



Newport SLSC

Coastal Hazard Safety and
Evacuation Management Plan

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Glossary and Abbreviations¹

Term / Abbreviation	Description
AHD	Australian Height Datum
Average recurrence interval (ARI)	The long-term average number of years between the occurrence of an event of a specified magnitude. ARI is another way of expressing the likelihood of occurrence of an event.
Beach erosion	Landward movement of the shoreline and/or a reduction in beach volume, usually associated with storm events or a series of events, which occurs within the beach fluctuation zone. Beach erosion occurs due to one or more process drivers; wind, waves, tides, currents, ocean water level, and downslope movement of material due to gravity.
Beach scraping	The mechanical movement of small to medium quantities of sand from the intertidal zone to the upper beach and/or dune, usually involving dozers and/or excavators, with trucks utilised if alongshore distances of more than several hundred metres are required (WRL, 2017).
Bureau	Bureau of Meteorology
Coastal hazard	Coastal hazards, as defined in clause 4(1) of the CM Act, include: <ul style="list-style-type: none"> • Beach erosion • Shoreline recession • Coastal lake or watercourse entrance instability • Coastal inundation • Coastal cliff or slope instability • Tidal inundation • Erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters.
Coastal inundation	Coastal inundation occurs when a combination of marine and atmospheric processes raises the water level at the coast above normal elevations, causing land that is usually 'dry' to become inundated by sea water. Alternatively, the elevated water level may result in wave run-up and overtopping of natural or built shoreline structures (e.g. dunes, seawalls).
Coastal processes	Coastal processes are the set of mechanisms that operate at the land-water interface. These processes incorporate sediment transport and are governed by factors such as tide, wave and wind energy.
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
Escarpment (storm bite)	The landward limit of erosion in the dune system caused by storm waves. At the end of a storm the escarpment may be nearly vertical; as it dries out the sand slumps to a typical slope of one vertical to 1.5 horizontal.
High tide	The maximum height reached by a rising tide. The high water is due to the periodic tidal forces and the effects of meteorological, hydrologic, and/or oceanographic conditions.
Highest Astronomical Tide (HAT)	<p>The highest level which can be predicted to occur under average meteorological conditions and any combination of astronomical conditions. In Australia HAT is calculated as the highest level from tide predictions over the tidal datum epoch (TDE), this is currently set to 1992 to 2011.</p> <p>The HAT and the Lowest Astronomical Tide (LAT) levels will not be reached every year. LAT and HAT are not the extreme water levels which can be reached, as storm surges may cause considerably higher and lower levels to occur.</p>

¹ Where relevant, definitions have been derived from the Coastal Management Glossary (OEH, 2018a).

Term / Abbreviation	Description
MHWM	Mean High Water Mark
NBC	Northern Beaches Council
NSW SES	NSW State Emergency Service
SEMP	Safety and Evacuation Management Plan
Severe Weather Warning	<p>A warning issued by the Bureau of Meteorology for potentially hazardous or dangerous weather, being:</p> <ul style="list-style-type: none"> • sustained winds of gale force (63 km/h) or more, • wind gusts of 90 km/h or more, • very heavy rain that may lead to flash flooding, • abnormally high tides (or storm tides) expected to exceed Highest Astronomical Tide • unusually large surf waves expected to cause dangerous conditions on the coast.
Shoreline	The intersection between the sea and the land. The line delineating the shoreline is often approximated as the Mean High Water Mark (MHWM), however, the definition can vary depending on the application.
SLSC	Surf Life Saving Club (the building structure)
Storm tide	An abnormally high water level that occurs when a storm surge combines with a high astronomical tide. The storm tide must be accurately predicted to determine the extent of coastal inundation.
SWW	Severe Weather Warning
Tidal inundation	The inundation of land by tidal action under average meteorological conditions and the incursion of sea water onto low lying land that is not normally inundated, during a high sea level event such as a king tide or due to longer-term sea level rise. For planning controls, it is defined as the land that is inundated up to the level of HAT.
Trigger	Pre-negotiated decision-making points and commitments, so that action on coastal risks is taken when necessary.
Wave overtopping	Occurs when water from waves wash over the dune berm or foreshore structure causing flooding, damage to coastal defences, erosion behind structures, and can pose risks to public safety.
Wave run-up	The vertical distance above mean water level reached by the uprush of water from waves across a beach or up a structure.

