

State Emergency Management Committee

Hawkesbury-Nepean Valley Flood Emergency Plan

A sub plan to the State Emergency
Management Plan (EMPLAN)

January 2026

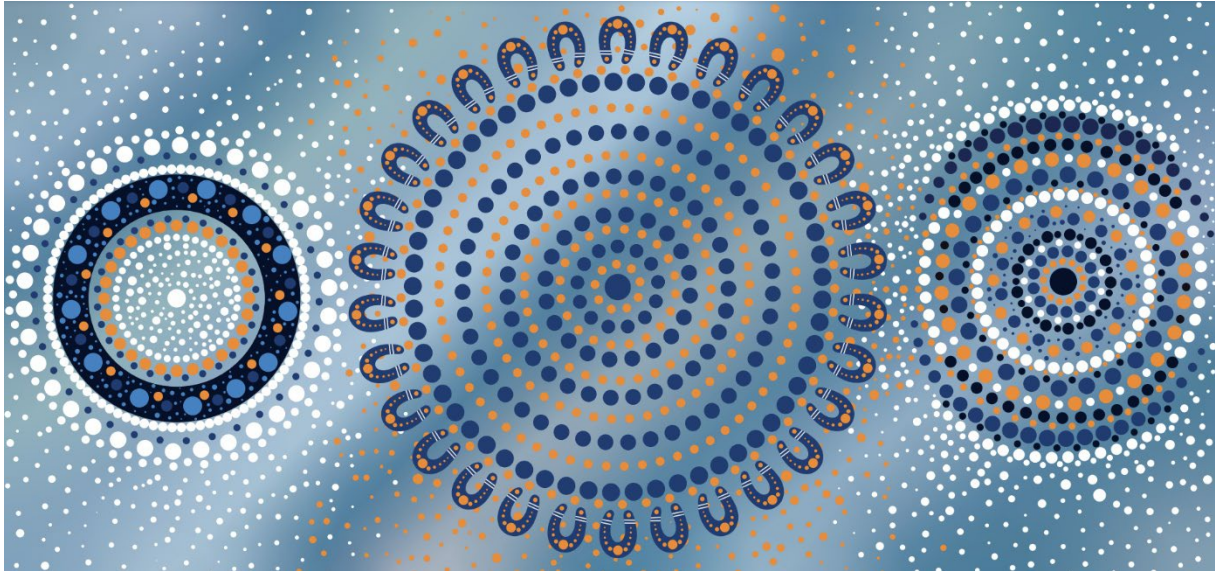


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Acknowledgement of Country

The NSW State Emergency Service acknowledges the Traditional Custodians of the lands where we work and live. We celebrate the diversity of Aboriginal and Torres Strait Islander peoples and their ongoing cultures and connections to the lands and waters of NSW. We pay our respects to Elders past, present and emerging. We acknowledge the Aboriginal and Torres Strait Islander people who contributed to the development of this plan.



'Journey After the Storm' 2016

Commissioned artwork by Lani Balzan for the NSW State Emergency Service

"My name is Lani Balzan, and I am a proud Aboriginal woman from the Wiradjuri people. My family comes from Mudgee, but I was born in Penrith. Having lived in many different towns, including Illawarra, I feel I grew up all over Australia. Today I live in Figtree NSW with my husband John and our three beautiful boys. I am a recognised Indigenous artist, an Aboriginal Education Officer and conduct art therapy within my community. Painting is my passion, it's a means of showcasing and sharing our beautiful and amazing culture. In 2016, a fire tore through our home and destroyed everything we owned, including all the paintings I had lovingly created over many years. While this was a devastating time in my life, I felt it was important to use this experience as an inspiration to create new art and to push myself to learn more about my culture."

Hawkesbury-Nepean Valley Flood Emergency Plan

Published by NSW State Emergency Service

<https://www.ses.nsw.gov.au>

First published: January 2026

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Introduction



Image courtesy of NSW Reconstruction Authority
Close-up flood marker at Blaxland Crossing, Wallacia (March 2022)

1 Introduction

1.1 Purpose

The purpose of this plan is to set out the multi-agency arrangements for the emergency management of flooding in the Hawkesbury-Nepean Valley in New South Wales (NSW).

The NSW State Emergency Service (NSW SES) is identified in the *NSW State Emergency Management Plan* (EMPLAN) and the *State Emergency Service Act 1989* (NSW) ('SES Act') as the Combat Agency for dealing with floods (including the establishment of flood warning systems) and to coordinate the evacuation and welfare of affected communities. NSW SES is required to protect persons from dangers to their safety and health, and to protect property from destruction or damage, arising from floods.

The NSW SES Commissioner is the State Controller under the SES Act and is responsible for managing and controlling all flood response operations across the Hawkesbury-Nepean Valley according to this plan.

1.2 Authority

This plan is written and issued under the authority of the *State Emergency and Rescue Management Act 1989* (NSW) ('SERM Act'), the SES Act and the EMPLAN. In addition to these instruments, the following Acts and Regulations apply to managing flooding in the Hawkesbury-Nepean Valley:

- *Essential Services Act 1988* (NSW)
- *Work Health and Safety Act 2011* (NSW)
- *NSW Reconstruction Authority Act 2022* (NSW)
- *Fire and Rescue NSW Act 1989* (NSW)
- *Water NSW Act 2014* (NSW)
- *Water Management Act 2000* (NSW)
- *Water Act 1912* (NSW)
- *Dams Safety Act 2015* (NSW)
- *Dams Safety Regulation 2019* (NSW)
- *Coastal Management Act 2016* (NSW)
- *Protection of the Environment Operations Act 1997* (NSW)
- *Environmental Planning and Assessment Act 1979* (NSW)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (NSW)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW)

This plan is a sub plan to the EMPLAN and *NSW State Flood Plan* and should be considered concurrently.

This plan was approved by NSW SES, which is the designated Combat Agency for floods, on 19th January 2026 and was endorsed by the NSW State Emergency Management Committee (SEMC) on 12th March 2026.

1.3 Revision history

Version	Date endorsed	Amendment notes
2026-1.0	January 2026	Substantive review
2020-1.0	June 2020	Substantive review
2015-1.0	September 2015	Substantive review
2014-1.0	June 2014	Amendments and updates
2013-1.0	September 2013	Substantive review
2005-1.0	December 2005	Substantive review
1993-1.0	February 1993	Substantive review
1983-1.0	May 1983	Substantive review
1972-1.0	August 1972	Substantive review

1.4 Activation

The EMPLAN is always active in anticipation of the need to coordinate support and resources requested by combat agencies, including NSW SES.

The arrangements in this plan are always active and do not require formal activation. Triggers for formal activation of particular response functions are outlined in *Section 5 Response*.

1.5 Scope

This plan describes the state-level emergency management arrangements for prevention, preparation, response (including immediate relief) and transition to recovery of flood emergencies affecting Hawkesbury-Nepean Valley communities.

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 inundation resulting from super-elevated sea levels and/or waves (including tsunami) overtopping coastline defences. Any vehicle or pedestrian access way is deemed to be an artificial bank for the purpose of this plan and subordinate plans.

Flash flooding, can occur in a short duration (within 6 hours) after rain, causing overland flood and rapid stream rises. Within the Hawkesbury-Nepean catchment, emergency response for flash flooding is generally managed by an Incident Management Team with a defined area of operation.

The arrangements for the emergency management of damage control for storm (including beach erosion caused by storm activity) are detailed within the [NSW State Storm Plan](#).

The arrangements for the emergency management of tsunami are detailed within the [NSW State Tsunami Plan](#).

This plan also addresses the high-level arrangements for the management of downstream consequences of flooding due to dam failure of a declared dam.

This plan does not address the management of flooding of an underground mine by inrush or other cause, which is covered by the Mine Emergency Sub Plan for the respective mine.

This plan recognises that agencies have responsibilities during emergencies allocated under the EMPLAN or other sub or supporting plans to the EMPLAN. This plan does not repeat those responsibilities or roles but does refer to them.

This plan includes:

- The potential risks and consequences of flooding to the social, built, economic, natural and cultural environments in the Hawkesbury-Nepean Valley.
- The policy and programs in place to mitigate these risks before, during, and after an emergency.
- The arrangements for control and coordination led by the NSW SES State Controller for managing a flood impact.
- An outline of the approach as determined by the NSW SES State Controller in managing a flood impact and the agencies responsible for managing specific strategies.
- The multi-agency management arrangements and integrated strategies at the regional and local level for the Hawkesbury-Nepean Valley.
- Strategies to collaborate with communities through engagement and partnerships to build community capability and disaster resilience.
- Links to sources of information where the reader can obtain further detail.

This plan is based on existing information available at the time of writing. Future development beyond current levels within the Hawkesbury-Nepean Valley are not covered by this plan. Consultation with NSW SES and modification to this plan will be required to account for future population increases and development within the area.

The previous Hawkesbury-Nepean Valley Flood Emergency Plan (2020) referred to the Valley only, however this plan refers to the whole river including the Hawkesbury-Nepean Valley and Upper Nepean Valley. This plan continues to refer to the Hawkesbury-Nepean Valley without incorporating the Upper Nepean Valley into the name, to maintain consistency with the broad range of other supporting Hawkesbury-Nepean Valley resources.

Note: this does not preclude Incident Controllers considering new information available since the endorsement of this plan.

1.6 Assumptions

This plan is based on the following assumptions:

- All the agencies and organisations with a role or responsibility included in this plan maintain their own capability, including detailed operational plans, adequately trained personnel and sufficient resources to fulfil their role.
- Referring to stakeholders is inclusive of a wide range of groups, and where relevant includes, but is not limited to:
 - Communities (defined below).
 - Emergency Services Organisations.
 - Supporting Agencies.
 - Functional Areas.
 - Local Government Councils (defined below).
- Referring to communities is inclusive of a wide range of groups including, but not limited to:

- People who live, work, or visit places where disasters can occur and who, therefore, face a common risk.
- Existing social, community and organisational networks (e.g., associations, faith-based groups, clubs, sporting groups, community groups, multicultural groups and small businesses).
- Aboriginal and Torres Strait Islander people, including Discrete Aboriginal Communities.
- Different age groups and life stages.
- Community hubs.
- Multicultural and linguistically diverse communities.
- People with disabilities.
- All genders.
- LGBTQIA+ individuals.
- Referring to Local Government Councils includes other relevant councils and agencies, if applicable. This can include, but is not limited to:
 - Local Aboriginal Land Councils, Aboriginal landowners, and Aboriginal community-controlled organisations.
 - Crown Lands.

1.7 Key Principles

The key principles for NSW SES in relation to flood emergency management include the following:

- Protection and preservation of life (including the lives of responders and the community) is the highest priority.
- Protect property including critical infrastructure, community assets and residential property, as well as protect the natural environment and conservation values, including cultural heritage, biodiversity, and social values.
- Establish Strategic Control and Incident Control at the level most relevant to the incident. In significant flood events this may include a whole of government response.
- Establish and operate warning systems, ensuring information is provided to the community in an effective and timely manner.
- Recovery planning and actions will occur in parallel with response operations. NSW SES as the Combat Agency is responsible for immediate relief, and will engage Functional Areas as outlined in the [NSW Recovery Plan](#).
- Working to prevent, prepare for, respond to and recover from the impacts of floods is the shared responsibility of agencies and the community. ⁽¹⁾
- All agencies, including cross-border agencies, will promote interoperability between agencies and the community to better prepare for, respond to and recover from flood incidents and related emergencies.

1.8 Audience

The audience for this plan is the NSW Government and agencies within the emergency management sector including Local Government Councils, non-government organisations, businesses and community groups with a significant role in emergency management.

Although the wider community is not the primary audience, community members and industry groups may find the contents of this plan informative.

1.9 Linkages

This plan reflects current legislation, the arrangements in the EMPLAN and NSW State Flood Plan, the strategic direction for emergency management in NSW and accepted state practice for emergency management. The EMPLAN and NSW State Flood Plan arrangements have not been repeated unless necessary to ensure context and readability. Any variations from these arrangements have been identified and justified.

The arrangements for the emergency management of flooding (for riverine and flash) are detailed within the NSW State Flood Plan. This plan is a sub plan of the NSW State Flood Plan and the EMPLAN and should be read in conjunction with these documents.

The special arrangements in this plan supplement the arrangements regarding Hawkesbury-Nepean Valley described within the respective NSW SES Local Flood Emergency Sub Plans. The plans listed below are subordinate plans to this plan as well as being subordinate plans to the relevant local EMPLAN:

- Blacktown City Flood Emergency Sub Plan
- Camden Council Flood Emergency Sub Plan
- Campbelltown City Flood Emergency Sub Plan
- Central Coast Council Flood Emergency Sub Plan
- Hawkesbury City Flood Emergency Sub Plan
- Hornsby Ku-ring-gai Flood Emergency Sub Plan
- Liverpool City Flood Emergency Sub Plan
- Penrith City Local Flood Emergency Sub Plan
- The Hills Shire Flood Emergency Sub Plan
- Wollondilly Shire Flood Emergency Sub Plan

1.9.1 Roles and responsibilities

General responsibilities of Emergency Services Organisations, Functional Areas and Supporting Agencies are set out in the EMPLAN.

