare centres are identified as at known risk of flooding and/or isolation in Lansdowne.

Facilities for the aged and/or infirm

2.2.128 No aged care or hospital facilities are identified as at known risk of flooding and/or isolation in Lansdowne.

Utilities and Infrastructure

2.2.129 The following utilities and infrastructure are at risk of flooding (1):

a. Lansdowne concrete road bridge Lansdowne Road (10m).

b. Lansdowne Rail Bridge Lansdowne Road (10m).

2.2.130 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.131 RRA for floods up to the PMF (12.10m) (1).

Inundation

2.2.132 Lansdowne utilises the flood warnings provided by the Bureau to Taree Traffic Bridge gauge. Classification of flooding at Taree Traffic Bridge gauge is summarised in Table 10.

2.2.133 Lansdowne River has a telemetric gauge (208015) installed but has limited associated history. Design heights for this location are provided in Table 12.

Table 12: Design heights for Lansdowne gauge (208015)

50% AEP	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP	PMF
8.4m	9.5m	10m	10.5m	11m	11.3m	12.1m

2.2.134 The town of Lansdowne is relatively flood free although Hampton Court is prone to overland flooding during heavy rainfall (6).

2.2.135 Approximately 10 properties are at risk of inundation in a PMF (12.1m) (1).

2.2.136 Streets susceptible to flooding (from 4.37m) are identified in Section 2.4.

Isolation

2.2.137 Intermittent inundation of access roads may occur during rainfall events; however RRA remains up to the PMF (1).

Characteristics of flooding

2.2.138 Flooding may occur from Lansdowne River or Cross Creek.

2.2.139 Lansdowne is predominantly outside the PMF extent and relatively flood free. However, the area is classified as a high hazard flood storage area and overland flooding of the Hampton Court area of Lansdowne may require evacuation of domestic animals (Greyhounds) (1).

2.2.140 Smaller access roads may be cut for short durations at intermittent intervals, isolating rural areas from 4.37m (1).

Flood Mitigation Systems

2.2.141 There are no known mitigations systems in Lansdowne.

Dams

2.2.142 There are no known consequences in Lansdowne of Bootawa dam failure.

Other Considerations

2.2.143 October - November Upper Lansdowne Craft in the Country

MANNING POINT

2.2.145 Manning Point is situated at the southern entrance of the Manning River North Arm (MAP 8 -). The village has a population of approximately 220 and is a popular tourist destination which includes two caravan parks (1). Manning Point is an aging population, with 61% of residents aged 55 years and older (11).

Cultural and Linguistic Diversity

2.2.146 Manning Point has six (6) identified Aboriginal residents (11).

Schools and childcare centres

2.2.147 No schools or childcare centres are identified are at known risk of flooding and/or isolation in Manning Point.

Facilities for the aged and/or infirm

2.2.148 No aged care or hospital facilities are identified as at known risk of flooding and/or isolation in Manning Point.

Utilities and Infrastructure

2.2.149 The following utility is at risk of flooding:

a. Substation at Ocean Pde, Manning Point supplying the, Manning Point Bowling Club (14).

2.2.150 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.151 Manning Point is a LFI and will require evacuation prior to 1.8m on the Taree Traffic Bridge Gauge (1).

Inundation

2.2.152 Manning Point utilises flood warnings provided by the Bureau for the Harrington Gauge and Taree Traffic Bridge gauge. Classification of flooding at Harrington Gauge is summarised in Table 13.

Table 13: Classification of flooding at Harrington Gauge.

Min	Mod	Maj	5% AEP	2% AEP	1% AEP	PMF
1.9m	2.2m	2.8m	1.89m	2.1m	2.26m	2.90m

2.2.153 Properties fronting Manning Point Road, Banksia Close and Manning Street may inundate from 1.5m (1).

2.2.154 During a 5% AEP flood (1.89m) 23 properties may become inundated (1).

2.2.155 During a 1% AEP (2.26m) event 52 houses and 4 businesses are likely to be affected by over floor flooding.

2.2.156 A peak flood at the Harrington gauge of 1.53m was recorded in 2011, with flooding reported at properties in Manning Point Road, the junction of Banksia Close and Manning Street (Main Road), Main Road and Banksia Crescent. Most properties become inundated by 1.9m (1).

2.2.157 Most of Manning Point is inundated at 2.37m on the Harrington gauge (5.68m at Taree identifies that 56 properties will be affected, with flooding initiating at 4.63m) (1).

2.2.158 Manning Point dwellings at the Manning River entrance on Manning Point Road are also susceptible to coastal inundation as a consequence of an oceanic storm event; however there is a greater risk of inundation due to riverine flooding (17).

Isolation

2.2.159 The Manning Point Road becomes cut from 1.8m at the Taree Traffic Bridge gauge, resulting in isolation prior to the entire area becoming a LFI (1).

Characteristics of flooding

2.2.160 Much of Manning Point is flood liable flood fringe and floodway (where the South Arm approaches the village), with access roads cut and variable flood velocities. It is susceptible to inundation and isolation from Manning River floods (15).

Flood Mitigation Systems

2.2.161 No flood mitigation systems are identified at Manning Point; however a breakwall is located opposite the community alongside Harrington on the northern bank of the Manning River, channelling the river to the south of Harrington and adjacent wetlands.

Dams

2.2.162 There are no known consequences in Manning Point of Bootawa dam failure.

Other Considerations

2.2.163 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase in population with up to a 60% increase in population in the Greater Taree LGA (16).

HARRINGTON AND CROWDY HEAD

2.2.164 Harrington is an urban settlement situated at the northern mouth of the Manning River MAP 9 -). It is a popular holiday destination and populated by 2258 permanent residents. Harrington is expanding, with the development of Harrington Waters Estate (1).

2.2.165 Crowdy Head is a holiday community situated further east and north of Harrington (MAP 9 -) with a population of 221 (11).

Cultural and Linguistic Diversity

2.2.166 Harrington and Crowdy Head recorded 43 indigenous residents and many residents that have difficulty understanding the English language (11). There are no known programs in place to assist them.

Schools and childcare centres

2.2.167 The following schools and childcare centres are at risk of isolation (2) (1).

a. Schools

- Harrington Public School High Street Harrington
- Crowdy Head Public School Geoffrey Street Crowdy Head

b. Childcare centres

- Jabiru Pre School Jabiru Drive Harrington

Facilities for the aged and/or infirm

2.2.168 There are no aged care or hospital facilities identified as at known risk of flooding and/or isolation in Harrington and Crowdy Head.

Utilities and Infrastructure

2.2.169 The following utilities and infrastructure are at risk of flooding:

a. Electricity Substations on Industrial Road Harrington supplying Harrington and surrounding areas and the sewerage treatment works (14).

b. Pump stations in Murray St and Hogan St, Harrington (13)

2.2.170 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.171 Harrington is a HFI in the 5% and 1% floods (1.59 and 2.26m respectively), becoming a LFI in a PMF (5.4m) (1).

Inundation

2.2.172 Harrington has its own BoM gauge (ARWC 208425). Flood heights for this gauge are summarised in Table 13.

2.2.173 At 1.5m the following roads may close in Harrington; (1)

a. Bakers Road (isolating 6 houses)

b. Coralville Bridge, Coralville (isolating 10 houses)

c. Crowdy Bay Road, Coralville

d. Forest Road (at Bridge)

e. Harrington Road (at Cattai Creek and Clunes Lane)

f. Rutile Road (Gully Creek and Bakers Road)

2.2.174 Sixteen (16) properties may inundate in a 5% AEP flood (1).

2.2.175 Large areas of Harrington remain flood free until around 1.89m (1% AEP). As this height is exceeded (from 1.9 to 2.26m), 83 houses and four businesses (around Coralville Road, Crowdy Bay Road, Harrington Drive, Scott Street, Beach Street, Crowdy Street, Hogan Street, Nicholson Street, Jabiru Close, Minamurra Drive, Terranora Avenue, Latham Street, Bangalee Place, Glacken Street, Manor Road, Colonial Leisure Village Caravan Park and Bluewater Drive) are likely to be flooded above floor level (1).

2.2.176 Roads around Harrington Waters Estate may begin to inundate around 2.37m (however the impact of Harrington Estate infill is not definitive). Properties may begin inundation from 2.7m.

2.2.177 Only the small area of Harrington Public School remains flood free throughout the PMF (5.4m) (1).

2.2.178 Harrington dwellings at the Manning River entrance on Beach Street are also susceptible to coastal inundation as a consequence of an oceanic storm event; however it would not be as significant as a major catchment flooding event (17).

Isolation

2.2.179 Access to the area is by Harrington Road, which is likely to be cut prior to flood waters affecting any residential property. This is estimated to occur around 1.4 to 2.2m at Harrington gauge, but is impacted by local swamp (non-riverine) flooding (1). Alternate access may remain available via Coralville or Diamond Head Road, which is 4WD only (1). Harrington can become isolated for 3 to 5 days (1).

2.2.180 The area suffers inundation and isolation along its single access route prior to any flooding of property (1).

2.2.181 Mamboo Island properties become isolated from Harrington around 1.9m.

Characteristics of flooding

2.2.182 Flooding is a mixture of riverine from the Manning and Lansdowne Rivers, Cattai Creek and overland from the surrounding swampland (Cattai Wetlands); however, flood waters are generally shallow and slow (15). Storm

and tidal surges typically increase the water and wave height. There are no river systems that significantly affect the river below Coopernook (2).

2.2.183 The area is influenced by its location directly on the coast. It can be affected by storm surge, tides and overland flow. The access (and evacuation) route (Harrington Road in the vicinity of Clunes Lane) may be cut by overland flooding without any residential effect other than outlying farmland (2).

2.2.184 The tidal deltas gradually accrete sand over time, which can increase flood levels by approximately 30 mm, scouring the entrance channel (15).

Flood Mitigation Systems

2.2.185 Harrington Estate has been constructed 0.5 metre above the 1% AEP by the use of landfill. There is no recorded flood data available since its construction (2).

2.2.186 A breakwall extends from the south of Harrington on the Manning River to its entrance at the east of Harrington.

Dams

2.2.187 There are no known consequences in Harrington of Bootawa dam failure.

Other Considerations

2.2.188 Harrington has an annual festival on the 1st of January each year which can occur over a 2 day period.

2.2.189 The Harrington Festival is hosted in January.

2.2.190 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase (up to 60%) in population (11).

CUNDLETOWN

2.2.191 Cundletown is located directly east of Taree and the confluence of the Dawson and Manning Rivers (MAP 10 -).

2.2.192 Cundletown has a population of 2064. It has an aging population, with 795 residents aged over 55 years (11).

Cultural and Linguistic Diversity

2.2.193 Fifty five (55) residents have been identified as Aboriginal and/or Torres Strait Islander and no residents identified that they do not speak English (11).

Schools and childcare centres

2.2.194 The following schools and childcare centres are at risk of flooding and/or isolation (1).

a. Schools

- Cundletown Public School may be isolated during a 1% AEP equivalent flood.

b. Childcare centres

- Cundletown Pre-school and Long Day Care Centre may be isolated during a 1% AEP flood.

Facilities for the aged and/or infirm

2.2.195 The following facility is at risk of flooding and/or isolation (1):

a. St Paul's Hostel (nursing home) which is located on River Street.

Utilities and Infrastructure

2.2.196 Substation at Lansdowne Road near Taree Airport supplying the Airport (14).

2.2.197 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.198 Cundletown is classified as a RRA Area during the 5% and 1% AEP flood (4.63 and 5.68m respectively) to a safe refuge located on a HFI up to a PMF (1).

Inundation

2.2.199 The Cundletown community utilises the warnings provided for Taree Traffic Bridge Gauge. Classification of flooding at Taree Bridge Gauge is summarised in Table 10.

2.2.200 Inundation of 11 properties in Cundletown occurred in 2011 on Albert Street, Arkana Avenue, High Street, McDonnell Avenue, Oakdale Road, Old Lansdowne Road, Park Avenue, Princes Street and River Street (1).

2.2.201 Seven (7) properties are inundated in a 5% AEP flood; 17 in a 2% AEP and 24 in a 1% AEP flood (1).

2.2.202 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.203 In the 2011 event (4.5m), approximately 24 dwellings became isolated (Table 5). Many potential evacuation routes may become inundated during the design 5% and greater floods. Consequently, evacuation during major floods may only be available via Lansdowne Road (1).

2.2.204 Cundletown may become isolated during an event greater than the 1% AEP flood (1).

Characteristics of flooding

2.2.205 Cundletown is largely unaffected by flooding and is considered to be a low hazard flood fringe (15).

Flood Mitigation Systems

2.2.206 There are no known mitigations systems in Cundletown.

Dams

2.2.207 There are no known consequences in Cundletown of Bootawa dam failure.

Other Considerations

2.2.208 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase in population (up to 60%) (11).

DUMARESQ ISLAND

2.2.209 Dumaresq Island is a low lying area surrounded by the Manning River to the east of Taree (MAP 11 -). It is largely used for dairying and grazing land. The residential population is estimated to be 72 (11).

Cultural and Linguistic Diversity

2.2.210 No cultural or linguistically diverse persons are identified as residents in Dumaresq Island (11).

Schools and childcare centres

2.2.211 No schools or childcare centres are identified as at known risk of flooding and/or isolation in Dumaresq Island.

Facilities for the aged and/or infirm

2.2.212 No facilities for the aged/infirm are identified as at known risk of flooding and/or isolation on Dumaresq Island.

Utilities and Infrastructure

2.2.213 No utilities or infrastructure are identified as at known risk of flooding.

2.2.214 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.215 Dumaresq Island is classified as predominantly a LFI for 5% floods up to the PMF. In smaller floods there are areas of overland refuge (1).

Inundation

2.2.216 The Dumaresq Island community utilises the warnings provided for Taree Traffic Bridge Gauge. Classification of flooding at Taree Bridge Gauge is summarised in Table 10.

2.2.217 The area starts to inundate in low lying areas from 1.8m (1).

2.2.218 The entire location may be completely inundated in a 5% (4.63m) and rarer event (i.e. above the “Major” flood classification). It appears that the houses in the area may be constructed on earthwork mounds, which may place them above the predicted design flood extents (1). Ten (10) properties may be affected by over floor flooding in a 1% AEP (5.68m) event, which become completely inundated by a PMF.

Isolation

2.2.219 The community is affected by floods as low as 1.78m on the Taree Traffic Bridge Gauge, and consequences can occur quickly, with Dumaresq Island Road and Newtons Road becoming inundated around 3.2m (2).

2.2.220 A peak height of 4.5m (Taree Traffic Bridge) was recorded in June 2011, with Newtons Road and River Road during this event (1).

Characteristics of flooding

2.2.221 Dumaresq Island is a LFI (low lying area) surrounded by the Manning River and is susceptible to fast flowing flood waters (15).

Flood Mitigation Systems

2.2.222 There are no known flood mitigation systems in Dumaresq Island.

Dams

2.2.223 There are no known consequences in Dumaresq Island of Bootawa dam failure.

Other Considerations

2.2.224 No other considerations have been identified for Dumaresq Island.

PAMPOOLAH AND BOHNOCK

2.2.225 Pampoolah and Bohnock are located south east of Taree City, on the southern bank of the Manning River (MAP 12 -). They are agricultural areas consisting of approximately 84 properties. It has a population of approximately 360, with 39% of the population are aged 55 or older (11).

Cultural and Linguistic Diversity

2.2.226 Pampoolah and Bohnock have 4 identified Aboriginal and/or Torres Strait Island residents with no residents identified that are unable to speak English (11).

Schools and childcare centres

2.2.227 There are no schools or childcare centres identified as at known risk of flooding and/or isolation.

Facilities for the aged and/or infirm

2.2.228 There are no identified facilities are at known risk of flooding and/or isolation.

Utilities and Infrastructure

2.2.229 There are no identified utilities at known risk of flooding and/or isolation.

Classification of Floodplain

2.2.230 The sector is characterised by both LFI and RRA with areas of farmland that are easily inundated. The area is made up of low density rural properties. In previous events, the residents were largely independent and required little support (1).

Inundation

2.2.231 Pampoolah utilises flood warnings from the Bureau for the Taree Traffic Bridge gauge (Table 10).

2.2.232 Pampoolah and Bohnock may be inundated from 1.8m. 37 properties are inundated in a 5% flood. The majority (84 properties) inundated by a 1% AEP event (5.68m).

2.2.233 Pampoolah can have flood depths exceeding 1.3m in a PMF, occurring after isolation (at 4.5m) (15).

2.2.234 Streets susceptible to flooding are identified in Section 2.4.

Isolation

2.2.235 Pampoolah becomes isolated at 4.5m when Manning River Drive closes at Cubba Cubba Creek and then Dawsons River Bridge (15).

2.2.236 In 2011 (4.5m at Taree), Old Bar Road was closed, causing isolation (1).

2.2.237 Isolation of the sector area is normally of short duration (3-5 days) and resupply into the area may not be required as it is not unusual for the residents to be independent (2).

Characteristics of flooding

2.2.238 Flooding in the area occurs due to Manning River floods and local overland flooding. The area has advance notification of impending riverine flooding due to the lag time of around 36 hours from river rise in Gloucester to water arrival. Localised rainfall will produce overland flooding of farmland earlier (2).

2.2.239 Pampoolah can have flood depths exceeding 1.3m in a PMF, occurring after isolation at 4.5m (15).

Flood Mitigation Systems

2.2.240 There are no identified flood mitigation systems.

Dams

2.2.241 There are no known consequences of Bootawa dam failure in the Pampoolah area.

Other Considerations

2.2.242 See Taree for nearby community events.

OLD BAR AND WALLABI POINT

2.2.243 Old Bar and Wallabi Point are both relatively large urban areas in the lower Manning River Valley (MAP 13 -).

2.2.244 Old Bar has a population of 4272 and Wallabi Point has a population of 545 (11).

Cultural and Linguistic Diversity

2.2.245 Old Bar and Wallabi Point have 152 and 19 identified Aboriginal and/or Torres Strait Islander residents respectively. Old Bar has three residents that have identified they speak English not very well or not at all, and potentially another four that did not state their proficiency. Wallabi Point has three residents have that identified they speak English not very well or not at all (11).

Schools and childcare centres

2.2.246 There are no schools or childcare centres identified as at known risk of flooding and/or isolation from Old Bar.

Facilities for the aged and/or infirm

2.2.247 There are no facilities identified as at known risk of flooding and/or isolation from Old Bar.

Utilities and Infrastructure

2.2.248 The substations on Wallabi Point Rd and the cnr Manning Point Rd and Bohnock Rd that supply the Wallabi Point sewerage treatment works at Wallabi Point, the settlement ponds and supply to Old Bar and surrounding areas (14).

2.2.249 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.250 A HFI in a 5% and 1% flood, becoming RRA to a HFI area in a PMF (1).

Inundation

2.2.251 The community does not have a specific flood gauge. There are gauges monitoring the levels of the Manning and its tributaries at Taree Traffic Bridge gauge, Croki, Dumaresq Island and Farquhar Inlet. However there is limited information available on heights relating to Old Bar.

2.2.252 The community remains predominantly flood free in events up to and including the PMF (1).

2.2.253 In the 2011 flood, no dwellings were flooded, however properties in Berady Lane, Broadoaks Road, Hina Close, Kolinda Drive, Manning Point Road, Red

Gum Road and Sarah Close reported minor flooding of secondary structures and yards (1).

2.2.254 Road closures which can be expected with major flooding include (1):

a. Manning River Drive (up to 11 hours) from 4.33m on the Taree traffic bridge gauge.

b. Old Bar Road – near Berady Creek (up to 11 hours) from 4.5m on the Taree traffic bridge gauge.

c. Glenthorne Road, Glenthorne from 2.2m on the Taree traffic bridge gauge.

Isolation

2.2.255 The area may become isolated during events as frequent as the 5% AEP as a result of flooding in the vicinity of the evacuation route along Old Bar Road (1).

Characteristics of flooding

2.2.256 The town of Old Bar is relatively flood free, however may become isolated during flooding. Old Bar is also subject to flash flooding and coastal inundation and erosion, as identified in Section 2.3 of this Volume (2).

Flood Mitigation Systems

2.2.257 The entrance to Racecourse Creek is trained using gabions (18).

Dams

2.2.258 There are no known consequences in Old Bar and Wallabi Point of Bootawa dam failure.

Other Considerations

2.2.259 Christmas and Easter holiday periods are considered peak seasons for tourism and cause a seasonal increase in population of up to 60% (11).

2.2.260 Old Bar Beach Festival is held in October.

2.2.261 Old Bar is susceptible to coastal erosion and is a recognised Coastal Erosion Hot Spot and Authorised Location (10). See the Coastal Erosion Section of this Volume of the Local Flood Plan for further information.

GLENTHORNE

2.2.262 Glenthorne is located on the southern bank of the Manning River immediately downstream of Taree, with has Cubba Cubba Creek to the South (MAP 14 -). It has a population of 263 (1). The majority of the community is rural properties.

Cultural and Linguistic Diversity

2.2.263 Sixteen (16) persons in Glenthorne that are identified as Aboriginal and/or Torres Strait Islander. Three (3) persons in Glenthorne have identified that they do not speak English well or at all (11).

Schools and childcare centres

2.2.264 There are no schools and childcare centres identified as at known risk of flooding and/or isolation.

Facilities for the aged and/or infirm

2.2.265 There are no facilities identified as at known risk of flooding and/or isolation.

Utilities and Infrastructure

2.2.266 There are no identified utilities and infrastructure are at known risk of flooding.

2.2.267 Caravan Parks are listed in Volume 3, Chapter 4 of this Local Flood Plan (SES Caravan Park Arrangements).

Classification of Floodplain

2.2.268 LFI, with dwellings located isolated mounds until around 4.5m, thereafter becoming inundated (1).

Inundation

2.2.269 The Glenthorne community utilises the warnings provided by the Bureau for Taree Traffic Bridge Gauge. Classification of flooding at Taree Bridge Gauge is summarised in Table 10.

2.2.270 A number of flood prone properties in Glenthorne may become inundated from around 1.8m (1). Inundation to property and secondary structures was reported for 8 properties, up to 2m in Glenthorne Road, Old Punt Road and River Road (1).

2.2.271 Complete inundation occurs at 5.43m (1).

2.2.272 Streets susceptible to flooding (although depths and durations are unspecified and variable) are (1);

a. Glenthorne Road, Glenthorne from 2.2m on the Taree traffic bridge gauge.

b. Old Punt Road, Glenthorne (24-36 hours) occurring below 4.5m on the Taree traffic bridge gauge.

c. River Road (under Martin Bridge), Glenthorne (24-48 hours) occurring below 4.5m on the Taree traffic bridge gauge.

Isolation

2.2.273 Local road closures occur from 3.5m, isolating the majority of properties.

Characteristics of flooding

2.2.274 The floodwaters have been identified as slow moving in historical floods (1), however larger floods are possible and may have variable velocities.

Flood Mitigation Systems

2.2.275 There are no known flood mitigation systems in Glenthorne.

Dams

2.2.276 There are no known consequences in Glenthorne of Bootawa dam failure.

Other Considerations

2.2.277 Refer to Taree for events in the area.

2.3 SPECIFIC RISK AREAS – COASTAL EROSION

Macquarie Coastal Waters

OLD BAR

2.3.1 Beach erosion occurs as a consequence of a combination of elevated ocean water levels, winds, tides, rips, storm surge and waves. Beach erosion has threatened development and beach amenity along Old Bar beach, particularly adjacent to Lewis Street, where some dwellings have been demolished subsequent to storm events. Dwellings at the southern end of Diamond Beach are also at risk of beach erosion (17).

2.3.2 Seaward yards (and building footprints of dwellings already demolished) on properties on the seaward side of Lewis Street (totalling 14, plus Meridian Resort) are at risk (18).

2.3.3 Council infrastructure may also be at risk, such as the stormwater outlet near Taree Old Bar SLSC, beach access ways and the southern end of Pacific Parade roadway at Old Bar (18) (17).

2.3.4 Council monitors beach conditions from significant wave heights of 3-5m and above with tides exceeding 1.8m. The likelihood of erosion is communicated to NSW SES for wave heights exceeding 5m. NSW SES is notified when a significant erosion scarp recedes landward toward property boundaries by Council or if there is an increase in storm threat from the Bureau (17).

2.4 ROAD CLOSURES

2.4.1 Table 14 lists roads liable to flooding in the Greater Taree City area, major locations are shown on the community maps (MAP 2 - to MAP 14 -).

Table 14: Roads liable to flood closures in Greater Taree City LGA.