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1 Introduction

This Coastal Hazard Safety and Evacuation Management Plan (SEMP) has been developed with Newport Surf Life Saving Club (SLSC; the Lessee) in connection with the development Application (DA) 2021/2173 submitted by Northern Beaches Council (hereafter Council or NBC).

The SEMP has been developed to manage emergency response actions required in and around the SLSC building arising from the residual risk from coastal hazards after the implementation of the building upgrades and coastal protection works outlined in the DA.

1.1 Scope

This SEMP:

- Defines relevant coastal hazards covered by this plan; (**Section 1.3**);
- Outlines the hazard exposure of the SLSC, coastal emergency event triggers for emergency response actions and available monitoring measures (**Section 2**);
- Outlines the roles and responsibilities of Council and the Lessee and coordinates their response to emergencies immediately preceding or during periods of beach erosion or coastal inundation (**Section 3**); and
- Outlines emergency response actions to be undertaken in the four phases of emergency management (Prevention, Preparatory, Response, Recovery), including the locations and types of works that may be undertaken for the protection of the public and the SLSC (**Section 4**).

Note that this SEMP does not deal with emergency response to tsunami warnings or actual tsunami conditions or other types of emergencies that are not related to coastal hazards (such as fire, earthquake or other threats or hazards). While various actions and responsibilities also relate to the broader response for Newport Beach as a whole, this SEMP is specifically intended for the SLSC site as shown in **Figure 1-1** overpage.