Specific roles and responsibilities for Emergency Services Organisations, Functional Areas, and Supporting Agencies in relation to flooding are detailed throughout this plan and in Appendix B.

Regional arrangements are detailed within this plan.

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

- NSW SES Incident Controller (for state and regional level responsibilities during response operations).
- NSW SES Metro Zone Commander (for state and regional level responsibilities outside of response operations).

1.9.2 Supplementary documents

NSW SES response arrangements for the Hawkesbury-Nepean Valley are detailed in the following Annexures to this plan:

- Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley
- Annex B – NSW SES Flood Warning Gauges
- Annex C – NSW SES Divisions, Sectors, Subsectors and Evacuation Strategy Selection Considerations

- Annex D – NSW SES Evacuation Arrangements
- Annex E – NSW SES Flood Rescue Arrangements
- Annex F – NSW SES Resupply Arrangements
- Annex G – NSW SES Dam Emergency Arrangements
- Annex H – NSW SES Managing Transport Impacts

Further information on flood hazard and warning strategies and processes is located on the following websites:

- [Australian Institute for Disaster Resilience \(AIDR\)](#)
- [NSW SES](#)
- [Hazard Watch](#)
- [Bureau of Meteorology](#)

The regional emergency management arrangements for the Hawkesbury-Nepean Valley are detailed in the following plans:

- [North West Metropolitan Emergency Management Region | NSW Government](#)
- [South West Metropolitan Emergency Management Region | NSW Government](#)

1.10 Maintaining the plan

The NSW SES State Controller (or delegate) will keep this plan current by:

- Ensuring all Emergency Service Organisations, Functional Areas, Supporting Agencies and officers included in this plan can review and contribute to the development of the plan.
- Conducting exercises to test arrangements.
- Reviewing the contents of the plan:
 - After significant flood response operations in the Hawkesbury-Nepean Valley.
 - After recommendations from After Action Reviews, reports or inquiries have been finalised.
 - After changes in knowledge of flood risk affecting the Hawkesbury-Nepean Valley.
 - When changes to land use strategic plans and policies increase the population at risk.
 - When new data and information is available that is relevant to this plan.
 - When there are changes to the machinery of government.
 - When there are changes that alter agreed plan arrangements.
 - As determined by the NSW SES State Controller.
 - As determined by the NSW SEMC.
- This plan will be reviewed no less frequently than every 5 years.

The Emergency Risk Context

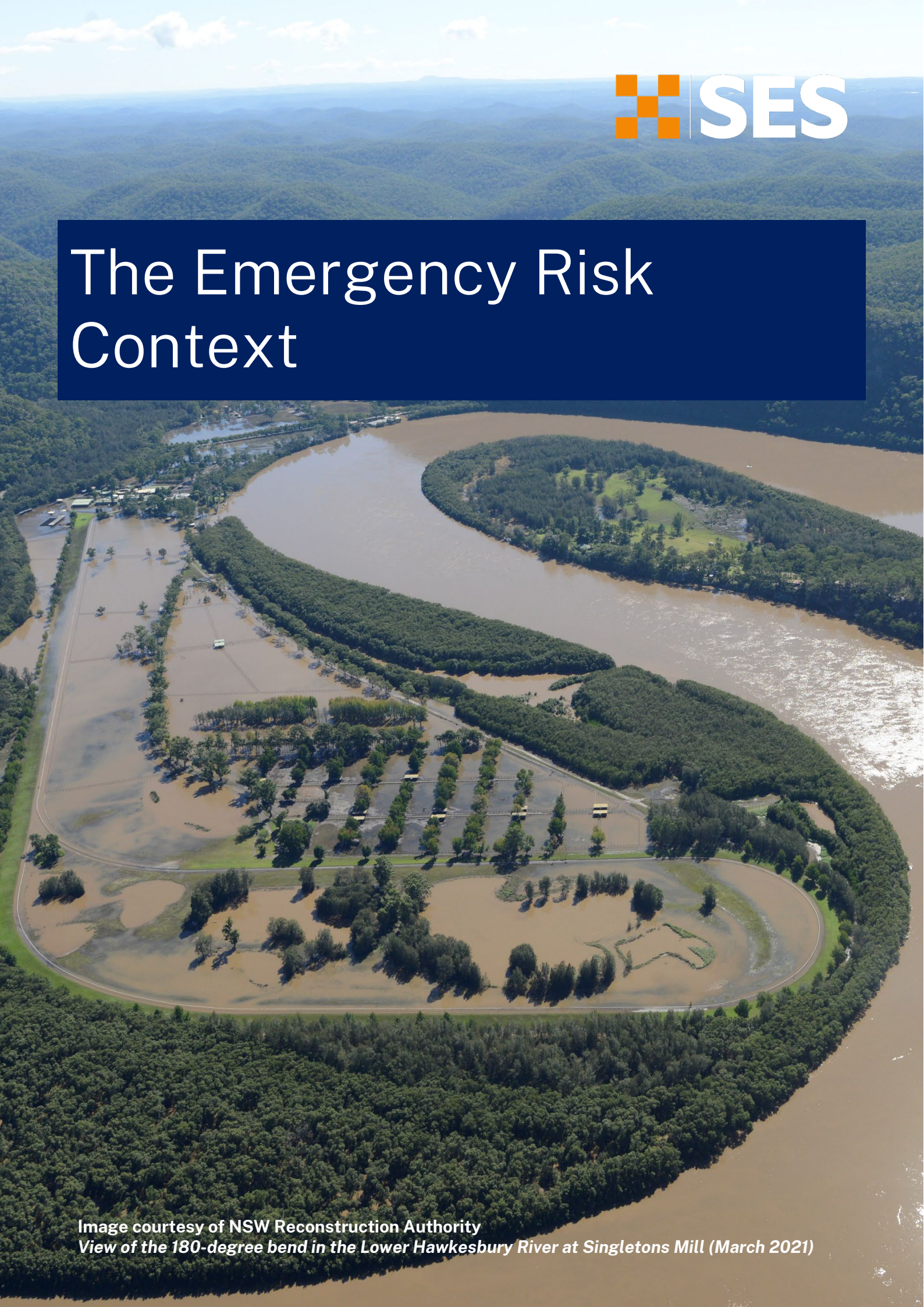


Image courtesy of NSW Reconstruction Authority
View of the 180-degree bend in the Lower Hawkesbury River at Singletons Mill (March 2021)

2 The Emergency Risk Context

2.1 The Hazard

The Hawkesbury-Nepean Valley covers approximately 670 square kilometres of floodplain and falls mainly within four fast-growing Local Government Areas (LGA) in Western Sydney: Penrith City, Hawkesbury City, The Hills Shire and Blacktown City. It includes the population centres of Penrith, Richmond and Windsor and many surrounding suburbs. Expanding urban development across the Valley means that flood exposure will increase in the future.

The *State Disaster Mitigation Plan* (SDMP) identifies flood as a natural hazard with significant disaster risk for NSW.⁽²⁾ The SDMP identifies that the highest natural hazard risks in the built environment are from storms and floods, with coastal hazards dominating risk in the future.⁽²⁾

It is understood that the changes to natural climate processes, oceanic climate systems, temperatures and weather pressure systems will affect Australia's weather systems and ocean hazards.⁽³⁾ The increased risk of severe thunderstorms and storm surges, flash flooding and large flood events will have more severe impacts on communities when they occur.⁽³⁾

Whilst several types of weather events can cause flooding in the Hawkesbury-Nepean Valley, nearly all the large flood-producing events have been either caused by East Coast Lows (ECL) or the interaction of ECL and other rain-producing systems. ECL are the major flood producing mechanism on large catchments on the east coast of NSW and are being very actively studied.

Detailed studies have been undertaken since 1997 to identify the factors, which are critical to the conduct of flood operations on the scale required to deal with the consequences of severe to extreme floods in the Hawkesbury-Nepean Valley.

The most recent riverine flood study is the *Hawkesbury-Nepean River Flood Study* (2024 Flood Study). The current work builds on extensive flood modelling and its review since the 1980s. Updated flood modelling and new techniques allow a better understanding of characteristics of floods including rate of rise. The updated modelling approach has improved the representation of hydrology and hydraulics, leading to some adjustments in peak flood level estimates.

Actual flood events can exhibit an enormous degree of variability, most of which is determined by exactly when and where rainfall occurs. Flood events are influenced by how wet the catchment is and, in the case of the Hawkesbury-Nepean Valley, the levels in Warragamba Dam prior to an event.

The following factors are significant for the timing of decisions to commence warning and evacuation:

- Significant rates of rise (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley).
- Extreme depth of flooding due to the river constrictions in the Valley (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley).
- Heavy reliance on the road network for vehicle-based evacuation given the limitations on rail and air transport in the Valley (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley and Annex D – NSW SES Evacuation Arrangements).
- The large numbers of people requiring evacuation (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley).
- The diverse nature and broad geographic spread of floodplain communities, including a large agricultural sector and isolated, remote communities (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley, Annex C – NSW SES Divisions, Sectors, Subsectors and Evacuation Strategy Selection Considerations and Annex D – NSW SES Evacuation Arrangements).
- Many critical evacuation routes becoming impassable at low points before the areas that need to evacuate are actually flooded (refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley).

Valley, Annex C – NSW SES Divisions, Sectors, Subsectors and Evacuation Strategy Selection Considerations and Annex D – NSW SES Evacuation Arrangements).

The 2024 Flood Study states that ‘Monte Carlo’ (repeated random sampling of inputs to obtain model outputs) approaches in flood estimation have typically focused on capturing the variability in input conditions and how this variability affects peak flood levels and flow.

Hawkesbury-Nepean Valley is considered to have one of the highest flood exposures in NSW.

2.2 Causes of flooding

Heavy rainfall - Heavy rainfall and associated runoff are the most common cause of flooding in NSW. Heavy rainfall can cause:

- Banks of rivers and creeks to overtop.
- Overflow from lakes, detention basins and stormwater drains.
- Local overland flooding.
- Releases or spills from dams.

The rainfall that produces severe flooding in the Hawkesbury-Nepean Valley will usually come from ECL Pressure Systems. These systems develop off the State’s coast, and direct moist winds onto the coast. Usually, but not exclusively, they move in a southerly direction. Once these air masses strike coastal ranges, such as the Illawarra escarpment or the Blue Mountains, the resulting uplift of air often produces very high rates of rainfall and heavy rain.

Storm surge - Sea conditions can also influence flooding in the lower river reaches. Along the coast, oceanic storm surges and large waves may result from ECL Pressure Systems and their associated gales and storm-force winds. Such conditions may lead to coastal inundation of seawater and can delay the floodwaters from the Hawkesbury River reaching the Pacific Ocean.

The larger floods that have occurred on the Hawkesbury-Nepean River have often been accompanied by storm surge, with these effects most apparent during periods of spring or extreme tides.

Dam failure - Dam failure causes flooding of downstream waterways and their surrounds. Dam failure is very rare but can have catastrophic consequences, in some cases exceeding the Probable Maximum Flood (PMF) extent. Dams Safety NSW publishes guidelines to help declared dam owners comply with the requirements of the [Dams Safety Act 2015](#) (NSW) and regulation. Some causes of dam failure include:

- Overtopping in severe floods.
- Lack of structural integrity.
- Earthquake activity (resulting in sunny day failure).
- Failure of operating equipment.
- Piping (erosion of the embankment or substructure).
- Any other major disturbances that may cause dam failure (e.g., sabotage).

Refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley for further information on flooding and the causes and types of flooding likely to be experienced in the Hawkesbury-Nepean Valley.

Refer to the NSW State Flood Plan *Section 2.1 The Hazard* for further information on the causes and types of flooding in NSW.

2.3 Consequences

The distribution and impacts of flooding can vary across the Hawkesbury-Nepean Valley. The consequences of flooding can necessitate emergency actions such as warnings, evacuation, resupply, search and rescue, and property protection.

The consequences of flooding can include, but are not limited to:

- Injuries, medical emergencies or loss of life (often by drowning).
- Inundation damaging property, farmland, infrastructure, overwhelming drainage systems and roads (leading to a need for evacuation, property protection and/or rescue).
- Property damage or destruction (including buildings and vehicles).
- Infrastructure damage leading to the disruption of services, such as airports, roads, bridges, transport, shipping routes, downed power lines and telecommunications infrastructure, water and sewerage.
- Isolation of properties and/or communities (e.g., Discrete Aboriginal Communities) due to flooding of access roads, with the additional risk of secondary emergencies (creating risk to life and the need for resupply and/or rescue).
- Economic losses (e.g., impacts to industries, local businesses, tourism, freight and agricultural damages).
- Environmental losses (e.g., impacts to water quality, soil erosion, riverine erosion, harm to wildlife, animal habitat, cultural heritage and generation of waste that is potentially hazardous).
- Positive environmental processes, that benefit native plants, fish and animals.
- Public Health risks (e.g., reduced access to primary health care, contamination to food supply, water borne diseases, movement of debris causing navigational hazards, other impacts because of direct contact with flood water and psychosocial impacts).
- Disruption to community activities and essential services.
- Psychological and psychosocial impacts on communities from distressing debris, evacuation and losses related to persons, property, financial and other cumulative effects of multiple/prolonged events.
- Community unrest.

