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# **NEW SOUTH WALES STATE TSUNAMI PLAN**

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**A Sub Plan of the NSW State Emergency Management Plan (EMPLAN)**

**Endorsed by the State Emergency Management Committee**

**14 December 2023**

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Available for general use and distribution on the following websites –  
<https://www.nsw.gov.au/rescue-and-emergency-management/sub-plans/tsunami> or  
[www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

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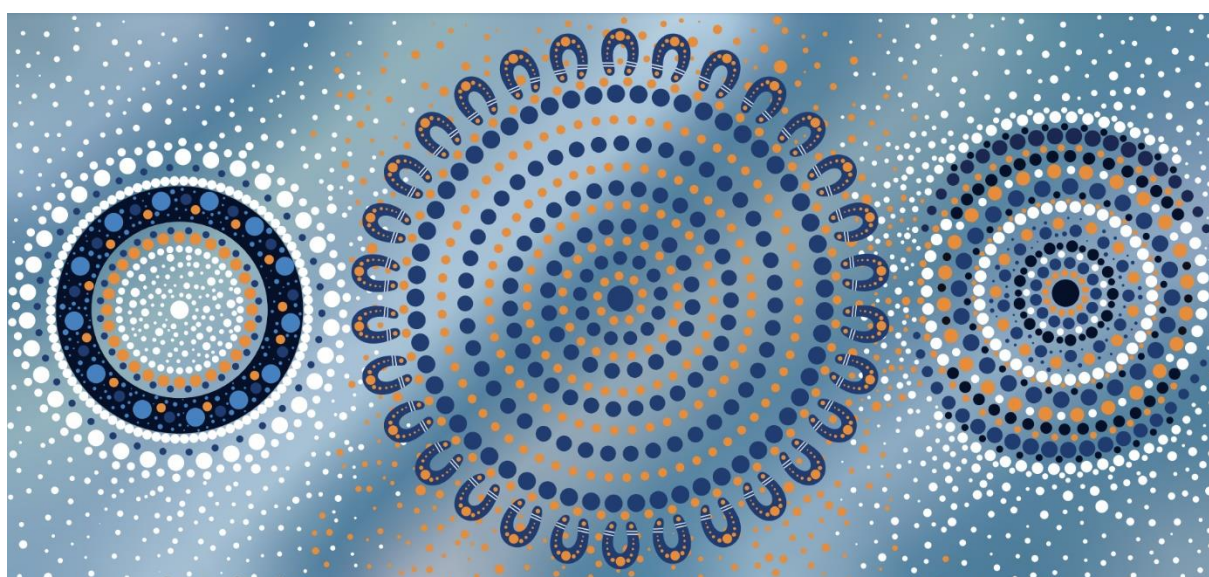
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# ACKNOWLEDGEMENTS

## ACKNOWLEDGEMENT OF COUNTRY

The New South Wales State Emergency Service (NSW SES) acknowledges and pays respect to the traditional owners and custodians of the land on which we work, volunteer and live. NSW SES recognises the diversity of Aboriginal and Torres Strait Islander peoples and their ongoing culture and continued connection to lands, waters, and the greater communities throughout Australia.

NSW SES appreciates the value of traditional knowledge held by Aboriginal and Torres Strait Islander peoples and its significance in understanding Australia's natural landscape to perform the emergency management procedures detailed in this Plan.



*'Journey After the Storm', 2016*  
Commissioned artwork Lani Balzan for the SES HQ

## STATEMENT ON CLIMATE CHANGE

NSW SES understands that the effects of climate change will continue to increase the severity of disasters including storm, flood, and tsunami disasters and its impacts on life and property in NSW.

It is understood that the changes to natural climate processes, oceanic climate systems, temperatures, and weather pressure systems will affect the extremity of Australia's weather systems and ocean hazards. (1) The increased risk of severe thunderstorms and storm surges (1), flash flooding and large flood events (1), and the possibility of higher levels of tsunami inundation from sea level rise (2) have potential to have a higher impact on communities when they occur.

NSW SES in the management of flood, storm, and tsunami risk must consider the effects of climate change in all phases of Emergency Management. The NSW SES has an important role in planning, preparing for, responding to, and initiating recovery from the environmental impacts of severe weather-related incidents, emergencies, and disasters.

# 1. OUTLINE AND SCOPE

## 1.1 PURPOSE

- 1.1.1 The purpose of this NSW Tsunami Emergency Sub Plan (NSW State Tsunami Plan) is to set out the state-wide multi-agency arrangements for the emergency management of tsunamis in NSW including Lord Howe Island.

## 1.2 AUTHORITY

- 1.2.1 This NSW State Tsunami Plan (this plan) is written and issued under the authority of the [State Emergency and Rescue Management Act 1989](#) (NSW) (SERM Act), the [State Emergency Service Act 1989](#) (NSW) (SES Act) and the NSW State Emergency Management Plan (EMPLAN).
- 1.2.2 This plan is a sub plan to the NSW State EMPLAN. It was approved by the NSW SES Commissioner and is endorsed by the NSW State Emergency Management Committee (SEMC).
- 1.2.3 NSW SES is identified in the NSW State EMPLAN and the SES Act as the lead (combat) agency for preparation for and response to tsunamis and for leading the coordinated response to the impact of tsunamis including the evacuation of affected communities and immediate relief if required.
- 1.2.4 Revision history:

Version	Date endorsed	Amendment notes
2024-1.1	January 2024	Administrative review
2023-1.0	December 2023	Substantive review
2018-1.0	September 2018	Substantive review
2015-1.0	March 2015	Substantive review
2008-1.0	December 2008	Substantive review
2005-1.0	December 2005	Substantive review

## 1.3 ACTIVATION

- 1.3.1 This plan does not require activation. The arrangements set out in this plan are always active.
- 1.3.2 The NSW State EMPLAN is always active in anticipation of the need to coordinate support and resources requested by combat agencies, including the NSW SES.

## 1.4 SCOPE

- 1.4.1 This plan sets out the state-wide emergency management arrangements for prevention, preparation, response, and initial recovery (including immediate relief) arrangements for tsunami activity at the strategic level. The plan accounts for all tsunami magnitudes and generation mechanisms.
- 1.4.2 In this plan, a 'tsunami' is defined as a series of ocean waves with very long wavelengths (typically hundreds of kilometres) caused by large-scale

disturbances of the ocean, such as earthquakes, landslide, volcanic eruptions, explosions, or meteorites.

- 1.4.3 The arrangements for the emergency management of flooding (for riverine and flash) are detailed within the NSW State Flood Plan.
- 1.4.4 The arrangements for the emergency management of storm activity (including coastal erosion caused by storm activity) are detailed within the NSW State Storm Plan.
- 1.4.5 This plan recognises that agencies have responsibilities during emergencies allocated under the NSW State EMPLAN or other sub or supporting plans to the NSW State EMPLAN. This plan does not duplicate those responsibilities or roles but does refer to them.

## **1.5 GOALS**

- 1.5.1 The primary goals in relation to emergency management for the NSW SES as the combat agency for tsunamis are:
  - a. Protection and preservation of life.
  - b. Enhance the community's capability to make safer decisions by implementing effective warning systems and enabling accurate and timely two-way communications between agencies and communities.
  - c. Coordination of effective tsunami focused activities across the prevention, preparation, response, and initial recovery (including immediate relief) stages.
  - d. Decisions made in all phases of emergency management consider the safety and well-being of the emergency service members and the broader community to assist in longer term recovery of the built environment and social impact of tsunami disasters.
- 1.5.2 Due to the potential for very short warning times and large-scale impacts of a tsunami, the following secondary goals are identified as being achievable only when time and resources permit within the response phase:
  - a. Identify emergency services assets that may need to be prepositioned or relocated.
  - b. Management of waterways and marine infrastructure.
  - c. Protection of property including critical infrastructure, community assets, and residential property.
  - d. Protection of the environment and conservation values considering the cultural, biodiversity and social values of the environment.

## **1.6 KEY PRINCIPLES**

- 1.6.1 Protection and preservation of life (including the lives of responders and the community) is the highest priority.
- 1.6.2 Working to prevent, prepare for, respond to, and recover from the impacts of tsunamis is the shared responsibility (3) of agencies and the community.

- 1.6.3 Embrace interoperability between agencies and the community to better prepare for, respond to, and recover from tsunami incidents and campaigns.
- 1.6.4 The establishment and operation of warning systems ensuring information is provided to community in an effective and timely manner.
- 1.6.5 Evacuation is the main response strategy utilised by NSW SES when people are impacted by tsunami events.

## **1.7 ROLES AND RESPONSIBILITIES**

- 1.7.1 General responsibilities of emergency service organisations and Functional Areas are set out in the NSW State EMPLAN.
- 1.7.2 Specific roles and responsibilities for agencies, Functional Areas, and organisations in relation to tsunamis are detailed in this plan and Appendix D.
- 1.7.3 Local arrangements may be made by local NSW SES Units in cooperation with the Local Emergency Management Committee (LEMC) and supporting agencies. These arrangements should align to the requirements outlined in this plan.
- 1.7.4 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:
  - a. NSW SES State Controller, NSW Deputy State Controller or NSW SES State Duty Commander (for state level responsibilities); or
  - b. NSW SES Incident Controller (for local level responsibilities during response operations); or
  - c. NSW SES Zone, Local and/or Unit Commander (for local level responsibilities outside of response operations).

## **1.8 PLAN MAINTENANCE AND REVIEW**

- 1.8.1 The NSW SES Commissioner (or delegate) will maintain the currency of this plan by:
  - a. Ensuring that all supporting emergency services and Functional Areas, organisations and officers named in this plan are made aware of their roles and responsibilities.
  - b. Conducting a minimum of one exercise every five years or within two years of the plan being reviewed.
  - c. Reviewing the contents of the plan:
    - After tsunami operations including recommendations from After Action Reviews, reports, or inquiries.
    - After changes in the knowledge of tsunami risk affecting NSW.
    - When changes to land use strategic plans and policies increase the population at risk.
    - When there are changes which alter agreed plan arrangements.
    - When new data and information is available that is material to this plan.

- When there are changes to the machinery of government that impact this plan.
  - As determined by the NSW SES Commissioner.
- d. Reviewing this plan will occur at a minimum every five years.

## 1.9 SUPPLEMENTARY DOCUMENTS

1.9.1 Supplementary and supporting material of the NSW State Tsunami Plan is maintained on the NSW SES website at: <https://www.ses.nsw.gov.au/about-us/flood-storm-and-tsunami-plans/>. This material includes:

- Tsunami Hazard and Risk in NSW
- Tsunami Warning Arrangements

1.9.2 Further information on tsunami hazard and warning is located on the following websites:

- Australian Institute for Disaster Resilience (AIDR) <https://knowledge.aidr.org.au/resources/tsunami-planning-handbook/>
- Joint Australian Tsunami Warning Centre (JATWC) <http://www.bom.gov.au/tsunami/>
- NSW SES website <https://www.ses.nsw.gov.au/disaster-tabs-header/tsunami/>
- NSW SES Warnings page <https://www.ses.nsw.gov.au/about-us/our-warnings/>
- International Tsunami Information Centre (ITIC) <http://itic.ioc-unesco.org/> - UNSECO/IOC Tsunami Ready Programme

## 1.10 LINKAGES

1.10.1 This plan reflects current legislation, the arrangements in the NSW State EMPLAN, the strategic direction for emergency management in NSW and the accepted state practice for emergency management. The NSW State EMPLAN arrangements have not been repeated unless necessary to ensure context and readability.

1.10.2 In addition, the following Acts and Regulations may apply to managing tsunamis:

- [\*Environmental Planning and Assessment Act 1979 No 203 - NSW Legislation\*](#)
- [\*NSW Reconstruction Authority Act 2022 No 80 - NSW Legislation\*](#)
- [\*State Environmental Planning Policy \(Transport and Infrastructure\) 2021 - NSW Legislation\*](#)
- [\*State Environmental Planning Policy \(Resilience and Hazards\) 2021 - NSW Legislation\*](#)
- [\*Coastal Management Act 2016 No 20 - NSW Legislation\*](#)

1.10.3 Furthermore, the following plans and policies may be relevant to this Sub Plan and should be considered concurrently:

- [\*2017 State Level Emergency Risk Assessment\*](#)



- [Flood Risk Management Manual 2023](#)
- Other Sub Plans and Supporting Plans available at [Rescue and emergency management](#)

## **1.11 ASSUMPTIONS**

1.11.1 This plan is based on the following assumptions:

- a. 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 enough resources to fulfil their role.