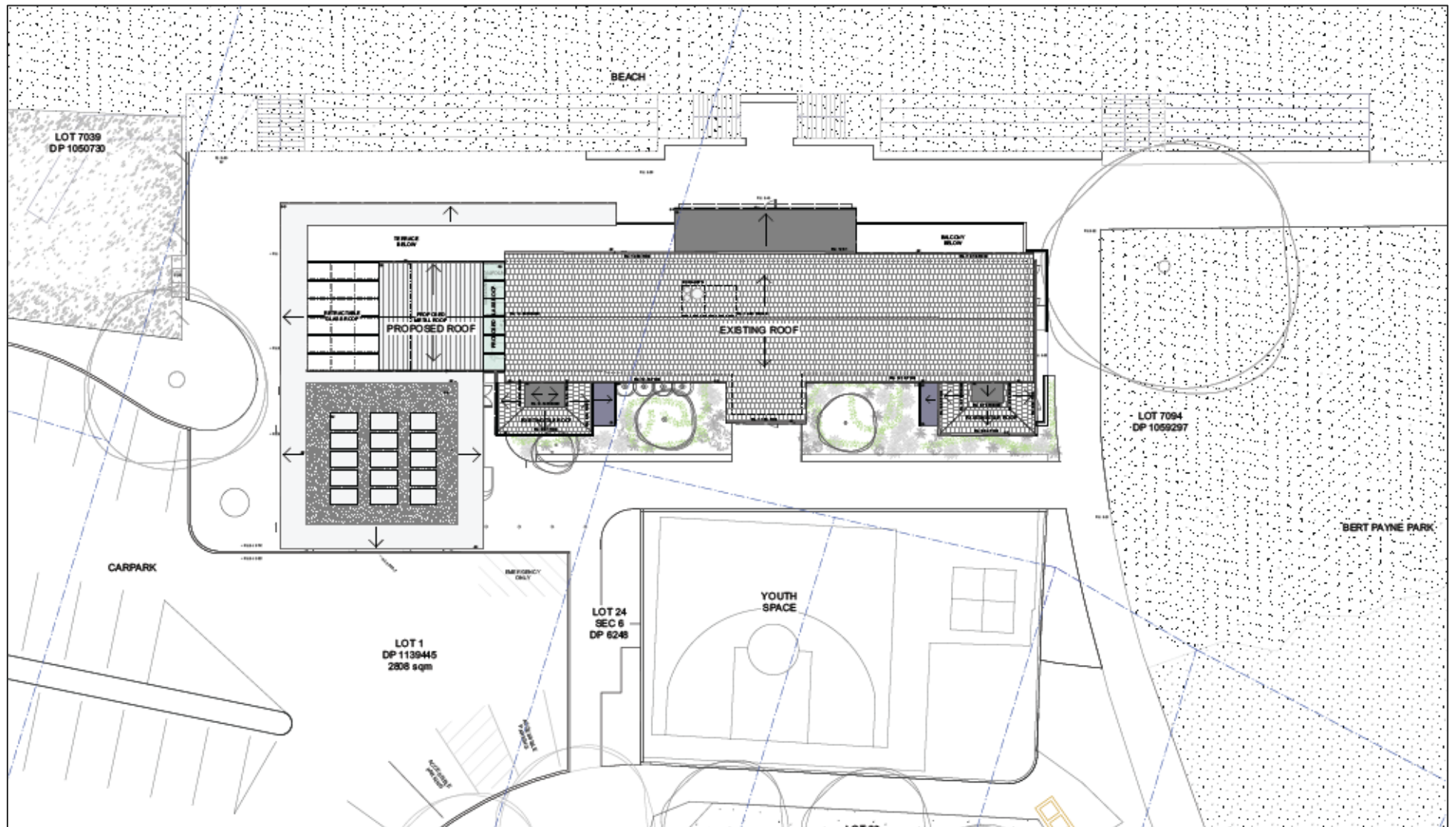


Figure 1-1 Newport SLSC site plan (Source: APA, 2024)

This SEMP should be read in conjunction with any management plan that may exist from time to time for the broader area and the timing, scope and implementation of various actions under this SEMP will need to be considered and coordinated as part of any broader response, recovery and restoration of the beach and coastal area associated with a coastal hazard emergency.

1.2 Purpose and Objectives

The purpose of this SEMP is to identify and facilitate the implementation of appropriate emergency response actions in order to:

- Protect human life and public safety;
- Minimise damage to the SLSC; and
- Not create additional hazards or risk.

This SEMP outlines the roles and responsibilities of Council and the Lessee in response to coastal hazards which may arise at Newport SLSC. It is modelled after a Coastal Zone Emergency Action Subplan (CZEAS), which (pursuant to the *Coastal Management Act 2016* (CM Act)) is required for land subject to coastal hazards identified in a Coastal Management Program (CMP). There is presently no CMP for the Newport Beach coastal zone, and therefore there is no statutory requirement for a CZEAS at this time. However, the SEMP has been prepared to demonstrate that, following implementation of the coastal protection works and structural modifications to the SLSC building described in DA2021/2173, the residual risk to public safety from coastal hazards can be appropriately managed.

The Newport SLSC is already subject to the coastal hazards of beach erosion, shoreline recession and coastal inundation, discussed further in **Section 1.3**. Other coastal hazards identified in the CM Act (e.g. entrance instability, coastal cliff or slope instability) are not relevant for consideration of the Newport SLSC building.

The NSW *State Emergency and Rescue Management Act 1989* (SERM Act) outlines a four-stage emergency management approach illustrated in **Figure 1-2**. The arrangements for these emergency phases of prevention, preparation, response, and recovery are detailed in **Section 4** of this SEMP.



Figure 1-2 Emergency response in the coastal management context (from DPIE, 2019)

1.3 Relevant Coastal Hazards

The Newport SLSC is exposed to several coastal hazards as defined in the CM Act.

For this SEMP, the key hazards that require consideration are:

- **Beach Erosion:** This occurs during severe coastal storms when waves remove sand from the beach, potentially undermining structures near the shoreline. The hazard is addressed for both immediate and future planning periods, with specific consideration of the storm demand and the impact on structural foundations. **Consideration:** With the proposed coastal protection works (secant pile wall) in place, potential risks resulting from the beach erosion hazard are mitigated for the SLSC.
- **Shoreline Recession:** Recession refers to the landward movement of the shoreline over time. At Newport Beach, this recession is expected to result primarily from sea level rise rather than sediment loss HCE (2021a) and WRL (2021). **Consideration:** With the proposed coastal protection works (secant pile wall) in place, potential risks resulting from the shoreline recession hazard are mitigated for the SLSC.
- **Coastal Inundation:** Coastal inundation occurs when high tides, storm surges, and waves overtop the beach, leading to flooding. Coastal inundation at the SLSC has been considered extensively using physical modelling. It is noted that inundation and wave loading damage to the SLSC building occurred some 50 years ago during the May 1974 storms, with the magnitude to increase over time due to projected sea level rise. **Consideration:** potential risks resulting from coastal inundation will be mitigated and/or avoided using the following measures:
 - Bleachers and stairs (an integrated feature of the coastal protection works)
 - Wave parapet (upstand wall with recurved seaward face and integrated seating, an integrated feature of the coastal protection works)
 - Reinforced concrete walls for new portions of the building exposed to the inundation hazard
 - Strengthening of the existing building structure for retained portions of the building exposed to the inundation hazard
 - Flood-compatible fit out (e.g. marine grade fittings and finishings, where required) for the ground floor portions of the building
 - Deployment of temporary measures, such as sandbags and bracing, as required.

Extensive physical modelling conducted by WRL (2024) has quantified the wave overtopping and wave loading for a range of design storm events, beach profiles, and with consideration of sea level rise. This modelling has informed the design of the SLSC alterations and additions and associated coastal protection works.

Understanding these hazards is essential for determining the required protection measures and emergency response actions outlined in this SEMP.

2 Hazard Exposure and Monitoring

2.1 Hazard Monitoring and Forecasting

Regular observation and reference to the forecasts from publicly available tools and systems are key to identifying situations where safety measures will need to be implemented.

This is important as coastal hazards can occur under scenarios not necessarily forecast by Severe Weather or Coastal Hazard Warnings issued by the Bureau, such as conditions arising from the effects of sequential storms, which can result in cumulative impacts leading to significant beach erosion adjacent to the SLSC and/or inundation of the SLSC and surrounds.

Access to forecasts and real-time data on wave conditions, water levels and beach state offers insight into the risk of coastal erosion and inundation generally a number of days before an event, providing a sufficient window for implementation of an emergency response.

Forecasting coastal erosion and coastal inundation involves navigating the complex interplay of several factors including:

- **Waves:** offshore wave height, period and direction;
- **Ocean tide:** astronomical tide cycle;
- **Surge:** storm surge timing and magnitude (barometric pressure and winds); and
- **Beach state:** the state of the beach prior to a storm.

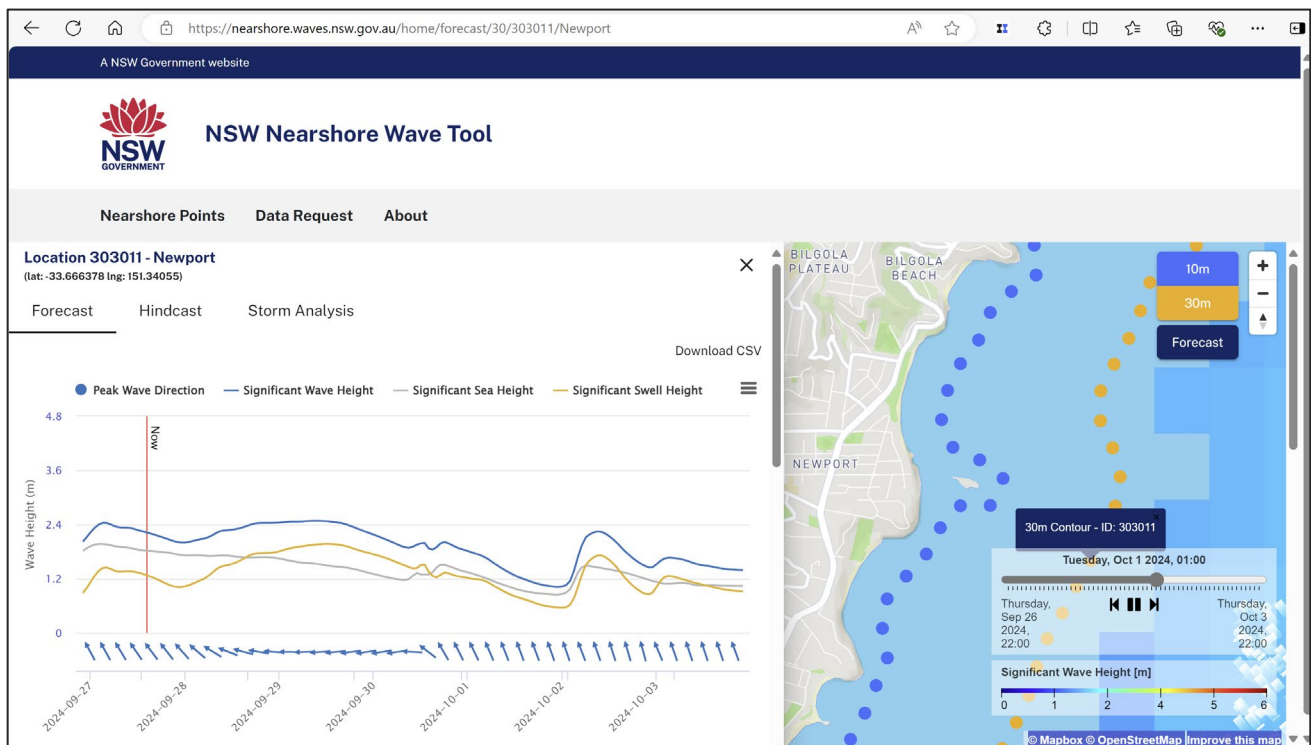
Further influencing the severity of coastal hazard events are:

- Cumulative impacts of storm clustering;
- Physical orientation of the shoreline;
- Intensity and path of East Coast Low weather systems (ECLs);
- Tidal and sea-level factors; and
- Human activities along the coast.

Table 2-1 identifies available tools and forecasts to assist with the monitoring of relevant ocean wave and tide conditions and the potential for coastal hazards to impact the subject site.

Table 2-1 Available sources of data for coastal hazard monitoring

Parameter	Forecast Source	Forecast Window	Links and Other Real-time information
Waves	Bureau of Meteorology Interactive Weather and Wave Forecast for the Sydney Region	7 days	http://www.bom.gov.au/australia/meteye/ NSW Nearshore Wave Tool MHL NSW Ocean Wave Data Collection Program
	NSW Nearshore Wave Forecast Tool (see Figure 2-1 for Newport example)	5 days	www.mhl.nsw.gov.au
Ocean Tide	MHL NSW Tide Charts	1 year	MHL NSW Ocean Tide Data Collection Program
	Bureau of Meteorology New South Wales Tide Tables	1 year	
Beach Erosion & Coastal Flooding	WRL Australian Coastal Early Warning System	7 days	https://coastalews.wrl.unsw.edu.au/region/nsw/
Historic Data Availability		Data Type	
Beach state	Council Beach Monitoring and Inspections	Photographs, Beach surveys	
	NSW Beach Profile Database	Beach profiles	


Figure 2-1 Nearshore Wave Tool Extract at 30m Depth for Newport with 5-day forecast

2.2 Triggers for Action

The term ‘trigger’ is used to define the circumstances under which a pre-agreed activity is initiated. This SEMP will be activated upon realisation of one or more of the trigger events detailed in **Table 2-2**.

Further details on specific actions to be undertaken at each phase of the coastal hazard emergency are reported in **Section 4** of this SEMP.