Refer to Annex A – Hazard and Risk in the Hawkesbury-Nepean Valley for further information on the potential consequences to property; vulnerable facilities, people and businesses; infrastructure; agriculture; and the environment.

Prevention



3 Prevention

Prevention includes the identification of hazards, assessment of threats to life and property and taking measures to reduce potential loss to life or property. Prevention aims to reduce vulnerability and exposure to the hazard and associated threats.

Guided by various planning legislation and policies, NSW SES works with agencies and the community to inform and influence the consideration of risks arising from floods, storms and tsunamis to assist all stakeholders in building resilience and reducing risk.

3.1 Flood Mitigation

Whilst it is not possible to prevent severe floods from occurring, actions (including, targeted and local government policies) to mitigate risk to life, reduce property damage and improve the resilience of infrastructure and assets to the impacts of flood events can be undertaken by carefully managing floodplains. These actions help to ensure the use of flood prone land is compatible with the flood behaviour and constraints and allows for sustainable land use.

The NSW Government's Floodplain Management Program provides technical and financial support to local councils to implement flood mitigation works in flood risk management plans to reduce risks to their communities.

The State Disaster Mitigation Plan (SDMP) outlines a range of actions to mitigate disaster risk. It also supports the development of regional Disaster Adaptation Plans (DAP) outlining actions to reduce disaster risk. NSW Reconstruction Authority has published the *NSW Disaster Adaptation Plan Guidelines* to assist in the preparation of these plans and has prioritised a DAP to address the flood risk in the Hawkesbury-Nepean Valley.

3.2 Flood Risk Management

The *Flood Risk Management Manual* outlines the NSW Government's Flood Prone Land Policy which details the framework for managing flood prone land in NSW. The primary objective of the Flood Prone Land Policy is to:

- "Reduce the impacts of flooding and flood liability on communities and individual owners and occupiers of flood prone property." ⁽⁴⁾
- "Reduce private and public losses resulting from floods, utilising ecologically positive methods where possible. In doing so, community resilience to flooding is improved." ⁽⁴⁾

Flood risk management includes an understanding and consideration of existing, future, continuing and residual risk as a means of limiting exposure to flood risk for both existing and growing communities. It requires a multidisciplinary approach including flood emergency managers, flood risk managers and land use planners working together to help communities build long term resilience to future flood events.

Refer to the NSW State Flood Plan *Section 3 Prevention* for further information on Flood Risk Management.

NSW SES and the Department of Climate Change, Energy, the Environment and Water published the following supporting emergency management guideline to inform councils and other bodies of NSW SES's requirements from flood studies and flood risk management studies.

- [Support for Emergency Management Planning - Flood Risk Management Guideline EMO1](#)

NSW Government works with local councils, businesses, and the community to reduce and manage the flood risk in the [Hawkesbury-Nepean Valley](#).

Strategy:	Actions to achieve the strategy (or outcome):
Participate in relevant regional and local flood risk management committees, where established by Local Government Councils, so that councils can ensure that emergency management considerations are accounted for in land use planning for the Hawkesbury-Nepean Valley.	1. NSW SES and agencies involved in flood risk management may provide emergency risk management advice to Flood Risk Management Committees established by councils in the Hawkesbury-Nepean Valley, in relation to the management of land that is subject to flooding.

3.3 Land Use Planning

One of the key findings of the *Achieving a Hawkesbury-Nepean Floodplain Management Strategy* (1997) was that the planning and construction of urban development on the floodplain must be improved to reduce the impact of flooding on people and property. To this end, the Hawkesbury-Nepean Flood Management Advisory Committee commissioned the production of flood-specific planning guidelines for the Hawkesbury-Nepean Valley:

- Managing Flood Risk through Planning Opportunities
- Designing Safer Subdivisions
- Reducing Vulnerability of Buildings to Flood Damage

These guidelines provide advice to individuals and organisations to improve flood emergency risk management outcomes. These guidelines:

- Recognise that all new development should be designed and built to ensure that emergency management action can be safely and efficiently implemented when a flood threatens.
- Assist individuals and businesses to minimise potential property damage caused by flooding, including guidance with home modifications and construction. Houses and buildings cannot be moved as a flood approach but basic modifications, some required at the time of construction, can make the difference between a total flood loss and a recoverable house and buildings.

NSW Reconstruction Authority is leading the development of a Regional Risk-Based Planning Approach for the Hawkesbury-Nepean Valley utilising data, information and reports developed or gathered from workshops with council staff and government agencies.

This framework will provide a land use and settlement strategy for the Valley based on flood risk, flood behaviour and evacuation constraints to enable future development to continue whilst increasing the resilience of the community.

3.4 Evacuation Routes

Flood emergency management is focussed on protecting people first and then their property. The capability to evacuate people off the floodplain is the key flood emergency management strategy for the Hawkesbury-Nepean Valley. More than 150 evacuation route signs have been installed by Transport for NSW across the Hawkesbury-Nepean Valley to help guide residents along key flood evacuation routes.

It is vital that any future population increases and development within the Hawkesbury-Nepean Valley considers evacuation requirements.

The capacity of evacuation routes within the Hawkesbury-Nepean Valley may need to be increased to cope with the evacuation of the existing population in particular areas.

Refer to Annex D – NSW SES Evacuation Arrangements for further information on the regional road evacuation routes within the Hawkesbury-Nepean Valley designated by NSW SES.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Determine evacuation routes for the Hawkesbury-Nepean Valley.</p>	<ol style="list-style-type: none"> 1. Agencies involved in flood emergency management, including NSW SES, will collaborate to identify potential evacuation routes for the Hawkesbury-Nepean Valley. 2. NSW SES may provide access to Geospatial Intelligence System (GIS) layers for the evacuation routes to relevant councils and Transport Services Functional Area.
<p>Identify proposed changes to roads and supporting infrastructure on the regional road evacuation routes. This is to maintain road capacity to safely evacuate the whole population in a timely fashion and to identify a coherent evacuation road network for the Hawkesbury-Nepean Valley.</p>	<ol style="list-style-type: none"> 1. Relevant councils and Transport Services Functional Area will advise NSW SES of any proposed changes to roads and supporting infrastructure on the regional road evacuation routes. 2. Proposals for modifying existing regional road evacuation routes, or for new evacuation routes, are to consider the following evacuation route objectives: <ol style="list-style-type: none"> a. Extent - Regional road evacuation routes are to extend firstly beyond the PMF extent and then to a point where the wider traffic network can absorb evacuation traffic without causing congestion back into the evacuation route network. b. Increase capacity - Where relevant evacuation timelines extend beyond the limit of confident flood forecasting, provide more lane capacity on current routes or provide new additional routes to reduce the timeline to within the forecasting limit. c. Resilience - Regional road evacuation routes affected by local flooding from local streams crossing the route are protected where practicable up to 1:500-year flood events on local streams crossing evacuation routes. d. Higher evacuation route - Where the route is inundated by mainstream flooding and where practicable, raise the height of the lowest point/s on the route and prioritise upgrades to affected local roads to improve access and support emergency evacuation. e. Independence - Routes should be independent where feasible to reduce or eliminate convergence of evacuation routes before merging into the wider traffic network. f. Simplify traffic management - Improvement in intersections, upgrading the type of road and ensuring traffic flows freely to safety without prolonged congestion or queuing.

Strategy:	Actions to achieve the strategy (or outcome):
	<ul style="list-style-type: none"> <li data-bbox="729 188 1445 315">g. Decouple evacuation from floodplains - Divert evacuation streams from the Hawkesbury River floodplain to reduce or eliminate convergence on evacuation routes in the Nepean River floodplain. <li data-bbox="729 338 1445 439">h. Redundancy - Provide an alternative route where possible to provide redundancy in case of serious incidents on the main route. <li data-bbox="679 461 1445 589">3. NSW SES and NSW Reconstruction Authority will continue to develop the Hawkesbury-Nepean Valley Flood Evacuation Model to assess evacuation route capacity. <li data-bbox="679 611 1485 712">4. NSW SES will review and maintain Annex D – NSW SES Evacuation Arrangements with any approved changes to evacuation routes. <li data-bbox="679 734 1414 797">5. Evacuation Route Signage may be reviewed at the same time as any review of evacuation routes.

GET READY
For disasters



Preparation

Floods are random, natural events.
It's impossible to say when the next
flood will come.

Flood
Strategy



Image courtesy of NSW Reconstruction Authority
Hawkesbury-Nepean Valley residents took part in a person-centred emergency
preparedness workshop for culturally and linguistically diverse communities

4 Preparation

Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency. Key preparedness activities such as emergency planning and efforts to build community resilience assist in the success of response operations. This includes working with communities to assist them in understanding their risk and, through the provision of information, have the knowledge to make the best decision for themselves and their family.

Preparation activities are undertaken by:

- Agencies and organisations that have responsibilities before, during and after an emergency.
- Communities, businesses and households that are likely to be affected by flooding.

4.1 Emergency planning

Emergency planning involves creating and documenting strategies to prevent, prepare for, respond to, and recover from emergencies, whether for individuals, communities, businesses, or facilities.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Review and maintain the Hawkesbury-Nepean Valley Flood Emergency Plan and associated supporting documents.</p>	<ol style="list-style-type: none"> 1. NSW SES will review and maintain the Hawkesbury-Nepean Valley Flood Emergency Plan and associated supporting documents. 2. NSW SES will review and maintain NSW SES Local Flood Emergency Sub Plans as required. NSW SES Local Flood Emergency Sub Plans outline the specific arrangements for management of flood events within the Hawkesbury-Nepean Valley and may include cross boundary arrangements. The plans listed below are subordinate plans to this plan: <ol style="list-style-type: none"> a. Blacktown City Flood Emergency Sub Plan b. Camden Council Flood Emergency Sub Plan c. Campbelltown City Flood Emergency Sub Plan d. Central Coast Council Flood Emergency Sub Plan e. Hawkesbury City Flood Emergency Sub Plan f. Hornsby Ku-ring-gai Flood Emergency Sub Plan g. Liverpool City Flood Emergency Sub Plan h. Penrith City Local Flood Emergency Sub Plan i. The Hills Shire Flood Emergency Sub Plan j. Wollondilly Shire Flood Emergency Sub Plan 3. Local Government Councils should consult with NSW SES in the development of council emergency arrangements. 4. All agencies (including Functional Areas) may review and provide any necessary feedback on any changes and updates to the Hawkesbury-Nepean Valley Flood Emergency Plan, and associated Sub Plans where applicable.

4.1.1 Supporting Plans

In addition to this plan and the lower-level NSW SES Local Flood Emergency Sub Plans, there are number of Supporting Plans and Strategies that are required to deal with the management of important functions which contribute to an efficient and effective response to a flood.

Supporting plans and strategies are prepared by agencies with the responsibility and expertise to develop the appropriate supporting arrangements. Some of the supporting plans and strategies for the Hawkesbury-Nepean Valley are currently in development or are yet to be developed.

Current supporting plans include:

- Hawkesbury-Nepean HEALTHPLAN - Nepean Blue Mountains Local Health District HEALTHPLAN.
- Hawkesbury Nepean Flood Plan: Traffic & Transport Supporting Plan.

4.1.2 Planning for fire and hazardous materials

Flooding can result in secondary incidents of fire and hazardous materials. Locations at risk of fire during flooding, which may pose a significant threat to surrounding populations, should be identified by Fire and Rescue NSW (FRNSW) and NSW Rural Fire Service (NSW RFS).

Strategy:	Actions to achieve the strategy (or outcome):
Identify risks of hazardous materials.	<ol style="list-style-type: none"> 1. FRNSW and NSW RFS, in consultation with Local Government, Safe Work NSW and the NSW Environment Protection Authority, are to identify any land-based locations which may pose a risk of hazardous material incidents within the PMF extent, including historic contaminated land sites in flood risk areas. NSW SES is to be notified of those facilities that pose a significant threat for incorporation into NSW SES flood intelligence and planning. 2. NSW Health can provide advice on the likely public health impacts of a hazardous material incident.

Refer to the [*NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Sub Plan*](#) for further information on the control, response, and recovery arrangements relating to hazardous materials.

4.2 Operational readiness

The NSW State Flood Plan *Section 4.2 Operational Readiness* sets out the arrangements for:

- Flood Intelligence Systems
- Development of Warning Systems
- Briefing, Training and Exercising

4.3 Community resilience

A community that is more aware, prepared, and connected is better at responding and recovering from disaster and overall, more resilient.