## **1.12 AUDIENCE**

1.12.1 The audience for this plan is the NSW Government, Local Government/Councils (for Lord Howe Island, this is the Lord Howe Island Board), and agencies within the emergency management sector, including non-government organisations (NGO), businesses, and community groups with a significant role in emergency management.

1.12.2 Although the wider community is not the primary audience, making the plan readily available on online platforms will support community and stakeholder engagement in emergency risk management. This plan is readily available on various government agency websites.

## 2. OVERVIEW OF NSW TSUNAMI HAZARD AND RISK

### 2.1 THE TSUNAMI THREAT

2.1.1 The 2017 NSW State Level Emergency Risk Assessment (SLERA) classifies a tsunami as a priority hazard that poses a significant risk to the State.

2.1.2 A tsunami could impact the entire NSW coast or only some parts of it. A large tsunami impacting the entire NSW coast would directly threaten between 250,000 and 1.5 million people, depending on tsunami magnitude, time of day and season. Tsunami warnings issued by the Australian Government Bureau of Meteorology (Bureau) on behalf of the JATWC are categorised into three threat levels:

- **No Threat:** A seismic or non-seismic source has been detected however it has not generated a tsunami, or the tsunami poses no threat to Australia.
- **Marine and immediate foreshore threat:** Warning of potentially dangerous rips, waves and strong ocean currents in the marine environment and the possibility of only some localised overflow onto the immediate foreshore.
- **Land inundation threat:** Warning for low-lying coastal areas of major land inundation, flooding, dangerous rips, waves, and strong ocean currents.

### 2.2 CAUSES OF TSUNAMIS

2.2.1 Tsunamis may be caused by any one or combination of the following:

- a. Vertical movement of the sea floor because of a large earthquake.
- b. Submarine or coastal volcanic eruptions.
- c. Meteor impacts.
- d. Coastal landslides and slumps, either land-based or submarine.
- e. Rapid changes in barometric pressure such as moving storm fronts; these are known as meteotsunamis.
- f. Any other major disturbances to ocean water columns that may cause tsunamis.

2.2.2 Tsunamis can be classified as either local, regional, or distant, depending on the distance of generation from the coastline:

- a. **Local tsunamis** are generated close to the coast. Time between generation and arrival can be around 20 minutes for submarine landslides, or as little as 5 minutes for coastal landslides. Hence it is unlikely that areas at the initial point of impact would receive any effective warning other than environmental signals, such as strong ground shaking or drawdown at the coastline.
- b. **Regional tsunamis** are generated within the southwest Pacific. Potential sources are in subduction zones along the Indian-Australian and Pacific tectonic plate boundary. This boundary runs through Macquarie Island, New Zealand, Tonga, Vanuatu, Papua New Guinea, the Solomon Islands and the

Kermadec Islands (1000 km northeast of Auckland). From these locations, travel time to the NSW coast is in the order of 2 hours to several hours.

c. **Distant tsunamis** are generated by subduction zone boundaries as far away as North America, South America and Asia or divergent boundaries located between Australia and Antarctica. Travel time to the NSW coast is in the order of several hours to days.

2.2.3 Over fifty incidents of tsunamis have been recorded in Australia’s written history, although many have been too small to produce noticeable effects (4). At least 7 marine-threat tsunamis originating from earthquakes and 1 from a volcanic source have impacted NSW since 2007. These include earthquake-sourced tsunamis occurring in the Solomon Islands (2007), Puysegur (2009), Chile (2010), Japan (2011), New Hebrides (2021), Kermadec (2021), New Hebrides (2023), and a volcano-sourced tsunami occurring in Tonga (2022) (5).

2.2.4 The most recent land-threat tsunami occurring in NSW was recorded at Lord Howe Island in January 2022 from a tsunami generated from a volcanic eruption in Tonga. A notable tsunami impact on the NSW coast also occurred in Eden in 1960. The maximum run-up for this tsunami was 1.71m at Eden which was generated from the Chilean earthquake (6). Resulting damage was limited primarily to vessels and moorings, as well as the local oyster industry which suffered some losses.

2.2.5 Geological studies (7) also suggest that tsunamis have impacted along the NSW coast with the oldest event dated 105,000 years ago and reported to have been generated by submarine sediment slides off Lanai, Hawaii. The six youngest paleo-tsunami events all occurred during the Holocene (10,000 years ago).

2.2.6 The following table lists tsunami travel times for 5 modelled sites in NSW, comparing a possible event (200 Average Recurrence Interval or ARI) with a very rare event (10000 ARI).

**Table 1. Tsunami travel times for 5 modelled sites in NSW (8)**

Average Recurrence Interval (ARI)	Tsunami Source	Tsunami Travel Time (hours:mins)				
		Site				
		Lake Macquarie	Manly	Botany Bay	Wollongong	Merimbula
200	New Hebrides	03:50	03:54	03:56	04:14	04:18
200	Puysegur	02:40	02:38	02:34	02:31	02:27
200	South Chile	14:04	14:02	14:00	13:57	13:41
10000	New Hebrides	03:40	03:43	03:46	03:52	04:09
10000	Puysegur	02:28	02:26	02:26	02:25	02:17

## 2.3 CONSEQUENCES OF A TSUNAMI

2.3.1 Destruction from a tsunami is the direct result of inundation, currents, waves, erosion, and debris impact on coastal structures. Flotation and drag forces can move buildings and over-turn vehicles. Tsunami associated wave forces can demolish buildings. Considerable damage is also caused by debris, including

boats, up-rooted vegetation, structural materials, and vehicles that are swept along by the force of the water. Even a small tsunami can generate currents strong enough to cause damage to boats and associated facilities. Destructive waves may continue for several hours, and several days may pass before the sea returns to its normal state.

2.3.2 The consequences of a tsunami can include:

- a. Loss of life, often by drowning.
- b. Inundation – damaging property, farmland, infrastructure, and roads (leading to a need for evacuation, property protection and/or rescue).
- c. Property damage or destruction (including vessels, buildings, and vehicles).
- d. Infrastructure damage, particularly marinas, moorings, ports, and coastal infrastructure such as beach access, but also land-based infrastructure leading to loss of services and transport access - such as airports, roads, bridges, downed power and telecommunications infrastructure, water, and sewerage.
- e. Isolation of properties and/or 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).
- f. Coastal erosion (including beaches and associated dunal systems) which may result in high unstable (near vertical) erosion escarpments and loss of sand that might lead to the undermining of infrastructure, building collapse or the trapping of persons.
- g. Economic losses (for example impacts to maritime industries, local businesses, infrastructure loss, tourism, and agricultural damages).
- h. Environmental losses, particularly in the coastal zone and the marine environment (for example impacts to water quality, soil erosion, animal habitat, cultural heritage, and generation of waste that is potentially hazardous).
- i. Indirect effects such as disruption to community activities and ongoing psychological issues. The broader community can be affected by infrastructure damage, disruption of essential services and disruption to transport and shipping routes.

## 3. PREVENTION

### 3.1 INTRODUCTION

- 3.1.1 Guided by various land use planning legislation and policies, NSW SES works with agencies and the community to inform and influence the consideration of the risks arising from floods, storms, and tsunamis to assist them in building their own resilience and reducing their risk.

### 3.2 TSUNAMI MITIGATION

- 3.2.1 Whilst it is not possible to prevent tsunamis from occurring, actions to mitigate risk to life, reduce property damage, and improve the resilience of infrastructure and assets to the impacts of tsunami events can be undertaken. Prevention and mitigation strategies for tsunamis include land and marine use planning, building codes and seawall and coastal infrastructure construction. These mitigation strategies are not currently adopted in NSW.
- 3.2.2 **Strategy:** NSW SES works with consent authorities, public authorities, public infrastructure and service utility organisations, and the community to manage or reduce the impact on private and public assets and improve resilience to tsunami events.

**Actions:**

- a. Public infrastructure and service utility organisations manage the risks to their assets from tsunami events to reduce or avoid potential damage and improve resilience of their assets to the impact of tsunamis.
- b. NSW SES and other relevant authorities participate in the review of relevant building codes such as the review of the National Construction Code and raise awareness of the need to implement suitable codes that reduce potential tsunami damage to buildings.
- c. NSW SES provides strategic input on land use planning matters that have or will create significant risk to life and/or property due to the impact of tsunamis.
- d. NSW SES contributes to national and state legislation reviews, policies and guidelines dealing with tsunamis.
- e. NSW SES provides coordinated and consistent emergency management advice to consent authorities, public authorities, public infrastructure, and service utility organisations in relation to the impact of tsunamis to inform measures to reduce the risk for existing and proposed development and infrastructure.

## 4. PREPARATION

### 4.1 INTRODUCTION

- 4.1.1 Preparation includes arrangements or plans to deal with an emergency or the effects of an emergency.
- 4.1.2 It also includes working with communities to assist them to understand their risk and through the provision of information have the knowledge to make the best decision for themselves and their family.
- 4.1.3 Preparation is undertaken by:
- a. Agencies and organisations which have responsibilities before, during and/or in the recovery from a tsunami.
  - b. Communities, businesses, and households that are likely to be impacted by the effects of a tsunami.

### 4.2 TSUNAMI EMERGENCY PLANNING

- 4.2.1 **Strategy:** NSW SES develop, review, and maintain the NSW State Tsunami Plan and associated Emergency Plans.

**Actions:**

- a. Review and maintain the NSW State Tsunami Plan.
  - b. Develop and review NSW SES Regional and Local Tsunami Emergency Sub Plans as required:
    - If roles and responsibilities change at these levels.
    - If the tsunami hazard is deemed to be location specific, for example, at Lord Howe Island.
  - c. Develop and maintain complementary and local level arrangements within NSW SES, for specific tsunami risk areas, as required.
  - d. Review Sub Plans as per Section 1.8.
- 4.2.2 Further tsunami research will inform future Tsunami Emergency Sub Plans.
- 4.2.3 **Strategy:** Local Government/Councils develop and implement Coastal Management Programs, Coastal Zone Management Plans and Coastal Zone Emergency Action Sub Plans.

**Actions:**

- a. Local Government /Councils develop and implement Coastal Management Programs and Coastal Zone Management Plans in accordance with the requirements of the *Coastal Management Act 2016* and *Chapter 2 Coastal management of the State Environmental Planning Policy (Resilience and Hazards) 2021*.
- b. Local Government /Councils develop and implement Coastal Zone Emergency Action Sub Plans in accordance with the requirements of the *Coastal Management Act 2016* and *Chapter 2 Coastal management of the State*

*Environmental Planning Policy (Resilience and Hazards) 2021*. These plans outline the roles and responsibilities of public authorities (including NSW SES) in emergencies including preceding or during periods of beach erosion or cliff instability.

- c. Local Government/Councils consult with NSW SES in the development of council emergency arrangements including Coastal Zone Emergency Action Sub Plans to ensure compatibility with the NSW State Tsunami Plan.

### 4.3 TSUNAMI INTELLIGENCE DEVELOPMENT

- 4.3.1 **Strategy:** NSW SES develop and maintain a Tsunami Intelligence System to identify tsunami behaviour, its impact on the community and required response actions.

**Actions:**

- a. Gather and assess tsunami information for a range of tsunami types and severities.
- b. Collect, collate, and assess information on the characteristics of communities at risk.
- c. Collect, collate, and assess information about the potential effects of tsunamis on communities at risk.
- d. Share tsunami intelligence information with supporting agencies.
- e. Invest and/or support research and development of information, technology and systems which may improve the tsunami intelligence system and data gathering.
- f. Be the primary point of contact in NSW for emergency risk management related tsunami research, modelling, and planning.

### 4.4 DEVELOPMENT OF WARNING SYSTEMS

- 4.4.1 The official tsunami warning centre for Australia is the Joint Australian Tsunami Warning Centre (JATWC) operated by the Bureau and Geoscience Australia. The JATWC forms part of the Australian Tsunami Warning System (ATWS) which is a national collaboration between the Bureau, Geoscience Australia, the National Emergency Management Agency (NEMA) and relevant State and Territory Emergency Service Agencies.
- 4.4.2 The Australian Tsunami Advisory Group (ATAG) is a reference group of the Australian-New Zealand Emergency Management Committee (ANZEMC), which deals with national tsunami issues, including the implementation of the ATWS, and coordination of programs relating to tsunami capability development, promoting research, information knowledge management and education in Australia.
- 4.4.3 **Strategy:** Develop, maintain, and prepare systems for the provision of tsunami warnings and associated warning services.