Road	Closure location (and map reference (19))	Consequence of closure	Alternate Route	Indicative Gauge Height
Tiri Road	Tiri (Knorrit Flat 9334-3-n 768 145)	Mount George to Gloucester	No	After 5.6m at Mt George
Nowendoc Road	McQueen's (Kerriki 9334-4-s 108 916)	Mount George to Nowendoc	No direct access. A large (over 100km) detour may provide access may be available via Knodingbul Road and Oxley Highway depending on adjacent river basin flooding.	
Kimbriki Road	Charity Creek (Bundook 9332-3-s 274 698)	No access between Mt George and Burrell Creek	No	
Buckett's Way	Deans Creek (Taree 9334-2-s 446 652)	No access between Tinonee and Taree	No	3.2- 3.68m Taree Gauge
	Swamp Oak Creek (Taree 9334-2-s 442 651)	Access between Tinonee and Burrell Creek	No	From 3.2m Subject to local environmental variables such as local overland flooding etc.
	Pegleg Creek (Taree 9334-2-s 430 656)	No access between Tinonee and Burrell Creek	No	From 3.2m Subject to local environmental variables such as local overland flooding etc.
	Other small creek crossings	Access routes to Tinonee	No	Subject to local environmental variables such as local overland flooding etc.
Manning River Drive	Cubba Cubba and Stitts Creeks (Taree 9334-2-s	Road closed between Taree South and Taree	No	4.5m Taree Gauge

Road	Closure location (and map reference (19))	Consequence of closure	Alternate Route	Indicative Gauge Height
	493 673)	North (southern entrance)		
	Dawson River Bridge, Cundletown (9434-3-s 530 709)	No access between Taree and Cundletown. **Isolating Taree.**	No	4.63m Taree gauge
Railway Street Underpass	(Taree 9334-2-s 494 699)	Access between Taree. Localised closure	Limited, until inundation of Muldoon Street	3.5m Taree gauge
Pultney Street and Victoria Street	To Chapmans Car Park (Taree 9334-2-s 488 687)	Localised closure, and evacuation route closure for businesses in this vicinity. Car Park fills with water.	Yes, via parallel streets	4.0m Taree gauge
Victoria Street	Browns Creek (Taree 9334-2-s 489 694)	Road Closed between Cundletown and Taree	Yes, via Wingham Road until Muldoon Road is cut (height undetermined but before 4.5m).	4.33m Taree gauge
Hogan's Road	Upper Lansdowne (Bobin 9334-1-s 511 906)	Limited access between Lansdowne and Upper Lansdowne/Comboyne	Upper Lansdowne Rd may also be inundated at Crittenden's Bridge; Detour available via the Pacific Hwy	5.01m Lansdowne gauge
Upper Lansdowne Road	Crittenden's Bridge, Lansdowne River (Bobin 9334-1-s 491 884)	Affecting access between Cundletown/Melinga and Comboyne	Detour available via the Pacific Hwy	4.37m Lansdowne gauge
Mount Coxcombe Road	Upper Lansdowne (Bobin 9334-1-s 483 928)	Rural properties isolated on Mount Coxcombe Road (around 30)	No	4.37m Lansdowne gauge
Wingham Road	Cedar Party Creek (Wingham 9334-2-n 306 409)	No northerly access between Taree and Wingham	No	10m Wingham gauge
River St	McDonnell Ave and Kendall reserve	Evacuation route for residents along River Street, including St Pauls Hostel	No	2.38m Taree

Road	Closure location (and map reference (19))	Consequence of closure	Alternate Route	Indicative Gauge Height
Tinonee Road	Bight Bridge, Wingham (Taree 9334-2-s 404 7431)	Road Closed between Wingham and Tinonee	Limited (pending on Bootawa Dam Road)	5m AHD Wingham Gauge
Comboyne Road	Killabakh Creek (Bobin 9334-1-s 430 891)	Wingham to Comboyne	No	10 - 10.3m Wingham
Bulga Road	Bobin Bridge, Dingo Creek (Bobin 9334-1-s 317 919)	No access north of Wingham to Elands	No	10m Wingham
Nowendoc Road Wingham	Peter Garrett Bridge	No access between Wingham and Nowendoc	No	10m Wingham
Gloucester Road	Dingo Creek (Wingham 9334-2-n 375 732)	No access between Wingham and Gloucester	No	10m Wingham
Pacific Highway	Ghinni Ghinni Bridge (Cundletown 9434-3-s 581 726)	Cundletown and Coopernook	No	Due to new highway old Ghinni Ghinni bridge has been demolished new bridge sits substantially higher than old bridge.
Harrington Road	Humpty Bridge, Cattai Creek (Coopernook 9434-3-N 646 744)	No access between Coopernook and Harrington. **Harrington isolated**	Pending 4WD access via Crowdy Bay Rd.	1.5m Harrington gauge (approximation as it is impacted by localised flooding)
Croki Road	Croki	Evacuation route closed for Croki	No	1.5m Croki gauge
Manning Point Road Bohnock	Neville Weiley Bridge	Road closes isolating Oxley Island, Mitchell Island and Manning Point for 24-72 hours	No	1.8m Taree gauge
North Moto Road		No access between Moto and Coopernook or Lansdowne. Moto Potentially isolated.	No	4.37 Lansdowne gauge

Road	Closure location (and map reference (19))	Consequence of closure	Alternate Route	Indicative Gauge Height
Failford Road	Bungwahl Creek (Nabiac 9331-1-n 502 493)	Affecting access between Nabiac and Tuncurry	No	
Edinburgh Drive Taree West	Figtree Bridge	No access between Taree and Taree Estate. **Isolating Taree Estate** (31 houses) and Andrew Reserve (est. 1000 persons)	No	4.3m Taree gauge
Old Bar Road	Berady Creek - Half Chain Road (Cundletown 9343-3-s 547 647)	No access between Old Bar/Bohnock and Glenthorne. **Isolating Old Bar and Bohnock**	No	4.5m Taree gauge
George Gibson Drive	Between Coopernook and Croki	Affecting access between Croki and Coopernook	Alternate access may be available	1.8m Croki
Glenthorne Road	Glenthorne	Isolating Glenthorne residential properties	No	2.2m Taree gauge
Macquarie Street	Near Coopernook	Restricting road access into and out of Coopernook	Alternate access may be available	3.07m Croki

2.4.2 Other streets susceptible to flooding and closure (although depths and durations are unspecified and variable) for a 4.5m (**Taree traffic bridge gauge**) flood are (1);

a. Albert Lane, Taree
b. Albert Street, Taree
c. Amaroo Drive, Taree
d. Bayview Crescent, Taree (30 hours)
e. Bent Street, Taree
f. Beeton Parade, Taree (24 hours)
g. Berady Lane, Taree
h. Bligh Street, Taree (northern and southern sections)
i. Bushland Drive, Taree
j. Boyce Street, Taree

k. Chatham Avenue, Taree (30 hours)
l. Commerce Street, Taree (southern end)
m. Cornwall Street, Taree (eastern section)
n. Cowper Street, Taree
o. Crescent Avenue, Taree
p. Davis Street, Taree
q. Deb Street, Taree
r. Douglas Street, Taree
s. Edinburgh Drive, Taree (2 weeks)
t. Florence Street, Taree
u. Gipps Street, Taree
v. Glenthorne Road, Glenthorne (24-96 hours)
w. High Street (Browns Creek), Taree (24 hours)
x. Kanangra Drive, Taree (72 hours)
y. Lawson Crescent, Taree
z. Muldoon Street, Taree
aa. Mackay Street, Taree
bb. Macquarie Street, Taree
cc. Manning River Drive, Taree
dd. Old Punt Road, Glenthorne (24-36 hours)
ee. Pioneer Street, Taree
ff. Pulteney Street, Taree
gg. Queens Place, Taree
hh. Railway Street, Taree
ii. Railway Parade, Taree
jj. River Road (under Martin Bridge), Glenthorne (24-48 hours)
kk. River Street, Taree
ll. Stevenson Street, Taree
mm. Stevenson Lane, Taree (eastern section)
nn. Victoria Street, Taree
oo. Witbread Street, Taree (near Browns Creek crossing)
pp. Albert Street, Cundletown
qq. Arkana Avenue, Cundletown
rr. Ferry Lane, Cundletown (several days)

ss. High Street, Cundletown

tt. Kundle Kundle Road, Kundle Kundle (several days)

uu. McDonnell Avenue, Cundletown

vv. Moto Road, Moto (several days)

ww. Oakdale Road, Cundletown

xx. Old Lansdowne Road, Cundletown

yy. Park Avenue, Cundletown

zz. Princes Street, Cundletown

aaa. River Street, Cundletown

bbb. Terry Lane, Cundletown

ccc. Barton Street, Croki

ddd. Coralville Road (across Big Swamp), Coralville (96 hours)

eee. Croki Road, Jones Island

fff. Crowdy Bay Road, Coralville

ggg. Ferry Road, Croki

hhh. North Moto Road, Moto (1 week)

iii. Old Bridge Road (1 week)

jjj. South of North Croki to Coopernook

kkk. Pacific Highway (intersection of Barton Street), Jones Island (96 hours)

lll. Manning River Drive (up to 11 hours)

mmm. Wariba Road (up to 11 hours)

nnn. Old Bar Road – near Berady Creek (up to 11 hours)

ooo. Glenthorne Road, Glenthorne

ppp. Alans Lane, Oxley Island

qqq. Beach road, Mitchells Island

rrr. Cowans Lane, Oxley Island (48-96 hours)

sss. Jobson Lane, Mitchells Island

ttt. Layton Road, Oxley Island (48 hours)

uuu. Lauries Lane, Oxley Island

vvv. Manning Point Road (at Teatree Lane and Factory Road and between Cowans and Poulsons Lane) – for up to 3 days

www. Pampoolah Road, Pampoolah (24-72 hours)

xxx. Pelican Bay Road, Mitchells Island – up to 1.5m

yyy. Ruprechts Road, Mitchells Island

zzz. Weeks Lane, Oxley Island

aaaa. Woodlands Road, Pampoolah (24-72 hours)

2.4.3 From the 2011 flood, road closures for a 12.24m (at **Wingham gauge**) event, include (1);

a. Appletree road, Wingham

b. Belbowrie Bridge, Wingham (12 hours to several days)

c. Bight Bridge, Wingham (24 hours)

d. Cedar Party Bridge, Wingham (several hours to 24 hours)

e. Combined Street, Wingham

f. Comboyne Street, Comboyne (16 hours)

g. Flett Street Bridge, Wingham

h. Gloucester Road, Gloucester

i. Dingo Creek Bridge (Gloucester Road) (12-18 hours)

j. Mortimer Street, Wingham

k. Primrose Street (Combined Street intersection and near Coles), Wingham (18 hours)

l. Punt Road to Tinonee (72 hours)

m. Queen Street, Wingham

n. Ruth Street, Wingham

o. Stoney Creek Bridge, Wingham (24 hours)

p. Tinonee Road, Wingham (12-72 hours)

q. Wingham Road (at Tinonee Road and Wingham Brick Works), Wingham

r. Wynter Street, Wingham (48 hours)

s. Bootawa Road, Bootawa

t. Bootawa Dam Road, Bootawa

u. Bucketts Way, Deans Creek

v. Careys Road (at Bobo Creek), Hillville (24-120 hours)

w. Claxton Street, Tinonee

x. Hillville Road, Hillville

y. Marylands Close, Hillville

z. Mondrook Bridge, Mondrook

aa. Purfleet Roundabout, Purfleet

bb. River Street, Tinonee

cc. Tinonee Road at Timber Bridge, Tinonee

dd. Tinonee Road and Wingham Road intersection, Tinonee

2.4.4 In the Lansdowne area (4.37m at **Lansdowne gauge**);

a. Cicolini Close (96 hours)
b. Henry's Lane, Lansdowne
c. Hogans Road Causeway
d. Koppin Yarratt Road, Upper Lansdowne (48-72 hours)
e. Lansdowne Road, Lansdowne (72-48 hours)
f. Mt Coxcomb Road, Lansdowne (at bridges)
g. Mudfords Lane, Upper Lansdowne (hours to 2 days)
h. Nellies Bridge, Lansdowne
i. North Moto Road to Lansdowne and Coopernook (30-120 hours)
j. Paynes Lane, Upper Lansdowne (72 hours)
k. Putta Road, Upper Lansdowne (2 hours)
l. Upper Lansdowne Road (Crittenden Bridge) (5 days)

2.4.5 At 1.5m (Harrington) the following roads may be closed (1);

a. Bakers Road, Harrington (isolating 6 houses)
b. Coralville Bridge, Coralville (isolating 10 houses)
c. Crowdy Bay Road, Coralville
d. Forest Road, Harrington (at Bridge)
e. Harrington Road (at Cattai Creek and Clunes Lane)
f. Rutile Road (Gully Creek and Bakers Road)
g. Manning Point Road (48 hours)
h. Main Street, Manning Point (48 hours)
i. Banksia Crescent, Manning Point (48 hours)

2.5 SUMMARY OF ISOLATED COMMUNITIES AND PROPERTIES

2.5.1 Table 15 lists communities liable to isolation and potential periods of isolation. Information presented here is based on historical and design events and does not reflect the duration of isolation expected in larger possible and extreme events.

Table 15: Potential Periods of Isolation for communities in the Greater Taree City LGA during a Moderate to Major flood (1).

Note: The Greater Taree area is in close proximity to the river's dual entrance, therefore flood durations and heights are strongly influenced by tidal fluctuations water flowing in and out of the entrances (~ indicates approximation).

Town / Area (River Basin)	Population/ Dwellings	Flood Affect Classification	Approximate period isolation.	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	NOTES
Wingham (10m Wingham)	5313 persons (350 in Wingham Peninsula)	Rising Road Access (RRA) to a High Flood Island (HFI) (Wingham Peninsula is a Low Flood Island (LFI))	3-5 days									Resupply is unlikely; however if resupply of the local stores is required it will be in accordance with the NSW SES MNR Resupply Incident Action Plan. Rural properties may be isolated for weeks but are generally self-sufficient. Wingham Peninsula is a LFI, therefore does not require resupply as it will already be evacuated.
Tinonee (~3.2m Taree)	1052 persons	HFI	3-4 days									Resupply unlikely to be required. If resupply is

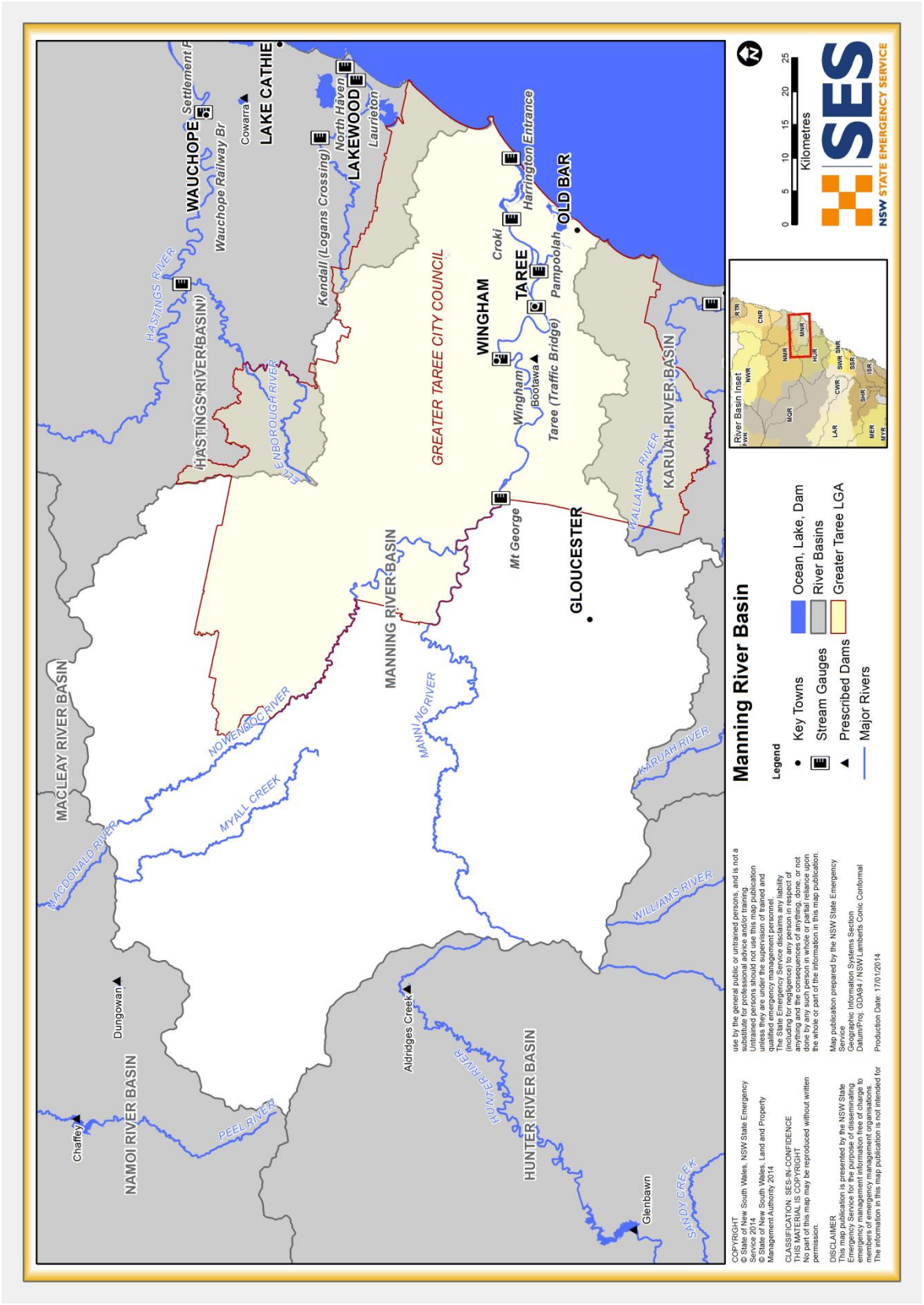
Town / Area (River Basin)	Population/ Dwellings	Flood Affect Classification	Approximate period isolation.	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	NOTES
												required it will be in accordance with the NSW SES MNR Resupply Incident Action Plan.
Taree (~4.63m Taree)	~7000 persons	RRA to a HFI	3-4 days									Resupply unlikely to be required. If resupply is required it will be in accordance with the NSW SES resupply
Old Bar (~4.5m Taree)	4272 persons	RRA to a Trapped Perimeter Area (TPA) after 4.5m	3-4 days									If resupply is required beyond 4.5m, it will be in accordance with the NSW SES MNR Resupply Incident Action Plan
Oxley Island, Mitchells Island (~1.8m Taree)	746 persons (301 and 445 respectively)	HFI and LFI	3-4 days									Low density rural properties with minimal access routes. The residents are largely independent and require little

Town / Area (River Basin)	Population/ Dwellings	Flood Affect Classification	Approximate period isolation.	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	NOTES
												support during events.
Manning Point (~1.8m Taree; 1.9 Harrington)	220 persons (plus seasonal tourists).	HFI in minor floods; LFI above 2.4m at Harrington gauge	3-4 days									Becomes a LFI in a moderate flood (from around 2.4m Harrington gauge). It is unlikely that the sector would require a resupply in larger floods as the sector would be subject to an evacuation order.
Harrington/Crowdy Head (~1.4m Harrington)	2479 persons (2258 and 221 respectively)	HFI. LFI in a PMF	3-4 days									Becomes a LFI in a PMF. Resupply of neighbourhood shopping centre may be required, which is to be in accordance with the NSW SES MNR Resupply Incident Action Plan

Town / Area (River Basin)	Population/ Dwellings	Flood Affect Classification	Approximate period isolation.	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	NOTES
Dumaresq Island (~2.2m Taree)	72 persons	HFI to 4.5m, after which becoming a LFI	3-4 days									Resupply unlikely in smaller frequent floods as durations are short and the community is generally self-sufficient. In larger floods, it becomes a LFI. If resupply is required it will be in accordance with the NSW SES MNR Resupply Incident Action Plan.
Cundletown (9.7m PMF Taree)	55 persons	RRA. HFI in a PMF	3-4 days									Resupply is not required in most events as not isolated until PMF. If resupply is required it will be in accordance with the NSW SES MNR Resupply Incident Action Plan

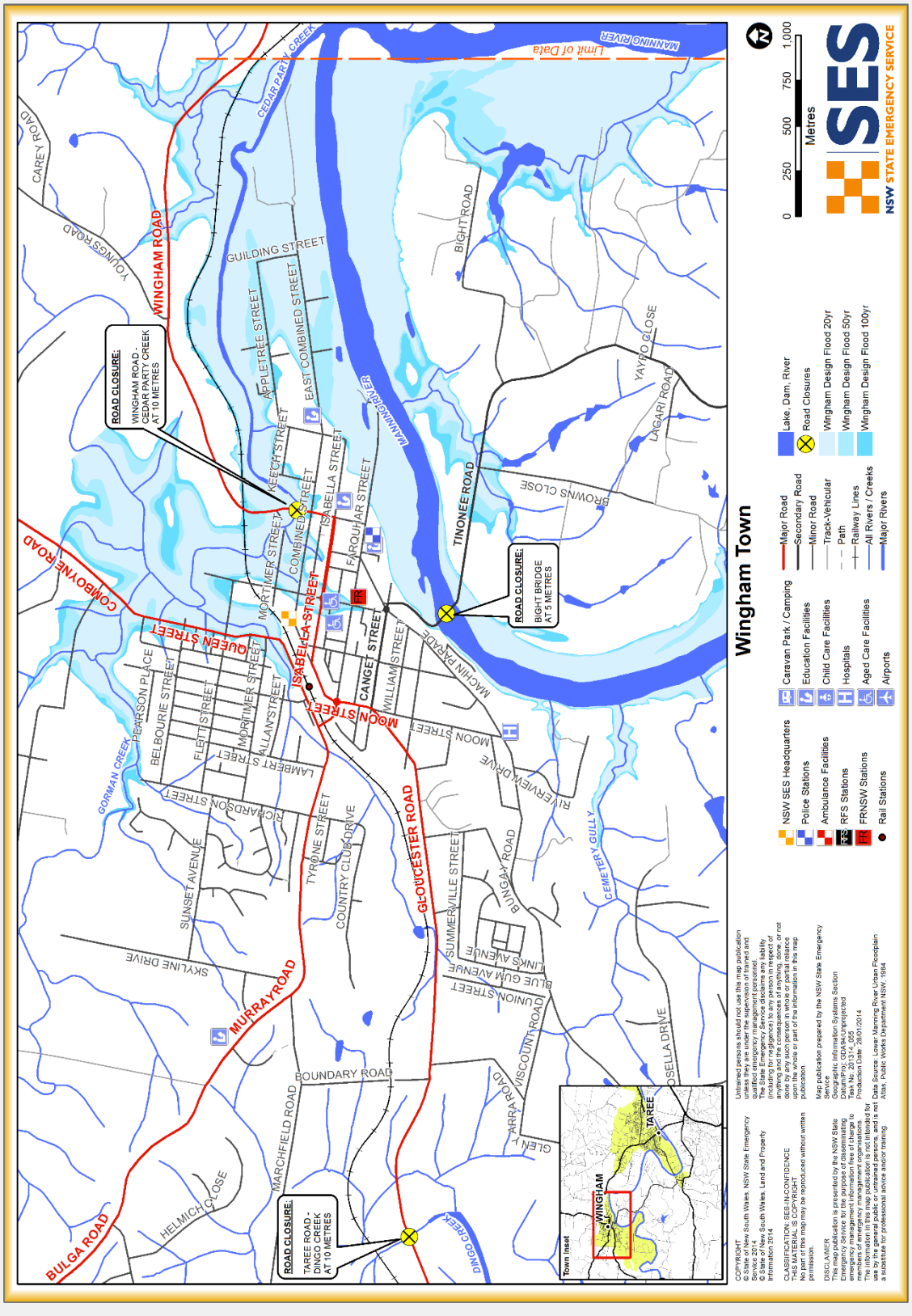
Note: Periods of isolation are a guide only. Liaison with the Local Controller and communities/residents involved is essential during periods of potential.

MAP 1 - MANNING RIVER BASIN MAP



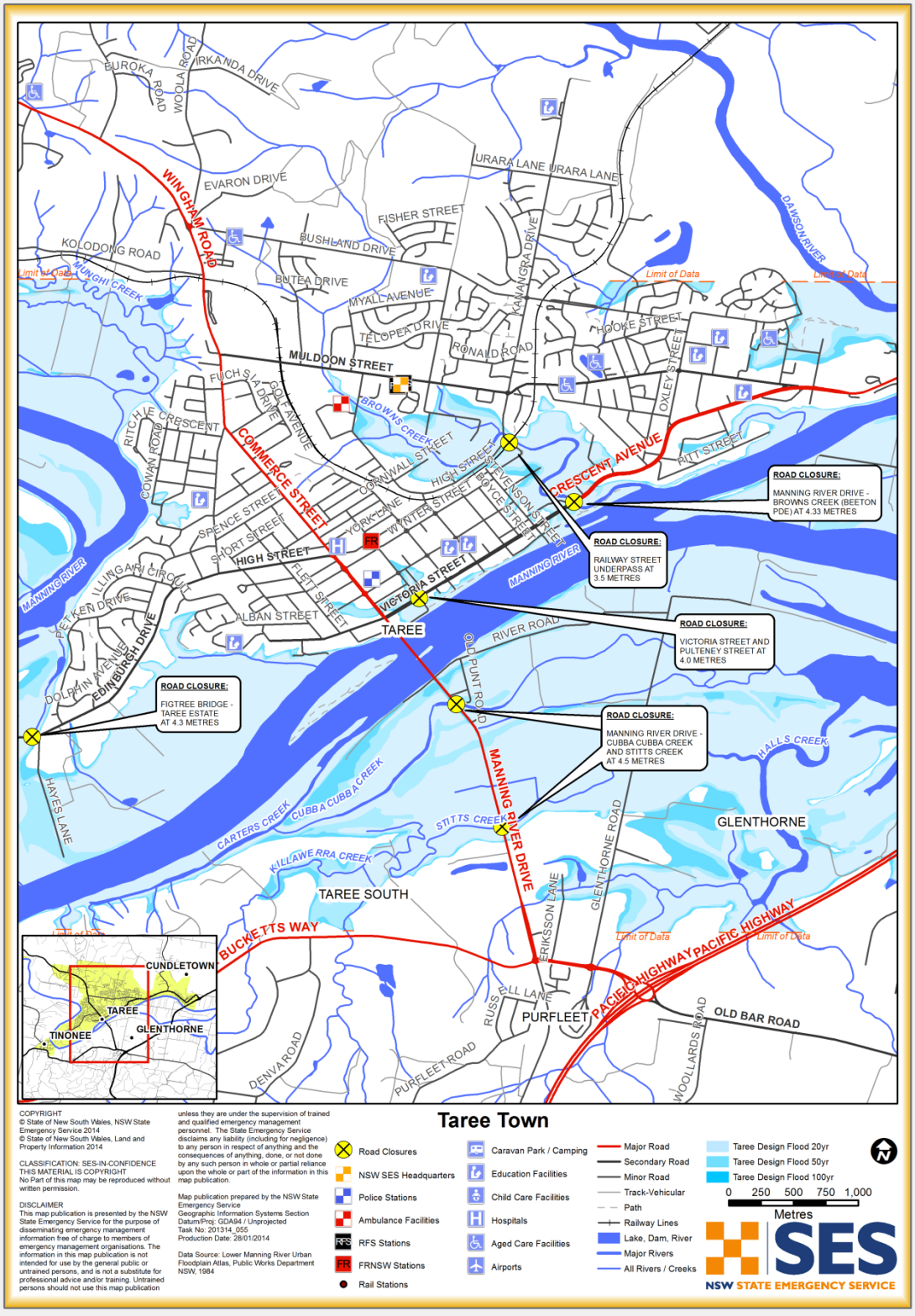
MAP 2 - WINGHAM TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



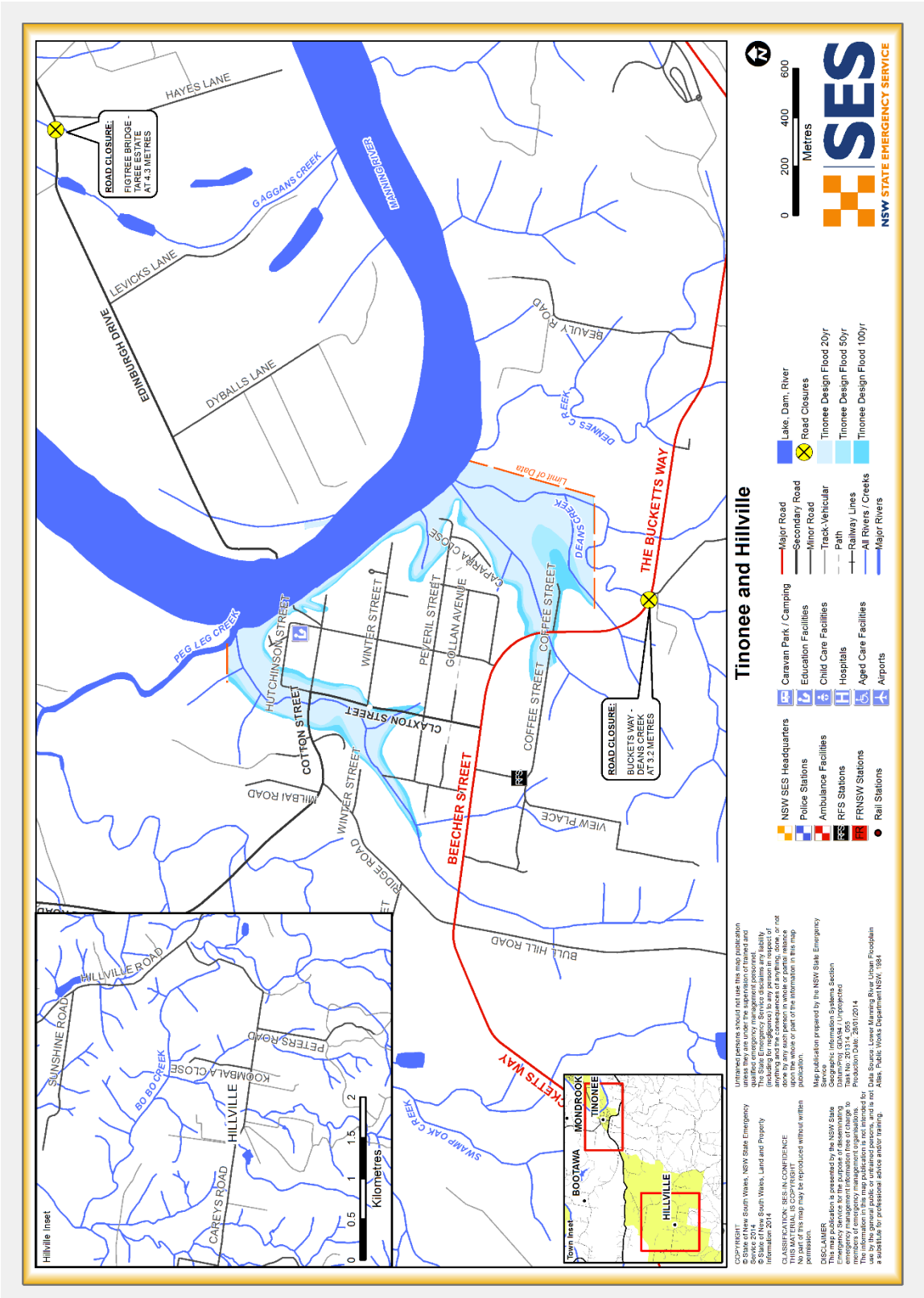
MAP 3 - TAREE AND GLENTHORNE TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