NSW SES and our partners including community will use a range of actions to build community capability in the Hawkesbury-Nepean Valley. These include, but are not limited to:

Strategy:	Actions to achieve the strategy (or outcome):
<p>Collaborate with the community to plan and prepare for flood impacts and any resultant risks to life and property.</p>	<ol style="list-style-type: none"> 1. NSW SES will work in partnership with organisations and communities (including Aboriginal communities) early and often to improve understanding and management of the risks associated with floods, including bank erosion caused by flood events. This can be achieved through strategies based on policy, guidance and resources from NSW Reconstruction Authority and other relevant NSW Government agencies, NSW SES, and other sources (e.g., relevant community organisations). 2. NSW SES will work in partnership with Aboriginal people and communities by engaging and consulting with Local Aboriginal Land Councils, Aboriginal landowners, and Aboriginal community-controlled organisations in local and regional flood planning to prepare for, respond to, and recover from the impacts of flood events. 3. NSW SES will support Aboriginal-led initiatives to support preparedness, response, and recovery from flooding and the effects of flooding, e.g., the Aboriginal Communities Emergency Management Program led by Aboriginal Affairs NSW. 4. NSW SES may work in partnership with organisations and communities to develop and implement programs that emphasise community behavioural change before, during and after flooding to ensure effective emergency response, reduce flood-related risks and improve community readiness and recovery. 5. NSW SES and other organisations may collaborate with non-government organisations and communities (including Aboriginal communities) when developing flood information, intelligence, warnings, preparedness and response information. The following considerations should be made when collaborating with these stakeholders: <ol style="list-style-type: none"> a. Disaster risk information is accessible and considers communication capabilities. b. Locally led and owned disaster risk reduction efforts are supported by NSW SES. c. Community expectations are understood and managed when planning and preparing for hazards. For example, community members should be made

Strategy:	Actions to achieve the strategy (or outcome):
	<p>aware when they will not be able to influence a decision.</p> <ol style="list-style-type: none"> 6. All agencies are to ensure local flood information (including Aboriginal knowledge of landscapes and waterways) from community is proactively sourced and utilised to develop community awareness campaigns and undertake community outreach. This may include undertaking and utilisation of research. 7. NSW SES may support the development of community action plans, community action teams (which may include the development of equipment caches) and flood wardens, including the development of action plans and teams for Aboriginal communities and the design and management of culturally safe evacuation centres for Aboriginal and culturally and linguistically diverse (CALD) communities. 8. NSW SES may work in partnership with other Government Agencies and with Aboriginal peoples to develop an Indigenous first responder program (as part of a community first responder program) to address the needs of Aboriginal peoples during disasters. 9. NSW Government agencies (e.g., NSW Reconstruction Authority and NSW SES) will measure the level of community resilience and develop community engagement plans based on unique community needs.
<p>Collaborate with the community to understand the needs of community members who may be constrained by a range of circumstances in their ability to prepare for and withstand the effects of flood risks and consequences.</p>	<ol style="list-style-type: none"> 1. All agencies will ensure the effectiveness and accessibility of information that is being shared with individuals that may require additional support to flood hazard risk and find alternative means of sharing information to meet these individual needs. 2. NSW SES and NSW Reconstruction Authority may work with community organisations to understand their risk and how this can be reduced. 3. NSW SES and NSW Reconstruction Authority may develop and implement programs specific to community members (e.g., culturally and linguistically diverse communities, Aboriginal peoples, and people with disabilities).

4.4 Volunteering

The NSW SES workforce is predominately made up of volunteers. Effective pre-incident planning is crucial to ensuring that NSW SES can effectively maintain an engaged and capable workforce of volunteers that can be activated during flood operations. Other Supporting Agencies may provide trained volunteers to the Combat Agency to support flood operations.

Volunteers, both formal and informal, play a critical role in emergency management across the full spectrum of prevention, preparation, response, and recovery.

The enabling strategies and actions below outline the engagement of volunteers from a state perspective. It is at the discretion of Local Government Councils to further articulate how volunteers are engaged within their own flood planning.

Strategy:	Actions to achieve the strategy (or outcome):
Provide and maintain a flexible volunteer workforce to support community resilience and respond to flood events.	<ol style="list-style-type: none"> 1. NSW SES and its volunteer workforce will adopt a strengths-based approach that recognises and complements existing community capabilities. ⁽¹⁾ 2. NSW SES will recruit, retain and train a diverse range for volunteers that reflect the community they serve.
Integration of operational considerations for spontaneous or informal volunteering into NSW SES operational planning.	<ol style="list-style-type: none"> 1. NSW SES may incorporate the engagement with and utilisation of spontaneous volunteers in emergency planning (i.e., Local Flood Emergency Sub Plans) and in Incident Action Plans. 2. NSW SES may undertake pre-planning to facilitate the management of spontaneous volunteers and community members during a flood. 3. NSW SES may undertake exercising and training for formal volunteers who incorporate and engage with spontaneous volunteers in disasters. 4. NSW SES will harness community connection with local NSW SES Units through community engagement to build trust and understanding before disasters, increasing the likelihood of community adherence to advice and messaging for spontaneous volunteering.
Improving community understanding of NSW SES's role in emergencies and expectations for safe and considered spontaneous volunteering.	<ol style="list-style-type: none"> 1. NSW SES, with support from other agencies, may develop and implement public information campaigns focussed on the capabilities of the community and how they can be harnessed through spontaneous volunteering in a safe and considered manner during large incidents. 2. NSW SES, with support from other agencies, may develop approaches to build the resilience and safety of the community, ensuring volunteering activities do not lead to further harm. 3. NSW SES, with support from other agencies, will encourage communities to be involved in disaster preparedness activities.

Response



5 Response

The response phase includes pre-impact, impact, and immediate post-impact response actions. Response involves taking appropriate actions to ensure the impacts of flooding on communities are minimised, this includes undertaking immediate relief for people affected by the flood.

In addition to managing floods in the Hawkesbury-Nepean Valley, the decision to implement this plan is also driven by the potential need to:

- Completely evacuate whole communities before mainstream flooding cuts evacuation routes (refer to Annex D – NSW SES Evacuation Arrangements).
- Undertake rescue operations where areas are not fully evacuated (refer to Annex E – NSW SES Flood Rescue Arrangements).
- Manage large scale resupply operations to some affected areas where full evacuation is not required (refer to Annex F – NSW SES Resupply Arrangements).

The following response strategies and actions generally follow this sequence of phases but there may be some overlap of actions between phases.

Flood response operations will begin when NSW SES receives:

- A Bureau of Meteorology (Bureau) Severe Weather Warning, Detailed Severe Thunderstorm Warning, or broad-based Severe Thunderstorm Warning.
- A Bureau Flood Watch or Flood Warning.
- Advice from the Bureau of potential flooding.
- Warnings for flash flood.
- A dam safety or dam failure alert.
- A flood forecast that has the potential to impact communities.
- Incidents relating to flooding.
- Information or intelligence indicates imminent or actual flood impacts to the community.

5.1 Concept of Operations

NSW SES is the responsible authority for the control in responding to the consequences of flooding on a community. Consistent with the 'All Hazard, All Agency', approach to emergency management in NSW, other agencies can assist at the request of the Combat Agency.

This concept of operations provides guidance for:

- The development of subordinate flood plans.
- The development of Incident Action Plans prepared by the Incident Management Team appointed to manage a particular flood event.

An Incident Action Plan developed for a particular event will contextualise this Concept of Operations to the prevailing and predicted conditions at the time. The Incident Action Plan will be shared with relevant stakeholders, as required.

5.1.1 Principles of Flood Operations

NSW SES is the Combat Agency for preparing for, responding to and undertaking the immediate relief within community for floods. Control of flood response will be at the lowest effective level and may be scaled to suit the incident.

Scientific modelling, engineering and local knowledge, including local Aboriginal knowledge, should, as far as possible, be used to assist in the management of flood operations.

If Zone (regional) and local resources are insufficient or likely to be exhausted, then additional resources may be requested by the Zone Duty Commander and sourced and deployed by the NSW SES State Duty Commander.

Resources from Supporting Agencies and Functional Areas may be requested as required.

Resources from interstate and international Supporting Agencies and Functional Areas may be requested through the State Emergency Operations Centre (SEOC), National Resource Sharing Centre (NRSC) or National Emergency Management Agency (NEMA) as required.

5.1.2 Operational Strategies

The strategic priorities of the NSW SES Incident Controller will direct the management of incidents and other flood related emergencies controlled by NSW SES. They underpin operational planning and decisions made when responding to an incident.

Refer to Annex E – NSW SES Flood Rescue Arrangements for further information on flood rescue arrangements for the Hawkesbury-Nepean Valley.

For riverine flooding in the Hawkesbury-Nepean Valley, NSW SES will:

- Establish control of the incident and the area of operation, including a Flood Rescue Area of Operations (FRAO). Once established, flood rescue responses within the FRAO are to be managed in accordance with the Incident Controller's priorities and direction and the established flood rescue coordination mechanisms.
- Provide timely, relevant, accurate and tailored information (including warnings) to the community regarding the potential impacts of a flood and what actions to undertake to support and encourage proactive measures.
- Evacuate people and domestic animals pre-emptively from dangerous or potentially dangerous places created by the flood hazard to safe locations away from the hazard.
- Rescue people and domestic animals from floods in accordance with the NSW State Rescue Policy including where evacuation operations have not been successfully completed.
- Coordinate the protection of property of residents, businesses and essential infrastructure at risk of flood damage where feasible.
- Resupply properties, towns and villages which have become isolated because of flooding to minimise disruption of the community.
- Undertake immediate relief and work with the Emergency Operations Centre (EOC) to undertake initial welfare and data collection.
- Manage the transition from the Combat Agency (NSW SES) to the recovery agency (NSW Reconstruction Authority).

The main strategies available in the response operation are:

- **Emergency Information and Warnings:** The provision of information and warnings to the community.
- **Progressive evacuation:** Dependent on the expected upper limit of flooding. Evacuation can take place by vehicle or as a last resort on foot along roads as floodwaters advance.
- **Partial evacuation:** Dependent on whether the expected upper limit of flooding cuts road evacuation routes for a sector, but the sector (e.g., flood island) will not be submerged beyond the point of sustainability. During a partial evacuation strategy consideration will need to be given to the sufficiency and availability of essential services to support the population that remains isolated, until road routes re-open.

- **Complete evacuation:** Evacuation may have to take place before isolation occurs, or in some cases, after isolation if it is not possible to provide adequate support to the community. Complete evacuation may be initiated for an area for one of the following reasons:
 - The predicted flood height may result in the area being completely submerged.
 - The predicted flood height will result in the area being flooded to such an extent the area is flooded beyond the point of sustainability (e.g., too few support services functioning to cope with the number of people left on the flood island).
 - Services such as water, electricity and sewerage are expected to be unavailable for a prolonged period.
 - There is a high level of uncertainty about the predicted upper level of flooding.
- **Resupply:** If there is a definite prediction that an area's road evacuation routes will be cut but the flood island or trapped perimeter will not be substantially inundated there may be no need to evacuate people. This will result in the need to maintain the isolated population by conducting a resupply operation. The coordination of resupply is the responsibility of NSW SES and is further detailed in *Section 5.1.10* of this plan.
- **Rescue:** A revised assessment of the expected upper limit of flooding may make it necessary to change to a rescue strategy. This may be the result of the temporary closure of a road evacuation route because of short term flooding, or permanent closure of a road evacuation route before the road evacuation of the required number of people can be completed. Community members who delay responding to emergency warnings may also need to be rescued.

5.1.3 Aviation Strategies

Within NSW SES, standardised procedures for requesting and utilising aircraft ensure clarity and efficiency in the deployment of aviation assets.

The main response strategies for NSW SES to manage aviation resources are:

- Embedding Air Operations Officers into the State AirDesk.
- Implementing the State AirDesk Policy and pre-positioning of aircraft for response operations:
 - The State AirDesk Policy permits access to a fleet of aircraft including call-when-needed (CWN) and contract aircraft. These aircraft can be pre-deployed for the protection of people and essential services.
 - The State AirDesk does not coordinate NSW Police Force (NSWPF) or NSW Ambulance aviation assets.
 - The State AirDesk will liaise with other agencies (such as NSWPF and NSW Ambulance) and work with Civil Aviation Authority regarding airspace management.
- Establishing a clear aviation structure outlining roles and responsibilities, including those within the Incident Management Team, to effectively execute this aviation strategy.
- Ensuring NSW SES aviation training aligns with the Australasian Fire and Emergency Services Authorities Council (AFAC) recommendations and industry standards. NSW SES aims for standardised training for all aviation-based roles to enhance operational proficiency across all levels.

5.1.4 Protection of Property

Property protection involves implementing emergency arrangements to safeguard property, infrastructure, and assets through actions like securing equipment, relocating stock, preparing for natural disasters, and activating backup systems to minimise damage and facilitate quick recovery. Property protection is undertaken where feasible and reasonable, given the potentially limited effectiveness of property protection efforts due to significant flood depths and hazards during severe floods within the Hawkesbury-Nepean Valley.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Coordinate tasks designed to protect property to minimise damage and potential injury. These activities will only be undertaken when it does not conflict with rescue priorities and where resources and capabilities are available.</p>	<ol style="list-style-type: none"> 1. NSW SES may coordinate Supporting Agencies and community volunteers (including informal volunteers) to undertake tasks including, but not limited to: <ol style="list-style-type: none"> a. Protection of properties through flood protection systems (e.g., sandbagging) to minimise entry of water into buildings. b. Raising or moving of household furniture, commercial stock/equipment, and agricultural stock. c. Relocation of the public from hazardous areas. d. Identification of public health risks. e. Limiting access to hazardous areas by the public until they are deemed safe. f. Identification of potential asbestos and other contamination. g. Undertaking structural and impact assessment to identify extent and significance of damage. h. Unblocking and limiting access to stormwater drains. i. Pumping water out of premises. j. Clearing debris that directly interferes with operation response or poses a direct threat to the public. k. When isolation occurs may assist with transporting patients with non-life-threatening medical conditions to personal appointments and to access medications, in consultation with the Health Services Functional Area. 2. NSW SES will work with the relevant authorities to ensure response operations detailed within this plan do not unnecessarily impact the natural environment.