**Actions:**

- a. The Bureau will provide warning services in line with the [Intergovernmental Agreement on the Provision of Bureau of Meteorology Hazard Services to the States and Territories](#).
- b. All levels of government work in partnership to develop and maintain warning infrastructure.
- c. NSW SES develops and maintains warning and information products by:
  - Utilising intelligence data.
  - Developing warning and information products.
  - Providing warning and information products in line with the Australian Warning System (AWS).
  - Continuously reviewing warning and tsunami information products.
  - Consulting with affected communities, the Bureau, JATWC, ATAG and other key stakeholders to obtain feedback on existing and future warning products.
  - Participating in the development of public information and warning systems.

## 4.5 BRIEFING, TRAINING, AND EXERCISING

- 4.5.1 **Strategy:** Ensure NSW SES, supporting agencies, Functional Areas, and the community are prepared for and familiar with the strategies and arrangements within the NSW State Tsunami Plan and supporting documents.

**Actions:**

- a. NSW SES will consult stakeholders throughout the development and review of plans.
- b. NSW SES will inform stakeholders of content changes after revisions.
- c. NSW SES will train their members and those of other agencies (as requested) for their expected tsunami operation roles to ensure operational readiness.
- d. NSW SES will regularly brief stakeholders and exercise the arrangements contained in the NSW State Tsunami Plan.
- e. NSW SES will conduct evaluations and reviews following all large-scale exercises to identify areas of positive performance and areas for improvement. These will include all stakeholders. The outcomes will be disseminated and used to review and continuously improve arrangements, plans, systems, and processes.
- f. NSW SES will conduct activities to engage and educate the community about the arrangements contained in the NSW State Tsunami Plan.
- g. NSW SES will ensure their facilities and resources are maintained and operationally ready.
- h. NSW SES will maintain and review this plan's supporting documents with supporting agencies and Functional Areas in line with the review schedule and requirements of this plan.



- i. Supporting agencies will ensure all personnel are appropriately trained for tsunami operational roles they are required to undertake as outlined in Appendix D.

## 4.6 COMMUNITIES' RESILIENCE TO TSUNAMIS

- 4.6.1 **Strategy:** NSW SES will collaborate with the community to plan and prepare for tsunami impacts and any resultant risks to life and property.

**Actions:**

- a. NSW SES will partner with and engage communities early and often to improve understanding and management of the risks associated with tsunamis. This can be achieved through strategies based on policy, guidance, and resources from NSW Government, NSW SES, and other sources, for example, community organisations.
- b. NSW SES will collaborate with communities (including Discrete Aboriginal Communities) when developing tsunami information, intelligence, warnings, preparedness, and response information. The following considerations should be made when collaborating with these stakeholders:
  - Disaster risk information is accessible and considers communication capabilities, to deliver actionable disaster risk data and information.
  - Locally led and owned disaster risk reduction efforts are enabled by NSW SES with clear governance pathways for pursuing disaster risk reduction projects.
  - Community expectations are managed to plan and prepare for hazards i.e., where community members will not be able to influence a decision, participation is not appropriate, and communities should be made aware as to why this is the case.
- c. NSW SES will work in partnership with other emergency service agencies, NSW Government, Local Government/ Councils, the Bureau, and community networks. NSW SES will implement a range of tailored and inclusive programs, activities, and initiatives designed to enhance community capability, knowledge, and skills.
- d. The community should contact the NSW SES on 132 500 to report incidences and request assistance following the impact of a tsunami.

- 4.6.2 **Strategy:** NSW SES will collaborate with the community to understand the needs of individuals who may experience a higher risk of harm during tsunamis due to additional susceptibilities.

**Actions:**

- a. NSW SES will ensure the effectiveness of information that is being shared with individuals experiencing additional susceptibilities to tsunami risk and find alternative means of sharing information to meet these individual needs.
- b. NSW SES will work with community organisations to understand where greater risk to harm during disaster exists and how these risks can be reduced.

4.6.3 **Strategy:** NSW SES provides and maintains a flexible volunteer workforce to support community resilience. The NSW SES and its volunteer workforce will adopt a strengths-based (3) approach that recognises and compliments existing community capabilities.

**Actions:**

- a. NSW SES ensures ongoing recruitment and training of a diverse range of volunteers.
- b. NSW SES ensures pre-planning to facilitate the management of spontaneous volunteers and community members during a tsunami.

## 5. RESPONSE

### 5.1 INTRODUCTION

5.1.1 Tsunami response operations will begin:

- a. On receipt by NSW SES of a Tsunami Watch or Warning from the JATWC indicating a threat to NSW.
- b. On advice from the Bureau to the NSW SES.
- c. After reports of a large earthquake on or near the NSW coast.
- d. After the impact of a locally generated tsunami.
- e. When unusual ocean behaviour indicative of an imminent tsunami is observed.
- f. When information processes or intelligence indicates imminent or actual tsunami impacts to the community.
- g. When any other evidence leads to the possibility that a tsunami may impact on the NSW coast.

5.1.2 The response phase includes pre-impact, impact, and immediate post-impact response actions.

### 5.2 PHASES OF RESPONSE OPERATIONS

5.2.1 Key factors which will determine the extent of any tsunami response operation are tsunami magnitude, time of day, season, warning time and areas likely to be affected.

5.2.2 The response operation consists of the following phases:

- a. **Pre-impact Phase** - This phase begins when a *Tsunami Watch* or *Tsunami Warning* is issued. Depending on the distance of the tsunami source there may be no time or up to a day for response operations such as warnings, evacuation, and protection of essential infrastructure.
- b. **Impact Phase** - This phase is characterised by the impact of a series of separate waves and likely to last several hours but may last for an extended period depending on the source of the tsunami. Operations during this phase may be limited due to safety considerations of emergency services.
- c. **Immediate Post-Impact Phase** - This phase will commence upon the issue of a *Tsunami Warning Cancellation* indicating that the destructive potential of the tsunami has ceased in both the marine and land environment.

5.2.3 The following response strategies and actions, for Sections 5.3 – 5.14, generally follow this sequence of phases but there may be some overlap of actions between phases.

## 5.3 INCIDENT MANAGEMENT ARRANGEMENTS

5.3.1 **Strategy:** NSW SES will maintain effective control of tsunami operations across NSW, regardless of the severity of the warning.

**Actions:**

- a. The NSW SES will use the Australasian Inter-service Incident Management System (AIIMS) to manage the tsunami response.
- b. Control of tsunami response will be at the lowest effective level and will be scaled to suit the incident.
- c. The NSW SES State Controller (or delegate) or Deputy State Controller (or delegate) will appoint Incident Controllers and establish Incident Control Centres.
- d. The NSW State Controller (or delegate) or Deputy State Controller (or delegate) will determine one or more Areas of Operations to either coordinate relevant Incident Controllers, or to manage Incident at a higher level.
- e. The Incident Controller, in consultation with participating supporting emergency services and Functional Areas will determine appropriate breakdown of an Area of Operations into Divisions and/or Sectors in accordance with the principles of AIIMS.
- f. NSW SES may request response units from other emergency services to accept responsibility for tasks, areas, or sectors, operating under overall NSW SES control, accept tasking direct from the NSW SES Incident Controller or operate under control of the NSW SES for tasking purposes.
- g. Where possible, Emergency Operations Centres (EOC) to be co-located with NSW SES Incident Control Centres for tsunami emergency response.

5.3.2 **Strategy:** NSW SES maintain a State Operations Centre and a State Command Centre.

**Actions:**

- a. NSW SES will operate a 24/7 State Operations Centre to:
  - Enable the public to contact the NSW SES on 132 500 to request assistance associated with the impact of a tsunami.
  - Undertake dispatch of resources based on incident location and severity.
  - Coordinate information, providing intelligence products to Incident Management Teams and other agencies.
  - Coordinate and conduct weather and operational briefings at a minimum of once per week.
  - Undertake proactive operational planning, interagency liaison, and the provision of warnings as required.
  - Support the State AirDesk with the provision of personnel to focus on aviation needs and requirements.

- Maintain operational readiness of the State Command Centre to ensure capability and capacity to respond.
  - Request assistance from other agencies as required.
- b. The NSW SES State Command Centre will:
- Strategically plan for and coordinate multiple Areas of Operations, enabling interoperability with other agencies and synergy between Areas of Operations, state boundaries and/or jurisdictional areas.
  - Conduct strategic resource management.
  - Provide support to Incident Management Teams with operational information management and intelligence products, as well as a conduit to those information feeder agencies. Conduct state level advocacy and reporting, and exchange situational awareness and information with supporting agencies, state and federal government, and other key stakeholders.
  - Establish communications between agencies through embedding of Liaison Officers, scheduling meetings or implementing other agreed methodologies.
  - Undertake the provision of warnings through NSW SES Warning Systems.
- 5.3.3 **Strategy:** NSW SES establishes and maintains Incident Control Centres using endorsed control arrangements to effectively manage operational response.
- Actions:**
- a. NSW SES will operate Incident Control Centres as required and based on the defined area of operation.
- b. The NSW SES Incident Control Centre(s) will (but will be not limited to):
- Control resources from NSW SES and coordinate resources of supporting emergency services and Functional Areas.
  - Manage dispatched response to incidents received and ensure they are actioned in a timely manner.
  - Undertake response planning and determine future resourcing requirements.
  - Coordinate information flow, including warnings, public information, and social media.
- 5.3.4 **Strategy:** NSW SES provides effective liaison between NSW SES and supporting agencies or Functional Areas in accordance with the NSW State EMPLAN.
- Actions:**
- a. Supporting emergency services and Functional Areas will provide Liaison Officers to NSW SES Incident Control Centres, NSW SES State Operations and/or Command Centre and/or EOC as required.
- b. NSW SES will provide Liaison Officers to EOC as required.
- c. The NSW SES State Controller, Deputy State Controller or State Duty Commander will ensure consultation with the State Emergency Operations Controller (SEOCN) and State Emergency Operations Centre (SEOC) is ongoing throughout response operations.

- d. Where possible EOC to be co-located with NSW SES Incident Control Centres for tsunami emergency response.
- e. NSW SES will be prepared to support the State Crisis Centre if it is activated for a major and significant tsunami crisis.

5.3.5 **Strategy:** Supporting agencies contribute to Tsunami Emergency Operations via plans, supporting plans, and Memorandums of Understanding (MOU).

**Actions:**

- a. An EOC will be activated at either the request of the NSW SES or as per requirements from the SERM Act.
- b. Emergency services, Functional Areas and supporting organisations provide support as per arrangements in this plan and supporting plans.
- c. Local Government Councils activate Coastal Zone Emergency Action Sub Plans as required, in addition to requirements listed in this plan.

5.3.6 **Strategy:** NSW SES coordinates resources and logistics support to ensure operational effectiveness.

**Actions:**

- a. 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 SEOC and/or National Resourcing Sharing Centre (NRSC) will occur to determine the need for access to Interstate or Commonwealth assistance. In a catastrophic event international assistance may be sought through NEMA.
- b. Wherever possible, supporting organisations are to provide their own logistics support in consultation with NSW SES.
- c. NSW SES may deploy additional resources to NSW SES Units and other supporting agencies if resources are deemed insufficient or likely to be exhausted within the operational area of command. Supporting emergency service agencies may be placed under the operational control of NSW SES Units for tasking purposes.
- d. In the post-impact phase, NSW SES will provide consumable operational stores such as sandbags, tarpaulins, rope, and plastic.
- e. In the post-impact phase, NSW SES will coordinate the acquisition and utilisation of major equipment such as cranes, elevated work platforms and heavy machinery, unless specifically authorised separately.
- f. NSW SES will develop and manage an interstate liaison unit when required.

5.3.7 **Strategy:** NSW SES may coordinate specialist logistics support.

**Actions:**

- a. NSW SES may engage professional arboriculture services to assist with damage response tasks in accordance with NSW SES procedures.
- b. NSW SES may engage electricians to disable photovoltaic arrays, where damage inhibits effective response.

- c. NSW SES may engage a contractor or other agency to conduct any other specialist support that is required to ensure an effective response.
- d. Engineering Services Functional Area may assist with the supply of goods and services as requested by the NSW SES, and where required, in consultation with the Transport Services Functional Area.

## 5.4 USE OF INFORMATION AND COLLECTION OF INTELLIGENCE

5.4.1 **Strategy:** NSW SES ensures tsunami information is effectively collected, analysed, utilised, and communicated to supporting agencies and Functional Areas during and post a tsunami.