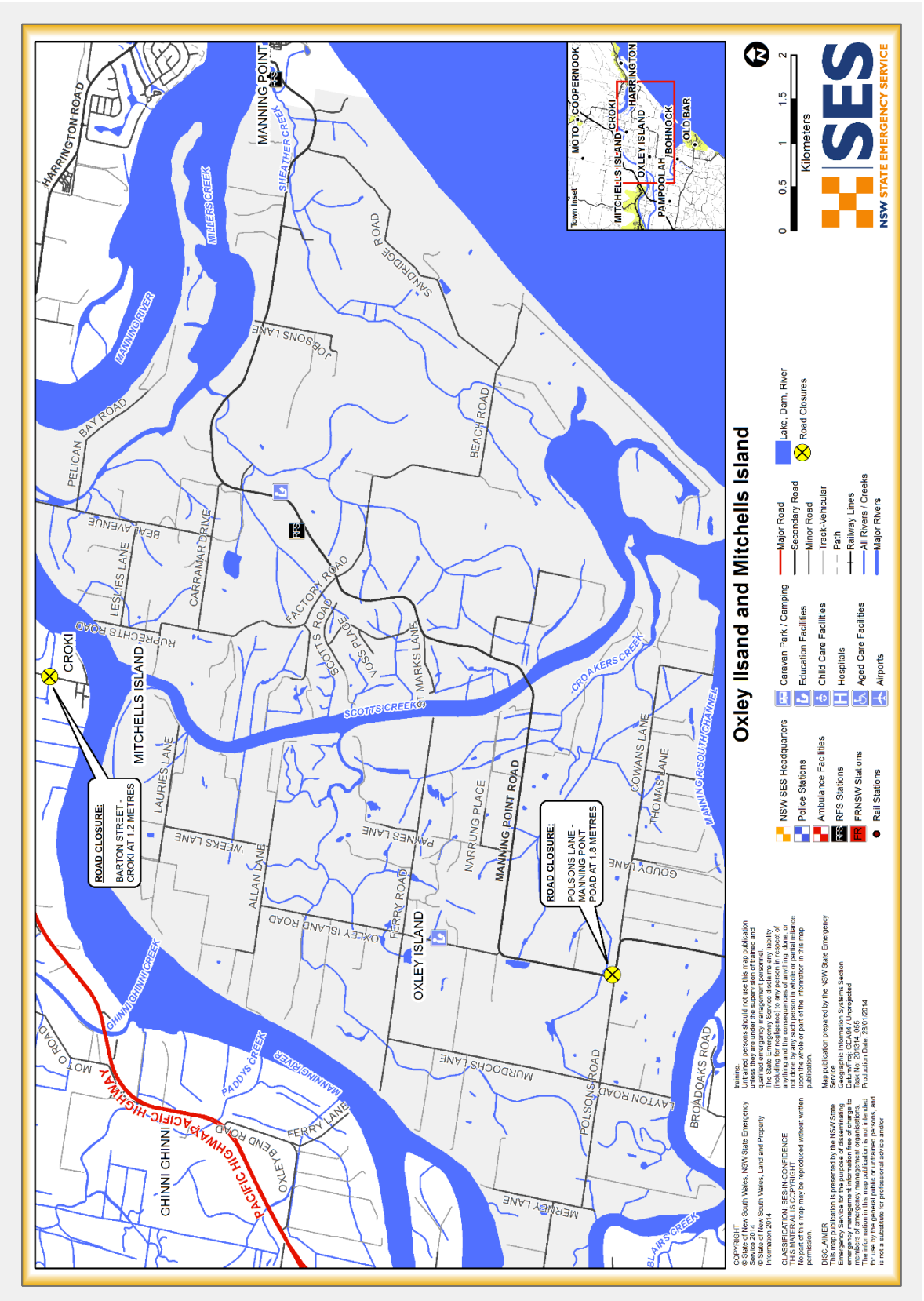
MAP 4 - TINONEE AND HILLVILLE TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



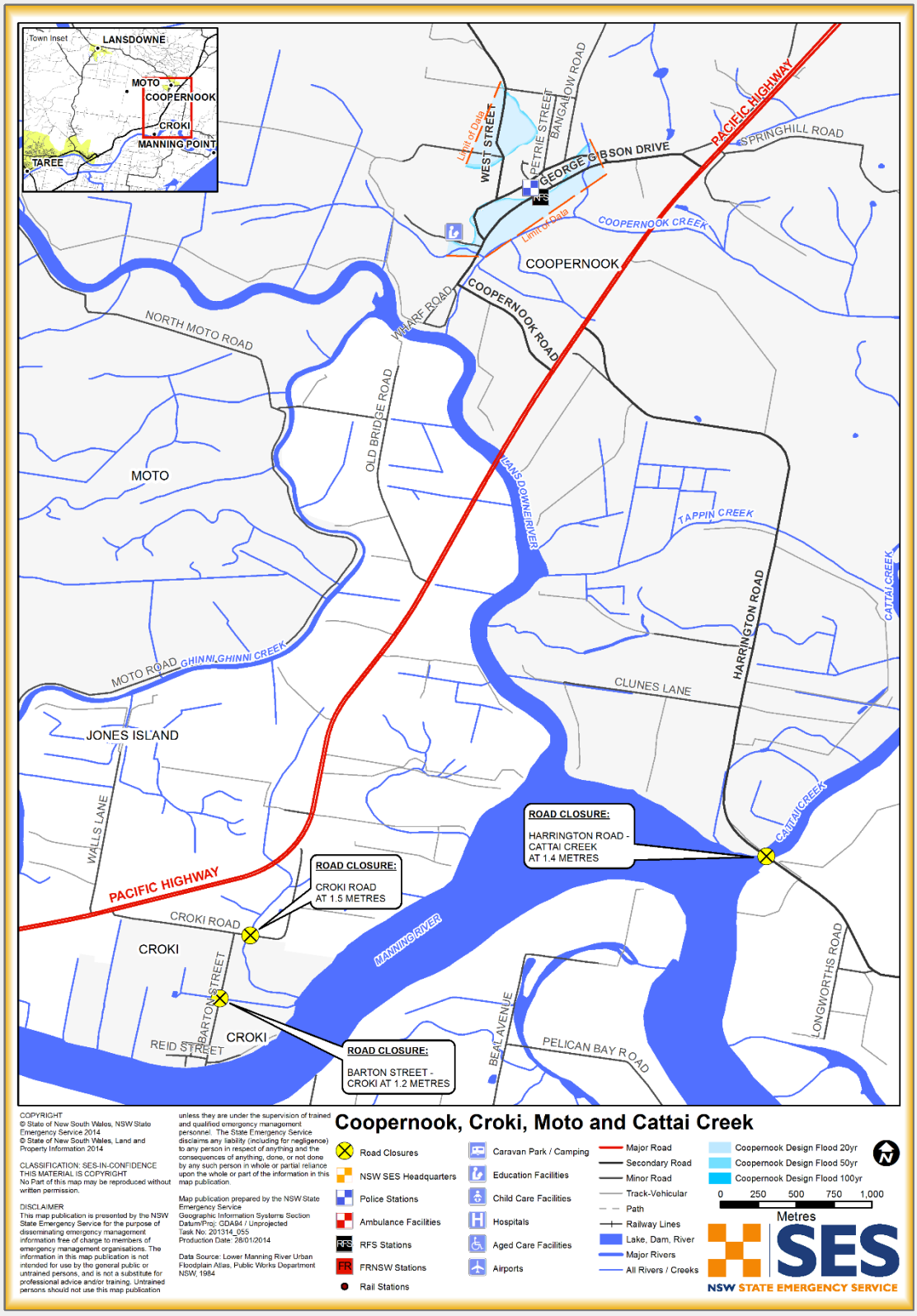
MAP 5 - OXLEY AND MITCHELL ISLAND TOWN MAP

Note: Digital flood extent mapping is not available for incorporation into this map.



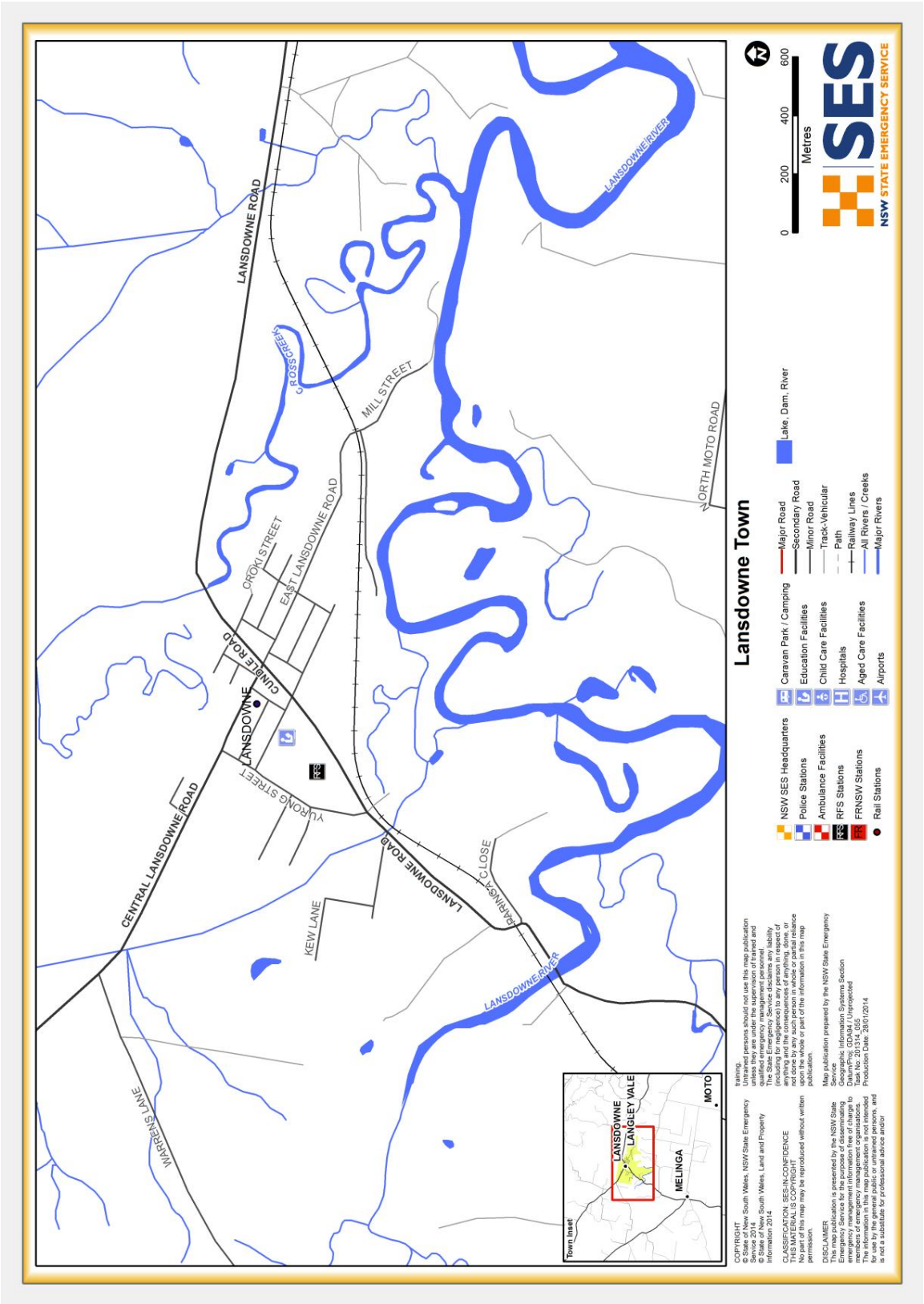
MAP 6 - JONES ISLAND, CROKI AND COOPERNOOK TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



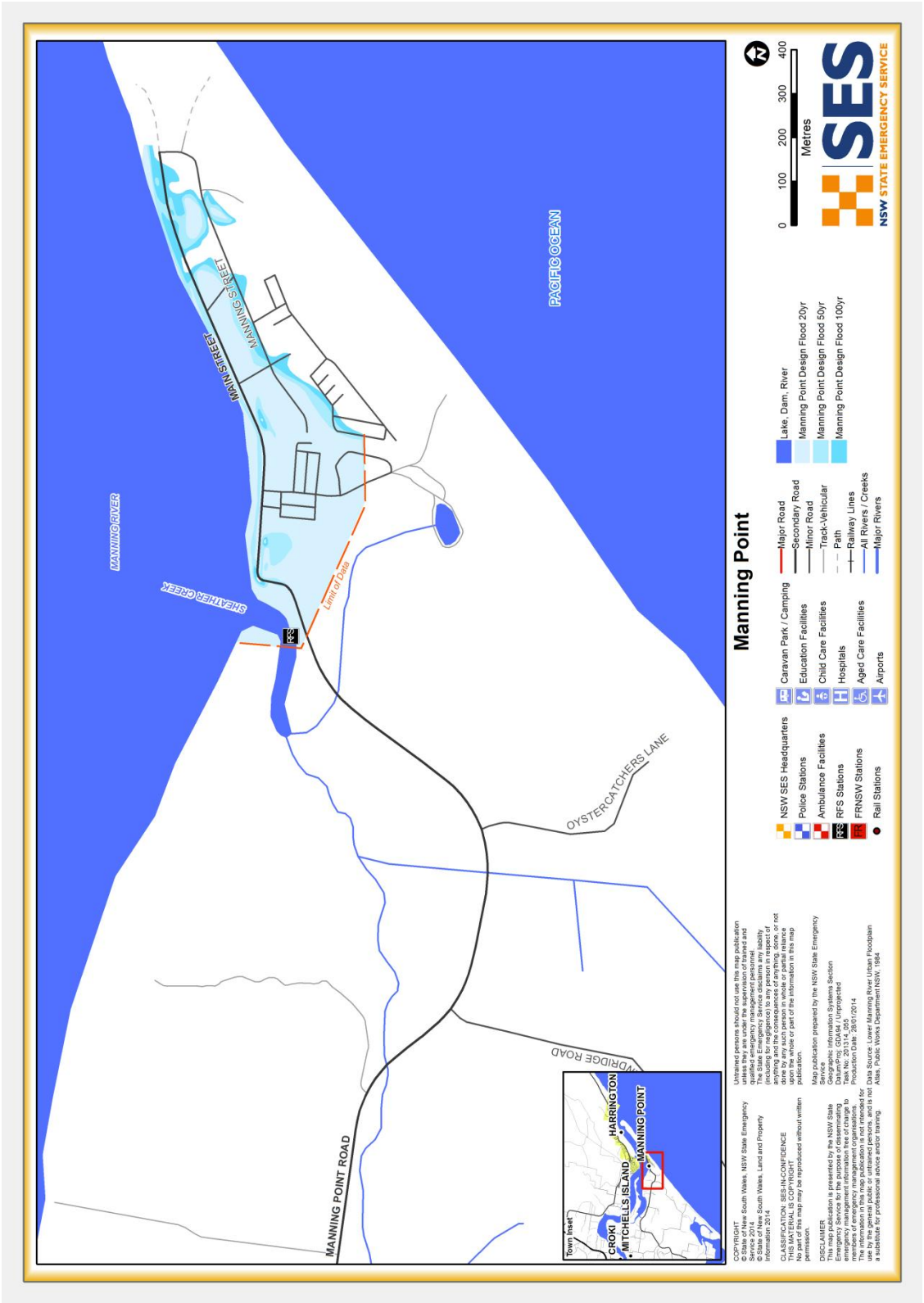
MAP 7 - LANSDOWNE TOWN MAP

Note: Digital flood extent mapping is not available for incorporation into this map.



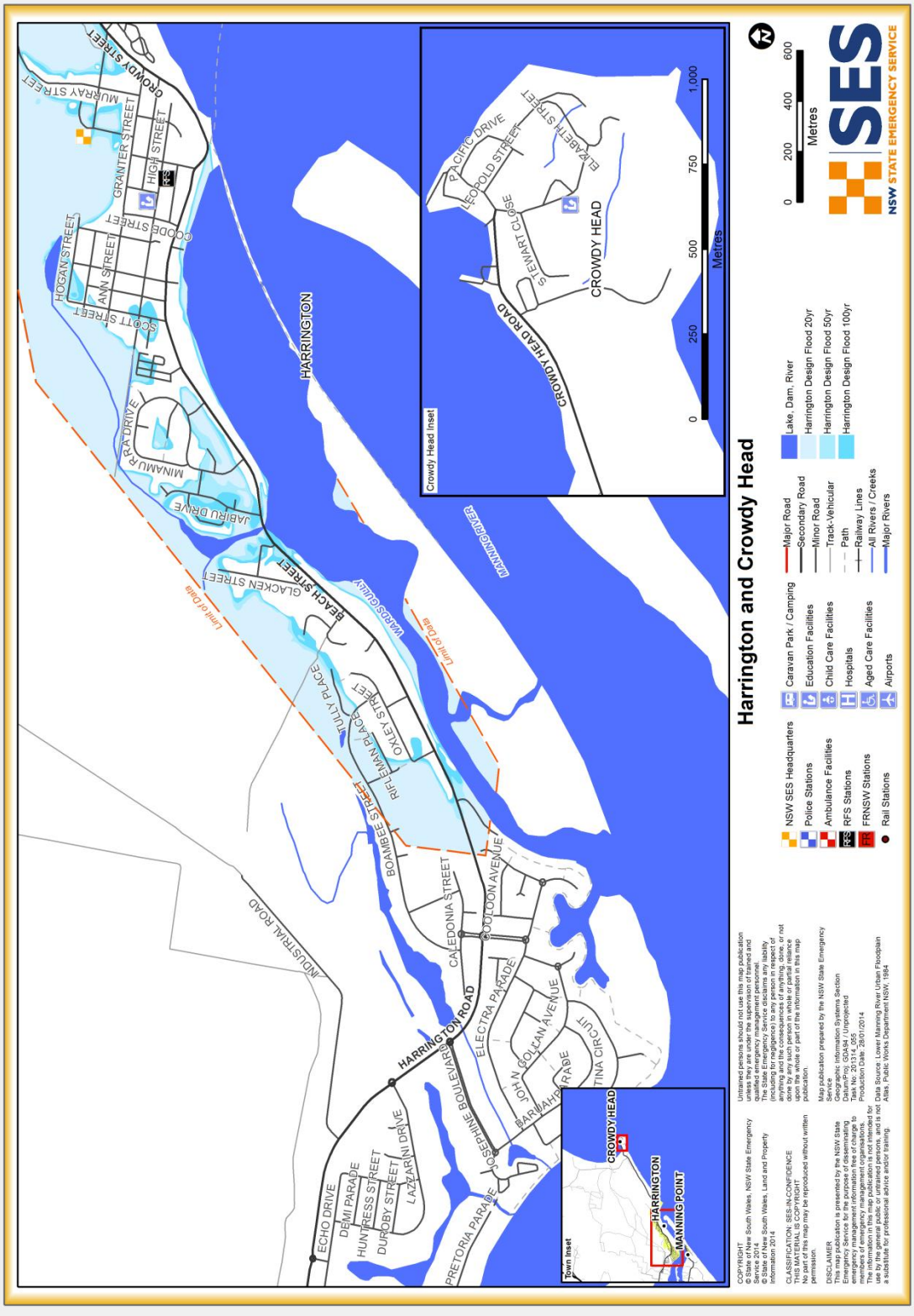
MAP 8 - MANNING POINT TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



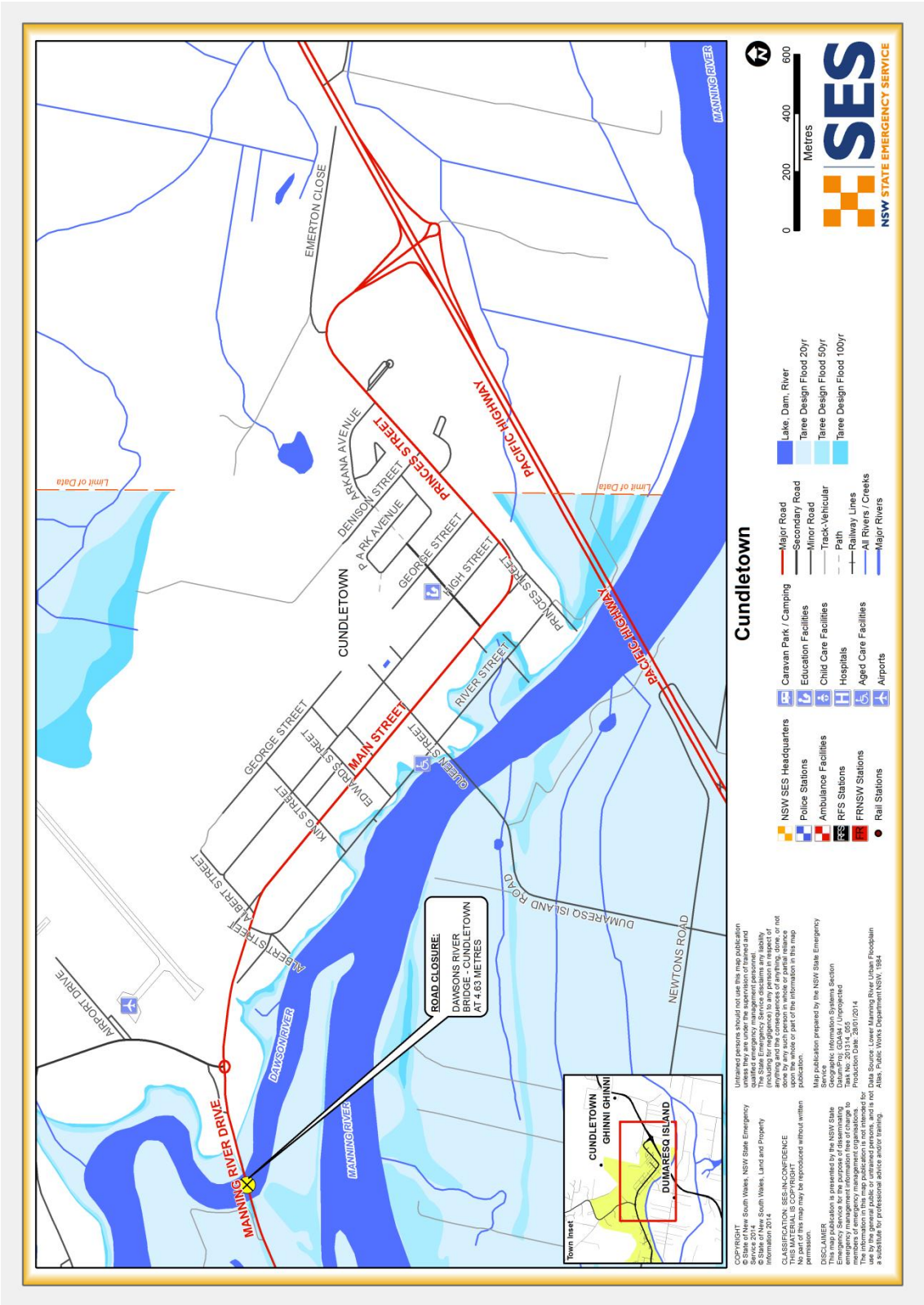
MAP 9 - HARRINGTON AND CROWDY HEAD TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



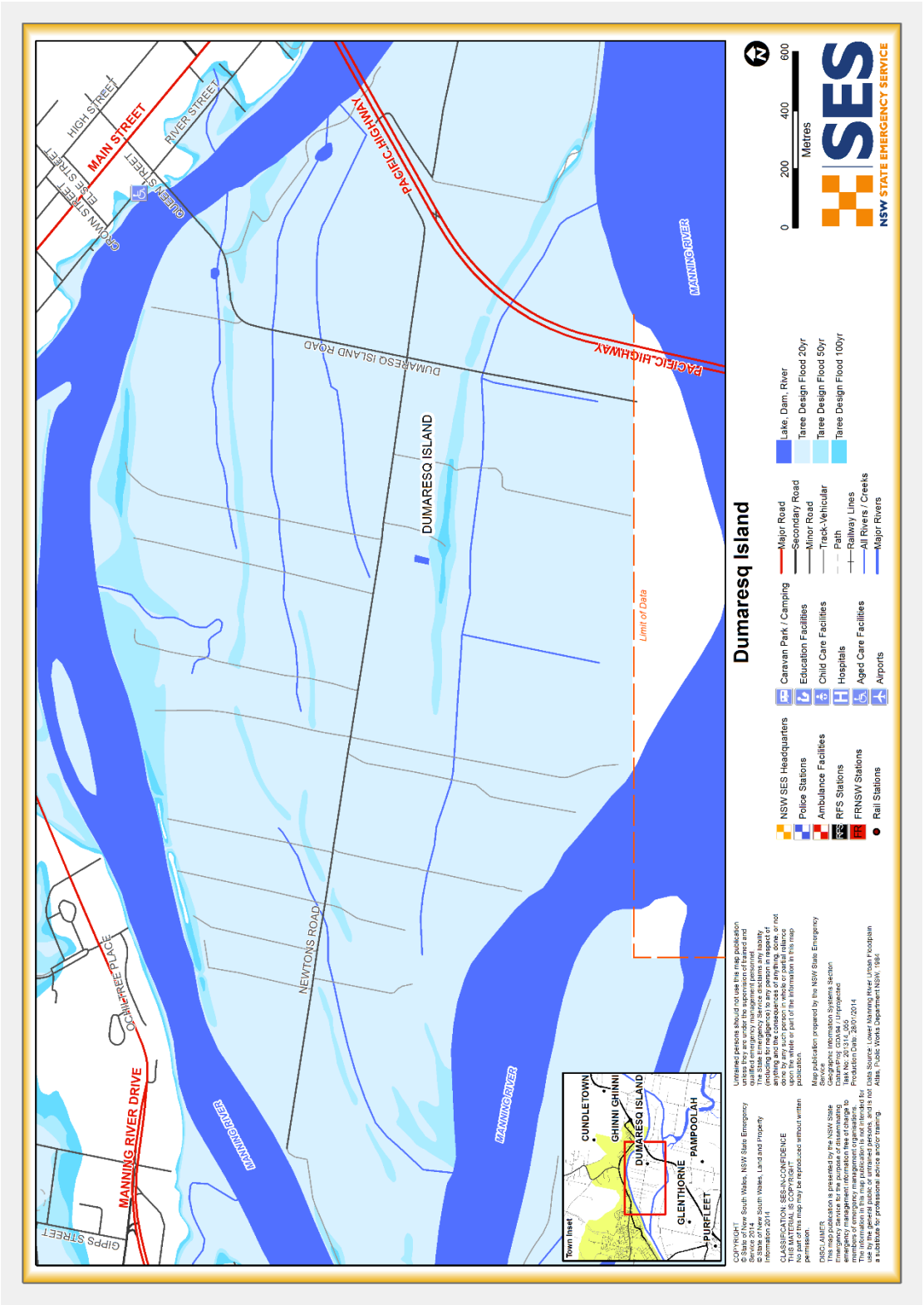
MAP 10 - CUNDLETOWN TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