5.1.5 Protection of Critical Infrastructure

Arrangements for the protection of local assets are outlined in NSW SES Regional and Local Flood Emergency Sub Plans. In addition, Regional and Local EMPLANS contain infrastructure inventories.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Minimise disruption to the community by ensuring protection of infrastructure and supply of essential transport, energy, telecommunication, and utility services (including water supply and wastewater management).</p>	<ol style="list-style-type: none"> 1. The Transport Services Functional Area will coordinate the provision of information about the assessment and restoration of transport network infrastructure. 2. The Energy and Utility Services Functional Area will coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).

	<ol style="list-style-type: none"> 3. The Telecommunications Services Functional Area will coordinate the assessment and restoration of telecommunications and the Public Safety Network (PSN). 4. The Engineering Services Functional Area will coordinate the assessment and restoration of critical public buildings and infrastructure. 5. Functional Areas and Local Government Councils will keep NSW SES informed of the status of utilities and infrastructure through the provision of Liaison Officers and written situational updates.
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Interruptions of electricity can have the following impacts:

- Communities can be without power for several days to months. For example, for flood levels exceeding 14.5m, all electricity supply west of the Hawkesbury River is likely to be shut off.
- During extreme flood events, electricity supply to wide parts of Western Sydney may also be interrupted for extended periods of time.
- Telecommunications services including mobile, landline, internet and data services including the PSN may be impacted.
 - Mobile base stations typically have 4–8-hour battery backup and if electricity mains power is not restored in that time, then the base stations dependent on that mains power will fail.
 - Telecommunications roadside cabinets will fail in the event of the loss of mains power or from being inundated.
- Transmission line circuits owned by Transgrid, Endeavour Energy or Sydney Trains (Transport for NSW) passing through flood affected areas may remain energised at lethal voltages to maintain electricity supplies for essential services and customers in the Sydney Metropolitan areas.

5.1.6 Protection and Pre-deployment of Essential Resources

Pre-deployment of essential resources refers to identifying, gathering, and staging critical supplies and personnel to strategic locations before the impacts of a hazard take effect.

This proactive step is crucial for a swift and effective emergency response, as it ensures that aid can be rapidly distributed to those in need, minimising the duration and impact of the event.

Strategy:	Actions to achieve the strategy (or outcome):
Where sufficient warning time is available and without additional risk to life, NSW SES will coordinate the protection and pre-deployment of essential resources required to respond to the impacts of flooding, such as rescue personnel equipment, critical communications equipment, boats, aircraft, fuel, food and earth-moving equipment for debris removal.	<ol style="list-style-type: none"> 1. NSW SES (and other agencies upon request of the Combat Agency) may pre-deploy available land resources from outside potential impact areas to staging areas, closer to impact areas. Impacts such as road closures may occur in different areas. 2. NSW SES may relocate resources from within the immediate potential impact area to outside the impact area if sufficient time is available. 3. NSW SES may coordinate the timing of protection and pre-deployment activities, to avoid potential conflict created by the removal of resources essential for warning and evacuation.

	<ol style="list-style-type: none"> 4. NSW SES will consider flight limitations from poor weather and available daylight as an influence over trigger points for aviation pre-deployment. 5. NSW SES will communicate relevant information to Functional Areas and Supporting Agencies to assist with their protection and pre-deployment activities.
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5.1.7 Evacuation Management

NSW SES is a trusted voice on preparedness and response actions. Public information is the primary response strategy for people impacted by flooding, with moving people and domestic animals away (evacuation) from imminent danger or threat, being the preferred action.

In some circumstances, warning and evacuation may need to be initiated immediately at the local level using local arrangements referenced within the Local EMPLAN (in addition to a Local Flood Emergency Sub Plan).

Strategy:	Actions to achieve the strategy (or outcome):
<p>NSW SES may evacuate people from dangerous or potentially dangerous places created by flood to safe locations away from the hazard.</p> <p>Evacuations may take place when there is a risk to public safety. Circumstances may include:</p> <ol style="list-style-type: none"> a. Evacuation of people when their homes or businesses are likely to flood. b. Evacuation of people who are unsuited to living in isolated circumstances, due to flood water closing access. c. Evacuation of people where essential energy and/or utility services are likely to fail. d. Evacuation of people where buildings have been made uninhabitable or are at risk from building collapse. e. Evacuation from areas that have been deemed hazardous due to the flood activity (such as near downed powerlines). 	<ol style="list-style-type: none"> 1. NSW SES Incident Controllers, Planning and Intelligence Officers will carefully consider the risks involved in conducting potential evacuations. 2. The NSW SES State Controller (or delegate) may warn communities to prepare for a possible evacuation, where circumstances allow such lead time. 3. The NSW SES State Controller (or delegate) may direct any necessary evacuations and provide information to the community about when and how to evacuate, if decided to do so. The Public Information Service Functional Area will assist NSW SES by amplifying messaging through established channels. 4. NSW SES may control the evacuation of affected communities and properties, if necessary. NSW SES determines the requirements and triggers for the evacuation of affected communities and properties and should consult with the Emergency Operations Controller (EOCON) for the management of the evacuation process. 5. NSW SES may work with Local Aboriginal Land Councils and Discrete Aboriginal Communities to determine appropriate triggers for potential evacuation of those affected communities and properties. 6. NSW SES will make all evacuation decisions as per NSW SES policy and procedures and consistent with NSW Evacuation Management Guidelines. Considerations for an evacuation include: <ol style="list-style-type: none"> a. Duration of evacuation or length of isolation. b. Characteristics of the community, including community members who may be restricted in their ability to evacuate.

Strategy:	Actions to achieve the strategy (or outcome):
	<ul style="list-style-type: none"> c. Early engagement with high-risk communities such as aged care facilities, schools and medical facilities. d. Number of people requiring evacuation. e. Availability of evacuation routes and transport which may be impacted by: <ul style="list-style-type: none"> i. Congestion of access roads due to evacuation traffic demand exceeding road capacity. ii. Flood damage to roads and bridges. f. Assigned Flood Emergency Response Classification of Communities (FERCC) for varying design floods and key trigger points, where known (as outlined in the Flood Risk Management Guideline). FERCCs can be used to: <ul style="list-style-type: none"> i. Describe communities with flood risk up to the PMF based on differences in isolation due to the potential for an area to become surrounded or inundated by floodwater. ii. Provide an indication for a likely consequence of flooding, including ramifications for an area to be isolated based on its potential to reach a PMF. iii. Support emergency management decision making at a community level, including assessment of resource availability to support a community. g. Time available for evacuation. h. Evacuee management requirements. i. Resources and delivery of evacuation information. j. The ability for existing levees or other flood protection works to fulfil their intended function. <p>7. NSW SES may request support to evacuation operations from other emergency services and Supporting Agencies using arrangements in the EMPLAN and supporting plans.</p> <p>8. NSW SES may utilise aircraft to facilitate evacuation. All aircraft must be operated in line with NSW SES policy and procedures.</p>
<p>NSW SES may consider shelter-in-place as a secondary strategy to evacuation where significant constraints to evacuation exist.</p> <p>Shelter-in-place may occur when there is a risk to public safety and other means of evacuation are not</p>	<ul style="list-style-type: none"> 1. The NSW SES Incident Controller will consider whether shelter-in-place is the most effective risk management strategy, depending on each community and flood incident. 2. NSW SES will ensure there is clear and regular communication with communities to understand the level of risk and triggers associated with shelter-in-

Strategy:	Actions to achieve the strategy (or outcome):
possible. Shelter-in-place is determined as a refuge occurring above the PMF level.	place. Engagement is critical to ensuring that the community is aware of actions to be taken before, during, and after shelter-in-place and the key triggers that require shelter-in-place.
Provide relief to communities and individuals affected by the impact of a flood.	<ol style="list-style-type: none"> 1. The Welfare Services Functional Area will establish evacuation centres when required to provide equitable access to psychological first aid, emergency accommodation and other forms of assistance to affected residents and travellers in accordance with the <u>Welfare Services Functional Area Supporting Plan</u> and the NSW Evacuation Management Guidelines. 2. The Education Services Functional Area will assist with the coordination of the evacuation of schools and the immediate welfare of students until returned to the appropriate carer. 3. NSW SES and other emergency service field teams who encounter residents whose dwellings are uninhabitable or who otherwise are likely to need assistance will notify the Incident Management Team, via their line of control, as soon as possible so that assistance can be provided to them by the Welfare Services Functional Area. 4. NSW SES may provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible. 5. The NSW SES State Controller (or delegate) will recommend to the State Emergency Operations Controller (SEOCN) if a Major Evacuation Centre is required. The need for such centres will be determined by the SEOCN in consultation with NSW SES and relevant Functional Areas. 6. The SEOCN or appointed Major Evacuation Centre Manager will manage Major Evacuation Centres where they are established. 7. The NSWPF with the assistance of Welfare Services Functional Area will control and coordinate Disaster Victim Registration.
Coordinate available and accessible health services for flood affected communities.	<ol style="list-style-type: none"> 1. The Health Services Functional Area coordinates the provision of health services during all stages of an emergency, in support of the Combat Agency. The Health Services Functional Area maintains business-as-usual health system operations, limits impact on the delivery of health services and provides health services and advice to impacted people.
Maintain the welfare of animals impacted by a flood.	<ol style="list-style-type: none"> 1. The Agriculture and Animal Services Functional Area will coordinate evacuation, emergency care of animals (excluding native wildlife), including support to primary

Strategy:	Actions to achieve the strategy (or outcome):
	<p>producers and animal owners and establishment of Animal Safe Places.</p> <ol style="list-style-type: none"> 2. The Agriculture and Animal Services Functional Area will coordinate the welfare of livestock and domestic animals (excluding native wildlife) including support to primary producers, animal holding establishments and animal owners. 3. The Agriculture and Animal Services Functional Area will provide for the welfare of animals impacted by flooding in accordance with services provided as outlined in the <u><i>Agriculture and Animal Services Functional Area Supporting Plan</i></u>. 4. The Environmental Services Functional Area will coordinate the support of native wildlife.

Note: Shelter-in-place considerations contained within this plan should not be used to determine development scale or density.

5.1.8 Search and Rescue

Search and Rescue is the process of locating and providing aid to people in distress or imminent danger.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Control and coordinate search and rescue of people and domestic animals (including companion and assistance animals) during and after flood hazard impact, including flood rescue arising from flooding and inundation.</p>	<ol style="list-style-type: none"> 1. NSWPF will control and coordinate all rescues outside the declared FRAO, as per the NSW State Rescue Policy. 2. NSW SES and/or Supporting Agencies will perform flood rescue of people and domestic animals when there has been no FRAO declared. 3. NSW SES and/or Supporting Agencies will respond with the appropriate resources to support the rescue of victims related to flood impact. 4. The NSW SES Incident Controller will establish a FRAO when the actual or imminent flood occurrence endangers or threatens to endanger the safety of persons or domestic animals and a significant and coordinated response is required. 5. NSW SES will control and coordinate all flood rescues within the declared FRAO, as per the NSW State Rescue Policy, NSW State Flood Plan and this plan. 6. NSW SES during a FRAO, may request other supporting emergency services to undertake flood rescues on behalf of NSW SES. <ol style="list-style-type: none"> a. Agencies must be trained and equipped to undertake flood rescue operations in accordance with the NSW State Rescue Policy requirements.