**Actions:**

- a. Information relating to specific incidents and the broader tsunami response must be entered into the NSW SES Operational Management System (OMS) – Beacon and/or Incident Management Gateway.
- b. Information relating to the consequences and impacts of tsunami, response strategies, situational awareness and operational updates will be shared by NSW SES to supporting agencies and Functional Areas listed under this plan.
- c. Geospatial information to support response strategies and situational awareness will be provided by NSW SES Geospatial Intelligence and may be provided by Spatial Services Emergency Information Coordination Unit (Department of Customer Service).
- d. All supporting agencies and Functional Areas will accurately record and report information relevant to their activities and any real time tsunami 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.
- e. Incidents received via Inter-CAD Electronic Messaging System (ICEMS) are to be recorded into the NSW SES OMS – Beacon.
- f. NSW SES may establish and operate a Joint Intelligence Unit (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.
- g. Supporting agencies and Functional Areas will provide trained staff for the Joint Intelligence Unit as required.
- h. Reconnaissance, mapping, damage assessments, intelligence validation and post tsunami evaluation will be coordinated by NSW SES. This will occur post impact and continue into the recovery phase.

5.4.2 **Strategy:** NSW SES ensures tsunami intelligence is incorporated into operational decision-making.

**Action:**

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

## 5.5 PROVISION OF INFORMATION AND WARNINGS TO THE COMMUNITY

5.5.1 JATWC issues public warning products through the Bureau in consultation with NSW SES, before and during an earthquake / tsunami event, which may include:

- **National No Threat Bulletin** – to advise the earthquake has been assessed and no tsunami threat exists.
- **National or State / Territory Watch** – to advise that a tsunami threat may exist.
- **State / Territory Warning** – to advise that a tsunami threat does exist, what the level of threat is and the recommended action.
- **National Warning Summary** – to provide a summary of the status of tsunami warnings nationally.
- **Event Summary** – to provide summary information that can be used in post-event analysis.

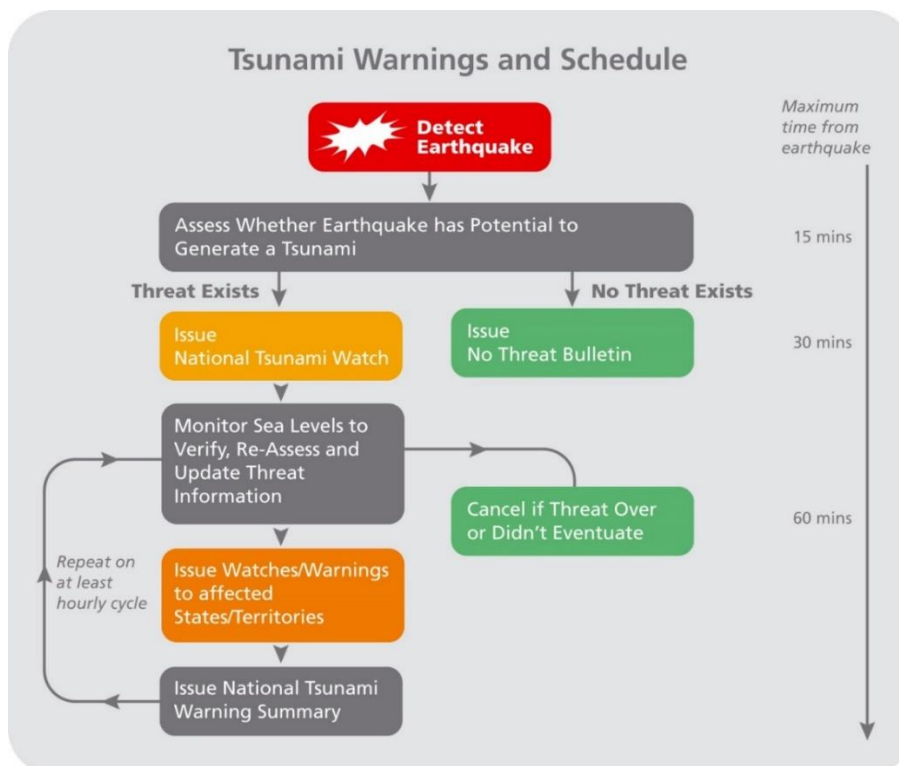
5.5.2 State / Territory warnings are further categorised into two threat levels:

- Marine and immediate foreshore threat
- Land inundation threat

5.5.3 **Strategy:** Distribute timely and accurate warnings to the community.

### Actions:



- a. The Bureau issues JATWC Watches, Warnings and Bulletins for earthquake / tsunami events according to the following schedule:



Graphic: JATWC



- b. The Bureau disseminates all JATWC Watches, Warnings and Bulletins directly to the media and all emergency services. These products are available at [www.bom.gov.au/tsunami](http://www.bom.gov.au/tsunami).
- c. The Pacific Tsunami Warning Centre (PTWC) also issue advice regarding potential Regional and Distant tsunamis in the Pacific Ocean. This advice can be found at <https://tsunami.gov/>. The JATWC Tsunami warning products are however regarded as the authoritative source of tsunami information for NSW.
- d. Tsunami Warnings for NSW disseminated by the Bureau are intended to cover the entire NSW coast and will include only general instructions and safety advice (provided by NSW SES) in a pre-agreed format. Separate warnings are also issued for Lord Howe Island.
- e. NSW SES will issue the following NSW SES Warnings aligning to the AWS:

AWS Warning Level		Action Statements
	Advice	Stay Informed Reduced Threat: Return with Caution Monitor Conditions
	Emergency Warning	Avoid The Area Evacuate Now/Before[time]

**Note:** There will be no “Watch and Act” warning issued by NSW SES for Tsunami.

- f. The NSW SES Emergency Warning products will incorporate warnings from JATWC products, expected consequences, including possible local effects, actions required, and community response advice as follows:

**Marine and Immediate Foreshore Threat:**

- Get out of the water and move away from beaches, coastal rock platforms and the water frontage of harbours, coastal streams, and lakes.
- Boats in harbours, estuaries and in shallow coastal water should return to shore. Secure your boat and move away from the waterfront.
- Vessels already out to sea should stay offshore in water at least 25 metres deep until further advised.
- Obey all signs about road, beach and foreshore closures, and instructions from emergency services.
- Check that your neighbours are aware of this advice.

**Land Inundation Threat (in addition to advice above):**

- Go immediately to high ground at least ten metres (10m) above sea level or, in the case of beaches, coastal rock platforms and the water frontage of harbours, coastal streams, and lakes move one kilometre (1km) away, or

in the case of coastal estuaries and rivers move a further ten kilometres (10kms) upstream from the open coast.

- If you are unable to reach high ground, take shelter in an upper storey of a sturdy brick or concrete building.
  - Take only essential items that you can carry including important papers, family photographs and medical needs.
  - Gather your pet(s) for safe travel.
  - Walk to safety, if possible, to avoid traffic jams.
  - If you have a Home or Business Emergency Plan, refer to it now.
- g. NSW SES provides alerts and delivers tsunami information to affected communities using a combination of public information. NSW SES disseminates warnings through some of the following methods where resources are available:
- NSW SES Website
  - HazardWatch
  - Hazards Near Me NSW App
  - Doorknocking (if warning time permits)
  - Emergency Alert
  - Social Media
  - Community Meetings
  - Broadcast media
  - Distribution lists (direct to media outlets and stakeholders)
  - Mobile and fixed public address systems
  - Low flying aircraft equipped with public address systems, dependent on weather, availability, and suitable risk assessment
  - Marine Rescue Vessel public address systems
  - Surf Life Saving NSW Coastal Radio Network
  - Public marine radio channels (i.e., VHF)
  - Marine Satellite phone
  - Telephony (including Auto dial systems)
  - Standard Emergency Warning Signal
  - Variable message signs
  - Community notices in identified hubs
- h. NSW SES may request supporting agencies redistribute NSW SES warnings, alerts, and information.

- i. Marine Rescue NSW (MRNSW) broadcasts Bureau and NSW SES warnings to boaters in the NSW marine radio network (public marine radio channels i.e., VHF with remote link to bases outside impact areas).
- j. The Australian Maritime Safety Authority (AMSA) will disseminate official warnings and related information to commercial shipping in Australian and international waters.
- k. A Joint Media Information Centre may be formed and coordinated by the NSW SES.

## 5.6 PROTECTION AND PRE-DEPLOYMENT OF ESSENTIAL RESOURCES

5.6.1 **Strategy:** Where sufficient warning time is available, without additional risk to life, NSW SES will coordinate the protection or pre-deployment of essential resources required to respond to the impacts of tsunamis, such as rescue equipment, critical communications equipment, boats, aircraft, fuel, food, and earth-moving equipment for debris removal.

**Actions:**

- a. Pre-deploy available land resources from outside potential impact areas to staging areas, closer to impact areas. Consideration should be given to the possibility that the path of water egress after tsunami inundation may not be the same as the path of water ingress during tsunami inundation. So impacts such as road closures may occur in different areas as water recedes.
- b. Relocate land resources from within the immediate potential impact area to outside the impact area if sufficient time is available.
- c. Secure marine resources in the immediate area, or if possible, relocate outside the potential impact area, if sufficient time is available.
- d. NSW SES will coordinate the timing of protection and pre-deployment activities, to avoid potential conflict created by the removal of resources essential for warning and evacuation.

## 5.7 MANAGEMENT OF WATERWAYS

5.7.1 **Strategy:** On receipt of a Tsunami Warning (Marine or Land Threat), relocate or secure vessels to minimise the potential for tsunami damage.

**Actions:**

- a. Port Authority of NSW or AMSA will advise vessels within their jurisdictions, which are in or close to deep water, to remain in or move to deep water until advised that it is safe to enter ports and harbours.
- b. When sufficient warning time is available, Port Authority of NSW will coordinate the movement of ocean capable vessels from port limits to deep water offshore. Such vessels will be prioritised by risk posed to the nearby port facilities and population and their potential to aid during rescue and recovery phases.

- c. If vessels in shallow water are unable to move to deep water, Port Authority of NSW will instruct commercial vessels under their jurisdiction to secure their vessels.
- d. Marine Rescue NSW and Transport for NSW – Maritime will provide advice to recreational vessels which is in line with the community response advice provided in JATWC warnings.
- e. Access to moored vessels to secure them may be allowed up until emergency warnings come into force.
- f. When insufficient warning time is available, access will not be allowed to waterways to remove boats.

## **5.8 EVACUATION MANAGEMENT AND WELFARE**

- 5.8.1 NSW SES has released mapping showing evacuation areas in the event of a land-threat tsunami. This can be found on the NSW SES website at <https://www.ses.nsw.gov.au/resources-folder/tsunami-evacuation-map/>
- 5.8.2 It is not currently possible to predict the extent of flood impacts which would be caused by any predicted tsunami. Therefore, evacuation must be applied to broad areas if land inundation is anticipated. Attenuation rules based on research and modelling, as well as conservative yet viable community messaging, means that an area 1 kilometre from the coast and below 10 metres above mean sea level will require evacuation. Evacuation may also include areas up to 10 kilometres upstream in coastal estuaries and rivers. Evacuation centres should be located outside these areas, on high ground away from the coast.
- 5.8.3 Most homes and small buildings are not designed to withstand tsunami impact and therefore should not be used as a refuge. However, if evacuation is no longer safe or possible, the upper floors of rigid multi-story buildings may provide refuge. This should not be relied upon as a response strategy.
- 5.8.4 In some circumstances, warning and evacuation may need to be initiated immediately at the local level using local arrangements and Consequence Management Guides referenced within the Local EMPLAN:
  - a. If a strong earthquake is felt in a coastal area i.e., ground shaking lasting 20 seconds or longer, or unusual ocean behaviour indicative of tsunami is observed, such as a noticeable rise or retreat of coastal waters.
  - b. Local tsunamis can also be produced by submarine or coastal landslides for which there will be no warning time for communities immediately adjacent to the landslide. Some warning time (around 20 minutes) may be available for communities north and south of the initial point of impact.
- 5.8.5 Evacuation by foot may be the only means possible for the following reasons:
  - a. A large earthquake has occurred locally, causing damage to roads and bridges.
  - b. Roads are congested due to evacuation traffic demand exceeding road capacity.
- 5.8.6 Further consideration must be given to the following community members who may be restricted in their ability to evacuate quickly:

- a. Persons with mobility difficulties – consider appropriate messaging of emergency warnings, evacuation routes, and evacuation methods that meet their mobility needs e.g., on foot, by bus, emergency, or private vehicle, etc.
- b. Persons with culturally and linguistically diverse backgrounds (CALD) – consider appropriate translation and messaging of emergency warnings, evacuation routes and evacuation methods.
- c. Tourists / visitors to the area – consider potential for limited local knowledge of coastal estuaries and rivers and evacuation routes. Some people may also be attempting to leave with vehicles or mobile homes.