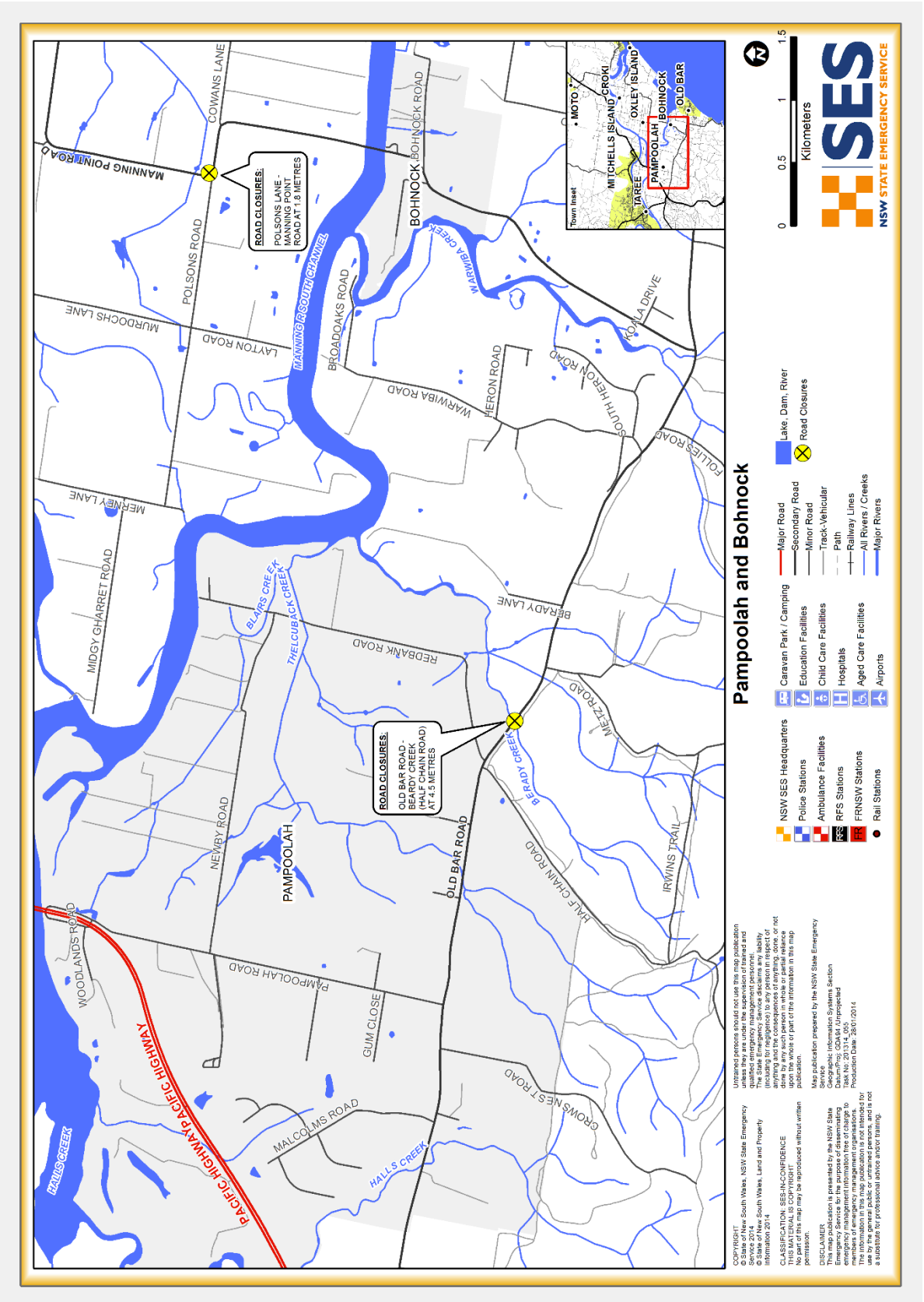
MAP 11 - DUMARESQ ISLAND TOWN MAP

Note: Flood extent mapping is not comprehensive for this area and should be interpreted with caution.



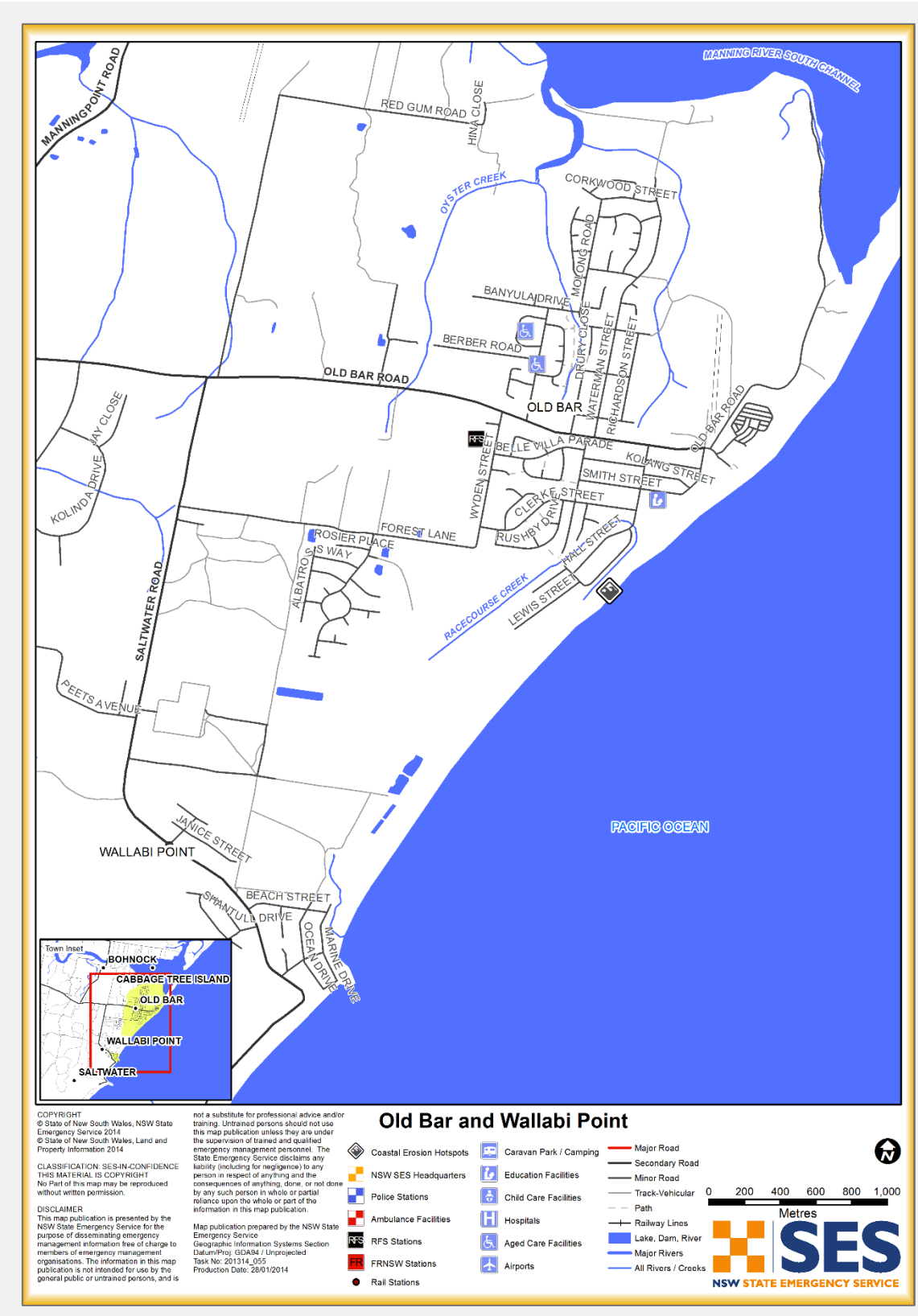
MAP 12 - PAMPOOLAH AND BOHNOCK TOWN MAP

Note: Digital flood extent mapping is not available for incorporation into this map.



MAP 13 - OLD BAR AND WALLABI POINT TOWN MAP

Note: Digital flood extent mapping is not available for incorporation into this map.



Map publication prepared by the NSW State Emergency Service
Geographic Information Systems Section
Datum/Proj: GDA94 / Unprojected
Task No: 201314_055
Production Date: 28/01/2014

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SES RESPONSE ARRANGEMENTS FOR GREATER TAREE CITY

Volume 3 of the Greater Taree City Local Flood Plan

CONTENTS

VERSION LIST

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

Description	Date

AMENDMENT LIST

Suggestions for amendments to this Volume should be forwarded to:

The Greater Taree Local Controller

NSW State Emergency Service

P.O. Box 1011, TAREE NSW 2430

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

Amendment Number	Description	Updated by	Date
1	Ch 2 - Updated design flood levels and consequence for Wingham	M. de Deuge	07/03/2018

GREATER TAREE CITY: FLOOD WARNING SYSTEMS AND ARRANGEMENTS

Chapter 1 of Volume 3 (NSW SES Response Arrangements for Greater Taree City) of the Greater Taree City Local Flood Plan

Last Update: December 2014

AUTHORISATION

Greater Taree: Flood Warning Systems and Arrangements has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process.

Approved

Manager Emergency Risk Management

Date: 21/10/14

Approved

NSW SES Mid North Coast Region Controller

Date: 11/12/14

Tabled at LEMC

Date:

CONTENTS

1. GAUGES MONITORED BY THE NSW SES TAREE CITY LOCAL HEADQUARTERS

Table 1: Gauges monitored by the NSW SES Taree Local Headquarters

Gauge Name	Type	AWRC No.	Bureau Gauge No.	Stream	Flood level classification			Special Reading Arrangements	Owner
					MIN	MOD	MAJ		
Lansdowne	Telemeter	208015		Lansdowne River	-	-	-		
Dingo Creek	Manual	208017		Dingo Creek	-	-	-		
Dingo Creek (Munyaree Flat)^	Telemeter	208019		Dingo Creek	-	-	-		
Forbesdale	Telemeter	208006		Gloucester River	-	-	-		
Forbesdale (Faulklands)	Manual	208008		Gloucester River	-	-	-		
Campbell's No 1	Manual	208021		Manning River	-	-	-		
Doon Ayr^	Telemeter	208003		Gloucester River	-	-	-		
Cundleflat	Manual	208900		Manning River	-	-	-		
Mount George^	Telemeter	208901		Manning River	5.5	7.6	10.6		
Killawarra	Telemeter	208004		Manning River	-	-	-		
Wingham*‡^	Telemeter	208400		Manning River	4.88	8.88	11.88		
Taree[1] (Traffic Bridge)^ * ‡	Telemeter	208410		Manning River	1.78	2.38	3.68		
Rocks Crossing	Telemeter	208005		Manning River	-	-	-		
Croki*^	Telemeter	208404		Manning River	-	-	-		
Harrington Entrance*^	Telemeter	208425		Manning River	1.9	2.2	2.8		

Gauge Name	Type	AWRC No.	Bureau Gauge No.	Stream	Flood level classification			Special Reading Arrangements	Owner
					MIN	MOD	MAJ		
Manning Point	Telemeter	208406		Manning River	-	-	-		
Farquhar Inlet^	Telemeter	208415		Manning River	-	-	-		
Dumaresq Island Bridge^	Telemeter			Manning River	-	-	-		

Notes: [1] Taree (Traffic Bridge) is located 200m upstream of Martin Bridge.

The Bureau of Meteorology provides flood warnings for the gauges marked with an asterisk (*).

NSW SES Local Flood Advices are provided for the gauges marked with a single cross (†).

The NSW SES holds a Flood Intelligence Card for the gauges marked with a double cross (‡).

2. DISSEMINATION OPTIONS FOR NSW SES FLOOD INFORMATION AND WARNING PRODUCTS

The NSW SES Mid North Coast Region Headquarters distributes NSW SES Flood Bulletins, NSW SES Evacuation Warnings and NSW SES Evacuation Orders to the following regional media outlets and agencies:

Television Stations:

Station	Location
Prime TV	Port Macquarie
Prime TV	Taree
Ten Northern	Taree
NBN TV	Port Macquarie
NBN TV	Taree

Radio Stations:

Station	Location	Frequency	Modulation
Primary			
ABC Mid North Coast	Port Macquarie	95.5	FM
ABC Mid North Coast	Port Macquarie	756	AM
Secondary			
STAR FM	Port Macquarie	102.3	FM
2 MC	Port Macquarie	100.7	FM
MAX FM	Taree	107.3	FM
2RE	Taree	1557	AM
Easy Listening	Port Macquarie	531	AM
2TLP	Taree	(Ngarralinyi)	AM

Newspapers:

Name	Location
Wingham Chronicle	Wingham
Manning River Times	Taree

GREATER TAREE CITY: NSW SES LOCALITY RESPONSE ARRANGEMENTS

Chapter 2 of Volume 3 (NSW SES Response Arrangements for Greater Taree City) of the Greater Taree City Local Flood Plan

Last Update: December 2014

AUTHORISATION

NSW SES Locality Response Arrangements in Greater Taree City has been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process.

Approved

Manager Emergency Risk Management

Date: 30/10/14

Approved

NSW SES Mid North Coast Region Controller

Date: 11/12/14

Tabled at LEMC

Date:

CONTENTS

LIST OF TABLES

LIST OF MAPS

SECTOR OVERVIEW

These Sectors provide further detail of the planned response strategies within Communities in the Greater Taree City LGA.

Sector	Community	Sector Basis	Approximate total Number of properties within Sector[1]	Estimated no. of Properties potentially at risk of inundation
1	Wingham Central (Wingham Gauge – Bight Bridge)	High Flood Island from 10m, with rising road access to the evacuation centre located on the high flood Island	1000	In total in Wingham Central & Peninsula: 5% AEP (12.45m): 50 houses 1% AEP (14.51m): 118 houses PMF (24.04m): 159 houses
2	Wingham Peninsula (Wingham Gauge – Bight Bridge)	Up to 1% AEP rising road access to the PMF then overland refuge area on a low flood island	60	In total in Wingham Central & Peninsula: 5% AEP (12.45m): 50 houses 1% AEP (14.51m): 118 houses PMF (24.04m): 159 houses
3	Taree West (Taree Traffic Bridge Gauge)	Rising road access to 4.30m thereafter low flood island	30	13 houses in a 4.63m flood 21 houses in a 5.68m flood (1% AEP) 25 in a 9.7m flood (PMF)
4	Taree Central (Taree Traffic Bridge Gauge)	Rising road access to a high flood island in a PMF at 9.70m	6990	54 houses in a 4.63m flood (5% AEP) 66 houses and 100 businesses in a 5.68m flood (1% AEP) More than 227 houses in a 9.7m flood (PMF)
5	Tinonee (Taree Traffic Bridge Gauge)	High flood island	436	4 houses from a 5% AEP flood 5 up to a 4.5m flood.

[1] Properties with dwelling based on Land and Property Information 10cm GSD aerial photography (2013), Census (2011), Manning River Post Flood Study (2014), Wingham Flood Study (2011) and NSW Digital Cadastral Database (2014)

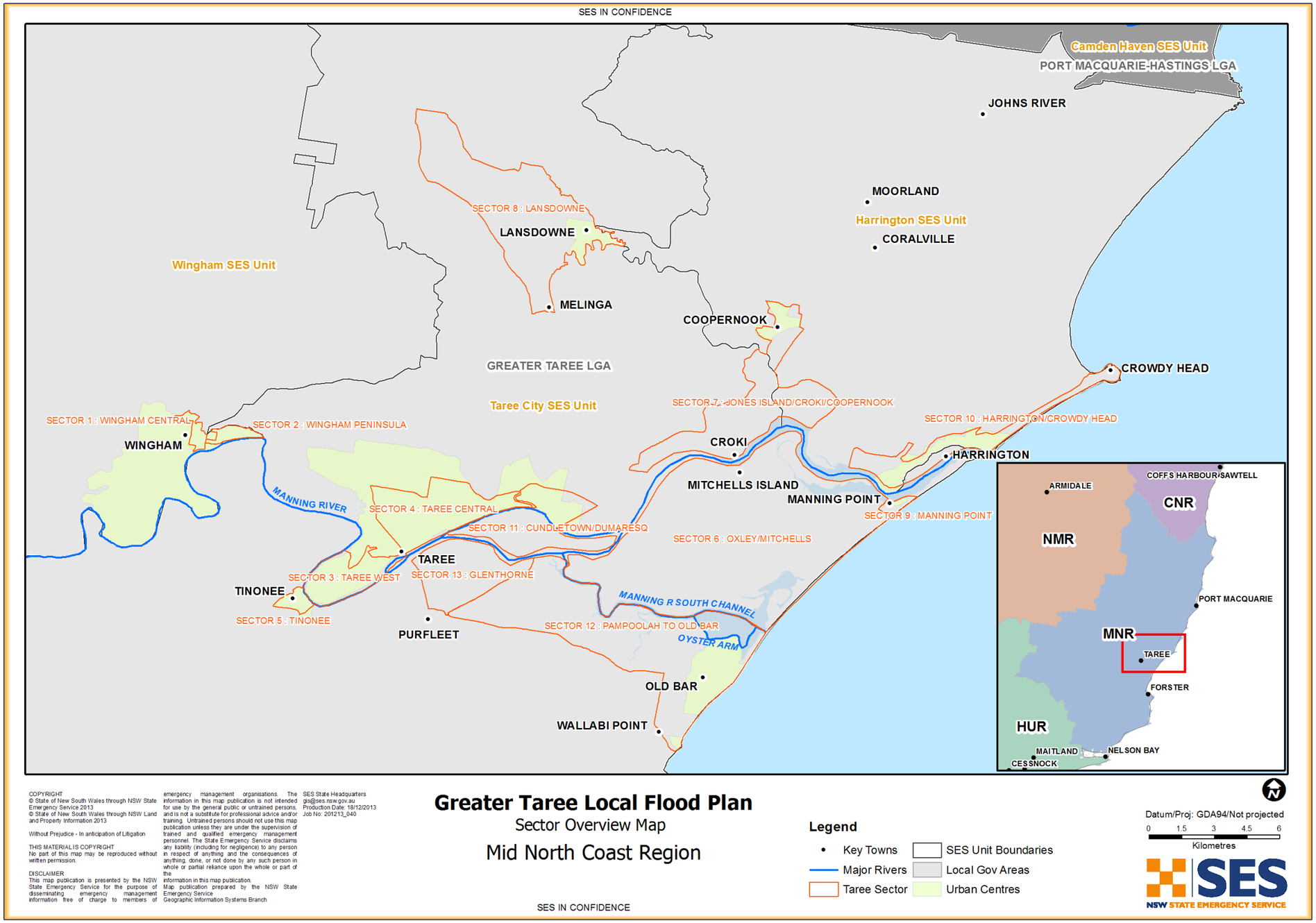
Sector	Community	Sector Basis	Approximate total Number of properties within Sector[1]	Estimated no. of Properties potentially at risk of inundation
				Numbers not available for larger floods up to a PMF (9.7m), but are likely to be larger
6	Oxley/Mitchells Islands (Taree Traffic Bridge Gauge)	The sector is characterised by both low and high flood islands with areas of farmland inundated. The sector is predominantly low density rural properties with minimal access routes from 1.80m - therefore becoming overland refuge areas.	119 Oxley 199 Mitchells	15 in a 5% AEP flood (4.63m) 41 in a 2% AEP flood (5.36m) 68 houses in a 1% AEP flood (57 Oxley, 11 Mitchells) (5.68m) Numbers not available for a PMF (9.7m), but are likely to be larger
7	Jones Island, Croki, Coopernook (Croki Gauge)	Croki is classified as a low flood island from the 5% floods at 2.46m. Coopernook is classified as a rising road access area to the 5% AEP at 2.46m then becoming an area with an overland escape route in a PMF.	228 Coopernook 114 Moto/Croki	All of Croki from 2.46m (5% AEP) Between Lansdowne and Coopernook 11 in a 5% AEP flood (2.46m) 43 in a 2% AEP flood (2.87m) 70 in a 1% AEP flood (3.07m)
8	Lansdowne (Lansdowne Gauge)	Rising Road Access for floods up to and including the PMF at 12.10m	244	10 in a PMF (12.1m)
9	Manning Point (Taree Traffic Bridge Gauge and Harrington Gauge)	Up to 100 year ARI event at 5.68m on the Taree Gauge - overland refuge area on a high flood island In a PMF at 9.70m on the Taree Gauge- low flood island	159	Relating to the Harrington Gauge: 23 in a 5% AEP flood (1.89m) 51 in a 2% AEP flood (2.1m) 56 in a 1% AEP flood (2.26m) All properties in a PMF (2.9m)

Sector	Community	Sector Basis	Approximate total Number of properties within Sector[1]	Estimated no. of Properties potentially at risk of inundation
10	Harrington/Crowdy Head (Harrington Gauge)	High flood island up to a 100 year ARI event at 2.26m. In a PMF at 5.40m only a small area remains flood free thus classifying the area as a Low Flood Island	1328 Harrington 140 Crowdy Head	16 in a 5% AEP flood (1.89m) 60 in a 2% AEP flood (2.1m) 87 in a 1% AEP flood (2.26m) Numbers not available for a PMF (2.9m), but are likely to be larger; potentially up to 1328
11	Cundletown/Dumaresq (Taree Traffic Bridge Gauge)	Cundletown – rising road access up to a PMF at 9.70m Dumaresq Island – up to a 20 year ARI at 4.63m overland refuge to higher ground then a low flood island to PMF at 9.70m	785 Cundletown 26 Dumaresq Island	10 in 1% AEP (5.68m) and up to 26 in Dumaresq Island Cundletown: 7 in a 5% AEP flood (5.68m) 17 in a 2% AEP flood (5.36m) 24 in a 1% AEP flood (2.26m) Values unavailable for the PMF (9.7m)
12	Pampoolah to Old Bar (Taree Traffic Bridge Gauge)	Indirectly affected area with rising road access from 4.63m to the PMF at 9.70m when the sector becomes isolated.	146 Pampoolah 1990 Old Bar 230 Wallabi Point	37 in a 5% AEP flood (4.63m) 67 in a 2% AEP flood (5.36m) 84 in a 1% AEP flood (5.68m) The area is completely inundated in a PMF
13	Glenthorne (Taree Traffic Bridge Gauge)	Low Flood Island, with dwellings located on isolated mounds until around 4.50m, thereafter becoming inundated	111	111 from 4.5m (below the 5% AEP) The area becomes entirely inundated at this height

Table 1: Overview of Sectors in the Greater Taree City LGA.

Properties with dwelling based on Land and Property Information 10cm GSD aerial photography (2013), Census (2011), Manning River Post Flood Study (2013), Wingham Flood Study (2011) and NSW Digital Cadastral Database (2014)

Map 1: Greater Taree Sector Overview Map



SES State Headquarters
gis@ses.nsw.gov.au
Production Date: 18/12/2013
Job No: 201213_040

Greater Taree Local Flood Plan

Sector Overview Map

Mid North Coast Region

SES IN CONFIDENCE

Legend

- Key Towns
- Major Rivers
- Taree Sector
- SES Unit Boundaries
- Local Gov Areas
- Urban Centres

Datum/Proj: GDA94/Not projected

0 1.5 3 4.5 6

Kilometres

NSW STATE EMERGENCY SERVICE

1. WINGHAM CENTRAL SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector comprises of the Wingham Township bordered by Stoney Creek to the North, Cedar Party Creek to the East and the Manning River to the South. The Wingham Township is the second largest urban center in the Council area and is at the upper limit of tidal influences on the Manning River. Access roads and the rail line to this sector may become impassable during major floods resulting in the isolation of approximately 4963 people for 3-5 days, depending on rainfall and river flow.		
Hazard	Inundation and isolation from- • Flash flooding from Stoney Creek and Cedar Party Creek • Riverine flooding from the Manning River (backwater flooding)		
Flood Affect Classification	High Flood Island from 10m, with Rising Road Access to the evacuation centre located on the High Flood Island up to and including the PMF.		
At risk properties	In Wingham Central & Peninsula: 5% AEP (12.45m): 50 houses 1% AEP (14.51m): 118 houses PMF (24.04m): 159 houses	**Total number of properties within Sector/Community**	1000
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Wingham SES Incident Controller will control all evacuations in this sector. **Coordination -** The Wingham SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		

Key Warning Gauge Name:- Wingham (208902) (Bight Bridge, Longitude 152.3667°E Latitude 31.8750°S)	**Minor:** 4.88m	**Moderate:** 8.88m	**Major:** 11.88m

General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions.
	• Issue of early warning of flood level impacts and potential isolation.
	• Evacuation of at risk population:
	  o Self-evacuation to friends/family outside the impact area.
	  o Establishment of an Assembly Area/Evacuation Centre in accordance with the Welfare Services Functional Area Coordinator.
	• Resupply in accordance with NSW SES Greater Taree Local Flood Emergency Sub Plan.		

Key Risks / Consequences	• The Manning River can be expected to rise quickly. During the flood of 1978 rates of rise as high as 1.5m per hour occurred at Wingham and upstream. Flooding since this event has been in the order of 0.5m per hour. • The sector may become isolated for 3-5 days from 10.00m due to the flooding of Cedar Party Creek Bridge to the East, Dingo Creek Bridge to the West and Peter Garret (Stoney Creek) Bridge to the North. • Low lying properties may start to inundate from 10.30m. • Lower sections of Wingham Court Nursing Home may start to inundate from 12m. **Note:** Potential high rates of rise within Stoney Creek, Cedar Party Creek and Manning River present high likelihood of flood rescue operations.		