Strategy:	Actions to achieve the strategy (or outcome):
	<p>b. Supporting emergency services must supply information regarding rescues performed to NSW SES. Notification arrangements with the NSWPF are outlined in the NSW State Rescue Policy.</p> <p>7. NSW SES and Supporting Agencies tasked by NSW SES when a FRAO is declared will carefully assess the heightened risk to safety due to flood water velocity and depth and debris before undertaking any in-water or water-based activities.</p> <p>8. Supporting Agencies will ensure all personnel are appropriately trained for flood operational roles they are required to undertake as outlined in Appendix B.</p> <p>9. All agencies should ensure effective communications are always established.</p> <p>10. NSWPF will control all searches for persons missing with support from other agencies as requested.</p> <p>11. NSWPF will keep the NSW SES State Duty Commander, and the NSW SES Incident Controller informed of the progress of search operations and any requirement for rescue.</p> <p>12. NSW Ambulance will assess injured or medically unwell person/s to enable an assessment of the appropriate means of accessing and retrieving the person/s. If in imminent danger, the person/s should be removed and information of an appropriate meeting point with NSW Ambulance identified and communicated.</p> <p>13. Fire and Rescue NSW will control and coordinate urban search and rescue operations as per the EMPLAN.</p> <p>14. The SEOCON may activate the SEOC in support of urban search and rescue operations.</p> <p>15. All aircraft engaged by NSW SES for search and rescue operations must be approved by the State Air Desk or formally endorsed by a NSW Government agency as a suitable aviation rescue resource. Approved aircraft may include appropriately qualified assets from the Australian Defence Force or civilian contractors operating under Federal Government arrangements.</p> <p>16. The arrangements for search and rescue operations from the ocean/coastal waterways are detailed within the NSW State Tsunami Plan.</p>

5.1.9 Use of Information and Collection of Intelligence

Collecting and using intelligence is vital for understanding situations, informing decisions, and guiding actions across prevention, preparation, response, and recovery. This process involves gathering various data sources, from environmental factors to community needs, to build comprehensive situational awareness and create actionable insights through analysis and reporting.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Flood information is effectively collected, analysed, utilised, and communicated between NSW SES, the community, Supporting Agencies and Functional Areas before, during and post a flood.</p>	<ol style="list-style-type: none"> 1. All agencies will ensure information relating to specific incidents and the broader flood response is received by NSW SES and where able to is entered into the NSW SES Operational Management System (OMS) if tasked by NSW SES. 2. All Supporting Agencies and Functional Areas will accurately record and report information relevant to their activities and any real time flood information to the NSW SES State Duty Commander (for state level activities) or the NSW SES Incident Controller (for Zone and local level activities). This may be in the form of a combined EOC Report, or direct from agencies where an EOC has not been established. 3. NSW SES will share information relating to the consequences and impacts of flooding, response strategies, situational awareness and operational updates to Supporting Agencies and Functional Areas listed under this plan. 4. NSW SES and/or Spatial Services, Emergency Information Coordination Unit (EICU) will provide geospatial information to support response strategies and situational awareness. 5. NSW SES will record incidents received via Inter-CAD Electronic Messaging System (ICEMS) into the NSW SES OMS. 6. NSW SES will establish and operate an Intelligence Function within the Incident Management Team (incorporating situation and analysis, modelling and predictions, technical advice, airborne intelligence, and mapping) to coordinate the collection, collation, interpretation, mapping, actioning and dissemination of information. 7. Supporting Agencies and Functional Areas may provide trained staff for the Intelligence Function as required. 8. NSW SES will coordinate reconnaissance, mapping, damage assessments, intelligence validation and post flood evaluation. This may continue into the recovery phase. 9. NSW SES may request the Engineering Services Functional Area to assist with the gathering of flood intelligence including (but not limited to) maximum flood extents, peak flood heights, recording flood damage at key high velocity locations and preparation of After-Flood Report.
<p>Ensure flood intelligence is incorporated into operational decision-making.</p>	<ol style="list-style-type: none"> 1. 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.

5.1.10 Immediate Relief

NSW SES is responsible for immediate relief and commencing recovery operations (transition to recovery) of flood emergencies until control has been handed over to NSW Reconstruction Authority. This is to ensure a seamless transition from response to recovery.

Strategy:	Actions to achieve the strategy (or outcome):
Coordinate immediate relief for impacted communities.	<ol style="list-style-type: none"> 1. The NSW SES State Controller and Incident Controller will provide regular briefings to the relevant EOC. 2. NSW SES will attend initial meetings of a Recovery Committee to provide overview of the emergency response operation. 3. NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required. 4. NSW SES may direct Welfare Services Functional Area to provide initial welfare for evacuees where required 5. NSW SES and Supporting Agencies will assist with clean-up operations after floods where possible when resources and personnel permit. 6. Community members requiring psychological first aid may be referred to support services in accordance with the <i>Health Services Functional Area Supporting Plan</i> and the Welfare Services Functional Area Supporting Plan.
Coordinate resupply to towns, villages and properties isolated by flooding or the effects of flooding (e.g., infrastructure failure) to minimise disruption to the community.	<ol style="list-style-type: none"> 1. NSW SES will coordinate the resupply of isolated communities and/or properties, as per the NSW SES Resupply Flowchart (refer to Annex F – NSW SES Resupply Arrangements) and the designated resupply plan. 2. NSW SES will work with Aboriginal Affairs NSW and Local Aboriginal Land Councils to support development and delivery of culturally suitable services. 3. NSW SES will advise communities, businesses and retailers if flood predictions indicate that areas are likely to become isolated and indicative timeframes where possible. 4. NSW SES may request support from Functional Areas and EOC to resupply isolated communities. 5. NSW SES may collaborate with Functional Areas and EOC to determine the prioritisation of infrastructure repair.

5.2 Control and coordination

The EMPLAN identifies NSW SES as the Combat Agency for dealing with floods under the SERM Act.

5.2.1 Incident Control

Flood operations throughout the Hawkesbury-Nepean Valley will be under the control of the Incident Controller using arrangements under the NSW State Flood Plan, this plan, the Local Flood Emergency Sub Plans and the Incident Action Plan. The Incident Action plan will define the area of operation and area of interest under the control of the Incident Management Team.

Flood operations will be controlled using the Divisions and Sectors as outlined in Table 2 in Annex C – NSW SES Divisions, Sectors, Subsectors and Evacuation Strategy Selection Considerations.

Strategy	Actions to achieve the strategy (or outcome)
<p>Maintain effective control and coordination of flood operations across the Hawkesbury-Nepean Valley.</p>	<ol style="list-style-type: none"> 1. NSW SES will use the Australasian Inter-service Incident Management System (AIIMS) to manage the flood response. 2. NSW SES will control the flood response at the lowest effective level and will be scaled to suit the incident. 3. NSW SES State Controller (or delegate) or Deputy State Controller (or delegate) appoints Incident Controllers and establishes Incident Control Centres. 4. The NSW SES State Controller (or delegate) or Deputy State Controller (or delegate) determines one or more Areas of Operations to coordinate relevant Incident Controllers. 5. The Incident Controller, in consultation with participating supporting emergency services and Functional Areas, determines appropriate breakdown of an Incident into Divisions and/or Sectors in accordance with the principles of AIIMS. 6. NSW SES may request response units from other Emergency Services Organisations for tasks, areas or sectors, operating under overall NSW SES control. Note: Emergency Services Organisations maintain command of their own resources as per AIIMS. 7. NSW SES State Controller (or delegate) and Incident Controller (or delegate) will provide regular briefings to the relevant EOC. 8. Where possible, the EOC should be co-located with NSW SES Incident Control Centres for flood emergency response.
<p>Establish and maintain Incident Control Centres (ICCs) using endorsed control arrangements to effectively manage operational response.</p>	<ol style="list-style-type: none"> 1. NSW SES will establish and operate Incident Control Centres as required, based on the defined area of operation. 2. The NSW SES Incident Management Team(s): <ol style="list-style-type: none"> a. Controls resources from NSW SES and coordinate resources of supporting emergency services and Functional Areas.

Strategy	Actions to achieve the strategy (or outcome)
	<ul style="list-style-type: none"> b. Manages dispatched response to incidents received and ensure they are actioned in a timely manner. c. Undertakes response planning and determines future resourcing requirements. d. Coordinates information flow, including warnings, public information and social media.
Provide effective liaison between NSW SES and Supporting Agencies or Functional Areas in accordance with the EMPLAN.	<ol style="list-style-type: none"> 1. NSW SES will request Liaison Officers from Emergency Services Organisations (via established communication pathways) and Functional Areas (via the respective Functional Area Coordinator) to NSW SES Incident Control Centres as required. 2. NSW SES will provide Liaison Officers to the EOC where possible. 3. Where possible, the EOC should be co-located with NSW SES Incident Control Centres for flood emergency response. 4. The NSW SES State Controller and Incident Controller provides regular briefings to the relevant EOC.
Supporting Agencies contribute to Flood Emergency Operations via plans, supporting plans and Memorandums of Understanding (MOU).	<ol style="list-style-type: none"> 1. An EOC will be activated at either the request of NSW SES or as per requirements from the SERM Act. 2. Emergency Services Organisations, Functional Areas, and Supporting Agencies provide support as per arrangements in this plan and supporting plans.

5.3 Emergency information and warnings

Flood warning services are provided by the Bureau, with NSW SES augmenting the Bureau's predictions with additional information in accordance with the NSW State Flood Plan.

Refer to the NSW State Flood Plan *Section 5.3 Emergency Information and Warnings* for further information on the warning products provided by the Bureau.

Strategy:	Actions to achieve the strategy (or outcome):
Distribute timely, accurate, and effective warnings to Hawkesbury-Nepean Valley communities.	<ol style="list-style-type: none"> 1. The Incident Control Centre will coordinate the dissemination of flood information for the Hawkesbury-Nepean Valley, including the sectors in the Wollondilly and Liverpool LGAs that report to the NSW SES Penrith Unit during flood operations. 2. NSW SES Northern Zone will coordinate the dissemination of flood information for the sectors in the Central Coast LGA. 3. NSW SES will deliver flood warning information directly, when possible, in addition to the media.

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| | 4. The Standard Emergency Warning Signal (SEWS) may be used. |
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5.4 Informal volunteering

NSW SES follows the EMPLAN to guide and direct the agency on how to engage and use informal (spontaneous) volunteers during operations. This model is flexible and scalable, taking into consideration principles and operational factors such as the agency's capacity for coordinating spontaneous volunteering, the overall operational environment and the community needs.

Strategy:	Actions to achieve the strategy (or outcome):
Develop mutually beneficial partnerships with communities to enhance operational response when working with spontaneous volunteers.	<ol style="list-style-type: none"> 1. NSW SES will use a flexible and adaptable approach when engaging spontaneous volunteers, recognising the diversity of the community, operating environments, and the impact of flood incidents. 2. NSW SES will communicate clearly with spontaneous volunteers to build trust and recognise that cooperative partnership between the community and the official response will deliver the greatest impact to community. 3. NSW SES will implement a simple, scalable approach to engaging spontaneous volunteers to support Incident Controllers and volunteer coordinators to make informed, timely decisions during response operations. 4. NSW SES will embed research and evidence into best practice approaches to working in partnership with communities, including engaging local leaders to leverage their expertise and connections within their communities.

5.5 Inter-jurisdictional support and Commonwealth Assistance

NSW SES may request interstate assistance through the NRSC and/or Commonwealth assistance via the SEOC. Actions for requesting assistance are highlighted within the NSW State Flood Plan.

5.6 Impact assessment

NSW SES will maintain and operate a Flood Intelligence System. The Flood Intelligence System will be the primary means by which flood consequences can be pro-actively identified at a detailed level.

Reconnaissance, damage assessments and post flood evaluation will be coordinated by NSW SES, as early as possible and when it is safe to do so. Impact assessments are conducted to:

- Develop a holistic assessment of the actual impact of a flood and for the purpose of reviewing flood intelligence and emergency flood plans.
- Quantify the extent of damage and may also inform formal recovery processes including Disaster Recovery Funding Arrangements (DRFA) and Natural Disaster Declarations.

NSW SES will provide damage assessment information as early as possible following a flood to the relevant EOCON, EICU and NSW Reconstruction Authority. EICU will process, collate and distribute impact assessment data to relevant agencies. The impact assessment information can be used to inform recovery needs, future planning, and mitigation strategies.

5.7 Withdrawal from response

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 (transition to recovery). It is important to establish clear control, command and coordination strategies that oversee the transition to recovery.

5.7.1 Return

NSW SES arrangements for transition to recovery emphasise the need to commence activity early and share information with the relevant EOC and NSW Reconstruction Authority. NSW SES may request the EOC and/or Functional Areas to perform the immediate relief functions that are not part of NSW SES expertise.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Coordinate the safe return of communities to impacted areas by re-establishing access to properties, dwellings, and impact areas when immediate danger to life and property has passed.</p>	<ol style="list-style-type: none"> 1. NSW SES will determine when it is safe to progressively return in consultation with the relevant EOCON and State Emergency Recovery Controller (SERCON) and Supporting Agencies considering the ongoing risk to public safety. 2. NSW SES will specify the level of access to affected communities as the following: <ol style="list-style-type: none"> a. Not suitable for access. b. Limited access by emergency services and response agencies. c. Limited access by residents and/or business operators. d. Full access. 3. The NSW SES Incident Controller will issue an Advice Warning advising 'Reduced Threat: Return with Caution' or 'Monitor Conditions' when the immediate danger to life and property has passed. 4. NSW SES will coordinate the re-establishment of access and may utilise Supporting Agencies with the shortest lead time based on operational priorities. 5. Where directly notified of a hazard or requested by NSW SES: <ol style="list-style-type: none"> a. The Transport Services Functional Area will coordinate the assessment of any damage and the clearing of debris from the State Road network. b. Local Government Councils will coordinate the assessment of any damage and the subsequent clearance of debris from council managed road networks and public land, where appropriate.

Strategy:	Actions to achieve the strategy (or outcome):
	<ol style="list-style-type: none"> 6. The Engineering Services Functional Area may aid with the coordination of road access if requested by NSW SES. 7. NSWPF will coordinate traffic control activities, with support from the Transport Services Functional Area on the State Road network, support from councils on local and regional roads and with assistance from NSW SES. 8. FRNSW will coordinate the re-establishment of access to areas affected by hazardous materials once areas have been rendered safe as per the NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Sub Plan. 9. The Environmental Services Functional Area can aid with the re-establishment of access following a hazardous materials incident in accordance with the NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Sub Plan, the <u>NSW Disaster Waste Sub Plan</u> and the <u>Environmental Services Functional Area Supporting Plan</u>. 10. NSW SES will facilitate the return of evacuees to their homes as part of response operations when it is safe to do so.