Table 2-2 Triggers for Activation of the SEMP

Trigger Event	Action Required	Responsibility
<p>Issue of a Severe Weather Warning Issued by the Bureau of Meteorology:</p> <p>The Bureau of Meteorology (‘the Bureau’) issues Severe Weather Warnings (also known as Coastal Hazard Warnings) for abnormally high tides or storm tides, and for damaging surf that may result in beach erosion or damage to coastal infrastructure. Under such circumstances there is potential for wave overtopping and coastal inundation that could compromise public safety at the SLSC.</p> <p>Warnings are issued when a coastal hazard is happening in an area or is expected to develop or move into an area. The lead time depends on the weather situation but may be up to 36 hours, and is updated every 6 hours while the threat remains. More frequent warnings may be issued if required.</p> <p>AND/OR</p> <p>Elevated Ocean Water Levels or Wave Run-up Observed at the Site:</p> <p>If elevated water levels (e.g., storm surge, king tides) or significant wave run-up is observed or forecast.</p>	<ul style="list-style-type: none"> • Ongoing monitoring of updates to Severe Weather Warnings and Coastal Hazard Warnings. • Ongoing monitoring of the following sources of information on current and forecast conditions for the locality: <ul style="list-style-type: none"> - Bureau’s MetEye Wave Forecasts, - WRL Australian Coastal Early Warning System - Hazards Near Me system warnings (i.e. ‘Advice, Watch and Act’ or ‘Emergency Warning’). • Initiate regular on-site monitoring and inspections of the site as per Sections 4.1 and 4.2. • Commence communications/preparatory actions as per Section 4.1 and 4.2 of this SEMP. 	<p>Council and Lessee</p>
<p>Coastal Erosion Observed near Coastal Protection Works:</p> <p>Coastal erosion is a naturally occurring process but should be closely monitored by the Council near the SLSC building. If erosion is observed near the coastal protection works is material such that there are issues with access and public safety.</p>	<ul style="list-style-type: none"> • Activities as above. • Consider need for beach scraping after an event (when safe to do so) if the erosion results in a substantial loss of amenity in the beach area immediately in front of the SLSC building and sand is available on other parts of the beach. 	<p>Council and Lessee</p> <p>Council</p>
<p>Damage or Wear of Coastal Protection Works:</p> <p>Whilst the design life and engineering of the works is such that no damage is expected, any signs of cracking, movement, or significant wear beyond design tolerances require intervention to repair or reinforce the protection works.</p>	<ul style="list-style-type: none"> • Periodic inspections of the coastal protection works as part of Council’s Asset Management Plan. • Post-storm inspections of the coastal protection works. • If any signs of cracking, movement or significant wear beyond design tolerances are observed, proactive maintenance should be adopted to mitigate risk of damage. 	<p>Council</p>

3 Roles and Responsibilities

The NSW State Emergency Service (NSW SES) is the designated combat agency for management of floods, tsunami and storms, including severe storms which cause coastal erosion.

Northern Beaches Council utilises the Australasian Inter-Service Incident Management System (AIIMS) and has an Incident Management Process that provides a framework outlining how Council prepares, responds to, and recovers from incidents such as coastal hazard emergencies.

Under the Incident Management Process, an ‘Incident Management Team’ comprising Council personnel may be activated by Council to monitor conditions and manage a coordinated response to the incident. If such an Incident Management Team is activated, Council will appoint an Incident Controller to oversee and coordinate Council’s response and to support the efforts of the lead combat agency (i.e. NSW SES). The Council will also liaise and coordinate with the Lessee regarding activation of this SEMP.

Relevant Council Business Units and functions of the Incident Management Team have a responsibility to document decisions made and the reasoning in making those decisions (before, during and after coastal erosion emergencies). Responsibilities of the Council and the Lessee before, during and after coastal emergencies at Newport SLSC are as listed in **Table 3-1**. However, responsibilities can vary depending on the nature and scale of an incident and the structure of an Incident Management Team, set up in accordance with the Incident Management Process. For example, it is noted that the SLSC is typically only staffed during normal Patrol and Operational Hours, and other parties may share responsibility for implementation of those tasks allocated to the Lessee in **Table 3-1**.

The responsibilities of the NSW SES and other agencies are described in the NSW State Storm Emergency Management Plan (NSW SES, 2023) and relevant NSW SES Local Flood Emergency Sub Plans. This SEMP, by virtue of its comparable structure to a CZEAS, looks to align with, and give effect to, any plan made under the SERM Act (including the NSW State EMPlan and any arrangements outlined in relevant emergency sub-and supporting plans) and does not duplicate any material (or change defined roles and responsibilities) in those plans.