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  o Flood Watch
	  o Flood Warning
	  o Equipment, Livestock and Aquaculture Warnings		

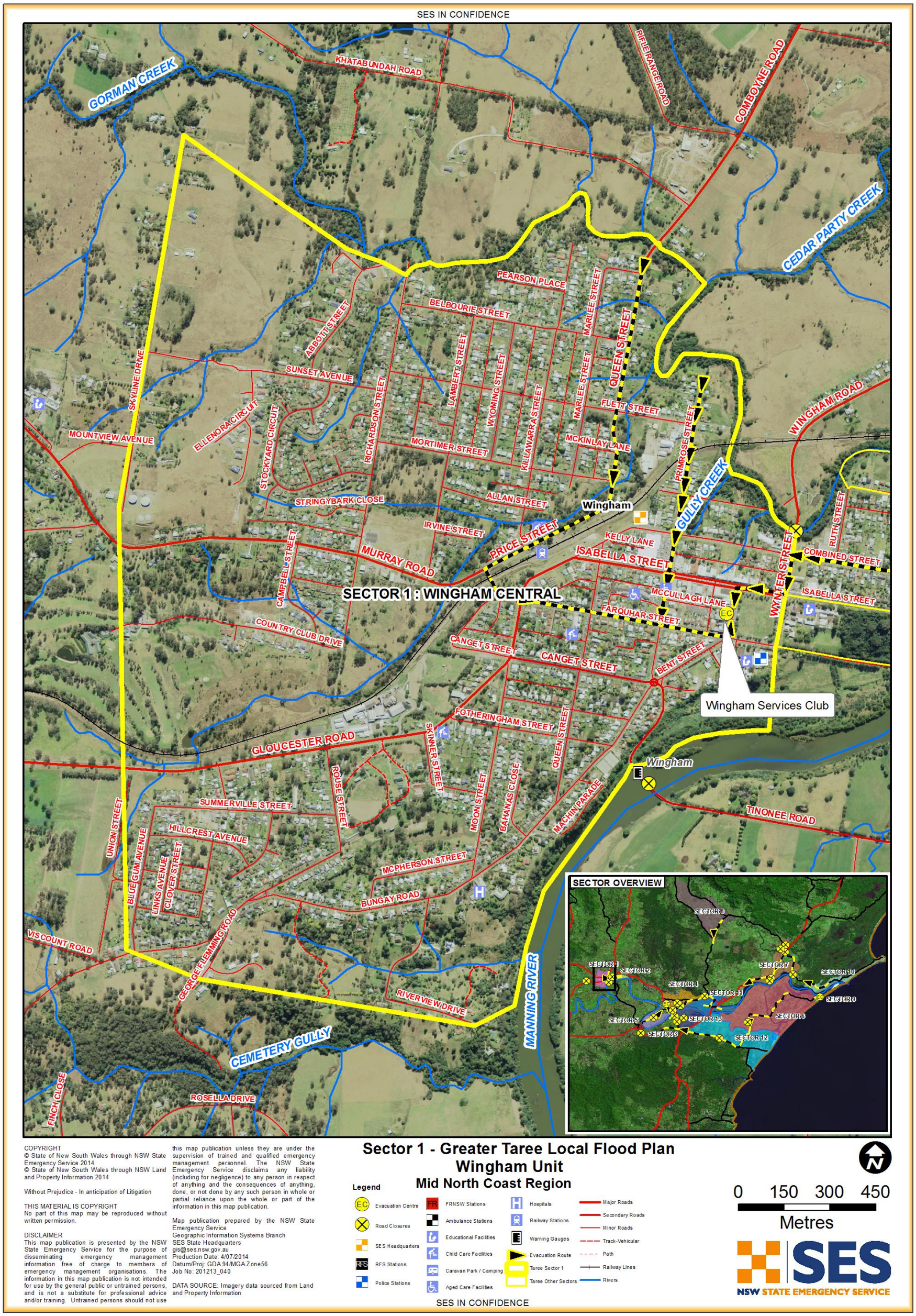
	○ Media Release such as– Isolation Warnings • Evacuation Warning • Evacuation Order • All Clear • Emergency Alert • Standard Emergency Warning Signal (SEWS) • Sequenced door knocking • Media briefing • Interagency LEMC briefings • Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Specific property protection measures:** The following institutions and facilities may require evacuation. • Wingham Court Nursing Home (Lower Level Units) (104 residents)
	Assistance with property protection: NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters Storage facilities are available commercially or at the Wingham Showground in exigent circumstances.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector. This includes: • The Pad substation supplying part of the CBD and Wingham Services Club and the pole substation supplying Wingham Fire Station and Police Station. • The Pump stations at Wingham Road and Primrose St.

Evacuation and/or Isolation Triggers	**Wingham Gauge (208902):** • **Prediction to reach and/or exceed 10m** – If this level is predicted Cedar Party Creek Bridge to the East, Dingo Creek Bridge to the West and the Peter Garret (Stoney Creek) Bridge to the North may close causing the sector to be isolated for 3-5 days. Persons wishing to travel into or out of the sector will need to leave prior to this height. Access within the sector, including the evacuation centre and shops is still available. • **Prediction to reach and/or exceed 10.50m** – If this level is predicted evacuations may be required for properties in Mortimer Street East, Combined Street, Queen Street North and Primrose Street. • **Prediction to reach and/or exceed 12.70m** – If level is predicted evacuations may be required for Wingham Court Nursing Home (lower level hostel units), low lying parts of Isabella Street and Flett Street. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will prioritized based on risk at the triggers for identified properties and/or locations. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and the Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	As per the sector map - evacuation routes to the evacuation center locations are bounded by the intersections of Queen Street (North), Price Street, Moon Road, Farquhar Street, Bent Street, Isabella Street, Wynter Street and Combined Street Wingham.
Evacuation Route Closure	Evacuation routes within the sector to the evacuation center are flood free. Where due to extreme conditions evacuation routes are compromised alternate routes via higher ground are accessible via rising road access.

Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements
Evacuation Centre	The following facilities may be used as evacuation centers at the direction of the Welfare Services Functional Area Coordinator: • Wingham Services Club – Primary • Wingham Town Hall – Secondary
Large scale evacuations	Large scale evacuations would be unlikely in this sector. As the majority of the sector is located above the PMF.
Rescue	The Wingham SES Unit located within the sector will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply for the 3-5 days of isolation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** Suitable landing points are located at: • Central Park, Wingham • Wingham High School • Wingham Showground • Wingham Sporting Complex Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). Access to this airport is lost at 10m, when the sector becomes isolated. Taree Airport details include: • Fixed wing aircraft including C-130, Dash –8 and Saab 340

	models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding; however, the remainder is still useable by STOL aircraft.
Other	

1.1. WINGHAM CENTRAL SECTOR MAP



2. WINGHAM PENINSULA SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector is the entire Wingham Peninsula bordered by Cedar Party Creek to the North, the Manning River to the South East and the Wingham Township by West Apple Tree Street, Rowley Street and Isabella Street. The sector is predominantly rural residential with a population of approximately 350 people. Being at the confluence of Cedar Party Creek and the Manning River this sector is particularly hazardous. Much of the sector is low lying with flood depths across the sector possibly exceeding 1m and flowing quicker than 1m per second. Evacuation routes out of the sector will close early in an event, depending on rainfall and river flow.		
Hazard	Inundation and isolation from- • Cedar Party Creek • Manning River		
Flood Affect Classification	• Up to 100 year ARI (1% AEP) Rising Road Access • PMF– Overland Refuge Area and Low Flood Island		
At risk properties	In Wingham Central & Peninsula: 5% AEP (12.45m): 50 houses 1% AEP (14.51m): 118 houses PMF (24.04m): 159 houses	**Total number of properties within Sector/Community**	60
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Wingham SES Incident Controller will control all evacuations in this sector. **Coordination -** The Wingham SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name - Wingham (Bight Bridge, Longitude 152.3667°E Latitude 31.8750°S)	**Minor:** 4.88m	**Moderate:** 8.88m	**Major:** 11.88m

General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue of early warning of flood level impacts and potential isolation • Establishment of an evacuation center • Evacuation of at risk population • Relocate at risk livestock • Identification of a suitable helicopter landing zone
Key Risks / Consequences	• **Prediction to reach and/or exceed** 10.00m –the sector may become isolated and may remain isolated up to 3 days. Cedar Party Creek Bridge to the East, Dingo Creek Bridge to the West and Peter Garret (Stoney Creek) Bridge to the North may close causing the isolation. • **Prediction to reach and/or exceed** 11.20m - over-floor flooding in the sector commences and laneways on the peninsular may close due to rising water • **Prediction to reach and/or exceed** 12.45m –large sections of the sector are flooded – evacuation routes lost. Evacuation of the sector is to be completed prior this height **Note:** The Manning River can be expected to rise quickly. During the flood of 1978 rates of rise as high as 1.5m per hour occurred at Wingham and upstream. In more recent floods it has been in the order of 0.5m per hour. There is potential for high rates of rise and fast flow rates from Cedar Party Creek and the Manning River. This presents a high likelihood of flood rescue operations being required.

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning

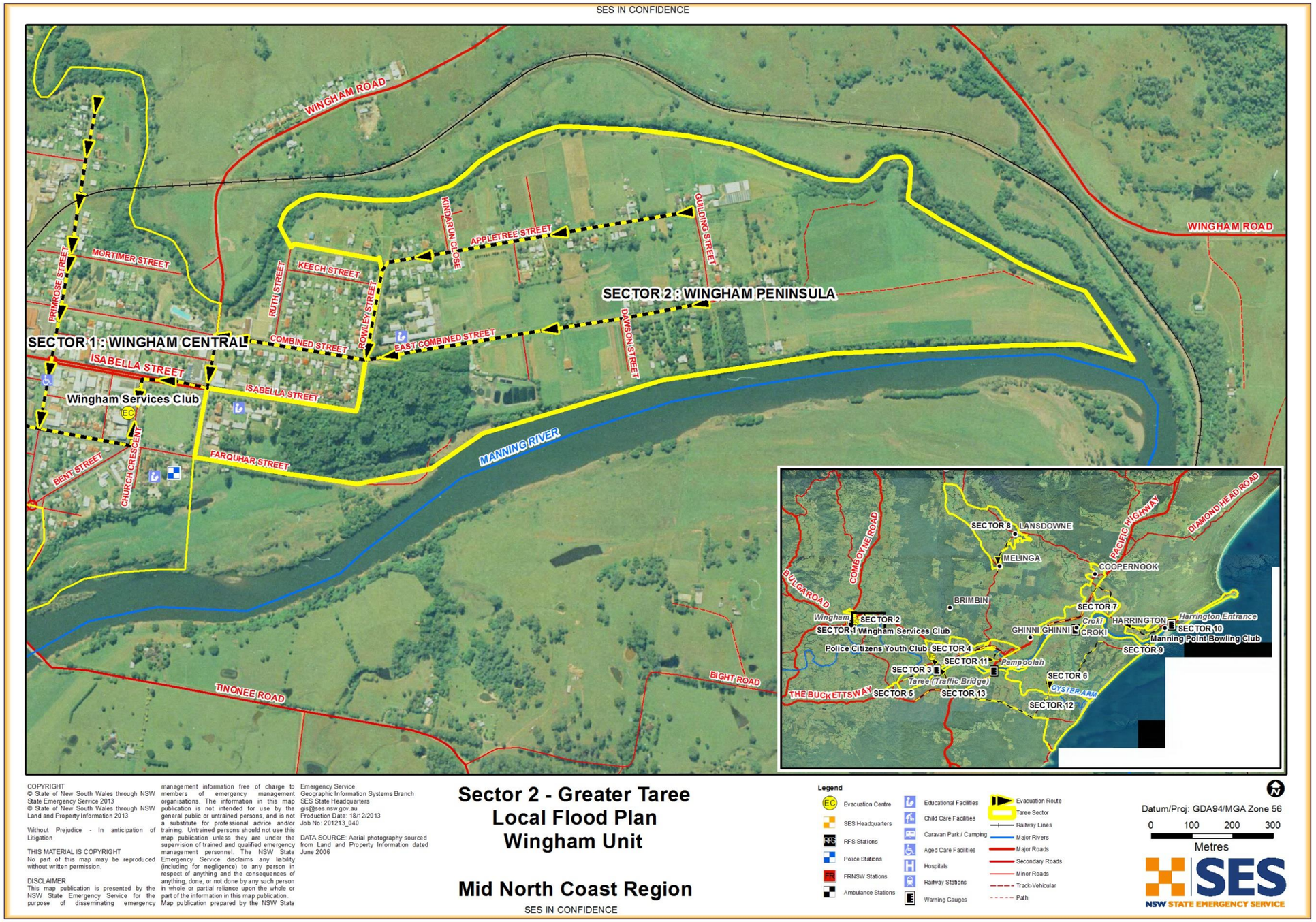
	• Evacuation Order • All Clear • Emergency Alert • Standard Emergency Warning Signal (SEWS) • Sequenced door knocking • Media briefing • Interagency LEMC briefings • Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters. Storage facilities are available commercially or at the Wingham Showground in exigent circumstances.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector including: • The Substation supplying the Sewerage Treatment Works at Combined St. • The Sewerage Treatment Works itself and pump station on Coroma Pl.
Evacuation and/or Isolation Triggers	This sector has a flood classification of rising road access to a **low flood island** in a PMF– Evacuations in this sector are to be conducted incrementally as predicted flood heights become known and the impact extent established. **All evacuations are to be completed prior to PMF (12.45m)**

	Wingham gauge (208902) • **Prediction to reach and/or exceed** 10m –Cedar Party Creek Bridge to the East, Dingo Creek Bridge to the West and the Peter Garret (Stoney Creek) Bridge to the North may close causing the sector to be isolated from all but the Wingham Central Sector, were an evacuation centre will be located at the direction of the Welfare Services Coordinator if required. • **Prediction to reach and/or exceed** 10.30m –evacuations may be required for properties within the sector. • **Prediction to reach and/or exceed** 11.20m –over-floor flooding in the sector commences and laneways on the peninsular may close. • **Prediction to reach and/or exceed** 12.70m –large sections of the sector are flooded – evacuation routes lost. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation:	Evacuation sequencing will be as per the triggers for identified at risk properties: 1. The low lying properties in Guilding St, Mortimer St, Combined St, Queen St North, Primrose St and West Appletree St. 2. The remainder of the sector must be evacuated by 12.7m. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and the Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	**From Wingham Peninsula:** • Apple Tree St to Wingham Central Sector • Combined St to Wingham Central Sector.
Evacuation Route Closure	Individual houses located on Wingham Peninsula may lose access to evacuation routes incrementally as water levels rise, due to the flooding of laneways leading from houses to evacuation routes Evacuation routes from Wingham Peninsula are expected to be closed at ~12.70m.

Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre	• *The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator):* o Wingham Services Club - Primary o Wingham Town Hall - Secondary
Large scale evacuations	In a large or full evacuation - required from approximately 12.70m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized

	NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Wingham SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply as it will be subject to an evacuation order. If resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** Suitable landing points are located at: • Wingham High School • Central Park, Wingham • Wingham Showground • Wingham Sporting Complex. Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). Access to this airport is lost at 10m, when the sector becomes isolated. Taree Airport details include: • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft.
Other	

2.1. WINGHAM PENINSULA SECTOR MAP



3. TAREE WEST SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector (also referenced as Taree Estate) is located west of the Taree township and is predominantly low lying rural land on a meander bend of the Manning River. Residences within the lower lying areas are generally positioned on raised earthworks. The majority of the sector is flood prone and likely to experience high hazard flooding consisting of deep fast flowing flood waters.		
Hazard	Inundation and isolation from the Manning River		
Flood Affect Classification	Rising Road Access to 4.30m thereafter Low Flood Island		
At risk properties	13 houses in a 4.63m flood 21 houses in a 5.68m flood (1% AEP) 25 in a 9.7m flood (PMF)	**Total number of properties within Sector/Community**	30
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree City SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Taree Traffic Bridge (Longitude = 152.4550°E Latitude =-31.9200°S)	**Minor:** 1.78m	**Moderate:** 2.38m	**Major:** 3.68m
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue of early warning of flood level impacts and potential		

	isolation • Establishment of an evacuation centre • Evacuation of at risk population • Relocation of at risk livestock • Identification of a suitable helicopter landing zones
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.80m –low lying areas begin to inundate relocation of equipment and livestock may be required • **Prediction to reach and/or exceed** 3.68m –flooding commences to impact upon properties within the sector, properties at risk of over floor flooding – evacuations will be required from this height • **Prediction to reach and/or exceed** 4.30m - road access to the sector closes. **Note:** Water flowing through this sector can be deep and fast flowing. In 1978 the rate of rise was ~0.4m per hour

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

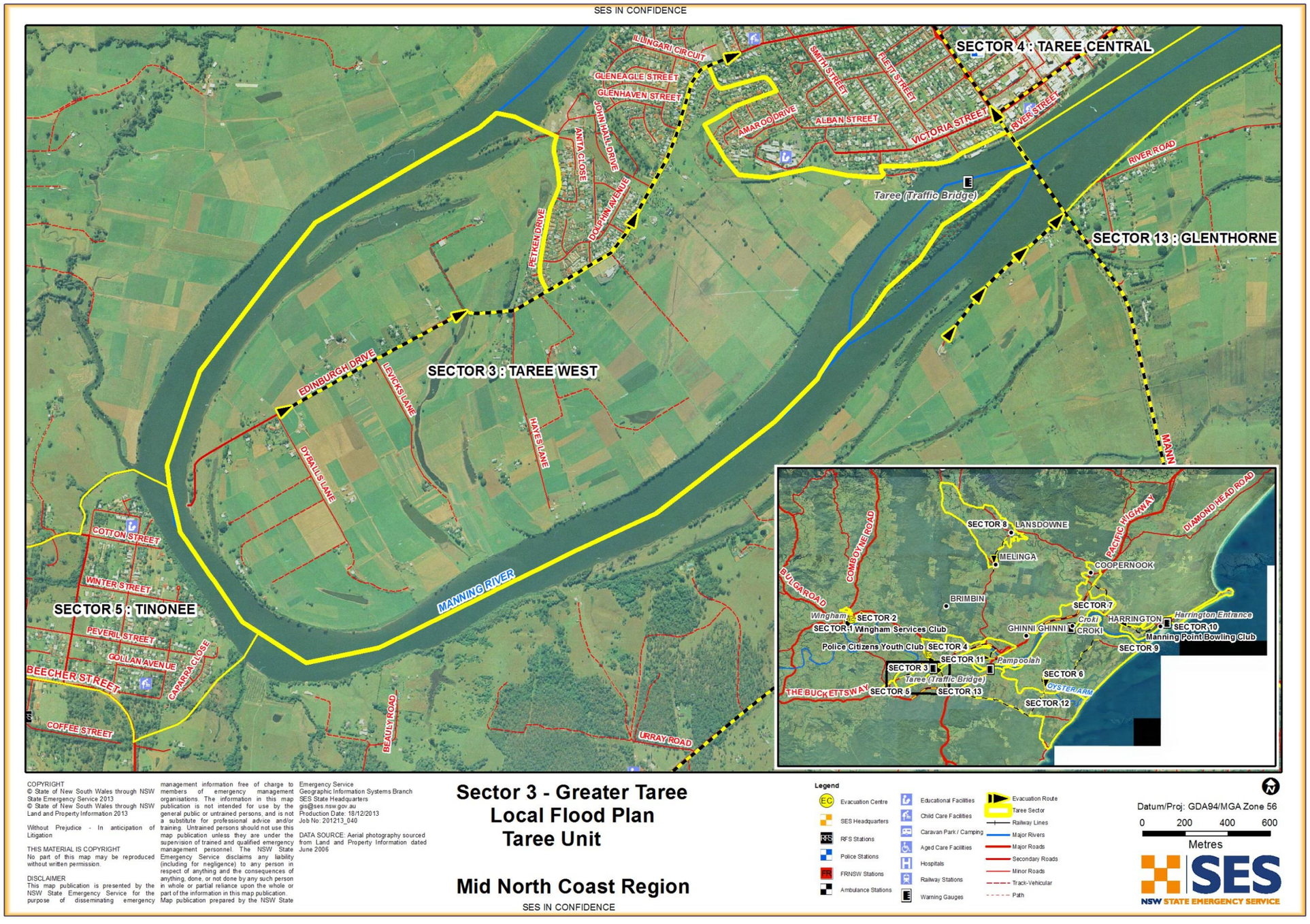
Property Protection	**Assistance with property protection**: NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: • Edinburgh Dr Pole Sub
Evacuation and/or Isolation Triggers	This sector has a flood classification of rising road access up to 4.30m then a **low flood island** – Evacuations in this sector are to be conducted incrementally as predicted flood heights become known and the impact extent established. **All evacuations are to be completed prior to 4.30m**. The effects on this sector are dependent on **tidal influences**. Tidal levels will need to be identified at the onset of main Manning River flooding. Taree Traffic Bridge Gauge (208410) • **Prediction to reach and/or exceed 3.68m** – If this level predicted flooding commences to impact upon properties within the sector, properties at risk of over floor flooding – evacuations will be required from this height • **Prediction to reach and/or exceed 4.30m** – If this level predicted the only road access to the sector closes at the Figtree Bridge evacuations to be completed prior to this height Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties.

	Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Via Edinburgh Drive to the Taree Central Sector evacuation centres.
Evacuation Route Closure	Individual houses within this sector may lose access to evacuation routes due to flooding of laneways leading from houses to the main evacuation route. The evacuation route in this sector closes at 4.30m.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator): • Club Taree – Primary • Taree High School – Secondary.
Large scale evacuations	In a large or full evacuation - Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height

	predictions become known and the impact extent established. Evacuations will be staged. **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. NSW Police will be responsible for security of evacuated areas. Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply as it will be subject to an evacuation order. If resupply is required it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome. Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E

	152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding; however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway.
Other	

3.1. TAREE WEST SECTOR MAP



4. TAREE CENTRAL SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector comprises the lower parts of the Taree Central Business District and the residential / business areas of the lower end of Browns Creek. During a 100 year ARI (1% AEP, approximately 5.70m) the lower parts of Taree CBD can be impacted by high hazard flooding with low points inundated to a depth of 3.00m impacting ~80 properties. In the lower end of Browns Creek over floor flooding to a depth of 2.00m impacts ~80 properties. The sector is broadly bounded by the Dawson River to the North, Manning River to the East, Commerce Street and Wingham Road to the South and Bushland and Kanangra Drives to the West. The majority of the sector is located on high ground with only the low lying areas adjacent to the Manning River, Browns Creek and Dawson River subject to flooding. Evacuation from this sector is possible throughout the PMF (9.70m) to high ground - the sector can become isolated in a 20 year (5% AEP) ARI at 4.63m.		
Hazard	Riverine flooding and isolation from – • Browns Creek • Dawson River • Manning River		
Flood Affect Classification	Rising Road Access to a High Flood Island in a PMF at 9.70m.		
At risk properties	54 houses in a 4.63m flood (5% AEP) 66 houses and 100 businesses in a 5.68m flood (1% AEP)	**Total number of properties within Sector/Community**	6990

	More than 227 houses in a 9.7m flood (PMF)		
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree City SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Taree Traffic Bridge (Longitude = 152.4550°E Latitude =-31.9200°S)	**Minor:** 1.78m	**Moderate:** 2.38m	**Major:** 3.68m
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Establishment of a helicopter landing zone at the Taree Aerodrome.		
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.80m – properties bordering Queen Elizabeth Park along the Manning River commence inundation • **Prediction to reach and/or exceed** 3.50m – low lying properties near Browns Creek and Dawson River commence inundation evacuations maybe required • **Prediction to reach and/or exceed** 3.68m – low lying properties across the sector progressively commence to become inundated (including over floor flooding at higher flood levels) evacuations maybe required • **Prediction to reach and/or exceed** 4.33m – Manning River Drive (main route through sector) is cut at Browns Creek • **Prediction to reach and/or exceed** 4.50m – Manning River Drive at Cubba Cubba Creek (southern entrance to the sector) may close • **Prediction to reach and/or exceed** 4.63m – Manning River Drive at Dawson's River (northern entrance to the sector) may close leading to isolation • **Prediction to reach and/or exceed** 4.68m – the		

	Ambulance Depot in Marathon Street may be affected by flood water and may require evacuation • **Prediction to reach and/or exceed** 5.43m – flooding affects operations at Taree Aerodrome restricting runway length.

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  o Flood Watch
	  o Flood Warning
	  o Equipment, Livestock and Aquaculture Warnings
	  o Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

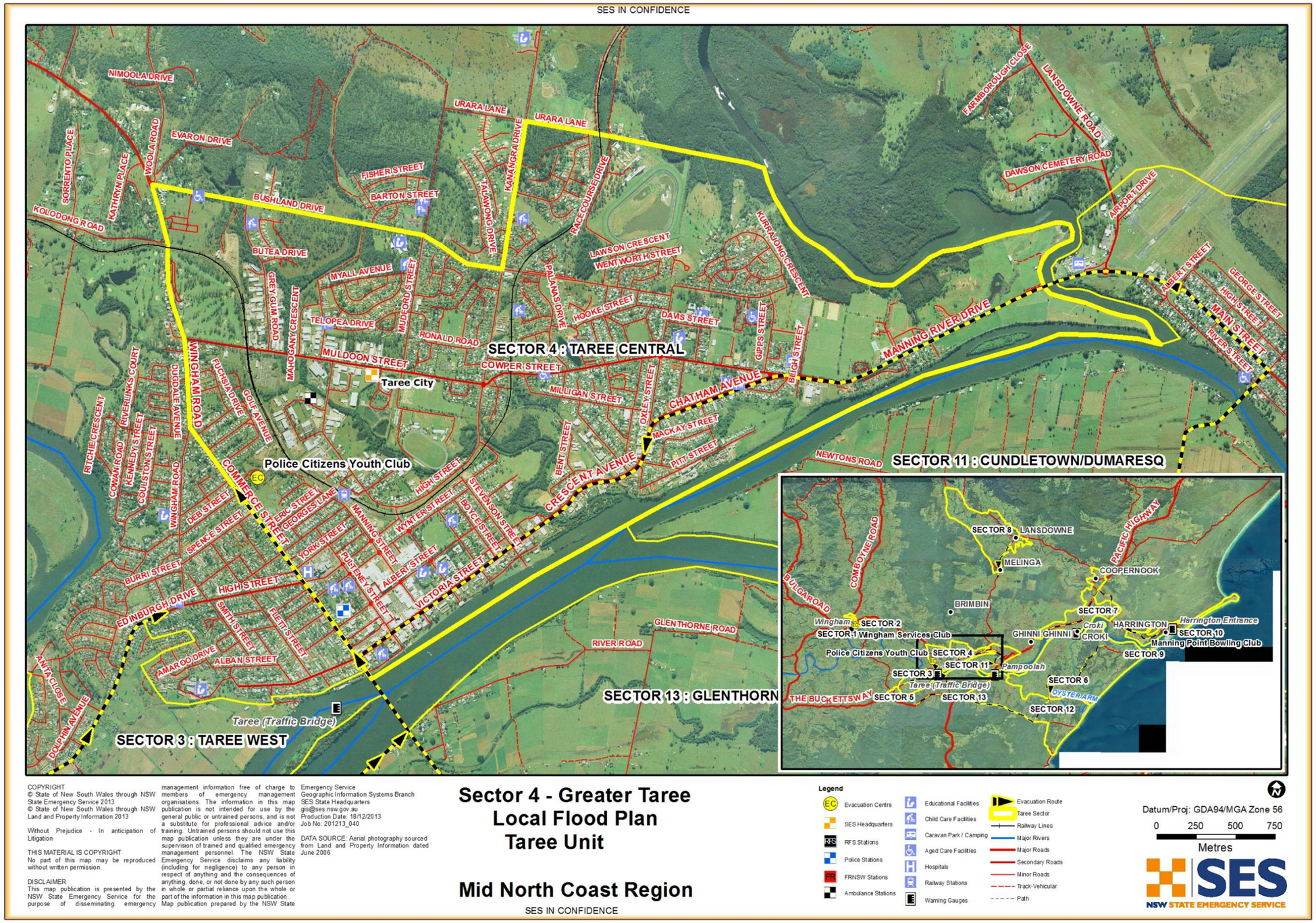
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector:

	• Pole Subs • Zone Subs • Padsubs • Depot • Ground Subs
Evacuation Triggers	• **Prediction to reach and/or exceed** 3.50m – low lying properties near Browns Creek and Dawson River commence inundation evacuations maybe required in Florence St, Beeton Parade, Bent St and Cornwall St. • **Prediction to reach and/or exceed** 3.68m – low lying properties across the sector progressively commence to become inundated (including over floor flooding) evacuations maybe required in Cresent Ave, Railway St, Drury Ln, Edinburgh Dr • **Prediction to reach and/or exceed** 4.00m – From this height flooding is predicted to commence near low lying properties and businesses in Taree CBD in the vicinity of Victoria Street and Pulteney Street. From this height onwards evacuations may be required in the area. • **Prediction to reach and/or exceed** 4.68m – the Ambulance Depot in Marathon Street may require evacuation. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Manning River Drive to Commerce Street to the evacuation centre located on the high ground above PMF (9.70m).
Evacuation Route Closure	Evacuation routes can be compromised from 4.33m – however rising road access detours are available determined by the prevailing conditions.

Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center. At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary.
Large scale evacuations	In the event that evacuee numbers exceed the Taree evacuation centre capability, evacuees will be transported to alternate evacuation centres as determined by The Welfare Services Functional Area Coordinator – dependent upon prevailing conditions.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of flooding. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** The primary landing point is located at the Taree Aerodrome. If required operational landing points are also located at: • Rear of VRA/SES at Muldoon St, Taree GR 487704 (Taree 9334-2-S) • Mid North Coast SES Region Headquarters, (Site adjacent) Arkwright Cres, Taree GR 456726 (Taree 9334-2-S) • NPWS Depot, Hargraves Dr, Taree GR 455723 (Taree 9334-2-S). Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.

	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m. Airport operations are limited from 5.43m with floodwaters reducing the length of the runway.
Other	

4.1. TAREE CENTRAL SECTOR MAP



5. TINONEE SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	Located to the south west of Taree on the Manning River the sector comprises the township of Tinonee. A small number of low lying properties (~5) may be impacted by over floor flooding in a 100 year ARI (1% AEP, approximately 4.50m) event. The sector may become isolated as a result of flooding on the Buckets Way and the Tinonee Road from 3.20m.		
Hazard	Riverine flooding and isolation from- • Manning River and associated feeder creeks		
Flood Affect Classification	High Flood Island		
At risk properties	4 houses from a 5% AEP flood 5 up to a 4.5m flood. Numbers not available for larger floods up to a PMF (9.7m), but are likely to be larger	**Total number of properties within Sector/Community**	436
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree City SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Taree Traffic Bridge (Longitude = 152.4550°E Latitude =-31.9200°S)	**Minor:** 1.78m	**Moderate:** 2.38m	**Major:** 3.68m

General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of a suitable helicopter landing zone.
Key Risks / Consequences	• **Prediction to reach and/or exceed** 5.00m – on the **Wingham Flood Gauge** access to Wingham via Tinonee Road is cut at the Bight Bridge Wingham • **Prediction to reach and/or exceed** 3.20m – at the Taree Traffic Bridge Gauge inundation of the Buckets Way commences in the vicinity of Deans Creek Road Deans Creek cutting access East toward Taree • **Prediction to reach and/or exceed** 3.68m – on the Taree Traffic Bridge Gauge properties in Cappara Street, Claxton Street and Buckets Way impacted by water and require monitoring • **Prediction to reach and/or exceed** 4.50m – on the Taree Traffic Bridge Gauge properties in Claxton Street, Buckets Way, Winter Street and Hutchinson Street may be flooded. Large numbers of roads in and around the sector may close potentially isolating the sector.

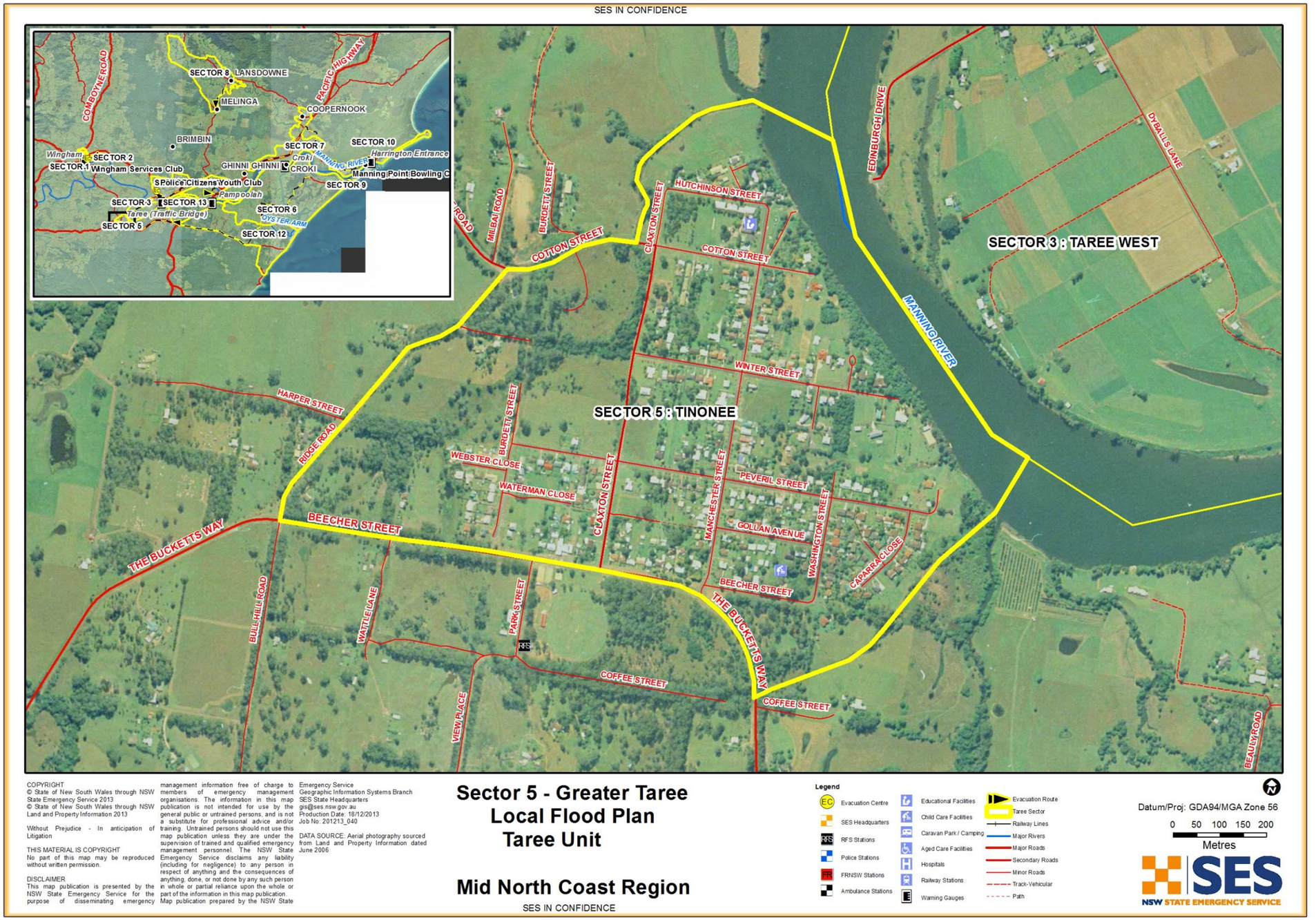
Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings

	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: • Tinonee Pole Subs
Evacuation Triggers	• **Prediction to reach and/or exceed** 3.68m – on the Taree Traffic Bridge Gauge, low lying properties in Cappara Street, Claxton Street and Bucketts Way impacted by water and may require evacuation • **Prediction to reach and/or exceed** 4.50m – on the Taree Traffic Bridge Gauge, properties in Claxton Street, Bucketts Way, Winter Street and Hutchinson Street may require evacuation. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case

	basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	High Flood Island refuge within sector.
Evacuation Route Closure	Routes out of the sector close at- • Tinonee Road to Wingham closes at the Bight Bridge – From 5.00m on the **Wingham Flood Gauge** • Buckets Way to Taree closes at Deans Creek – From 3.20m on the Taree Traffic Bridge Flood Gauge • Buckets Way may close at various low creek crossings from 4.50m on the Taree Traffic Bridge Flood Gauge.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre/Assembly Point	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary The Tinonee Public School, Manchester St (Taree 9334-2-s GR 445667) is suitable for use as an evacuation assembly point.
Large scale evacuations	Due to the population density and small number of at risk properties it is unlikely a large scale evacuation will be required.

Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of flooding. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** Suitable landing points are located at: • Tinonee Public School, Manchester St, Tinonee GR 445667 (Taree 9334-2-S) • Tinonee Oval, The Bucketts Way, Tinonee GR 442658 (Taree 9334-2-S) Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway.
Other	

5.1. TINONEE SECTOR MAP



6. OXLEY/MITCHELLS ISLANDS SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector includes Oxley Island and Mitchell's Island excluding the village of Manning Point. The Islands are joined by narrow bridges on the Manning Point Road at Bohnock and Scott's Creek. The two Islands in this sector are comprised of rural properties with some high ground that is completely flood free. In the floodway areas the hazard is high, characterised by fast flowing floodwaters and long evacuation distances that will close early. In excess of 50 properties may be affected by over floor flooding in a 100 year (1% AEP) ARI event at 4.63m.		
Hazard	Riverine flooding and isolation from- • Manning River • Scott's Creek (joining the north and south arms of the Manning River) Coastal erosion can impact this sector at the point of the second entrance to the Manning River at the south east end of Mitchel's Island and along the coastal strip of Mitchell's Island		
Flood Affect Classification	The sector is characterised by both low and high flood islands with areas of farmland that are easily inundated. The area is made up of low density rural properties with minimal access routes therefore becoming overland refuge areas.		
At risk properties	15 in a 5% AEP flood (4.63m) 41 in a 2% AEP flood (5.36m) 68 houses in a 1% AEP flood (57 Oxley, 11 Mitchells) (5.68m) Numbers not available for a PMF (9.7m), but are likely to be larger	**Total number of properties within Sector/Community**	119 Oxley 199 Mitchells

<table>
<tr><td>Sector Control</td><td colspan="3">Command – The Greater Taree Incident Controller will remain in Command of all evacuations in the local area.

Control – The Taree City SES Incident Controller will control all evacuations in this sector.

Coordination - The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.</td></tr>
<tr><td>Key Warning Gauge Name – Taree Traffic Bridge
(Longitude = 152.4550°E
Latitude =-31.9200°S)</td><td>Minor: 1.78m</td><td>Moderate: 2.38m</td><td>Major: 3.68m</td></tr>
<tr><td>General Strategy</td><td colspan="3">• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions
• Issue early warning of flood level impacts
• Establishment of an evacuation centre
• Evacuation of at risk population
• Identification of suitable helicopter landing zones</td></tr>
<tr><td>Key Risks / Consequences</td><td colspan="3">• Prediction to reach and/or exceed 1.80m – low lying parts of Manning Point Road may be inundated with water closing the evacuation route out of the Sector– evacuations, rescues and resupply may be required for isolated rural properties.
• Prediction to reach and/or exceed 5.68m – approximately 57 properties may be flooded above floor level on Oxley Island</td></tr>
<tr><td>Information and Warnings</td><td colspan="3">NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
• NSW SES Bulletins
o Flood Watch
o Flood Warning
o Equipment, Livestock and Aquaculture Warnings
o Media Release such as– Isolation Warnings
• Evacuation Warning
• Evacuation Order
• All Clear
• Emergency Alert</td></tr>
</table>

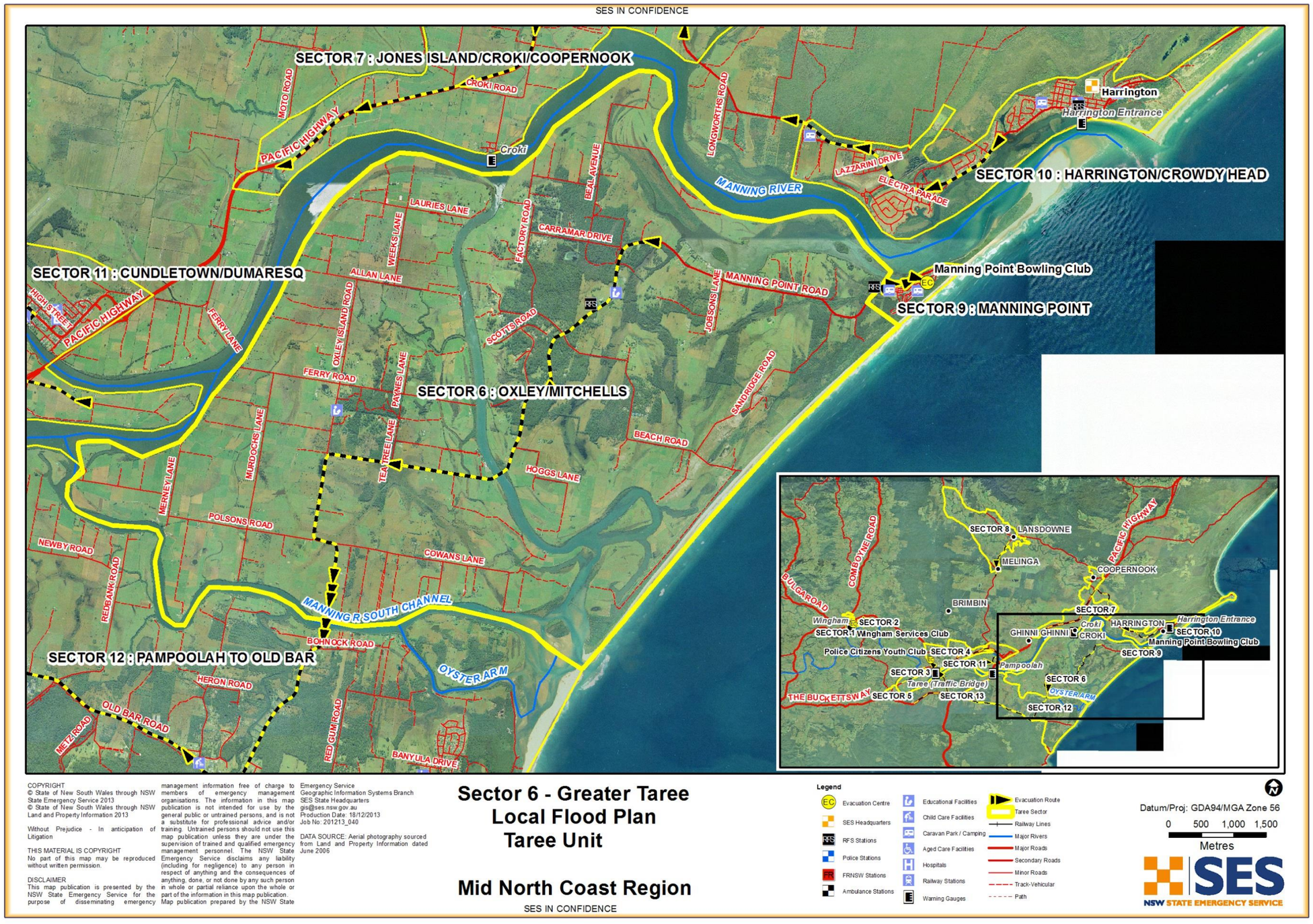
	• Standard Emergency Warning Signal (SEWS) • Sequenced door knocking • Media briefing • Interagency LEMC briefings • Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector.
Evacuation Triggers	**This sector has a flood classification characterized by isolated rural properties in both high and low flood islands. Evacuations in this sector are to be managed as predicted flood heights become known and the impact extent established. Evacuations from isolated properties located in low flood island classified areas need to be completed prior to 1.80m.** **Prediction to reach and/or exceed** 1.80m – low lying parts of Manning Point Road and rural laneways/roads within the sector may be inundated with water closing the evacuation route out of the Sector and causing isolation as heights increase– evacuations from isolated rural properties may be required from this height onward Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of

	residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Manning Point Road to Old Bar / Taree Note: Low lying sections of these roads are susceptible to flash flooding
Evacuation Route Closure	Evacuation routes will begin to close from 1.80m and will be subject to tidal influences
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements
Evacuation Centre/Assembly Point	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary The Oxley Island Hall (Oxley Island Road) and the Mitchel's Island Hall (Manning Point Road) are suitable as evacuation assembly points.
Large scale evacuations	In a large or full evacuation - Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area.

	Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of flooding. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8).

	• Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway.
Other	

6.1. OXLEY/MITCHELLS SECTOR MAP



7. JONES ISLAND, CROKI, COOPERNOOK SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector includes the communities of Croki, Coopernook, Moto, and Mambo Island. The sector is predominantly rural holdings with small villages at Croki and Coopernook. Croki is a small village located approximately 10klms north east of Taree. It has a population of ~60 people. The entire village is located in a high hazard area and may become completely inundated during a 20 year (5% AEP) ARI event at 2.46m. Evacuation routes from this area are low-lying and are likely to close early. Coopernook is a small village located approximately 25klms north of Taree. The village of Coopernook is predominantly located outside of the PMF (5.90m) range. Lower lying areas of Coopernook will be inundated – however extensive inundation of the surrounding rural lands occurs first.		
Hazard	Riverine flooding and isolation from- • Lansdowne River • Manning River.		
Flood Affect Classification	Croki is classified as a low flood island in the 5% AEP at 2.46m up to the PMF at 5.90m. The entire village is located in a high hazard area and may become completely inundated during major floods. Moto is classified as a low flood island in the 5% AEP at 2.46m up to the PMF at 5.90m. The area is located in a high hazard area and may become completely inundated during major floods. Coopernook is classified as rising road access area up to a 1% AEP at 3.07m then becoming an area with an overland escape route up to the PMF at 5.90m.		
At risk properties	All of Croki from 2.46m (5% AEP) Between Lansdowne and	**Total number of properties within Sector/Community**	228 Coopernook 114 Moto/Croki

	Coopernook 11 in a 5% AEP flood (2.46m) 43 in a 2% AEP flood (2.87m) 70 in a 1% AEP flood (3.07m)		
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree (Croki) and Harrington (Jones Island and Coopernook) SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree and Harrington SES Unit will conduct evacuations in this sector and coordinate supporting agencies. At the point the Harrington Unit becomes isolated in Harrington, operations management and evacuations for the entire sector revert to the Taree SES Unit.		
Key Warning Gauge Name – Croki (Longitude = 152.593°E Latitude = -31.878°S)	**Minor:** N/A	**Moderate:** N/A	**Major:** N/A
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of suitable helicopter landing zones		
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.20m – road access to Croki starts to be inundated leading to closure at 1.50m and isolation - Evacuations may be required • **Prediction to reach and/or exceed** 1.40m – water starts to impact Harrington Road potential loss of access to Harrington – depth and velocity need to be monitored • **Prediction to reach and/or exceed** 1.50m – flooding is likely to properties in Croki evacuations may be required • **Prediction to reach and/or exceed** 1.80m – flooding commences in low lying parts of George Gibson Drive		

	impacting access to Coopernook – assistance with evacuation may be required • **Prediction to reach and/or exceed** 2.46m – most of Croki is flooded – over floor flooding and isolation is likely – assistance with evacuation may be required • **Prediction to reach and/or exceed** 2.87m – Pacific Highway near Harrington Road may be affected by flooding • **Prediction to reach and/or exceed** 3.07m – Coopernook may become isolated if Macquarie Street closes

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.

	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: • Coopernook Zone Hub
Evacuation and/or Isolation Triggers	**Croki and Moto have flood classifications of low flood islands from 2.46m – Evacuations are to be conducted incrementally as predicted flood heights become known and the impact extent established.** ➢ **All evacuations in Croki are to be completed prior to 1.50m when the evacuation routes are lost** ➢ **All evacuations in Moto are to be completed prior to 2.46m when the area is inundated** • **Prediction to reach and/or exceed** 1.20m – road access to Croki starts to be inundated leading to closure at 1.50m and isolation - Evacuations may be required • **Prediction to reach and/or exceed** 1.50m – flooding is likely to properties in Croki evacuations may be required • **Prediction to reach and/or exceed** 1.80m – flooding commences in low lying parts of George Gibson Drive impacting access to Coopernook – assistance with evacuation may be required • **Prediction to reach and/or exceed** 2.46m – Most of Croki is flooded – over floor flooding and isolation is likely – assistance with evacuation may be required • **Prediction to reach and/or exceed** 3.07m – Coopernook may become isolated if Macquarie Street closes. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator.

	It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	The primary evacuation route for this sector is the Pacific Highway • From Croki, Barton St, Croki Rd then to Pacific Hwy. • From Coopernook George Gibson Drive to Macquarie Street to High Ground.
Evacuation Route Closure	The Pacific Highway is largely flood free both North and South. Water may impact the Pacific Highway in the vicinity of the intersection with Harrington Road from 2.87m. Croki - Barton Street and Croki Road are affected by flood water from 1.20m. Coopernook - George Gibson Drive is affected by flood water from 1.80m.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center.
Evacuation Centre	Evacuees will need to be transported to the evacuation centres in Taree. The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary.
Large scale evacuations	In a large or full evacuation - required in Croki from approximately 2.46m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height

	predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. NSW Police will be responsible for security of evacuated areas. Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Harrington / Taree SES Unit will undertake all Flood Rescue Operations (dependent upon who has sector Command) in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8).

	• Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding; however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m on the Taree Traffic Bridge Gauge. Airport operations are limited from 5.43m on the Taree Traffic Bridge Gauge with floodwaters reducing the length of the runway.
Other	

7.1. JONES ISLAND, CROKI, COOPERNOOK SECTOR MAP

8. LANSDOWNE SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector includes the township of Lansdowne and adjacent rural areas. Flood depths within the sector are expected to be less than one metre with low flow velocity. This sector is only moderately inundated by events up to the PMF at 12.10m; with the area around Hampton Court most flood prone. The township of Lansdowne is relatively flood free.		
Hazard	Riverine flooding and isolation from the- • Lansdowne River • Cross Creek		
Flood Affect Classification	Rising Road Access for floods up to and including the PMF at 12.10m		
At risk properties	10 in a PMF (12.1m)	**Total number of properties within Sector/Community**	244
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Harrington SES Incident Controller will control all evacuations in this sector. **Coordination -** The Harrington SES Unit will conduct evacuations in this sector and coordinate supporting agencies. At the point the Harrington Unit becomes isolated in Harrington operations management and evacuations for this sector revert to the Taree SES Unit.		
Key Warning Gauge Name – Lansdowne (Longitude = 152.512°E Latitude = -31.788°S)	**Minor:** N/A	**Moderate:** N/A	**Major:** N/A
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions		

	• Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of a suitable helicopter landing zone
Key Risks / Consequences	• **Prediction to reach and/or exceed** 4.37m – roads within the sector may start to close (some rural roads may close earlier) • **Prediction to reach and/or exceed** 11.00m – flooding in vicinity of properties in Hampton Court and Yurong Street – property protection may be required • **Prediction to reach and/or exceed** 12.10m – flooding in vicinity of properties in Central Lansdowne Road, Lansdowne Road and Taree Street – property protection may be required

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

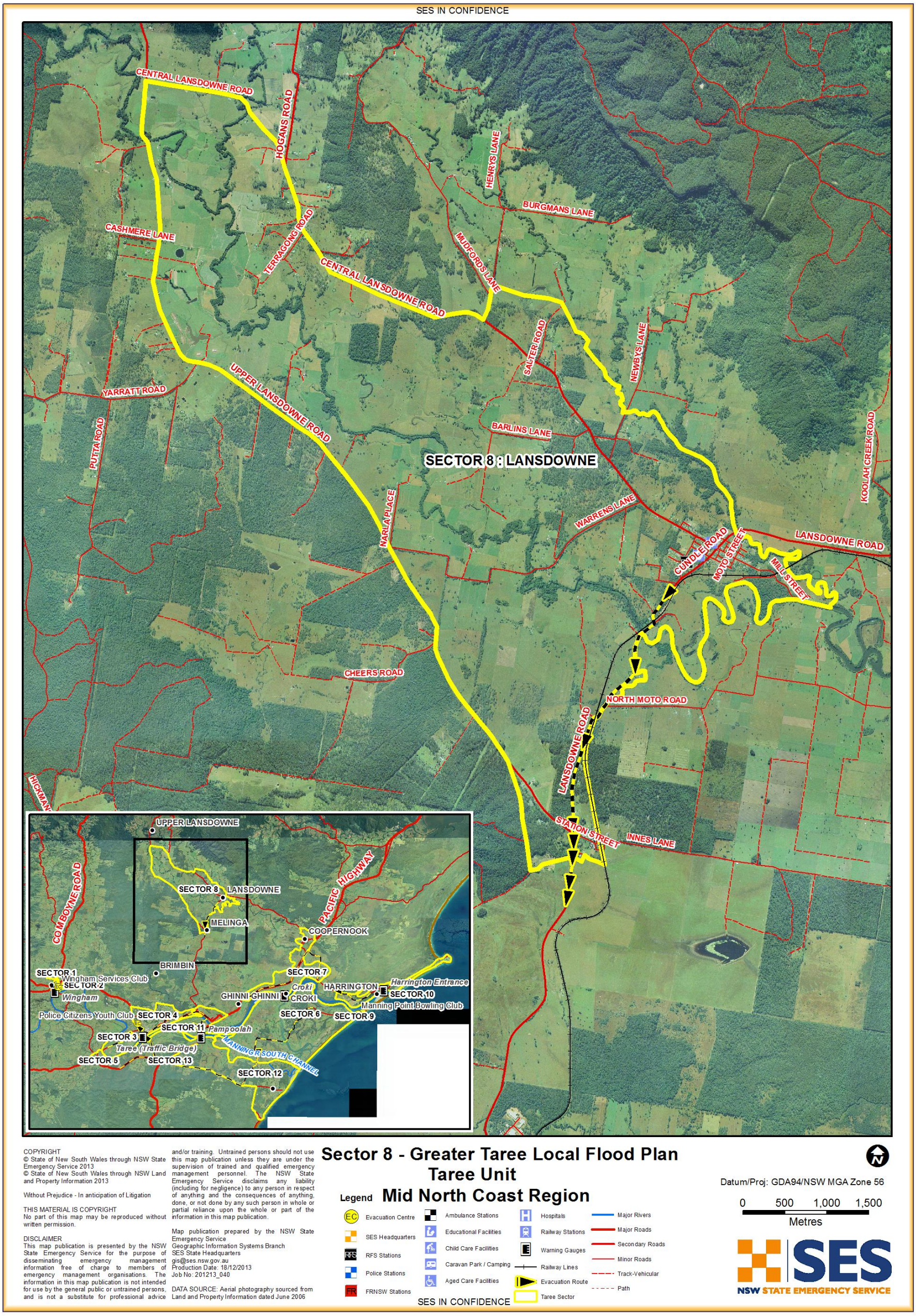
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations

	• Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector.
Evacuation Triggers	**Prediction to reach and/or exceed** 4.37m – roads within the sector may start to close (some rural roads may close earlier) individual rural properties may become isolated – evacuations may become necessary. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	The Lansdowne Road – North and South
Evacuation Route Closure	The evacuation route may be affected by localised flooding in low lying areas – however access to high ground via upper Lansdowne road will remain up to and including the PMF at 12.10m.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation

	center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre/Assembly Point	Evacuees will need to be transported to the evacuation centres in Taree. The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary. The following facilities may be used as assembly points - • Lansdowne Bowling Club • Lansdowne Public School, Kundle Rd and Macquarie St.
Large scale evacuations	In a large or full evacuation, Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service

	personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Harrington / Taree SES Unit will undertake all Flood Rescue Operations (dependent upon who has sector Command) in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Lansdowne Sports Oval, Lansdowne GR 544834 (Coopernook 9434-3-N) Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m on the Taree Traffic Bridge Gauge Airport operations are limited from 5.43m on the Taree Traffic Bridge Gauge with floodwaters reducing the length of the runway
Other	

8.1. LANSDOWNE SECTOR MAP



Map publication prepared by the NSW State Emergency Service
Geographic Information Systems Branch
SES State Headquarters
gis@ses.nsw.gov.au
Production Date: 18/12/2013
Job No: 201213_040

DATA SOURCE: Aerial photography sourced from Land and Property Information dated June 2006

Sector 8 - Greater Taree Local Flood Plan
Taree Unit
Mid North Coast Region

Legend

- Evacuation Centre
- SES Headquarters
- RFS Stations
- Police Stations
- FRNSW Stations
- Ambulance Stations
- Educational Facilities
- Child Care Facilities
- Caravan Park / Camping
- Aged Care Facilities
- Hospitals
- Railway Stations
- Warning Gauges
- Railway Lines
- Evacuation Route
- Taree Sector
- Major Rivers
- Major Roads
- Secondary Roads
- Minor Roads
- Track-Vehicular
- Path

SES IN CONFIDENCE

Datum/Proj: GDA94/NSW MGA Zone 56

0 500 1,000 1,500
Metres

NSW STATE EMERGENCY SERVICE

9. MANNING POINT SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector includes the village of Manning Point with a population of approximately 220. The sector is located at the mouth of the Manning Rivers north arm. The sector may become inundated in a 20 year ARI (5% AEP) event at 4.63m on the Taree Gauge. In summer months (peak December to February) the population expands with a large tourist population. There are two large caravan parks with the sector. The evacuation route to this sector is low lying and crosses Oxley and Mitchel's Island sector. These routes close early at approximately 1.80m on the Taree Gauge, and are likely to be cut before properties are affected in the sector. Due to the low lying egress routes this sector may become isolated Flood free land, with sufficient area to provide refuge is available up to a 100 year (1% AEP) ARI event at 5.68m on the Taree Gauge. During a PMF at 9.70m there is insufficient ground for refuge.		
Hazard	Riverine flooding and isolation from the Manning River.		
Flood Affect Classification	Manning Point is a low flood island and will require evacuation prior to 1.8m on the Taree Traffic Bridge Gauge (1).		
At risk properties	Relating to the Harrington Gauge: 23 in a 5% AEP flood (1.89m) 51 in a 2% AEP flood (2.1m) 56 in a 1% AEP flood (2.26m) All properties in a PMF (2.9m)	**Total number of properties within Sector/Community**	159

<table>
<tr><td>Sector Control</td><td colspan="3">Command – The Greater Taree Incident Controller will remain in Command of all evacuations in the local area.