5.7.2 End of Response Operations

NSW SES is responsible for declaring operations for flood are complete. A formal handover of responsibility to the lead recovery agency (NSW Reconstruction Authority) will occur in alignment with the requirements of the NSW Recovery Plan.

Strategy:	Response operations will conclude when the following conditions have been met:
<p>NSW SES and Supporting Agencies conclude response operations and demobilisation plans have been completed.</p>	<ol style="list-style-type: none"> 1. There is a reduced likelihood of additional flooding within the community and flood waters have receded. 2. Most of the responses to incidents related to the flood have been completed. 3. The need for warning and evacuation no longer exists. 4. There is no further likelihood of rescuing people or domestic animals and the FRAO has been stood down, as per the NSW State Rescue Policy. 5. Resupply operations to communities isolated due to flooding or the effect of flooding is no longer required or has transitioned from the response phase to the recovery phase. 6. Response to fire and hazardous material incidents have concluded (not including subsequent clean-up of contaminated sites).

	<p>7. All affected areas have had a ‘Reduced Threat: Return with Caution’ or ‘Monitor Conditions’ issued by NSW SES.</p> <p>8. The recovery agency and Supporting Agencies have been briefed that response operations have ceased.</p>
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Note: Full restoration of all utilities and transport routes may continue for some time beyond the end of Emergency Services Organisations’ response operations, depending on the scale and scope of the impacts of the flood.

5.7.3 Post Impact Actions

An After-Action Review is a learning tool used to help improve performance. By evaluating performance during and following incidents, NSW SES can identify strengths or positive performance that should be sustained and areas of improvement. Information collected will be used to guide the direction of capability enhancements for the service and to support decision making for future incidents.

Strategy:	Actions to achieve the strategy (or outcome):
Use learnings from the event to inform planning, recovery and future events.	<ol style="list-style-type: none"> 1. NSW SES may 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 may include other agencies such as the Bureau, the Welfare Services Functional Area, NSW Reconstruction Authority and Local Government Council representatives (including Local Aboriginal Land Councils). 2. NSW SES may conduct After Action Reviews at the conclusion of response activities for flood events. These will include internal and external stakeholders. The lessons identified will be disseminated and used to review and continuously improve arrangements, plans, systems and processes for planning, response and recovery activities in future events. 3. NSW SES will provide information and data throughout the emergency response to inform community recovery. A summary report will be developed at the conclusion of the response within an area. A response summary report will include the following: <ol style="list-style-type: none"> a. The emergency action plan in place at the conclusion of the response emphasising any continuing activities including community meetings/ engagement activities. b. Resources allocated to the emergency response and associated exit strategies. c. Details of any areas or situations with potential to re-escalate the emergency. d. A recommendation for the conclusion of NSW SES as lead response agency and handover to NSW

	<p>Reconstruction Authority as the lead recovery agency.</p> <p>e. Any actions that are incomplete or outstanding.</p> <p>4. NSW SES and EICU will provide impact assessment data and information obtained throughout the response phase which will further support the long-term recovery of communities.</p> <p>5. NSW SES may undertake/coordinate a comprehensive review of intelligence and plans following significant flood events.</p>
Participate in post flood data collection and analysis.	<p>1. NSW SES works with relevant stakeholders on post flood data collection and analysis including review of flood intelligence where necessary.</p>

5.7.4 Transition from Response Agency to Recovery Agency

Community recovery commences simultaneously with the response phase and continues after the response phase is complete and the area is deemed to be safe. Where possible, the transition from response to recovery should occur at the lowest effective level.

As per the NSW Recovery Plan, triggers for transitioning from the response phase into the recovery phase include:

- NSW SES and/or the EOCON has made a public announcement that the transition from response to recovery is completed (this process may be formally documented and recorded, depending on the severity of the event).
- A Recovery Coordinator has been appointed (if necessary and dependent on the scale of impact).
- There has been agreement between NSW SES and/or EOCON and relevant recovery agency, SERCON, and/or appointed Recovery Coordinator to accept the handover.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Arrangements for the transition from response operations to relief and recovery will be conducted by NSW SES, Supporting Agencies and Functional Areas, as outlined in the EMPLAN and further detailed in the NSW Recovery Plan.</p>	<p>1. NSW SES may undertake or direct relief activities, including “make safe” works to ensure that it is safe to commence the transition to formal recovery arrangements.</p> <p>2. NSW SES provides relevant operational documents and reports including damage assessment data to the SERCON, appointed Recovery Coordinator, NSW Reconstruction Authority or relevant recovery agency. Spatial data can be provided via the EICU.</p> <p>a. As the single coordination point, EICU processes, collates and distributes spatial impact assessment data to Supporting Agencies and Functional Areas to inform transition from response to recovery and immediate relief activities.</p> <p>3. NSW SES will provide information about continuing response activities (including relief), guidance on mitigation strategies and general advice and assistance, as requested.</p>

	4. NSW SES will provide appropriate representation at Local, Regional, or State Recovery Committees.
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Recovery

Recovery
Centre



6 Recovery

The arrangements for recovery operations in NSW are outlined in the EMPLAN and further described in the NSW Recovery Plan.

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 and continues after the response phase is complete and the area is deemed to be safe.

Further recovery principles and arrangements for the Hawkesbury-Nepean Valley are detailed in the Hawkesbury-Nepean Valley Recovery Strategy prepared by NSW Reconstruction Authority.

The recovery operations associated with floods of the severity for which this Hawkesbury-Nepean Flood Emergency Sub Plan have been written are likely to be of a long duration and highly complex.

6.1 NSW SES Recovery Role

NSW SES works in close coordination with other government and non-government agencies, such as NSW Reconstruction Authority, to ensure a community-centred approach to recovery.

Strategy:	Actions to achieve the strategy (or outcome):
Support recovery operations and established Recovery Committees.	<ol style="list-style-type: none"> 1. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the recovery phase. 2. 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. 3. The Recovery Committee will develop a Recovery Action Plan to support the needs of the community. 4. NSW SES will provide information to NSW Reconstruction Authority to support applications to Treasury for <u>Disaster Recovery Funding Arrangements 2018 (DRFA)</u>.

Logistics and Finance



7 Logistics and finance

NSW SES handles logistics and finance within emergency management through formal processes. These efforts are part of a comprehensive system for managing disasters, involving planning, prevention, response, and recovery across all hazards and agencies.

Logistics and financial arrangements are described in detail in the EMPLAN Part 10.

Strategy:	Actions to achieve the strategy (or outcome):
<p>Coordinate resources and logistics support to ensure operational effectiveness.</p>	<ol style="list-style-type: none"> 1. NSW SES may request resources and logistics support directly from a supporting emergency service or Functional Area. If it is likely that state resources will be exhausted or are insufficient for tasks, liaison with the SEOCON and/or NRSC will occur to determine the need for access to Interstate or Commonwealth assistance. In catastrophic event international assistance may be sought through the NEMA. 2. NSW SES may direct the booking of accommodation and travel arrangements for agencies providing logistics support. 3. NSW SES State Command Centre may deploy additional resources to NSW SES Units and other Supporting Agencies if resources are deemed insufficient or likely to be exhausted within the Area of Operations. Supporting Emergency Services Organisations will be placed under the control of NSW SES. 4. NSW SES may provide transport options to and from impact areas and staging areas for residents and essential workers that are isolated by flooding or the effects of flooding. 5. In the post-impact phase, NSW SES may provide consumable operational stores such as sandbags, tarpaulins, rope and plastic to other agencies and the community. 6. In the response phase, NSW SES may coordinate the acquisition and utilisation of major equipment such as cranes, elevated work platforms and heavy machinery, unless specifically authorised separately.
<p>Coordinate specialist logistics support.</p>	<ol style="list-style-type: none"> 1. NSW SES may engage professional arboriculture services to assist with damage response tasks in accordance with NSW SES procedures. 2. NSW SES may engage electricians to disable photovoltaic arrays, where damage inhibits effective response. 3. NSW SES may engage a contractor or other agency to conduct any other specialist support that is required to ensure an effective response.

Strategy:	Actions to achieve the strategy (or outcome):
	4. Engineering Services Functional Area may assist with the supply of goods and services as requested by NSW SES, and where required, in consultation with the Transport Services Functional Area.

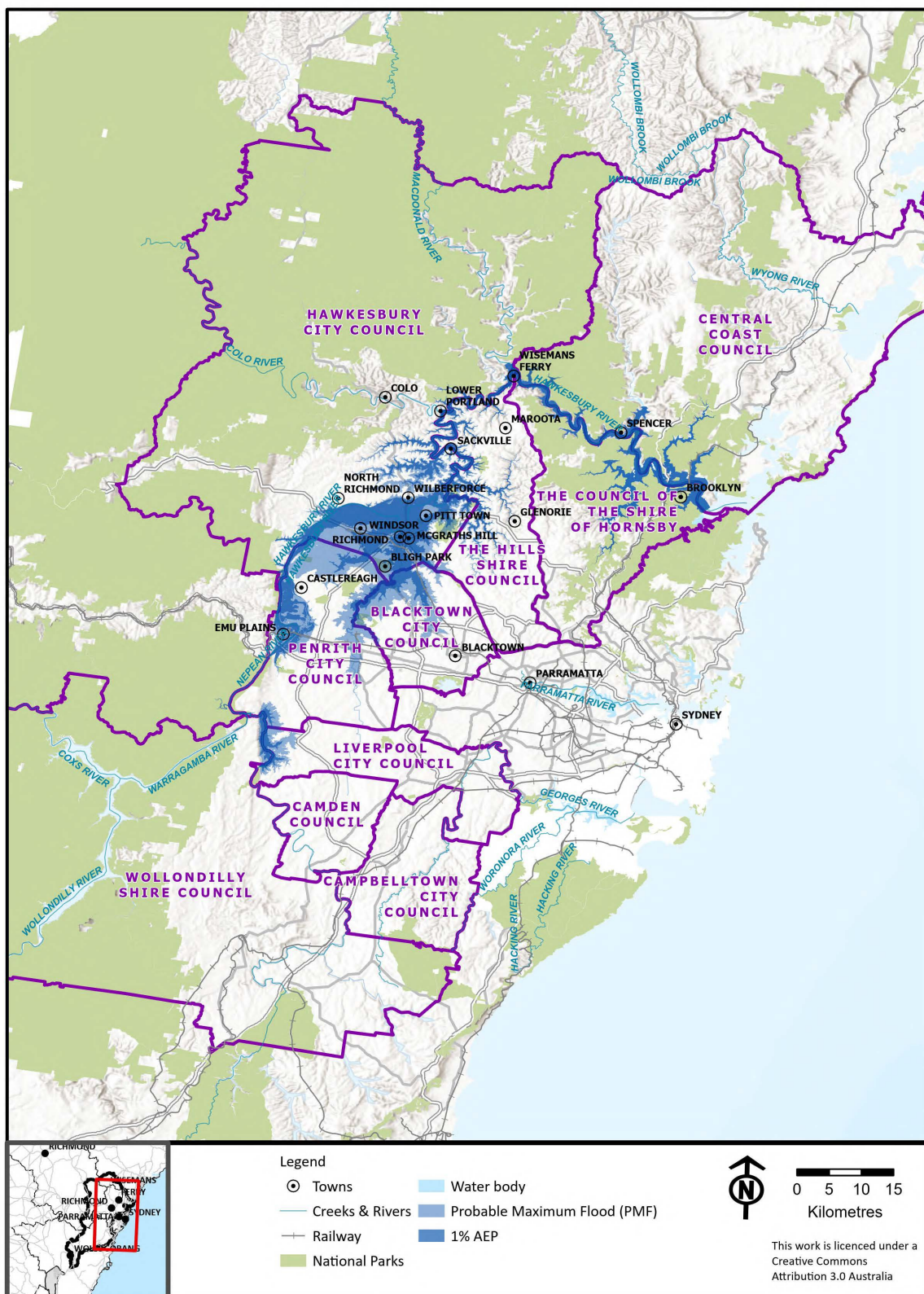
Appendices



8 Appendices

8.1 Appendix A – Map

Area covered by the Hawkesbury-Nepean Valley Flood Emergency Plan – Bents Basin to Brooklyn.



8.2 Appendix B – Roles and responsibilities

The following roles and responsibilities are in addition to the roles and responsibilities described in the EMPLAN and NSW State Flood Plan and relate to floods.