5.8.7 **Strategy:** NSW SES will evacuate people from dangerous or potentially dangerous places created by a tsunami to safe locations away from the hazard. Evacuation is the main response strategy used by NSW SES to manage people at risk during a tsunami event.

**Actions:**

- a. NSW SES Incident Controllers, Planning, and Intelligence Officers will carefully consider the risks involved in conducting potential evacuations.
- b. NSW SES Commissioner (or delegate) will warn communities to prepare for a possible evacuation, where circumstances allow such lead time.
- c. NSW SES Commissioner (or delegate) will order any necessary evacuations and provide information to the community about when and how to evacuate, if decided to do so, including the Bureau.
- d. On receipt of a Tsunami Warning (Marine or Land Threat), NSW SES will control and coordinate the evacuation of affected areas including closure of beaches, estuaries, rock platforms, direct waterfront areas of harbours and port facilities, within specified coastal waters areas, in consultation with Local Government Councils, Surf Life Saving NSW (SLSNSW), Transport for NSW – Maritime, Transport Services Functional Area, NSW Police Force (NSWPF) and Port Authority of NSW.
- e. On receipt of a Tsunami Warning (Land Threat), in addition to item d, NSW SES will control and coordinate the evacuation of low-lying coastal land and tidal river areas within specified coastal waters areas.
- f. NSW SES determines the requirements and triggers for the evacuation of affected communities and properties and may consult with the Emergency Operations Controller (EOCON) for the management of the evacuation process.
- g. People will be instructed to move to high ground at least 10 metres above sea level and 1 kilometre away from the water's edge. This instruction must also include areas up to 10 kilometres upstream in coastal estuaries and rivers. If no high ground is available nearby, people will be instructed to move as far away from the coast and tidal river areas as possible and to stay there until advised that it is safe to return.
- h. Evacuations may take place when there is a risk to public safety. Circumstances may include:

- Evacuation of people where essential energy and/or utility services are likely to fail.
  - Evacuation of people where buildings have been made uninhabitable or are at risk from building collapse.
  - Evacuation from areas that have been deemed hazardous due to impacts of inundation (such as near downed powerlines).
- i. All evacuation decisions will be made as per the NSW SES Policy and Procedures, and consistent with the NSW Evacuation Management Guidelines. Considerations for an evacuation include:
- Duration of evacuation.
  - Characteristics of the community.
  - Numbers requiring evacuation.
  - Availability of evacuation routes and transport.
  - Length of isolation.
  - Time available for evacuation.
  - Evacuee management requirements.
  - Resources and delivery of evacuation information.
  - The ability for existing coastal protection works to fulfil their intended function, should inundation occur.
- j. Support to evacuation operations may be requested from other emergency services and supporting agencies using arrangements in the NSW State EMPLAN and supporting plans.
- k. Where warning time permits, NSW SES will issue advice to emergency service and supporting agencies to leave impact areas at a minimum of 30 minutes before predicted tsunami impact.

5.8.8 **Strategy:** Restrict access to the coastal zone when a NSW Tsunami Warning is current.

**Actions:**

- a. The NSWPF will assist the NSW SES in restricting access to areas at-risk during a tsunami event, to authorised personnel only. Priority will be given to restricting access to waterfront locations in urban areas.
- b. The NSWPF will coordinate the security of supply lines and evacuated and damaged areas until it is no longer safe to do so.

5.8.9 **Strategy:** Maintain the welfare of communities and individuals affected by the impact of a tsunami.

**Actions:**

- a. NSW SES will provide initial welfare for evacuees where required but will hand the responsibility over to the Welfare Services Functional Area as soon as possible. The NSW SES will brief the Welfare Services Functional Area at the earliest opportunity regarding the level of assistance required.

- b. Welfare Services Functional Area will establish evacuation centres when required to provide immediate assistance to affected residents and travellers in accordance with the Welfare Services Functional Area Supporting Plan and the NSW Evacuation Management Guidelines.
- c. Education Services Functional Area will manage the safety of students directly affected by tsunamis and the management of school premises and will work with the NSW SES and Welfare Services Functional Area in the management of school evacuees.
- d. 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.
- e. NSW SES will provide details of all residents assisted in evacuations to the Welfare Services Functional Area as early as possible.
- f. Disaster Victim Registration will be controlled and coordinated by the NSWPF, with the assistance of NSW SES and Welfare Services Functional Area.
- g. Where the expected number of evacuees and the duration of evacuation is assessed to be beyond the capability and capacity of the established evacuation centre arrangements the SEOCON may establish Major Evacuation Centres or Mass Care Facilities.
- h. The decision to establish Major Evacuation Centres or Mass Care Facilities will be made by the NSW SES State Controller (or delegate) and the SEOCON in consultation with members of the SEMC.
- i. The SEOCON or appointed Major Evacuation Centre Manager will manage Major Evacuation Centres or Mass Care Facilities when they are established.

5.8.10 **Strategy:** Coordinate available and accessible health services for tsunami affected communities.

**Action:**

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

5.8.11 **Strategy:** Maintain the welfare of animals impacted by a tsunami.

**Actions:**

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

- c. Environmental Services Functional Area will coordinate the support of native wildlife.

## 5.9 SEARCH AND RESCUE

5.9.1 **Strategy:** Control and coordinate search and rescue of people from collapsed structures, waterways, and the ocean during and after tsunami impact, including flood rescue of people and domestic animals arising from flooding and inundation.

**Actions:**

- a. NSW SES will control and coordinate flood rescues required following coastal inundation caused by super-elevated sea levels and/or waves, as per the NSW State Rescue Policy and the NSW State Flood Plan.
- b. The NSW SES Incident Controller will establish a Flood Rescue Area of Operations (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.
- c. When a tsunami wave train is underway, NSW SES will carefully assess the heightened risk due to continuous strong currents and debris before undertaking any in-water or water-based rescues.
- d. NSW SES and accredited rescue agencies will perform flood rescue of people and domestic animals.
- e. NSWPF will control and coordinate all rescues outside the established FRAO, as per the NSW State Rescue Policy.
- f. In the case of major structural collapse, Fire and Rescue NSW (FRNSW) will control and coordinate urban search and rescue operations as per the NSW State EMPLAN.
- g. NSWPF will keep the NSW SES State Duty Commander and NSW SES Incident Controller informed of the progress of search operations and any requirement for rescue.
- h. MRNSW will assist with search and rescue operations from the ocean/coastal waterways.
- i. Local Government Councils through their Lifeguard services and SLSNSW will assist with the rescue of people from the surf zone following the impact of a tsunami.
- j. NSW SES will respond with the appropriate resources to support the rescue of victims related to tsunami impact.
- k. In the event of a major structural collapse requiring SEOCON support, the SEOCON may activate the SEOC in support of the emergency.

## 5.10 PROTECTION OF LIFE AND PROPERTY

5.10.1 **Strategy:** NSW SES coordinate the protection of life and property in the immediate post impact period to minimise further damage and potential injury.



This activity will only be undertaken when it does not conflict with rescue priorities.

**Action:**

- a. In an emergency response, NSW SES, supporting agencies and community volunteers will undertake tsunami protection of life and property tasks including, but not limited to:
  - Relocation of the public from hazardous areas.
  - Identifying public health risks.
  - Limiting access to hazardous areas by the public until they are deemed safe.
  - Identifying potential asbestos and other contamination.
  - Structural and damage assessment to identify extent and significance of damage.
  - Unblocking and limiting access to stormwater drains.
  - Pumping water out of premises.
  - Shoring-up damaged buildings against collapse (excluding properties damaged by coastal erosion).
  - Clearing debris, that directly interferes with operation response, or poses a direct threat to the public.
- b. NSW SES will work with the relevant authorities to ensure response operations detailed within this plan do not unnecessarily impact the natural environment.

## **5.11 PROTECTION OF ENERGY, TELECOMMUNICATION AND UTILITY SERVICES INFRASTRUCTURE**

5.11.1 **Strategy:** 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).

**Actions:**

- a. The Transport Services Functional Area is to coordinate the provision of information about the assessment and restoration of transport network infrastructure.
- b. The Energy and Utility Services Functional Area is to coordinate the assessment and restoration of essential energy and utility services (not including telecommunications).
- c. The Telecommunications Services Functional Area is to coordinate the assessment and restoration of telecommunications and the Public Safety Network.
- d. The Engineering Services Functional Area is to coordinate the assessment and restoration of critical public buildings and infrastructure.
- e. Functional Areas and Local Government Councils will keep the NSW SES informed of the status of utilities and infrastructure.

## 5.12 IMMEDIATE RELIEF

5.12.1 **Strategy:** NSW SES will coordinate resupply to towns and villages isolated by tsunami to minimise disruption to the community.

**Action:**

- a. NSW SES to coordinate the resupply of isolated communities and/or properties, as per the NSW SES Resupply Flowchart (refer to Appendix B).

5.12.2 **Strategy:** NSW SES coordinates 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.

**Actions:**

- a. JATWC will issue a:
  - Cancellation of a *Tsunami Watch* if a tsunami did not eventuate.
  - Cancellation of a *Tsunami Warning* if the main threat has passed.
- b. 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.
- c. NSW SES will specify the level of access to affected communities as the following:
  - Not suitable for access.
  - Limited access by emergency services and response agencies.
  - Limited access by residents and/or business operators.
  - Full access.
- d. 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.
- e. NSW SES will coordinate the re-establishment of access and may utilise supporting agencies with the shortest lead time based on operational priorities.
- f. Where directly notified of a hazard or requested by NSW SES:
  - Transport Services Functional Area and its maintenance contractors will coordinate the assessment of any damage and the subsequent clearance of debris from the state road network.
  - Local Government/ Councils will coordinate the assessment of any damage and the subsequent clearance of debris from council managed road networks and public land including beaches, where appropriate.
- g. Engineering Services Functional Area may aid with the coordination of road access if requested by NSW SES.
- h. The NSWPF and Transport Services Functional Area coordinate traffic control activities, with assistance from NSW SES.

- i. In accordance with the NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Plan, FRNSW coordinate the re-establishment of access to areas affected by hazardous materials once areas have been rendered safe.
- j. Environmental Services Functional Area can aid with the re-establishment of access following a hazardous materials / substances incident in accordance with the NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Plan, the NSW Disaster Waste Sub Plan, and the Environmental Services Functional Area Supporting Plan.
- k. In accordance with the NSW Coastal Waters Marine Pollution Plan, Transport for NSW – Maritime and the Port Authority of NSW will initially mobilise oil and chemical spill response equipment and respond to waste management as required, in conjunction with FRNSW and the NSW Environmental Protection Authority (EPA).
- l. NSW SES will facilitate the return of evacuees to their homes as part of Response operations, when it is safe to do so.

## 5.13 END OF RESPONSE OPERATIONS

5.13.1 **Strategy:** NSW SES and supporting agencies conclude response operations.

### **Actions:**

- a. Response operations will conclude when the following conditions have been met:
  - The physical impact of the tsunami has ceased.
  - Most of the responses to incidents related to the tsunami have been completed.
  - The need for warning and evacuation no longer exists.
  - There is no further likelihood of rescuing people.
  - Resupply is no longer required (resupply operations may occur concurrently with the recovery phase).
  - Response to fire and hazardous materials incidents have concluded (not including subsequent clean-up of contaminated sites).
  - All affected areas have had a *Reduced Threat: Return with Caution* or *Monitor Conditions* issued by NSW SES.
  - The Recovery agency and supporting agencies have been briefed that Response operations have ceased.

## 5.14 TRANSITION FROM RESPONSE TO RECOVERY

5.14.1 The transition from Response operations to immediate relief and Recovery arrangements will be conducted by NSW SES, supporting agencies, and Functional Areas, as outlined in the NSW State EMPLAN and further detailed in the NSW Recovery Plan.

## 5.15 POST IMPACT ACTIONS

5.15.1 **Strategy:** NSW SES uses learnings from the event to inform planning, recovery, and future events.