Control – The Taree City SES Incident Controller will control all evacuations in this sector.

Coordination - The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.</td></tr>
<tr><td>Key Warning Gauge Name –

1. Taree Traffic Bridge
(Longitude = 152.4550°E
Latitude =-31.9200°S)

2. Harrington
(Longitude = 152.688°E
Latitude = -31.875°S)</td><td>Minor:
1.78m (1)

1.90m (2)</td><td>Moderate:
2.38m (1)

2.20m (2)</td><td>Major:
3.68m (1)

2.80m (2)</td></tr>
<tr><td>General Strategy</td><td colspan="3">• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions
• Issue early warning of flood level impacts
• Establishment of an evacuation centre
• Evacuation of at risk population
• Identification of a suitable helicopter landing zone</td></tr>
<tr><td>Key Risks / Consequences</td><td colspan="3">On the Taree Traffic Bridge Gauge-
• Prediction to reach and/or exceed 1.80m (1) – –
  • Manning Point Road (evacuation route) may close isolating the sector
  • Properties in the sector commence inundation

• Prediction to reach and/or exceed 4.63m (1) (5% AEP) – the sector may become inundated resulting in over floor flooding to properties.

On the Harrington Gauge-
• Prediction to reach and/or exceed 1.50m (2) – flooding commences in properties in Main Road, Banksia Close and at Weerona Caravan Park
• Prediction to reach and/or exceed 1.90m (2) Manning Point Road inundated leading to isolation. Evacuations may be required.
• Prediction to reach and/or exceed 2.10m (2) – extensive flooding of Manning Point. Manning Point Road, Banksia Close and Manning Street flooded to a depth of up to a 1m.</td></tr>
</table>

	Evacuations will be required • **Prediction to reach and/or exceed** 2.37m (2) – extensive flooding of Manning Point only small areas predicted to remain flood free. Evacuations will be required

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

Property Protection	**Specific property protection measures:** Property protection measures for the threat of coastal erosion involve the relocation of readily moveable household goods and commercial stock and equipment. The NSW SES is not responsible for planning or conduct of emergency beach protection works or other physical mitigation works. The Greater Taree City Council is responsible for the activation of the Coastal Zone Management Plan – Emergency Action Plan.
	Assistance with property protection: NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets

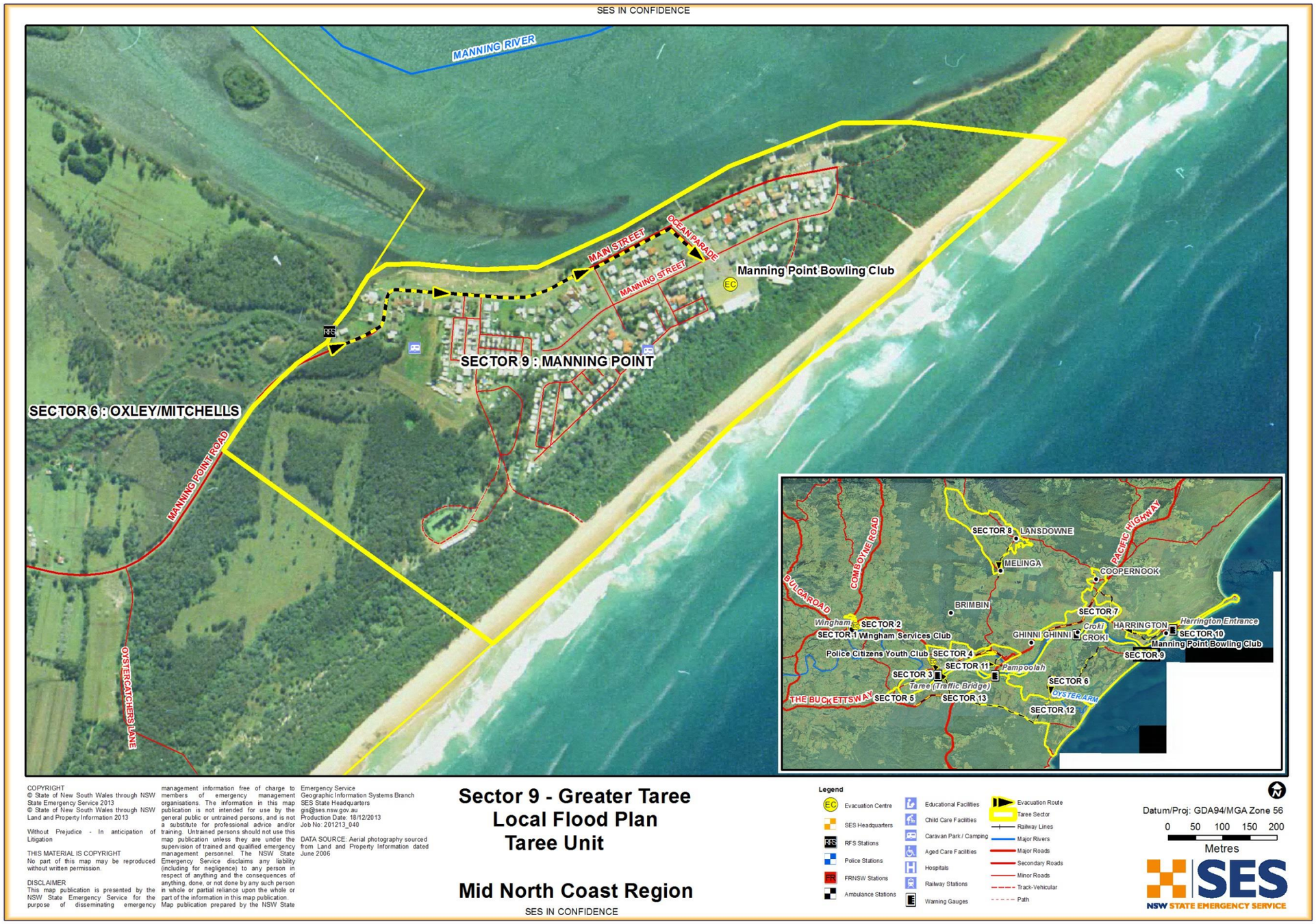
	• Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: Ocean Parade Manning Point Pole Sub
Evacuation Triggers	**This sector has a flood classification of low flood island area, becoming inundated at 5.68m. Evacuations in this sector are to be conducted incrementally as predicted flood heights become known and the impact extent established. Road evacuation routes will be lost from 1.80m.** On the Taree Traffic Bridge Gauge- • **Prediction to reach and/or exceed** 1.80m (1) – properties in the sector commence inundation and the evacuation route becomes closed. • **Prediction to reach and/or exceed** 4.63m (5% AEP) (1) – the sector may become inundated resulting in over floor flooding to properties and evacuations will be required. On the Harrington Gauge- • **Prediction to reach and/or exceed** 1.90m (2) – most properties fronting Manning Point Road, Banksia Close and Manning Street may be inundated – Manning Point Road inundated leading to isolation. Evacuations will be required. • **Prediction to reach and/or exceed** 2.10m (2) – extensive flooding of Manning Point. Manning Point Road, Banksia Close and Manning Street flooded to a depth of up to a 1m. Evacuations will be required • **Prediction to reach and/or exceed** 2.37m (2) – extensive flooding of Manning Point only small areas predicted to remain flood free. Evacuations will be required Reconnaissance will be required in this area to assess when evacuations will become necessary. Failure of essential services or persons who are not prepared for

	isolation may prompt additional evacuation requirements. The following caravan parks may require evacuation at 1.5m at Harrington. • Manning Point Caravan Park, Manning St (800 person's peak occupancy). • Weerona Caravan Park, Main Rd (600 persons peak occupancy) - 19 permanent vans and 75 holiday vans
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Manning Point Road to Taree (noting closures at 1.9m on Harrington gauge and 4.5m on Taree Traffic Bridge Gauge)
Evacuation Route Closure	The Manning Point Road commences to become inundated from 1.80m (1) on the Taree Traffic Bridge Gauge at various locations
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements
Evacuation Centre/Assembly Point	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary

	The Manning Point Bowling Club is appropriate for use as an evacuation assembly point.
Large scale evacuations	In a large or full evacuation - required from approximately 4.63m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.

Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome • Manning Point Bowling Club Car park Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway
Other	

9.1. MANNING POINT SECTOR MAP



10. HARRINGTON/CROWDY HEAD SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	The Harrington sector is comprised of the Harrington Township and Crowdy Head Village.		
Hazard	Riverine flooding and isolation from – • Manning River • Lansdowne River • Cattai Creek • Overland flooding from 'The Big Swamp / Cattai Wetlands' to the West of the sector		
Flood Affect Classification	High Flood Island up to a 100 year (1% AEP) ARI event at 2.26m. In a PMF at 5.40m only a small area remains flood free thus classifying the area as a Low Flood Island in a PMF.		
At risk properties	16 in a 5% AEP flood (1.89m) 60 in a 2% AEP flood (2.1m) 87 in a 1% AEP flood (2.26m) Numbers not available for a PMF (2.9m), but are likely to be larger; potentially up to 1328	**Total number of properties within Sector/Community**	1328 Harrington 140 Crowdy Head
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Harrington SES Incident Controller will control all evacuations in this sector. **Coordination -** The Harrington SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Harrington (Longitude = 152.688°E Latitude = -31.875°S)	**Minor:** 1.90m	**Moderate:** 2.20m	**Major:** 2.80m

General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of a suitable helicopter landing zone at the Taree Aerodrome.
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.50m – Harrington Road may be inundated with flood waters isolating Harrington. Rural roads at Coralville and Crowdy Bay road to the north also closed. • **Prediction to reach and/or exceed** 1.90m – flooding commences in and around properties in Crowdy Street, Hogan Street, Nicholson Street, Jabiru Close, Minnamurra Drive, Beach Street, Terranora Avenue and Harrington Drive • **Prediction to reach and/or exceed** 2.10m – flooding commences in and around properties in Scott Street, Latham Street, Bangalee Place, Glacken Street, Manor Road and the Colonial Leisure Village Caravan park • **Prediction to reach and/or exceed** 2.26m – flooding commences in and around properties in Bluewater Drive - 83 properties potentially flooded over floor • **Prediction to reach and/or exceed** 2.37m – flooding of roads in the vicinity of Harrington Waters may commence • **Prediction to reach and/or exceed** 2.70m – flooding of Harrington Waters Housing Estate may commence.

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert

	• Standard Emergency Warning Signal (SEWS) • Sequenced door knocking • Media briefing • Interagency LEMC briefings • Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Specific property protection measures:** Note: Property protection measures for the threat of coastal erosion involve the relocation of readily moveable household goods and commercial stock and equipment. The SES is not responsible for planning or conduct of emergency beach protection works or other physical mitigation works. The Greater Taree City Council is responsible for the activation of the Greater Taree City Council Coastal Zone Management Plan – Emergency Action Plan.
	Assistance with property protection: NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: Industrial Drive Zone and Pole Subs

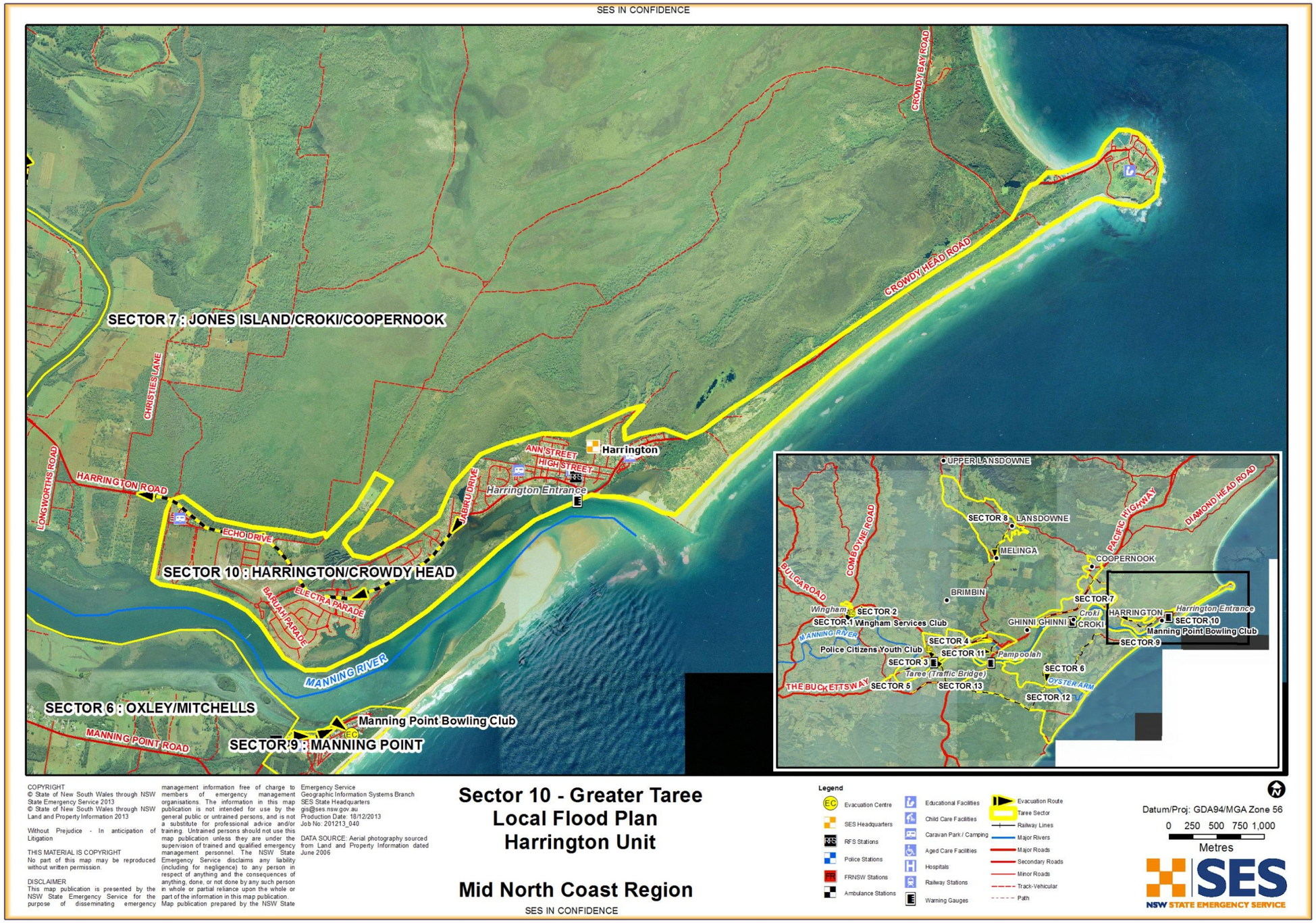
Evacuation and/or Isolation Triggers	**This sector has a flood classification of a high flood island up to 2.26m then progressively to a low flood island in a PMF at 5.40m. Evacuations in this sector are to be conducted incrementally as predicted flood heights become known and the impact extent established. Road evacuation routes will be lost from 1.50m. Evacuation can only be conducted by helicopter past this height.** • **Prediction to reach and/or exceed** 1.50m – Harrington Road may be inundated with flood waters isolating Harrington. Rural roads at Coralville and Crowdy Bay road to the north also closed. • **Prediction to reach and/or exceed** 1.90m – flooding commences in and around properties in Crowdy Street, Hogan Street, Nicholson Street, Jabiru Close, Minnamurra Drive, Beach Street, Terranora Avenue and Harrington Drive • **Prediction to reach and/or exceed** 2.10m – flooding commences in and around properties in Scott Street, Latham Street, Bangalee Place, Glacken Street, Manor Road and the Colonial Leisure Village Caravan park • **Prediction to reach and/or exceed** 2.26m – flooding commences in and around properties in Bluewater Drive - 83 properties potentially flooded over floor • **Prediction to reach and/or exceed** 2.70m – flooding of Harrington Waters Housing Estate may commence and evacuations may be required. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	The evacuation route is via Beach Street to Harrington Road to

	Taree.
Evacuation Route Closure	The evacuation route may close from 1.50m causing isolation.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center • At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre/Assembly Point	The following facilities may be used as evacuation centres (at the direction of the Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary • Harrington Bowling Club (flooded in a PMF). The following facilities maybe used as evacuation assembly points- • Harrington Public School, High St, Harrington. • Harrington Public Hall, Cnr of Pilot St and Beach St, Harrington.
Large scale evacuations	In a large or full evacuation - required from approximately 5.40m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations.

	Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas. Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services. Evacuation centers in Taree, Laurieton and Port Macquarie may be established (dependent upon the need).
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Pilot Hill, Harrington GR 707735 (Coopernook 9434-3-N) Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m on the Taree Traffic Bridge Gauge.

	Airport operations are limited from 5.43m on the Taree Traffic Bridge Gauge with floodwaters reducing the length of the runway.
Other	

10.1. HARRINGTON/CROWDY HEAD SECTOR MAP



11. CUNDLETOWN/DUMARESQ SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector comprises the village of Cundletown north of Taree – and Dumaresq Island, a small island in the Manning River joined to the mainland by a bridge to the Cundletown village. Dumaresq Island and Glenthorne may be the first areas to require evacuations. These areas should be carefully monitored. Flooding begins at 1.78m and evacuation routes may close prior to property inundation. Most properties are built on raised ground or elevated floors. The village of Cundletown remains largely flood free to the PMF at 9.70m with Rising Road Access from the low lying areas adjacent to the Manning River in River Street. The village may become isolated during a 20 year (5% AEP) ARI event at 4.63m. Cundletown may require evacuations from River St progressively if river is expected to exceed 2.38m at Taree traffic Bridge Gauge (208410). Dumaresq Island is predominantly rural residential surrounded by the Manning River and is susceptible to deep fast flowing flood waters. Properties are affected early in flood events and will become isolated – the island is expected to be completely inundated during a 20 year (5% AEP) ARI event at 4.63m.		
Hazard	Riverine flooding and isolation from the Manning River		
Flood Affect Classification	Cundletown – Rising Road Access to an area of safe refuge on a high flood island from 4.63m up to a PMF at 9.70m Dumaresq Island – Overland Refuge to Higher Ground up to a 20 year ARI (5% AEP) event at 4.63m. Then a Low Flood Island to the PMF at 9.70m.		
At risk properties	10 in 1% AEP (5.68m) and up to 26 in Dumaresq Island Cundletown: 7 in a 5% AEP flood (5.68m)	**Total number of properties within Sector/Community**	785 Cundletown 26 Dumaresq Island

	17 in a 2% AEP flood (5.36m) 24 in a 1% AEP flood (2.26m) Values unavailable for the PMF (9.7m)		
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree City SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Taree Traffic Bridge (Longitude = 152.4550°E Latitude =-31.9200°S)	**Minor:** 1.78m	**Moderate:** 2.38m	**Major:** 3.68m
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of a suitable helicopter landing zone at the Taree Aerodrome		
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.80m – water begins to flow across roads on Dumaresq Island and low lying parts of George and River Streets Cundletown • **Prediction to reach and/or exceed** 3.20m – flooding commences in Newtons Road Dumaresq Island and River Street Cundletown • **Prediction to reach and/or exceed** 4.00m – If this height flooding predicted near properties Dumaresq Island, low lying areas of Cundletown in and around River Street and St Pauls Hostel Cundletown – evacuations may be required • **Prediction to reach and/or exceed** 4.50m – properties commence to be impacted by flood waters in Dumaresq Island, low lying areas of Cundletown in and around River Street and St Pauls Hostel Cundletown – evacuations may be required.		

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

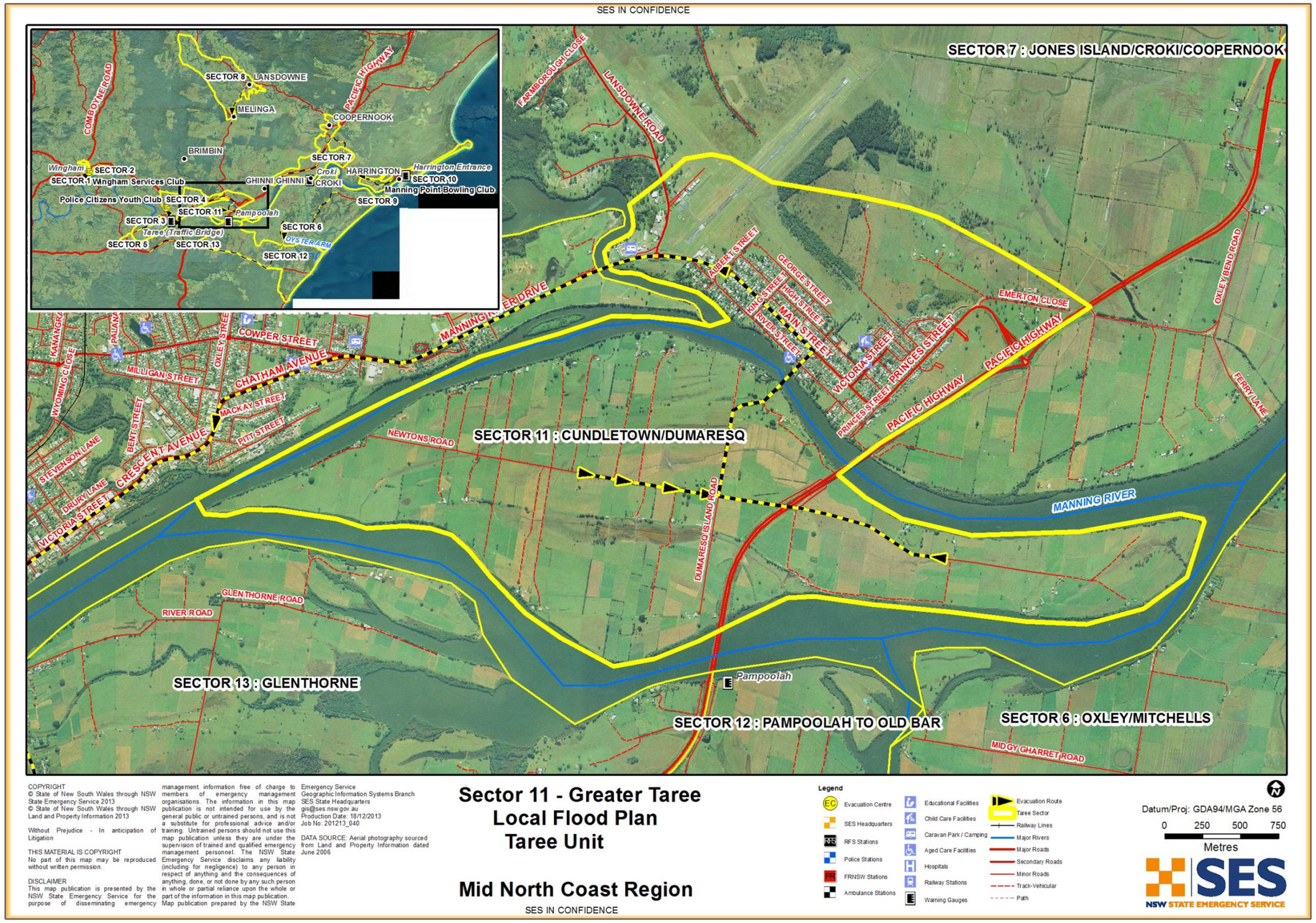
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: • Lansdowne Road Pole Sub

Evacuation and/or Isolation Triggers	**Dumaresq Island has a flood classification of overland refuge area to a high flood island up to 4.63m then a low flood island to the PMF at 9.70m. Evacuations on Dumaresq Island are to be conducted incrementally as predicted flood heights become known and the impact extent established. Road evacuation routes will be lost from 2.20m. Evacuations will need to be completed from before this height.** • **Prediction to reach and/or exceed** 2.20m – flooding commences in Newtons Road Dumaresq evacuation routes may close **Prediction to reach and/or exceed** 4.50m – properties commence to be impacted by flood waters in Dumaresq Island, low lying areas of Cundletown in and around River Street and St Pauls Hostel Cundletown – evacuations may be required Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Dumaresq Island – Newtons Road and Dumaresq Road to Cundletown/Taree Cundletown – Main Street to Manning River Drive to Taree
Evacuation Route Closure	Dumaresq Island evacuation routes start to close from 3.20m Cundletown evacuation routes are flood free to high ground in a PMF via Lansdowne Road – other potential evacuation routes may become closed from a 20 year (5% AEP) ARI event at 4.63m.

Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements
Evacuation Centre	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary
Large scale evacuations	In a large or full evacuation - required from approximately 4.63m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized

	NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway
Other	

11.1. CUNDLETOWN/DUMARESQ SECTOR MAP



12. PAMPOOLAH TO OLD BAR SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector comprises the villages of Wallabi Point and Old Bar. It includes the rural residential areas of Pampoolah, Bohnock and Cabbage Tree Island. Old Bar and Wallabi Point are coastal communities predominantly flood free up to and including the PMF at 9.70m – however in events from a 20 year (5% AEP) at 4.63m the evacuation route to Taree may close causing isolation. The areas surrounding Pampoolah and Bohnock are rural residential and subject to flooding and isolation at various heights throughout events commencing at 1.80m. Cabbage Tree Island is a small island in the south arm of the Manning River with a small number of residences. Access to the island is by boat only and it will require monitoring as it is subject to isolation and flooding – evacuations may be required.		
Hazard	Riverine flooding and isolation from the Manning River. The sector is also subject to coastal erosion impacts along the eastern coastal boundary and the south entrance to the Manning River at Old Bar.		
Flood Affect Classification	Indirectly Affected Area to the PMF at 9.70m when the sector becomes isolated with Rising Road Access Areas from approximately 4.63m.		
At risk properties	37 in a 5% AEP flood (4.63m) 67 in a 2% AEP flood (5.36m) 84 in a 1% AEP flood (5.68m) The area is completely inundated in a PMF	**Total number of properties within Sector/Community**	146 Pampoolah 1990 Old Bar 230 Wallabi Point

<table>
<tr><td>Sector Control</td><td colspan="3">Command – The Greater Taree Incident Controller will remain in Command of all evacuations in the local area.