Table 3-1 Responsibilities of Council and the Lessee

Who	Responsibilities
Council	<ul style="list-style-type: none"> • Preparation: maintain and ensure currency of SEMP in-line with relevant legislation and regulations. • Preparation: Preparing and installing permanent signage at the site on the risk of coastal hazards, managing related content on the Council website. • Preparation: purchasing and storing (or hiring) of appropriate temporary fencing or other materials such as sandbags or window boards for use in emergencies and identifying appropriate personnel that would transport and place any fencing or temporary protection measures. • Preparation: ensuring sufficient safety signage is stored within the SLSC building and available to be erected at short notice. • Preparation: monitoring physical environmental conditions (weather, wave data, water level data, beach behaviour). • Response: triggering standby and mobilisation for installation of safety works and/or evacuation, as required. • Response: sharing forecasts, warnings, safety information and incident updates from the lead combat agency to the community and media.

Who	Responsibilities
	<ul style="list-style-type: none"> • Response: communicate and coordinate with the Lessee in relation to actions as required. • Response: communicate any evacuation orders and facilitate evacuation of the building as required. • Response: assessing the need for deployment of safety signage and barricades to be installed to minimise risk to public safety. • Response: turn off power to the building as required. • Response: engaging experienced coastal and geotechnical engineer(s) where required to provide advice. • Recovery: beach scraping and/or sand nourishment to restore access, safety, and beach amenity after a storm as required and where conditions allow (e.g. where there is sufficient sand supply). • Recovery: maintaining photographic records. • Recovery: preparing report on any emergency works installed, if required. • Recovery: cleaning the beach of debris and other inappropriate materials, if required. • Recovery: arrange for any building cleanup/repairs if damage has occurred. • Recovery: arrange for electrical testing and repair for any affected electrical outlets. • Recovery: removing temporary fencing and signage as required.
Lessee	<ul style="list-style-type: none"> • Preparation: monitoring physical environmental conditions (weather, wave data, water level data, beach behaviour). • Preparation: alert the Council if any trigger events occur which require further action. • Response: communicate and coordinate with the Council in relation to actions as required. • Response: remove or relocate transportable equipment if safe to do so, and secure items that may become debris or cause hazardous spills. • Response: remove or relocate all valuable and water sensitive items within the building and elsewhere as required. • Response: enact and facilitate evacuation of the building as required and ensure the building is clear. • Response: transport and place any fencing or temporary protection measures (e.g. sandbags or window boards) as required. • Response: activate any design features internal to the building that enable flood water that enters the front rooms to flow out of the building and/or protect openings to other internal spaces (e.g. the first aid room), as applicable. • Response: turn off power to the building as required.

A copy of this SEMP will be kept by the Council and the Lessee and provided to designated SLSC and Council personnel. Such personnel will be trained in emergency response actions as set out in **Section 4**.

4 Emergency Response Actions

As set out above, the actions required to be undertaken and responsibilities for those actions will vary depending on the nature and scale of an incident and the structure of an Incident Management Team, set up in accordance with the Incident Management Process.

Council and the Lessee’s ability to undertake the actions identified in this SEMP will be dependent on the availability of resources during emergency events. Actions must not conflict with or impede NSW SES actions. Emergency works must not be undertaken during extreme weather unless safe to do so, as emergency actions must not put Council and SLSC staff or volunteers at risk.

Actions in this SEMP aim to reduce risk when rare and large or unexpected events occur.

There are four action types (as per **Figure 4-1**):

- Preventative Actions (Phase 1);
- Preparatory Actions (Phase 2);
- Response Actions (Phase 3); and
- Recovery Actions (Phase 4).

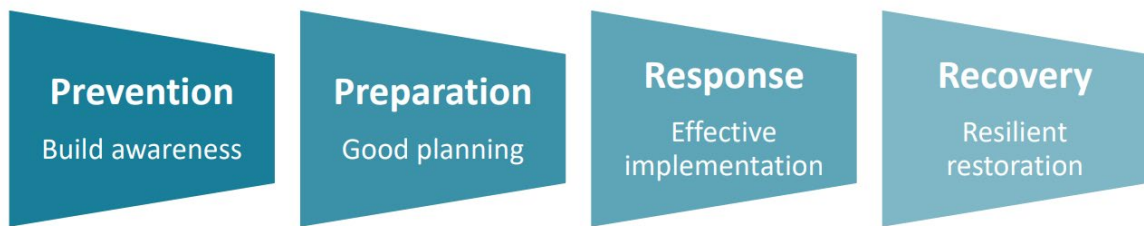


Figure 4-1 Emergency response in the coastal management context (from DPIE, 2019)