**Actions:**

- a. NSW SES will continue to engage with communities following a tsunami through convening one or more community forums, workshops, or other opportunities to provide communities a chance to provide feedback, address any concerns and provide input into the recovery process. These will typically include other agencies such as Geoscience Australia, the Bureau, Welfare Services Functional Area, and Local Government/ Council representatives.
- b. NSW SES will conduct After Action Reviews at the conclusion of response activities for tsunami events. This will include internal and external stakeholders. The outcomes will be disseminated and used to review and continuously improve arrangements, plans, systems and processes for planning, response, and recovery activities in future events.
- c. 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:
  - The emergency action plan in place at the conclusion of the response emphasising any continuing activities including community meetings/engagement activities.
  - Resources allocated to the emergency response and associated exit strategies.
  - Details of any areas or situations with potential to re-escalate the emergency.
  - A recommendation for the conclusion of NSW SES as lead response agency and handover to the NSW Reconstruction Authority (NSW RA) as the lead recovery agency.
  - Any actions that are incomplete or outstanding.
  - Damage Assessment Data and Information obtained throughout the response phase which will further support the long-term recovery of communities.
- d. NSW SES will undertake/coordinate a comprehensive review of plans following significant tsunami events.

5.15.2 **Strategy:** NSW SES participates in post tsunami data collection and analysis.

**Action:**

- a. NSW SES works with relevant stakeholders on post tsunami data collection and analysis including review of intelligence where necessary.

## 6. RECOVERY

### 6.1 INTRODUCTION

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

### 6.2 NSW SES RECOVERY ROLE

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

**Actions:**

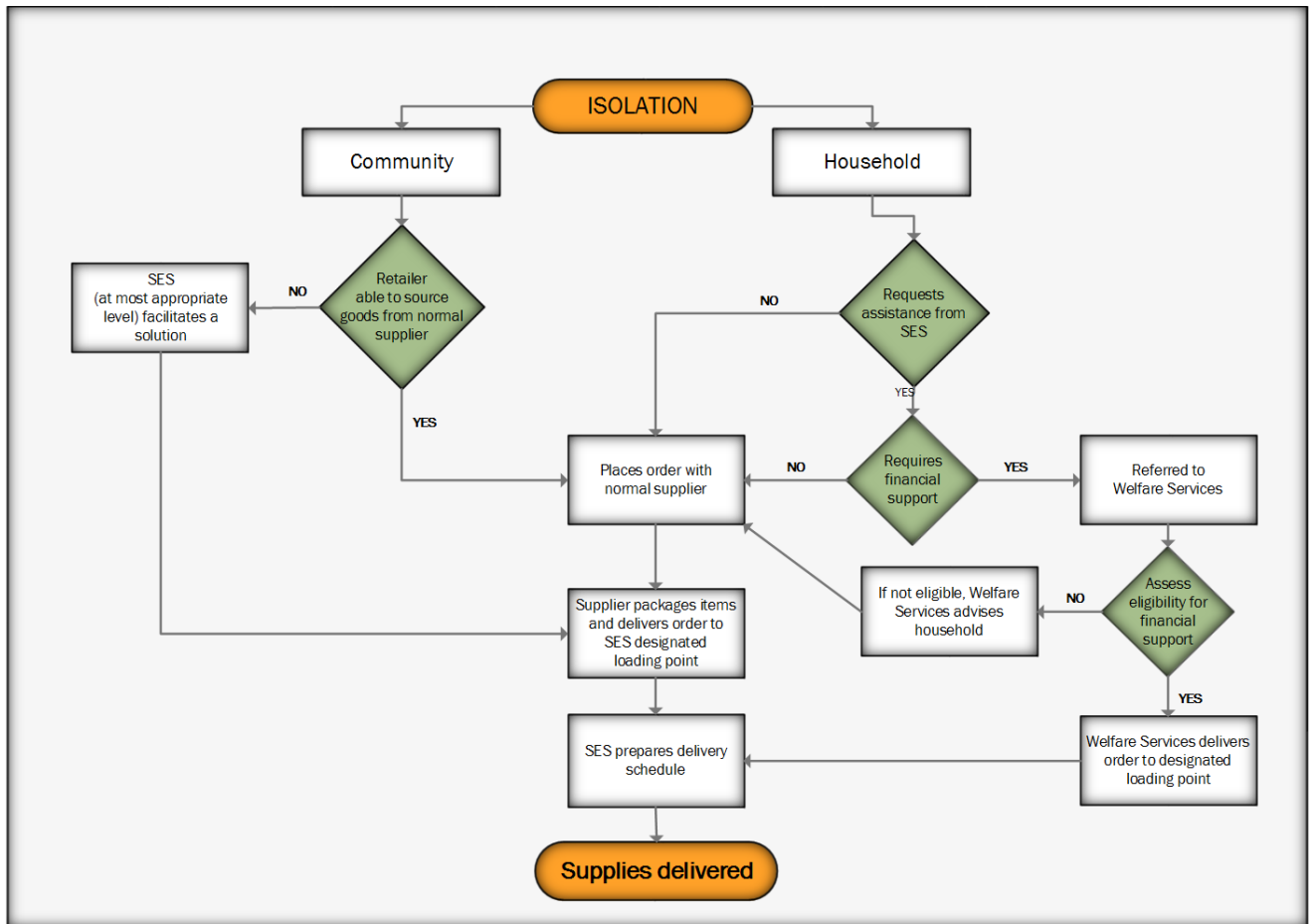
- a. NSW SES will provide representation to Recovery Committees as required and may have an ongoing role in the Recovery phase.
- b. NSW SES roles on Recovery Committees may include providing information about any continuing response, guidance on mitigation strategies, and general advice and assistance to the committee as a subject matter specialist.
- c. NSW SES, in conjunction with a Recovery Committee, will provide a service to support the information needs of a community immediately following a tsunami.
- d. NSW SES and supporting agencies will assist with clean-up operations after a tsunami where possible and when resources and personnel permit.
- e. The NSW SES will ensure that adequate arrangements are in place to record details of the After Action Review and each item requiring further action is delegated to an organisation or individual to implement.
- f. Where the maintenance of tarpaulins will be required over a protracted period, NSW SES may request the Engineering Services Functional Area to undertake this work in accordance with procedures established by NSW Disaster Assistance Guideline A5- Maintenance of Tarpaulins.
- g. NSW SES will provide information to the NSW RA to support applications to Treasury for [Disaster Recovery Funding Arrangements 2018](#) (DRFA).

## APPENDIX A – ABBREVIATIONS

<b>AIDR</b>	Australian Institute for Disaster Resilience
<b>AIIMS</b>	Australasian Inter-service Incident Management System
<b>AMSA</b>	Australian Maritime Safety Authority
<b>ANZEMC</b>	Australian-New Zealand Emergency Management Committee
<b>ARI</b>	Average Recurrence Interval
<b>ATAG</b>	Australian Tsunami Advisory Group
<b>ATWS</b>	Australian Tsunami Warning System
<b>AWS</b>	Australian Warning System
<b>Bureau</b>	Australian Government Bureau of Meteorology
<b>CALD</b>	Culturally and Linguistically Diverse Communities
<b>DCCEEW EHG</b>	Department of Climate Change, Energy, the Environment and Water – Environment and Heritage Group
<b>DRFA</b>	Australian Government’s Disaster Recovery Funding Arrangements
<b>EMPLAN</b>	State Emergency Management Plan
<b>EOC</b>	Emergency Operations Centre(s)
<b>EOCON</b>	Emergency Operations Controller
<b>EPA</b>	NSW Environmental Protection Authority
<b>FRAO</b>	Flood Rescue Area of Operations
<b>FRNSW</b>	Fire and Rescue NSW
<b>GIS</b>	Geographic Information System
<b>ICEMS</b>	Inter-CAD Electronic Messaging System
<b>JATWC</b>	Joint Australian Tsunami Warning Centre
<b>LEMC</b>	Local Emergency Management Committee
<b>MOU</b>	Memorandum(s) of Understanding
<b>MRNSW</b>	Marine Rescue NSW
<b>NEMA</b>	National Emergency Management Agency

<b>NGO</b>	Non-government Organisation(s)
<b>NPWS</b>	NSW National Parks and Wildlife Service
<b>NRSC</b>	National Resourcing Sharing Centre
<b>NSW</b>	New South Wales
<b>NSWPF</b>	NSW Police Force
<b>NSW RA</b>	NSW Reconstruction Authority
<b>NSW RFS</b>	NSW Rural Fire Service
<b>NSW SES</b>	NSW State Emergency Service
<b>OMS</b>	Operational Management System
<b>PIFAC</b>	Public Information Services Functional Area
<b>PTWC</b>	Pacific Tsunami Warning Centre
<b>SEMC</b>	State Emergency Management Committee
<b>SEOC</b>	State Emergency Operations Centre
<b>SEOCON</b>	State Emergency Operations Controller
<b>SERCON</b>	State Emergency Recovery Controller
<b>SERM Act</b>	State Emergency and Rescue Management Act 1989
<b>SES Act</b>	State Emergency Service Act 1989
<b>SLERA</b>	State Level Emergency Risk Assessment
<b>SLSNSW</b>	Surf Life Saving NSW

# APPENDIX B – NSW SES RESUPPLY FLOWCHART





## APPENDIX C – GLOSSARY

Common emergency service terminology can be found within the [Australian Disaster Resilience Glossary](#).

Readers should refer to the NSW State EMPLAN Annexure 9 – DEFINITIONS.

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

## APPENDIX D – ROLES AND RESPONSIBILITIES

The general roles and responsibility of agencies in emergency management are described in the NSW State EMPLAN. Additional roles and responsibilities under this plan are detailed below:

AGENCY	RESPONSIBILITIES
<b>Agricultural and Animal Services Functional Area</b>	The roles and responsibilities for Agricultural and Animal Services are outlined in the <a href="#">Agricultural and Animal Functional Area Services Supporting Plan</a> .
<b>Australian Government Bureau of Meteorology (Bureau)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Maintain, coordinate, and deliver operational 24-hour weather forecast and warning services to the NSW community in line with the Intergovernmental Agreement on the Provision of Bureau of Meteorology Hazard Services to the States and Territories and the Bureau’s Service Level Specification for Flood Forecasting and Warning Services for NSW and the ACT.</li> <li>• Work with the NSW SES, Geoscience Australia, and NEMA in the development of tsunami warning systems for NSW.</li> <li>• Develop and maintain the Tsunami Warning Service Standard Operating Procedures.</li> <li>• Assist the NSW SES with the development of scenarios for use in the exercising of this plan.</li> <li>• Undertake community engagement activities and contribute to similar community engagement and capacity building programs undertaken by the NSW SES.</li> <li>• Adhere to the requirements as outlined in the service level agreement between NSW SES and the Bureau.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Provide all tsunami advice directly to the NSW SES, SEMC, and other relevant agencies.</li> <li>• Provide the NSW SES with intelligence that conveys the development and progression of tsunami events.</li> <li>• Provide more information on tsunami warnings at <a href="http://www.bom.gov.au/tsunami/">http://www.bom.gov.au/tsunami/</a></li> <li>• Formulate, issue, and publish JATWC Bulletins and official warnings, in consultation with NSW SES and include NSW SES safety messages within warnings.</li> <li>• Adhere to the requirements as outlined in the service level agreement between NSW SES and the Bureau.</li> </ul>
<b>Australian Maritime Safety Authority (AMSA)</b>	<ul style="list-style-type: none"> <li>• Meet the agreed arrangements described in the NSW SES / NSW AMSA Memorandum of Understanding.</li> </ul> <p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Assist the NSW SES with community engagement and capacity building programs.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Respond to marine oil and chemical spill incidents in State waters, as detailed in the <a href="#">NSW State Waters Marine Oil and Chemical Spill Contingency Plan</a>.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>Disseminate official warnings and related information to commercial shipping in Australian and international waters.</li> </ul>
<b>Department of Communities and Justice – Housing</b>	<b>Response</b> <ul style="list-style-type: none"> <li>Assist the NSW SES with the response to damaged public housing.</li> </ul>
<b>Department of Defence</b>	Arrangements for Defence Assistance to the Civil Community are detailed within the NSW State EMPLAN.
<b>Education Services Functional Area</b>	<b>Preparation</b> <ul style="list-style-type: none"> <li>Ensure each school and education workplace liable to tsunami impacts has an emergency management plan (that is accessible locally and from a central incident management team), that includes local response procedure for tsunami events, and information for parents and carers.</li> <li>Conduct exercises to test schools’ emergency management plans.</li> <li>Assist NSW SES with community engagement and capacity building programs.</li> <li>Identify schools and known school bus routes within tsunami impact zones.</li> <li>Liaise with the NSW SES and, if appropriate, arrange for the early release or relocation of students whose travel arrangements are likely to be disrupted by a tsunami and/or road closures and transport disruptions (or where required, for students to be moved to a suitable location until normal school closing time).</li> </ul> <b>Response</b> <ul style="list-style-type: none"> <li>Disseminate official warnings and related information to all schools across the NSW Education sector.</li> <li>Coordinate the early notification to all schools across the NSW Education sector where schools, staff and students are likely to be impacted by tsunami events.</li> <li>Provide a Liaison Officer to the SEOC or NSW SES State Command Centre as required.</li> <li>Consider and act on the advice of the NSW SES regarding temporary ceasing operations of schools across the NSW Education sector.</li> <li>Coordinate local situation reports from all schools during a tsunami related incident through to the SEOC.</li> <li>Assist with the coordination of the evacuations of schools within the tsunami impact zone, and the immediate welfare of students until returned to the appropriate carer, noting that school student bus transport may not be immediately available.</li> <li>Pass information to school bus drivers/companies and/or school principals on expected or actual impacts of Tsunami Warnings.</li> </ul> <b>Relief and Recovery</b> <ul style="list-style-type: none"> <li>Support schools to return to normal operations as soon as practicable.</li> <li>Support the continued education of students from schools destroyed or damaged in a tsunami event.</li> <li>Participate in After Action Reviews as required.</li> </ul>
<b>Emergency Information Coordination Unit</b>	<b>Response</b> <ul style="list-style-type: none"> <li>Assist the NSW SES with the distribution of intelligence to agencies listed within this plan and the NSW State EMPLAN.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>Assist the NSW SES by providing Geographic Information System (GIS) trained staff and equipment to assist with establishment of a Joint Intelligence Unit if requested.</li> </ul>
<b>Energy and Utility Services Functional Area</b>	<p>The roles and responsibilities for Energy and Utility Services are outlined in the <a href="#">NSW Energy and Utility Services Functional Area Supporting Plan (EUSPLAN)</a>.</p>
<b>Engineering Services Functional Area</b>	<p>The roles and responsibilities for Engineering Services are outlined in the <a href="#">NSW Engineering Services Functional Area Supporting Plan (EngPLAN)</a>.</p>
<b>Environmental Services Functional Area</b>	<p>The roles and responsibilities for Environmental Services are outlined in the <a href="#">Environmental Services Functional Area Supporting Plan (EnviroPlan)</a>. Additionally, the Environmental Services Functional Area has roles and responsibilities that are outlined in the <a href="#">NSW Hazardous Materials/Chemical, Biological, Radiological and Nuclear Emergency Plan</a> and the NSW Disaster Waste Sub Plan.</p>
<b>Fire and Rescue NSW (FRNSW)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>Contribute to NSW SES reviews into plans, policies, and procedures as required.</li> <li>Participate in NSW SES briefings, training, and exercises as required.</li> <li>Identify and notify the NSW SES of any locations at risk of fire or hazardous materials that pose a significant threat to surrounding populations due to the impact of a tsunami for incorporation into NSW SES tsunami intelligence and planning.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>Meet the agreed arrangements described in any NSW SES and FRNSW Memorandum of Understanding or Mutual Aid Agreement.</li> <li>Provide Incident Management personnel and Liaison Officers to the NSW SES as required.</li> <li>Notify the NSW SES of tsunami related jobs received via the Triple Zero system.</li> <li>When requested by NSW SES, provide support to the NSW SES in response to tsunami emergencies across the State.</li> <li>Assist the NSW SES with the warning and/or evacuation of at-risk communities.</li> <li>Assist the NSW SES with the warning and monitoring of coastal facilities at-risk of fire or hazardous materials due to tsunami impact.</li> <li>Assist the NSW SES in monitoring and reconnaissance of areas potentially damaged by a tsunami.</li> <li>Provide rescue operators as required.</li> <li>Conduct hazardous materials operations including asbestos risks, arising from tsunami emergencies in coordination with the NSW SES Incident Controller.</li> <li>Recommend activation of the NSW Hazardous Materials/Chemical, Biological, Radiological, Nuclear Emergency Plan.</li> <li>Decontamination of Flood Rescue Operators as required.</li> <li>Assist the NSW SES with the resupply of isolated communities and/or properties.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Assist the NSW SES with property protection tasks including sandbagging.</li> <li>• Provide resources for pumping water out of buildings and from low-lying areas.</li> <li>• Provide trained staff to support a Joint Intelligence Unit, if established by NSW SES, including Remotely Piloted Aircraft System (RPAS) pilots to assist with field observations.</li> <li>• Assist the NSW SES to undertake damage assessment including structural collapse risks and recommend activation of the Major Structure Collapse Emergency Sub Plan if required.</li> <li>• Coordinate the pre-deployment of fire resources to communities within NSW Fire Districts if access is expected to be lost, in consultation with NSW SES.</li> <li>• Coordinate the deployment of the FRNSW High Transfer Pumps to locations in consultation with NSW SES.</li> <li>• Provide High Clearance Vehicles and remote area rescue resources as requested by the NSW SES.</li> <li>• Provide deployable and remotely powered emergency communications cells for emergency services communication and public networks as required.</li> <li>• Provide Rescue boats with trained water rescue technicians as requested by the NSW SES.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>• Assist with clean-up operations.</li> <li>• Participate in After Action Reviews as required.</li> </ul>
<p><b>Forestry Corporation NSW</b></p>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Assist the NSW SES with identification of road infrastructure in State Forests at risk from tsunamis.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means.</li> <li>• Close and direct people to leave camping grounds in coastal areas at risk from tsunamis in State Forest managed areas.</li> <li>• Close and reopen Forestry Corporation of NSW roads when affected by a tsunami and advise the NSW SES of their status.</li> <li>• Manage traffic on Forestry Corporation of NSW roads.</li> <li>• Facilitate the safe reliable access by emergency resources on Forestry Corporation of NSW roads.</li> </ul>
<p><b>Geoscience Australia</b></p>	<ul style="list-style-type: none"> <li>• Work with the NSW SES, the Bureau, and NEMA in the development of tsunami warning systems for NSW.</li> <li>• Provide specialist scientific advice to assist the NSW SES, other State Government Agencies and Local Government Councils on tsunami-related matters.</li> <li>• Provide national seismic detection capabilities.</li> <li>• Operate, with the Bureau, the JATWC.</li> <li>• Contribute to tsunami community engagement and capacity building initiatives.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>Assist the NSW SES with the development of scenarios for use in the exercising of this plan.</li> </ul>
<b>Health Services Functional Area</b>	<p>The roles and responsibilities for Health Services Functional Area are outlined in the <a href="#">NSW Health Services Functional Area Supporting Plan (NSW HEALTHPLAN)</a>.</p>
<b>Local Government / Councils in NSW coastal areas</b> (for Lord Howe Island, this is the Lord Howe Island Board)	<p>Local Government Councils are responsible for the care, control, and management of beaches through the <i>Local Government Act 1993</i> and the <i>Crown Lands Management Act 2016</i>.</p> <p><b>Prevention</b></p> <ul style="list-style-type: none"> <li>Contribute to community engagement activities.</li> <li>In council areas subject to coastal erosion: <ul style="list-style-type: none"> <li>Consult with the NSW SES and other relevant emergency services and functional areas when developing emergency management arrangements for inclusion in Coastal Management Programs and Coastal Zone Management Plans.</li> <li>Include NSW SES on Coastal Zone Management Plan committees.</li> </ul> </li> <li>Provide NSW SES with copies of Coastal Management Programs and Coastal Zone Management Plans to assist with emergency planning and intelligence development.</li> <li>Assist the NSW SES in planning for tsunamis within their respective local government boundaries.</li> </ul> <p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>Maintain a plant and equipment resource list for the council area.</li> <li>Assist the NSW SES with community awareness programs to ensure people in locations potentially threatened by tsunamis understand the threat and its management.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>Assist the NSW SES with the dissemination of official warnings.</li> <li>Notify the NSW SES when unusual ocean behaviour indicative of a tsunami is observed, or a tsunami has occurred for which there has been no prior warning.</li> <li>Where surf lifeguard services are operated by Local Government Councils, distribute advice contained in NSW Tsunami Warnings or upon observation of unusual ocean behaviour indicative of a tsunami, in consultation with NSW SES and SLSNSW.</li> <li>At the request of the NSW SES Incident Controller, deploy personnel and resources for tsunami related activities.</li> <li>Provide information on the status of critical infrastructure.</li> <li>In the event of an evacuation, assist with making facilities available for domestic pets and companion animals of evacuees.</li> <li>Council's Lifeguard staff assist with the rescue of people from the surf zone following the impact of a tsunami.</li> <li>Subject to the availability of council resources, assist the NSW SES with tsunami damage operations including: <ul style="list-style-type: none"> <li>The conduct of reconnaissance of at-risk areas to identify tsunami damage.</li> <li>Traffic management on council managed roads.</li> </ul> </li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>○ Provide assistance to the local NSW SES unit (plant, equipment and personnel, including headquarters staff where able and as requested).</li> <li>○ Remove tree and other debris from council managed roads and council managed public land during tsunami damage clean-up operations in consultation with the NSW SES.</li> <li>○ Close and reopen council managed roads (and other roads nominated by agreement with Transport Services Functional Area) and advise the NSW SES, the NSWPF and people who contact the council for road information.</li> </ul> <ul style="list-style-type: none"> <li>● The NSW SES is not responsible for planning or conduct of emergency beach protection works or other physical mitigation works. Local Government Council is responsible for the activation of any Coastal Zone Emergency Action Plan.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>● Provide for the management of health hazards associated with flooding, including removing debris and waste.</li> <li>● Ensure premises are fit and safe for reoccupation and assess any need for demolition.</li> <li>● Conduct impact assessments.</li> </ul>
<b>Lord Howe Island Port Operations</b>	<p><b>Response</b></p> <ul style="list-style-type: none"> <li>● Assist the NSW SES with the evacuation of people from port facilities on receipt of a tsunami evacuation warning, as required.</li> <li>● Encourage all commercial vessels to undertake appropriate measures to secure themselves before the arrival of a tsunami.</li> <li>● Disseminate official warnings and related information to shipping in or near port, anchorage and in the Lord Howe Island area.</li> </ul>
<b>Manly Hydraulics Laboratory</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>● Provide data from NSW tide gauges and wave height buoys, on behalf of Department of Climate Change, Energy, the Environment and Water.</li> </ul>
<b>Marine Rescue NSW (MRNSW)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>● Assist the NSW SES with community engagement and capacity building programs.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>● Notify the NSW SES when unusual ocean behaviour indicative of a tsunami is observed, or a tsunami has occurred for which there has been no prior warning.</li> <li>● Maintain and monitor the NSW marine radio network for boaters and coastal on-water users on a 24x7 basis.</li> <li>● Disseminate official warnings and related weather information to boaters through the NSW marine radio network.</li> <li>● Include NSW SES safety messages within warnings if appropriate.</li> <li>● Consider and act on the advice of NSW SES regarding the warning and evacuation of exposed MRNSW facilities and assets.</li> <li>● Assist the NSW SES with the warning and/or evacuation of at-risk coastal communities.</li> <li>● Assist NSW SES with the closure and / or evacuation of marinas, boat-ramps and waterways when required.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Assist the NSW SES and NSWPF with the provision of trained members to support public information units.</li> <li>• Assist with property protection tasks including sandbagging.</li> <li>• Assist with search and rescue operations from the ocean/coastal waterways.</li> <li>• At the direction of the NSWPF Marine Area Command assist in the identification and recovery of vessels.</li> <li>• Assist NSW SES in conducting reconnaissance and/or tsunami impact assessment.</li> <li>• Support NSWPF by providing suitable MRNSW facilities as Search and Rescue Coordination Centres and/or operations centres.</li> <li>• Assist NSW SES with the resupply of isolated coastal communities.</li> </ul>
<b>National Emergency Management Agency (NEMA)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Work with the NSW SES, Geoscience Australia, and the Bureau in the development of tsunami warning systems for NSW.</li> </ul>
<b>NSW Ambulance</b>	<p>The roles and responsibilities for NSW Ambulance are outlined in the <a href="#">NSW Health Services Functional Area Supporting Plan (NSW HEALTHPLAN)</a>. Roles and responsibilities in addition to the Supporting Plan are:</p> <p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Participate in NSW SES briefings, training &amp; exercises as required.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Meet the agreed arrangements described in the NSW SES / NSW Ambulance Memorandum of Understanding.</li> <li>• Provide Incident Management personnel and Liaison Officers to the NSW SES as required.</li> <li>• Provide Rescue Operators as required.</li> <li>• Provide specialist damage response teams as required.</li> </ul>
<b>NSW Department of Climate Change, Energy, the Environment and Water - Environment and Heritage Group (DCCEEW EHG)</b>	<p><b>Prevention</b></p> <ul style="list-style-type: none"> <li>• Provide the NSW SES, other State Government Agencies and Local Government Councils with scientific and technical advice to identify the nature of the tsunami threat, during the planning process.</li> <li>• Oversee the delivery of the NSW Coastal legislation including financial support through the Coastal Management Program and technical advice to Local Government Councils and state agencies including assistance with the identification of risks in areas which are subject to coastal erosion, the preparation and implementation of management plans and programs and associated mitigation and management actions.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Provide tsunami damage response teams to assist the NSW SES and National Parks and Wildlife Service (NPWS).</li> <li>• Provide related advice on coastal hazards to the NSW SES on request.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>• Support recovery committees as required.</li> </ul>
<b>NSW Food Authority</b>	<p>The roles and responsibilities for NSW Food Authority are outlined in the <a href="#">Food Safety Emergency Sub Plan</a>.</p>