Control – The Taree City SES Incident Controller will control all evacuations in this sector.

Coordination - The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.</td></tr>
<tr><td>Key Warning Gauge Name – Taree Traffic Bridge
(Longitude = 152.4550°E
Latitude =-31.9200°S)</td><td>Minor: 1.78m</td><td>Moderate: 2.38m</td><td>Major: 3.68m</td></tr>
<tr><td>General Strategy</td><td colspan="3">• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate actions
• Issue early warning of flood level impacts
• Establishment of an evacuation centre
• Evacuation of at risk population
• Identification of a suitable helicopter landing zone at the Taree Aerodrome.</td></tr>
<tr><td>Key Risks / Consequences</td><td colspan="3">• Prediction to reach and/or exceed 1.80m – low lying areas around Pampoolah begin to inundate – evacuations may be required.
• Prediction to reach and/or exceed 4.50m – Old Bar Road may close causing isolation. Access to Taree may also be lost at Cubba Cubba Creek at 4.50m, Manning River Drive (south entrance to Taree) and at 4.63m Dawson's River Bridge, Manning River Drive (north entrance to Taree) – access to Taree may close .</td></tr>
<tr><td>Information and Warnings</td><td colspan="3">NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
• NSW SES Bulletins
o Flood Watch
o Flood Warning
o Equipment, Livestock and Aquaculture Warnings
o Media Release such as– Isolation Warnings
• Evacuation Warning
• Evacuation Order
• All Clear</td></tr>
</table>

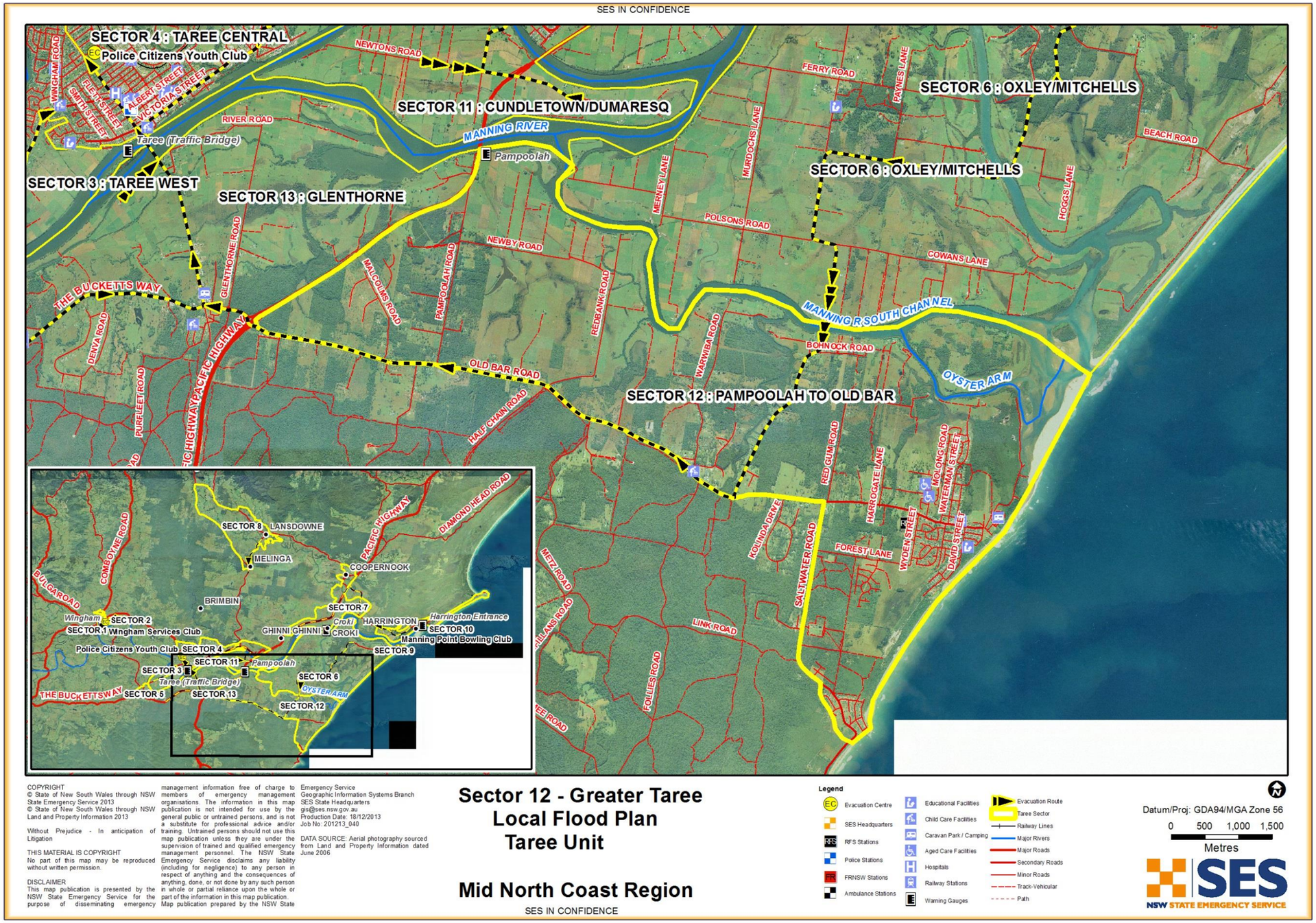
	• Emergency Alert • Standard Emergency Warning Signal (SEWS) • Sequenced door knocking • Media briefing • Interagency LEMC briefings • Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.
Property Protection	**Specific property protection measures:** Note: Property protection measures for the threat of coastal erosion involve the relocation of readily moveable household goods and commercial stock and equipment. The SES is not responsible for planning or conduct of emergency beach protection works or other physical mitigation works. The Greater Taree City Council is responsible for the activation of the Greater Taree City Council Coastal Zone Management Plan – Emergency Action Plan.
	Assistance with property protection: NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit - • Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector: • Bohnock Zone Sub • Wallabi Point Road Pole Subs

Evacuation Triggers	• **Prediction to reach and/or exceed** 1.80m – low lying areas around Pampoolah begin to inundate – evacuations may be required. **Pampoolah** will require monitoring to establish when evacuations will be required. Evacuations to Taree will need to be completed before the river at the Taree Traffic Bridge gauge (208410) exceeds 4.50m when access may be lost. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Manning Point Road to Old Bar Road to Taree or Old Bar (depending on prevailing conditions and road closures)
Evacuation Route Closure	The evacuation route along Old Bar Road remains flood free to the PMF although some low lying areas may experience flash flooding closing the evacuation route periodically during events (near Berady Creek). Manning Point Road from Bohnock to Old Bar Road is subject to inundation in low lying areas and may close early in an event at approximately 4.50m.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center. • With assistance of NSW SES or emergency services to the evacuation center.

	At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre/Assembly Point	The following facilities may be used as evacuation centres (at the direction of The Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary Old Bar Club in Waterman Street Old Bar is suitable for use as an evacuation assembly point.
Large scale evacuations	In a large or full evacuation Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.

Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome • Old Bar Landing Ground GR 612630 (Cundletown 9434-3-S). This grass strip can be used for the landing of light aircraft and military aircraft up to the size of a C-130. • Bohnock GR 591649) (Cundletown 9439-3-S). This is a private grass strip. Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m. Airport operations are limited from 5.43m with floodwaters reducing the length of the runway. A secondary grass airstrip is located at- Old Bar Landing Ground GR 612630. This grass strip can be used for the landing of light aircraft and military aircraft up to the size of a C-130.
Other	

12.1. PAMPOOLAH TO OLD BAR SECTOR MAP



13. GLENTHORNE SECTOR

Refer to Volume 2: Hazard and Risk in Greater Taree City for more information about this Sector/Community.

Sector Description	This sector is predominantly rural with a small residential area on the banks of the Manning River opposite the Taree township. The sector is bounded by the Manning River, Pacific Highway and Manning River Drive. Properties within this sector are susceptible to flooding and isolation due to the proximity to the River and the low lying terrain.		
Hazard	Riverine flooding and isolation from the Manning River.		
Flood Affect Classification	Low Flood Island, with dwellings located on isolated mounds until around 4.50m, thereafter becoming inundated.		
At risk properties	111 from 4.5m (below the 5% AEP) The area becomes entirely inundated at this height	**Total number of properties within Sector/Community**	111
Sector Control	**Command –** The Greater Taree Incident Controller will remain in Command of all evacuations in the local area. **Control –** The Taree City SES Incident Controller will control all evacuations in this sector. **Coordination -** The Taree City SES Unit will conduct evacuations in this sector and coordinate supporting agencies.		
Key Warning Gauge Name – Taree Traffic Bridge (Longitude = 152.4550°E Latitude =-31.9200°S)	**Minor:** 1.78m	**Moderate:** 2.38m	**Major:** 3.68m
General Strategy	• Manage operations in response to predicted heights indicating likely consequences that pre-empt appropriate		

	actions • Issue early warning of flood level impacts • Establishment of an evacuation centre • Evacuation of at risk population • Identification of a suitable helicopter landing zone at the Taree Aerodrome.
Key Risks / Consequences	• **Prediction to reach and/or exceed** 1.80m – low lying areas may begin to inundate • **Prediction to reach and/or exceed** 2.20m – properties in Glenthorne Road may begin to inundate, isolating rural properties • **Prediction to reach and/or exceed** 4.50m – access to Taree may be lost • **Prediction to reach and/or exceed** 5.43m – low lying areas in the sector may be completely flooded.

Information and Warnings	NSW SES Bulletins will localise the consequences of the Bureau products on the sector. NSW SES Mid North Coast Region will issue timely, relevant and tailored information to the public in the following formats:
	• NSW SES Bulletins
	  ○ Flood Watch
	  ○ Flood Warning
	  ○ Equipment, Livestock and Aquaculture Warnings
	  ○ Media Release such as– Isolation Warnings
	• Evacuation Warning
	• Evacuation Order
	• All Clear
	• Emergency Alert
	• Standard Emergency Warning Signal (SEWS)
	• Sequenced door knocking
	• Media briefing
	• Interagency LEMC briefings
	• Bureau products, such as Flood Watches and Flood Warnings, will include NSW SES safety advice.

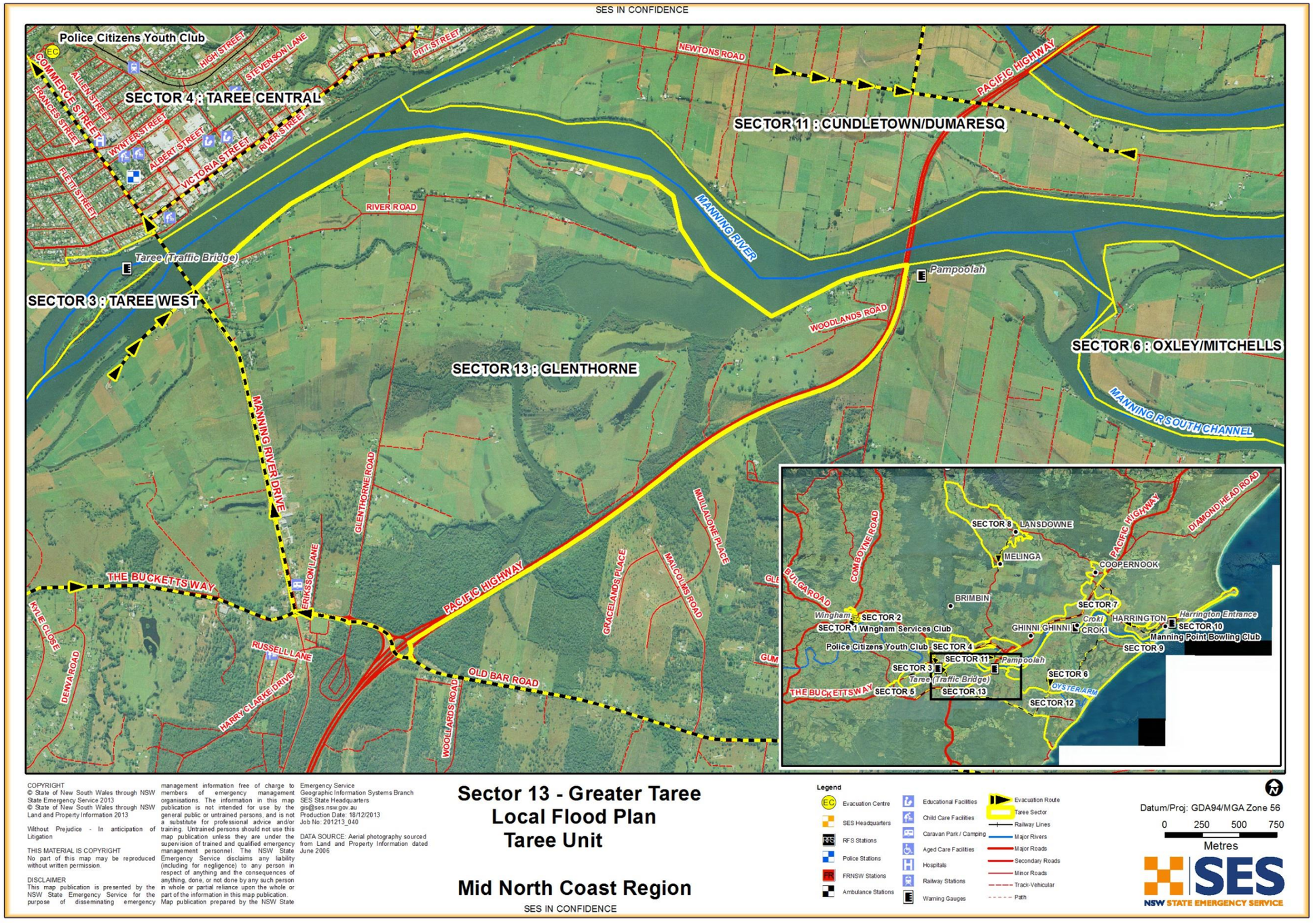
Property Protection	**Assistance with property protection:** NSW SES will monitor rising flood waters and provide the following assistance for flood-threatened properties where time and resources permit -

	• Relocation of personal property for at risk locations • Relocation of livestock in consultation with Local Land Services • Relocate moveable at risk public assets • Control surface water through sandbagging • Monitor integrity of dwellings surrounded by flood waters.
	Protection of essential infrastructure: Greater Taree City Council (Roads), Mid Coast Water (Water / Sewerage) and Essential Energy (Electricity) have responsibility for preparing and implementing emergency response arrangements for the protection of essential infrastructure within the sector.
Evacuation Triggers	**This sector has a flood classification of a low flood island up to and including the PMF at 9.70m. Evacuations are to be conducted incrementally as predicted flood heights become known and the impact extent established. Road evacuation routes will be lost from 2.20m with the majority of dwellings located on isolated mounds. Evacuations will need to be conducted by flood boat or helicopter from this height. Evacuations will need to be completed before 5.43m when the sector is completely inundated.** • **Prediction to reach and/or exceed** 1.80m – low lying areas may begin to inundate – leading to isolation evacuations may be required • **Prediction to reach and/or exceed** 2.20m – properties in Glenthorne Road may begin to inundate – evacuations may be required • **Prediction to reach and/or exceed** 5.43m - low lying areas of the sector will be completely flooded evacuations may be required. Failure of essential services or persons who are not prepared for isolation may prompt evacuation requirements.
Sequencing of evacuation	Evacuation sequencing will be as per the triggers for identified at risk properties. Outside the identified sequenced evacuation areas, a number of residences and properties may need to be evacuated during periods of significant flooding. In most floods, the evacuation tasks will only involve a small number of people from impacted properties. These properties would be dealt with on a case by case basis in conjunction with NSW Police and The Welfare Services

	Functional Area Coordinator. It is anticipated that evacuation will take approximately 6 hours. Field teams should not waste time dealing with people who are reluctant or refuse to comply with an evacuation order and should be referred to the LEMO.
Evacuation Routes	Manning River Drive and Pacific Highway to Taree.
Evacuation Route Closure	The southern and northern entrances to Taree via Manning River Drive may close at around 4.50m. The Pacific Highway remains flood free. Minor road closures may isolate rural properties from 1.80m.
Method of Evacuation	• Evacuations should reflect the principles outlined in Evacuation Planning Handbook (1) • Self-evacuation by private transport to the evacuation center • With assistance of NSW SES or emergency services to the evacuation center. At risk residents will be advised via warnings issued and or door knocks from emergency services personnel advising of evacuation details and arrangements.
Evacuation Centre	The following facilities may be used as evacuation centres (at the direction of the Welfare Services Functional Area Coordinator)- • Club Taree – Primary • Taree High School – Secondary.
Large scale evacuations	In a large or full evacuation - required from approximately 5.43m. Evacuees will be moved to the evacuation assembly area and or center identified by the NSW SES Incident Controller in consultation with the Community Services Functional Support Area. Evacuations will be conducted incrementally as the flood height predictions become known and the impact extent established. Evacuations will be staged- **Stage 1:** Evacuation of the elderly, sick and frail as well as families with young children. Evacuation will be by way of road along higher

	ground to the nominated assembly point or center – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 2:** Evacuation of all persons not required for emergency operations. Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized. **Stage 3:** Full evacuation of the sector (including emergency service personnel). Evacuation will be by way of road along higher ground – if access is impeded or blocked by water flood boats and helicopters may be utilized NSW Police will be responsible for security of evacuated areas Population densities within the sector would not exceed capacity of the surrounding evacuation centers and services.
Rescue	The Taree SES Unit will undertake all Flood Rescue Operations in accordance with the responsibilities outlined in the Flood Emergency Sub Plan.
Resupply	It is unlikely the sector will require resupply due to the likely duration of inundation. Where resupply is required to the sector it will be in accordance with the Greater Taree Local Flood Emergency Sub Plan.
Aircraft Management	**Helicopter Landing Points:** • Taree Aerodrome Landing sites within the sector will be dependent on the prevailing conditions and operational requirements. The final decision rests with the Pilot.
	Airports: The sector is serviced by the Taree Airport at Taree (S 31 53.3 E 152 30.8). • Fixed wing aircraft including C-130, Dash –8 and Saab 340 models. • Paved runway with landing lights. Refuelling facilities are available. • The northern third of the airport is susceptible to flooding, however, the remainder is still useable by STOL aircraft. Road access to Taree Airport can be lost at ~4.63m Airport operations are limited from 5.43m with floodwaters reducing the length of the runway
Other	

13.1. GLENTHORNE SECTOR MAP



GREATER TAREE CITY: NSW SES CARAVAN/TOURIST PARK ARRANGEMENTS

Chapter 4 of Volume 3 (NSW SES Response Arrangements for Greater Taree City) of the Greater Taree City Local Flood Plan

Last Update: December 2014

AUTHORISATION

The Greater Taree City NSW SES Caravan Park Arrangements have been prepared by the NSW State Emergency Service (NSW SES) as part of a comprehensive planning process.

Approved

Manager Emergency Risk Management

Date: 21/10/14

Approved

NSW SES Mid North Coast Region Controller

Date: 11/12/14

Tabled at LEMC

Date:

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1 ARRANGEMENTS FOR THE EVACUATION OF CARAVAN PARKS AND THE RELOCATION OF CARAVANS

1.1 GENERAL

1.1.1 The following caravan parks are susceptible to flooding or isolation:

a. Riverside Caravan Park - Croki

b. East Ocean Shores – Manning Point

c. Weeroona Holiday Park – Manning Point

d. Dawson River - Cundletown

e. Colonial Holiday Park and Leisure Village - Harrington

f. Oxley Anchorage Caravan Park – Harrington

g. Big4 Caravan Park - Harrington

h. Lanis on the Beach – Old Bar (isolation)

1.1.2 For more information on individual caravan/ tourist parks see Table 1 and Table 2 at the end of this Chapter.

1.2 ADVISING PROCEDURES

1.2.1 Caravan/ Tourist Park proprietors shall ensure that the owners and occupiers of caravans and other moveable dwellings are:

a. Made aware that the caravan/ tourist park is susceptible to flooding by:

- Providing written information to occupiers on the risk. The notice will confirm that the caravan/ tourist park is susceptible to flooding or isolation and indicate the flood liable land within the park.
- Ensuring the notice is displayed prominently throughout the park.

b. Made aware that if they are expecting to be absent from their vans for extended periods, they are required to:

- Provide the Park Manager with a contact address and telephone number in case of an emergency
- Provide a key.
- Leave any mobile van in a condition allowing it to be towed in an emergency (i.e.: tyres inflated, jacks wound up, personal effects secured and annexes and lines for water, sewer, electricity and gas readily detachable, and maintained in proper working order).

c. Be informed when a flood is rising. At this time, occupiers will be advised to:

- Ensure that they have spare batteries for their radios.
- Listen to a local radio station for updated flood information.
- Prepare for evacuation and van/ moveable dwelling relocation.

1.2.2 The NSW SES Greater Taree City Local Controller will ensure that the Managers of caravan parks are advised of flood warnings and the details of any evacuation warnings or orders.

1.3 EVACUATION OF OCCUPANTS AND RELOCATION OF VANS AND OTHER MOVEABLE DWELLINGS

1.3.1 When an evacuation order is given, Caravan/ Tourist Park occupants should follow the flood evacuation procedures for the park under the direction of the caravan/ tourist park manager. This should include advice to:

a. Isolate power to their vans by unplugging all leads.

b. Collect personal papers, medicines, a change of clothing, toiletries and bedclothes.

c. Move to friends, relatives or to a designated evacuation centre if they have their own transport, or move to the caravan office to await transport.

d. If self-evacuating, register their movements with the caravan/ tourist park manager upon leaving the park.

1.3.2 Where possible, vans and other moveable dwellings that can be moved will be relocated by their owners. Park managers will arrange for the relocation of other vans and moveable dwellings as required. Council and NSW SES personnel may assist if resources permit. Vans and other moveable dwellings are to be moved to the locations outlined in Tables 1 and 2 at the end of this Chapter, or to friends or relatives located in areas safe from flooding.

1.3.3 Caravan/ tourist park managers will:

a. Ensure that their caravan/ tourist park is capable of being evacuated in a reasonable time frame relevant to the risk associated with their location..

b. Advise the NSW SES Greater Taree City Local Controller of:

- The number of people requiring transport.
- Details of any medical evacuations required.
- Whether additional assistance is required to effect the evacuation.

c. Check that no people remain in any vans or moveable dwellings that have not been moved and are likely to be inundated.

d. Inform the NSW SES Greater Taree City Local Controller when the evacuation of the caravan park has been completed.

e. Provide the NSW SES Greater Taree City Local Controller with a register of people that have been evacuated.

1.4 RETURN OF OCCUPANTS AND VANS

1.4.1 The NSW SES Greater Taree City Local Controller, using council resources as necessary, will advise when it is safe for the caravan/ tourist parks to be re-occupied.

1.4.2 Vans and other moveable dwellings will be towed back to the caravan park(s) by van owners or by vehicles and drivers arranged by the park managers. Council and NSW SES personnel may assist if resources are available.

Table 1: Caravan Parks at risk of Inundation and/or Isolation from Flooding.

Name	Address/Location description	Town/Sector	Sites	Risk	Evacuation route	Evacuation route closure	Van relocation location	Evacuation centre	Notes
Riverside Caravan Park	Reid Rd, Croki 6556 3274	Croki (Croki Gauge)	38 sites Peak @120 persons	Inundation commences at 1.50mts.	From Croki to Pacific Highway	Progressively from 1.20mts to 1.50mts	Park subeject to isolation from 1.20mts and inundation from 1.50mts – Vans to be relocated out of Croki via evacuation routes to Pacific Highway prior to 1.20mts	Designated Taree Evacuation Centre	Peak Christmas and Easter holidays
East Ocean Shores	32 Manning St, Manning Point 6553 2624	Manning Point (Taree Gauge)	149 sites Peak @600 persons	Inundation and isolation commences at 1.80mts	From Manning Point to Mitchell's Island - Taree	Manning Point Road to Taree 1.80mts	Park subject to isolation from 1.80mts with inundation at 4.63 – Vans to be relocated out of Manning Point via evacuation routes to Pacific Highway prior to 1.80mts	Designated Taree Evacuation Centre	Peak Christmas and Easter holidays
Weeroona Holiday Park	21 Main Rd, Manning Point 6553 2635	Manning Point (Taree Gauge)	233 sites Peak @932 persons	Inundation and isolation commences at 1.80mts	From Manning Point to Mitchell's Island - Taree	Manning Point Road to Taree 1.80mts	Park subject to isolation from 1.80mts with inundation commencing at 1.80mts – Vans to be relocated out of Manning	Designated Taree Evacuation Centre	Peak Christmas and Easter holidays

Name	Address/Location description	Town/Sector	Sites	Risk	Evacuation route	Evacuation route closure	Van relocation location	Evacuation centre	Notes
							Point via evacuation routes to Pacific Highway prior to 1.80mts		
Dawson River	1 Manning River Drive, Cundletown 6553 9237	Taree (Taree Gauge)	56 sites Peak @224 persons	Inundation commences from 2.40mts	To higher levels within the park	N/A – Access to high ground available	Park subject to inundation from 2.40mts – move vans to higher ground within the park	Designated Taree Evacuation Centre	Peak Christmas and Easter holidays

Table 2: Caravan Parks at risk from Coastal Erosion and/or Coastal Inundation.

Name	Address/Location description	Town/Sector	Sites	Risk	Evacuation route	Evacuation route closure	Van relocation location	Evacuation centre	Notes
Oxley Anchorage Caravan Park	Beach Street, Harrington 6556 1250	Harrington (Harrington Gauge)	96 sites Peak @576 persons	Inundation commences @ 2.10mts and is inundated to 0.06mts at 2.26mts	Beach Street to Harrington	Harrington Road to Pacific Highway 1.50mts	Park subject to isolation from 1.50mts and inundation commences – vans to be evacuated progressively via the evacuation routes to the Pacific Highway initially or to high ground in Harrington once the Harrington Road is closed	Designated Harrington Evacuation Centre	Peak Christmas and Easter holidays
Colonial Holiday Park and Leisure Village	716 Harrington Road, Harrington 6556 3312	Harrington (Harrington Gauge)	78 sites Peak 468 persons	Inundation commences @1.90mts when evacuation warnings are issued up to 2.00mts	Harrington Road to Harrington or Pacific Highway	Harrington Road to Pacific Highway 1.50mts	Park subject to isolation from 1.50mts and inundation from 2.10mts - vans to be evacuated progressively	Designated Harrington Evacuation Centre	Peak Christmas and Easter holidays

Name	Address/Location description	Town/Sector	Sites	Risk	Evacuation route	Evacuation route closure	Van relocation location	Evacuation centre	Notes
				when evacuation orders are issued			via the evacuation routes to the Pacific Highway initially or to high ground in Harrington once the Harrington Road is closed		
Lanis On The Beach	Old Bar Road, Old Bar 6553 7274	Old Bar	200 sites Peak @1000 persons No permanents	Isolation	Old Bar Road to Pacific Highway	Old Bar Road from overland flooding @4.50mts	Park subject to isolation at 4.50mts – vans to be relocated via the evacuation routes to the Pacific Highway prior to this height.	Designated Old Bar / Taree Evacuation Centre	Peak Christmas and Easter holidays
Big4 Harrington Holiday Park	50 Crowdy Street Harrington 6556 1228	Harrington		Isolation	Harrington Road to Pacific Highway	Harrington Road to Pacific Highway 1.50mts	Park subject to isolation from 1.50mts	Designated Harrington Evacuation Centre	Peak Christmas and Easter holidays Park is NOT subject to

Name	Address/Location description	Town/Sector	Sites	Risk	Evacuation route	Evacuation route closure	Van relocation location	Evacuation centre	Notes
									inundation up to 1% AEP