Agency/Functional Area	Roles and responsibilities
Aboriginal Affairs NSW	The roles and responsibilities for Aboriginal Affairs NSW are outlined in the NSW State Flood Plan.
Agriculture and Animal Services Functional Area	The roles and responsibilities for the Agriculture and Animal Services Functional Area are outlined in the <u><i>Agriculture and Animal Services Functional Area Supporting Plan</i></u> and NSW State Flood Plan.
Australian Government Bureau of Meteorology (Bureau)	The roles and responsibilities for the Australian Government Bureau of Meteorology are outlined in the NSW State Flood Plan.
Dams Safety NSW	The roles and responsibilities for Dams Safety NSW are outlined in the NSW State Flood Plan.
Declared Dam Owners	The roles and responsibilities for Declared Dams Owners are outlined in the NSW State Flood Plan.
Department of Climate Change, Energy, the Environment and Water – Conservation Programs, Heritage and Regulation Group (DCCEEW – CPHR)	The roles and responsibilities for the Department of Climate Change, Energy, the Environment and Water – Conservation Programs, Heritage and Regulation Group are outlined in the NSW State Flood Plan (referred to as DCCEEW - Biodiversity Conservation and Science Division).
Department of Climate Change, Energy, the Environment and Water – Water (DCCEEW – Water)	The roles and responsibilities for the Department of Climate Change, Energy, the Environment and Water – Water are outlined in the NSW State Flood Plan.
Department of Communities and Justice - Housing	The roles and responsibilities for the Department of Communities and Justice – Housing are outlined in the NSW State Flood Plan.
Department of Defence	Arrangements for Defence Assistance to the Civil Community are detailed within the EMPLAN.
Department of Planning, Housing, and Infrastructure	The roles and responsibilities for the Department of Planning, Housing, and Infrastructure are outlined in the NSW State Flood Plan.
Education Services Functional Area	The roles and responsibilities for the Education Services Functional Area are outlined in the <u><i>Education Services Functional Area Supporting Plan</i></u> and NSW State Flood Plan.
Energy and Utility Services Functional Area	The roles and responsibilities for the Energy and Utility Services Functional Area are outlined in the <u><i>NSW Energy and Utility Services</i></u>

Agency/Functional Area	Roles and responsibilities
	<i>Functional Area Supporting Plan (EUSPLAN)</i> and NSW State Flood Plan.
Engineering Services Functional Area	The roles and responsibilities for the Engineering Services Functional Area are outlined in the <i>NSW Engineering Services Functional Area Supporting Plan (EngPLAN)</i> and NSW State Flood Plan.
Environmental Services Functional Area	<p>The roles and responsibilities for the Environmental Services Functional Area are outlined in the <i>Environmental Services Functional Area Supporting Plan (EnviroPlan)</i> and NSW State Flood Plan.</p> <p>Additionally, the Environmental Services Functional Area has roles and responsibilities that are outlined in the <i>NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Sub Plan</i> and <i>NSW Disaster Waste Sub Plan</i>.</p>
Fire and Rescue NSW (FRNSW)	The roles and responsibilities for Fire and Rescue NSW are outlined in the NSW State Flood Plan.
Floodplain Management Australia (FMA)	The roles and responsibilities for Floodplain Management Australia are outlined in the NSW State Flood Plan.
Health Services Functional Area	The roles and responsibilities for the Health Services Functional Area are outlined in the <i>NSW Health Services Functional Area Supporting Plan (NSW HEALTHPLAN)</i> and NSW State Flood Plan.
Local Government Councils	<p>Prevention</p> <ul style="list-style-type: none"> • Manage flood risk in service areas as outlined in the Flood Risk Management Manual. Some Local Government Councils may own and operate flood warning gauges and networks. The agreed responsibilities of Local Government Councils are listed in NSW SES Local Flood Emergency Sub Plans. • Where there is flash flood risk, refer planning proposals to NSW SES. <p>Preparation</p> <ul style="list-style-type: none"> • Assist NSW SES in planning for floods within their respective local government boundaries. • Advise NSW SES of any proposed changes to roads and supporting infrastructure on the regional road evacuation routes. • Maintain a plant and equipment resources list for the council area. • Provide advice to the community about the size and type of trees and shrubs to be planted near homes and advice about existing trees that may be dangerous. • Contribute to community engagement and capacity building programs undertaken by NSW SES. <p>Response</p> <ul style="list-style-type: none"> • Ensure flooded premises are fit and safe for reoccupation and assess any need for repair or demolition. Recognising that Local

Agency/Functional Area	Roles and responsibilities
	<p>Government Councils have many other tasks to perform, State agencies support councils with resources, personnel and advice.</p> <ul style="list-style-type: none"> • Work with NSW SES and relevant stakeholders to collect flood related data during and after flood events. • Assist NSW SES with the dissemination of official warnings and related information. • At the request of the NSW SES Incident Controller, deploy personnel and resources for flood related activities. • Provide information on the status of critical infrastructure. • In the event of an evacuation, assist with making facilities available for domestic animals of evacuees in conjunction with the Agriculture and Animal Services Functional Area. • Subject to the availability of council resources, assist NSW SES with flood damage operations including: <ul style="list-style-type: none"> – The conduct of reconnaissance of at-risk areas to identify flood damage. – Traffic management on council managed roads. – Provision of assistance to NSW SES (plant, equipment, and personnel where able and requested). – Remove tree and other debris from council managed roads and council managed public land during flood damage clean-up operations in consultation with NSW SES. <p>Recovery</p> <ul style="list-style-type: none"> • Provide for the management of health hazards associated with flooding, including removing debris and waste. • Ensure premises are fit and safe for reoccupation and assess any need for demolition. If resources are unavailable, additional resources may be requested from NSW Public Works. • Conduct impact assessments.
Manly Hydraulics Laboratory (MHL)	The roles and responsibilities for Manly Hydraulic Laboratory are outlined in the NSW State Flood Plan.
Marine Rescue NSW (MRNSW)	The roles and responsibilities for Marine Rescue NSW are outlined in the NSW State Flood Plan.
Maritime Combat Agencies	The roles and responsibilities for the Marine Combat Agencies are outlined in the NSW State Flood Plan.
National Emergency Management Agency (NEMA)	The roles and responsibilities for the National Emergency Management Agency are outlined in the NSW State Flood Plan.
NSW Ambulance	The roles and responsibilities for NSW Ambulance are outlined in the <u><i>NSW Health Services Functional Area Supporting Plan (NSW HEALTHPLAN)</i></u> and NSW State Flood Plan.

Agency/Functional Area	Roles and responsibilities
NSW Food Authority	The roles and responsibilities for the NSW Food Authority are outlined in the <u>State Food Safety Emergency Plan</u> .
NSW National Parks and Wildlife Services (NPWS)	The roles and responsibilities for NSW National Parks and Wildlife Services are outlined in the NSW State Flood Plan.
NSW Police Force (NSWPF)	The roles and responsibilities for NSW Police Force are outlined in the NSW State Flood Plan.
NSW Reconstruction Authority (NSWRA)	The roles and responsibilities for NSW Reconstruction Authority are outlined in the <u>NSW Reconstruction Authority Act 2022</u> (NSW), the NSW Recovery Plan, EMPLAN and NSW State Flood Plan.
NSW Rural Fire Service (NSW RFS)	The roles and responsibilities for NSW Rural Fire Service are outlined in the NSW State Flood Plan.
Public Information Services Functional Area	The roles and responsibilities for the Public Information Services Functional Area are outlined in the <u>Public Information Services Functional Area Supporting Plan</u> and NSW State Flood Plan.
Spatial Services, Emergency Information Coordination Unit (EICU)	The roles and responsibilities for the Spatial Services, Emergency Information Coordination Unit Supporting Function are outlined in the EMPLAN and NSW State Flood Plan.
State Emergency Operations Centre (SEOC) / State Emergency Operations Controller (SEOCON)	<p>The roles and responsibilities for the SEOC/SEOCON are outlined in the NSW State Flood Plan.</p> <p>Roles and responsibilities in addition to the NSW State Flood Plan are:</p> <p>Response</p> <ul style="list-style-type: none"> • Activate the Public Inquiry and Information Centre. • Request the Energy and Utility Services Functional Area Coordinator to begin monitoring the impact of flooding on utilities and keep the NSW SES State Duty Commander advised. • Request the Transport Services Functional Area Coordinator to activate the Transport Services Functional Area Coordination Centre. • Request the Australian Government for assistance in large scale evacuations should State, community and commercial resources be exhausted. • Advise the Australian Government that further Defence assistance may be required. • Liaise with Defence on the status of the RAAF Base Richmond. • Co-ordinate the establishment of a Major Evacuation Centre where the scale and duration of the emergency are beyond the capability and capacity of the established local / regional evacuation centre arrangements in accordance with the relevant provisions of the Major Evacuation Centre Guideline (Annex D – NSW SES Evacuation Arrangements).

Agency/Functional Area	Roles and responsibilities
Surf Life Saving NSW (SLSNSW)	The roles and responsibilities for Surf Life Saving NSW are outlined in the NSW State Flood Plan.
Telecommunications Services Functional Area	Telecommunications Services Functional Area coordinates telecommunications carrier and Public Safety Network (PSN) support and resources during the emergency response and recovery operations in accordance with the <u>Telecommunications Services Functional Area Supporting Plan (TelcoPlan)</u> .
Transport Services Functional Area	<p>The roles and responsibilities for the Transport Services Functional Area are outlined in the <u>Transport Services Functional Area Supporting Plan</u> and NSW State Flood Plan.</p> <p>Roles and responsibilities in addition to these plans are:</p> <ul style="list-style-type: none"> • Coordinate the provision of information about the assessment and restoration of transport network infrastructure (refer to <i>Section 5.1.5</i>). • Accurately record and report information relevant to Transport activities and any real time flood information to the NSW SES State Duty Commander or the Incident Controller (refer to <i>Section 5.1.9</i>). • Provide trained staff for the Intelligence Function as required, including the option of Remotely Piloted Aircraft System (RPAS) pilots to assist with field observations where resources permit (refer to <i>Section 5.1.9</i>). • Coordinate the assessment of any damage and the clearing of debris from the State Road network (refer to <i>Section 5.7.1</i>).
VRA Rescue NSW (VRA)	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 the Welfare Services Functional Area are outlined in the <u>Welfare Services Functional Area Supporting Plan</u> and NSW State Flood Plan.
Western Sydney University – Hawkesbury	<p>Preparation</p> <ul style="list-style-type: none"> • Ensure that evacuation plans for the university have arrangements for flooding. <p>Response</p> <ul style="list-style-type: none"> • Liaise with NSW SES and arrange for the early release of students whose travel arrangements are likely to be disrupted by flooding and/or road closures (or where required, for students to be moved to a suitable location until normal university closing time).

8.3 Appendix C – Glossary

Readers should refer to EMPLAN Annexure 11 – Definitions. Additional terms not found in the EMPLAN are defined in the NSW State Plan Glossary.

8.4 Appendix D – Abbreviations

AFAC	Australasian Fire and Emergency Services Authorities Council
AIDR	Australian Institute for Disaster Resilience
AIIMS	Australasian Inter-service Incident Management System
Bureau	Australian Government Bureau of Meteorology
CALD	Culturally and linguistically diverse communities
CWN	Call-when-needed (aircraft)
DAP	Disaster Adaptation Plan(s)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCCEEW CPHR	Department of Climate Change, Energy, the Environment and Water - Conservation Programs, Heritage and Regulation Group
DCCEEW Water	Department of Climate Change, Energy, the Environment and Water - Water
DRFA	Disaster Recovery Funding Arrangements 2018
ECL	East Coast Low(s)
EICU	Spatial Services, Emergency Information Coordination Unit
EMPLAN	Emergency Management Plan(s)
EOC	Emergency Operations Centre(s)
EOCON	Emergency Operations Controller
FERCC	Flood Emergency Response Classification of Communities
FMA	Floodplain Management Australia
FRAO	Flood Rescue Area of Operations
FRNSW	Fire and Rescue NSW
GIS	Geospatial Intelligence System
ICEMS	Inter-CAD Electronic Messaging System
ILU	Interstate Liaison Unit
LGA	Local Government Area(s)
LGBTQIA+	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Asexual +

MHL	Manly Hydraulics Laboratory
MOU	Memorandum(s) of Understanding
MRNSW	Marine Rescue NSW
NEMA	National Emergency Management Agency
NPWS	NSW National Parks and Wildlife Service
NRSC	National Resource Sharing Centre
NSW	New South Wales
NSWPF	NSW Police Force
NSW RFS	NSW Rural Fire Service
NSW SES	NSW State Emergency Service
OMS	Operational Management System
PMF	Probable Maximum Flood
PSN	Public Safety Network
SDMP	State Disaster Mitigation Plan
SEMC	State Emergency Management Committee
SEOC	State Emergency Operations Centre
SEOCN	State Emergency Operations Controller
SERCON	State Emergency Recovery Controller
SERM Act	State Emergency and Rescue Management Act 1989 (NSW)
SES Act	State Emergency Service Act 1989 (NSW)
SLSNSW	Surf Life Saving NSW
VRA	VRA Rescue NSW

8.5 Appendix E – References

1. **Australian Institute for Disaster Resilience.** Community Engagement for Disaster Resilience. 2020.
2. **NSW Reconstruction Authority.** State Disaster Mitigation Plan 2024-2026. s.l. : NSW Reconstruction Authority, 2024.
3. **Adapt NSW.** Climate change impacts on storms and floods. Adapt NSW. [Online] 2023. <https://www.climatechange.environment.nsw.gov.au/storms-and-floods>.
4. **NSW Department of Planning and Environment.** Flood risk management manual. Parramatta : NSW Department of Planning and Environment, 2023.

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