AGENCY	RESPONSIBILITIES
<b>NSW National Parks and Wildlife Service (NPWS)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>Assist the NSW SES with identification of road infrastructure in National Parks at risk from tsunamis.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>Assist the NSW SES with the communication of warnings and information provision to the public through variable message signs and other appropriate means.</li> <li>Close and direct people to leave camping grounds, visitor areas and recreational nodes in coastal areas at risk from tsunamis in NPWS managed areas.</li> <li>Close and reopen NPWS roads when affected by a tsunami and advise the NSW SES of their status.</li> <li>Facilitate the safe reliable access by emergency resources on NPWS managed roads.</li> <li>Provide a Liaison Officer to the NSW SES Incident Control Centre, State Command Centre or EOC as required.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>Participate in After Action Reviews as required.</li> </ul>
<b>NSW Police Force (NSWPF)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>Participate in NSW SES briefings, training, and exercises as required.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>Notify the NSW SES State Headquarters of any information indicating that a tsunami has impacted the NSW coast (or adjacent areas of the Queensland or Victorian coasts).</li> <li>Provide Incident Management personnel and Liaison Officers to the NSW SES where required.</li> <li>When requested by NSW SES, assist in tsunami operations when training and equipment are available and suitable: <ul style="list-style-type: none"> <li>Restrict access to areas affected by a tsunami.</li> <li>Assist with dissemination of official warnings and related information, including to commercial and recreational vessels.</li> <li>Assist with warning and/or evacuation of at-risk communities.</li> <li>Assist with monitoring and reconnaissance of areas potentially damaged by a tsunami.</li> </ul> </li> <li>Conduct road and traffic control operations in conjunction with NSW SES, Local Government Councils and/or Transport Services Functional Area.</li> <li>Coordinate search operations.</li> <li>Provide Rescue Operators, as required.</li> <li>Provide available rescue resources as required.</li> <li>Coordinate security for supply lines, evacuated and damaged areas.</li> <li>Manage Disaster Victim Registration and Disaster Victim Identification.</li> <li>Operate the Public Information and Inquiry Centre, if requested or otherwise needed during tsunami events.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>Participate in After Action Reviews as required.</li> </ul>
<b>NSW Reconstruction Authority (NSW RA)</b>	<p><b>Prevention</b></p> <ul style="list-style-type: none"> <li>Provide support to the SEMC to administer the <i>State Emergency and Rescue Management Act 1989</i> (NSW) and the NSW State EMPLAN.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Administer grant funding to support emergency risk management in NSW.</li> </ul> <p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Contribute to NSW SES reviews into plans, policies and procedures as required.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Support the SEOC.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>• Host the role of SERCON.</li> <li>• When required, undertake recovery operations under direction of the SERCON.</li> <li>• When requested, establish recovery centres.</li> <li>• Administer Disaster Relief Account.</li> <li>• Participate in After Action Reviews as required.</li> </ul>
<p><b>NSW Rural Fire Service (NSW RFS)</b></p>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Participate in NSW SES briefings, training, and exercises as required.</li> <li>• Identify and notify the NSW SES of land-based facilities at-risk of fire within prescribed Rural Fire Districts that pose a significant threat to surrounding populations during tsunami events, for incorporation into NSW SES tsunami intelligence and planning.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Meet the agreed arrangements described under the NSW SES and NSW RFS Memorandum of Understanding.</li> <li>• Provide Incident Management personnel and Liaison Officers to the NSW SES where required.</li> <li>• Provide trained staff to support a Joint Intelligence Unit, if established by NSW SES.</li> <li>• Provide aviation support, management, and advice as requested through the State AirDesk.</li> <li>• Provide speciality aircraft and appropriately trained personnel to perform Down the Wire (DTW) functions as required.</li> <li>• Assist with Damage Assessments.</li> <li>• Advise NSW SES of tsunami related jobs received by the NSW RFS.</li> <li>• Provide Strike Teams during tsunami operations when requested by NSW SES. This may include assistance with: <ul style="list-style-type: none"> <li>○ Warning and/or evacuation of at-risk communities.</li> <li>○ Assist NSW SES with the warning and monitoring of coastal facilities at risk of fire due to tsunami impacts.</li> <li>○ Monitoring and reconnaissance of areas potentially damaged by a tsunami.</li> <li>○ Property protection tasks including sandbagging.</li> <li>○ Pumping water out of buildings and from low-lying areas.</li> <li>○ Back-up radio communications.</li> <li>○ Deploying resources to communities within Rural Fire Districts where access is expected to be lost in consultation with the NSW SES.</li> <li>○ The resupply of isolated communities and/or properties.</li> <li>○ Providing access to areas/properties isolated by tsunami damage.</li> <li>○ Decontamination of NSW SES Flood Rescue Operators as required.</li> </ul> </li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Co-ordinate the deployment of fire resources to communities within Rural Fire Districts to maintain fire suppression capability in consultation with NSW SES.</li> </ul> <p><b>Relief and Recovery</b></p> <ul style="list-style-type: none"> <li>• Assist with clean-up operations.</li> <li>• Participate in After Actions Reviews as required.</li> </ul>
<p><b>Port Authority of NSW (in conjunction with Transport for NSW – Maritime)</b></p>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Identify and notify the NSW SES of port facilities which are at-risk of fire or hazardous materials and pose a significant threat to surrounding populations during tsunami events, for incorporation into NSW SES tsunami intelligence and planning.</li> <li>• Provide information on at-risk port infrastructure, anchorages, and moorings within port boundaries, for NSW SES tsunami intelligence and planning.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Disseminate official warnings and related information to commercial shipping in or near port, or at anchor.</li> <li>• Assist the NSW SES with the evacuation of people from port facilities if required.</li> <li>• Encourage all commercial vessels to undertake appropriate measures to secure their vessels before the arrival of a tsunami.</li> <li>• Coordinate the movement of high-risk vessels from within port boundaries (<i>Ports and Maritime Administration Regulation 2021, NSW</i>) to deep water if sufficient warning time is available.</li> <li>• Respond to marine oil and chemical spill incidents in coastal waters, as detailed in the NSW Coastal Waters Marine Pollution Plan, in conjunction with Transport for NSW - Maritime.</li> </ul>
<p><b>Public Information Services Functional Area</b></p>	<p>The roles and responsibilities for Public Information Services are outlined in the <a href="#">Public Information Functional Area Services Supporting Plan</a>.</p>
<p><b>SEOC</b></p>	<p><b>Response</b></p> <ul style="list-style-type: none"> <li>• The SEOC will: <ul style="list-style-type: none"> <li>○ Notify NSW SES State Headquarters when advised by Emergency Management Australia of an earthquake in a coastal or offshore area.</li> <li>○ Notify SEMC Members of a potential tsunami and the existence of tsunami warnings, or NSW SES warning products.</li> </ul> </li> <li>• Distribute NSW SES operational updates to the SEOCON, SEMC members and Australian Government.</li> </ul>
<p><b>SEOCON</b></p>	<p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Monitor tsunami operations.</li> <li>• Consider requests for State or Commonwealth assistance.</li> <li>• Coordinate the establishment of a Major Evacuation Centre in accordance with Major Evacuation Centre Guidelines if required.</li> <li>• Facilitate requests for the Public Inquiry and Information Centre to be stood up.</li> <li>• If requested, coordinate support to the NSW SES and/or other agencies.</li> </ul>

AGENCY	RESPONSIBILITIES
<b>Surf Life Saving NSW (SLSNSW)</b>	<p><b>Preparation</b></p> <ul style="list-style-type: none"> <li>• Assist NSW SES with community engagement and capacity building programs.</li> <li>• Contribute to NSW SES reviews into plans, policies, and procedures as required.</li> <li>• Participate in NSW SES briefings, training, and exercises as required.</li> </ul> <p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Distribute advice contained in the Bureau's weather warnings to people on SLSNSW patrolled beaches when dangerous surf conditions are predicted.</li> <li>• Notify the NSW SES when unusual ocean behaviour indicative of a tsunami is observed, or a tsunami has occurred for which there has been no prior warning.</li> <li>• Close SLSNSW patrolled beach water areas on receipt of a NSW Tsunami Warning or upon observation of unusual ocean behaviour indicative of a tsunami, in consultation with Local Government Councils, and advise NSW SES.</li> <li>• Assist the NSW SES with the dissemination of official warnings and related information.</li> <li>• Assist the NSW SES with the warning and/or evacuation of at-risk communities.</li> <li>• Assist the NSW SES with tsunami operations, where training and equipment are suitable.</li> <li>• Assist with the rescue of people from the surf zone following the impact of a tsunami.</li> </ul>
<b>Telecommunications Services Functional Area</b>	<p>The roles and responsibilities for Telecommunications Services are outlined in the <a href="#">NSW Telecommunications Services Functional Area Supporting Plan (TELCOPLAN)</a>.</p>
<b>Transport Services Functional Area</b>	<p>The roles and responsibilities for Transport Services are outlined in the <a href="#">NSW Transport Services Functional Area Supporting Plan (TSFA PLAN)</a>.</p> <p>Roles and responsibilities in addition to the Supporting Plan are:</p> <ul style="list-style-type: none"> <li>• Assist the NSW SES with the communication of tsunami warnings and information provision to the public (for example via Variable Message Signs VMS).</li> <li>• Assist the NSW SES with the evacuation of at-risk communities by maintaining access and egress routes.</li> <li>• Coordinate information on road conditions for emergency services access.</li> <li>• Coordinate the management of the transport network, across all modes.</li> <li>• Coordinate assisting NSW SES in monitoring and reconnaissance of areas potentially damaged by a tsunami through consultation with transport/traffic commanders, crews, and other staff.</li> <li>• Coordinate the clearing and removal of tress and debris on state roads prior to opening, in consultation with NSW SES.</li> <li>• Coordinate harbour clearing services to remove obstacles causing obstruction to Sydney waterways.</li> <li>• Coordinate multi-agency operational planning and return to services for traffic and transport operations in the response and recovery stage.</li> </ul>

AGENCY	RESPONSIBILITIES
	<ul style="list-style-type: none"> <li>• Assist the NSW SES with the resupply of isolated communities and/or properties by providing information regarding network status and priority repair works.</li> <li>• Following the direction of the NSWPF will assist in the identification and recovery of vessels.</li> </ul>
<b>VRA Rescue NSW</b>	<p><b>Response</b></p> <ul style="list-style-type: none"> <li>• Meet the agreed arrangements described in any NSW SES and VRA Rescue NSW Memorandum of Understanding.</li> <li>• Where requested by NSW SES, assist in tsunami operations when training and equipment are available and suitable: <ul style="list-style-type: none"> <li>○ Property protection tasks including sandbagging.</li> <li>○ Assist with warning and/or evacuation of at-risk communities.</li> <li>○ Assist with monitoring and reconnaissance of areas potentially damaged by a tsunami.</li> <li>○ Assist with search and rescue operations.</li> <li>○ Provide tsunami damage response teams to assist the NSW SES.</li> <li>○ Resupply to isolated communities and/or properties.</li> </ul> </li> </ul>
<b>Welfare Services Functional Area</b>	<p>The roles and responsibilities for Welfare Services are outlined in the <a href="#">Welfare Services Functional Area Supporting Plan</a>.</p>

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