4.1 Prevention (Phase 1) Actions

4.1.1 Coastal Hazard Monitoring and Inspections

Continuous monitoring of weather forecasts/warnings and on-site conditions, including wave heights, water levels / storm surges, and erosion patterns will allow Newport SLSC to anticipate potential coastal hazards. This will be conducted through the collection of real-time data (as per **Table 2-1**) and collaboration with Council staff and SLSC officials. Council will also monitor warnings issued by the Bureau which may impact the area, specifically Severe Weather Warnings and Coastal Hazard Warnings for the Sydney region, as detailed in **Section 2.1**.

Monitoring of the physical environment includes:

- Weather conditions, forecasts, and warnings;
- Wave forecasts regarding height, period, and direction;
- Predictions of water levels (tidal and storm surge);
- Real-time wave and water level data, including storm surge effects;
- Observation of beach behaviour, such as erosion extent and beach width, considering historical patterns during storms; and

- Daily inspection of beach areas, particularly during SWWs and other hazardous conditions, is expected.

4.1.2 Public Communication

Noting that there is expected to be at least 24-48 hours warning time of an event (forecast window of 5 – 7 days, as per **Table 2-1**), evacuation routes (as needed) will be clearly mapped and communicated to SLSC members and the public. These routes will guide individuals away from the hazard zone toward inland safe areas located in the youth zone and car park behind the SLSC building.

The designated evacuation routes will consider the potential for joint occurrence of catchment flooding with a coastal hazard event and seek where feasible to identify evacuation routes and assembly areas that are also flood free.

Permanent signage will be installed within the SLSC building about the potential risks associated with coastal hazards.

Information on beach closure and alternative access routes through the car park and/or via Bert Payne Reserve during hazardous conditions will be communicated via Council’s website and social media. Such advisory notices will be issued ahead of time, where feasible.

4.2 Preparatory (Phase 2) Actions

Preparation actions focus on ensuring readiness for a potential coastal hazard event. This includes planning evacuation routes, training personnel, and coordinating communication strategies.

4.2.1 Evacuation Planning

Designated SLSC and Council personnel will be trained in SLSC evacuation procedures and hazard response actions. Annual drills will be conducted by Council to ensure familiarity with the evacuation process.

4.2.2 Communications Protocols

Clear communication strategies will be established, primarily using signage at the site, to inform SLSC members and the public of impending hazards and necessary actions. This will include signage as discussed in **Section 4.1.2**, as well information provided to new SLSC members upon joining the Club (e.g. inductions, welcome packs).

Information also will be communicated on Council’s Emergency Dashboard at <https://emergency.northernbeaches.nsw.gov.au/> and via social media updates. Coordination by Council with local emergency services (e.g. NSW SES, Police) will ensure that a unified response can be implemented in case of a coastal hazard event.

4.2.3 Equipment Preparation

Resourcing for the SEMP should be undertaken during Phase 2, including identifying materials for safety management and temporary protection, and ensuring availability of plant and equipment for mobilisation during an event. Temporary fencing and warning signs, and temporary protection measures such as sandbags, will be stored or available from accessible locations, ready to be deployed during wave overtopping events to prevent access to hazardous areas.

4.3 Response (Phase 3) Actions

During a coastal emergency, Council staff responsible for managing actions will undergo training so that they possess a clear understanding of the SEMP and will be familiar with the roles and responsibilities of key personnel, as outlined in **Section 3**.

Information also will be communicated via the Response portion of Council’s Emergency Dashboard at <https://emergency.northernbeaches.nsw.gov.au/>.

4.3.1 Evacuation Procedure

- **Triggers:** Evacuation may be triggered:
 - Based on the advice of an experienced coastal engineer having regard to data on wave heights, storm surges, tides, erosion predictions, beach inspections, and experience;
 - If directed by the relevant Council Director or Incident Controller;
 - If ordered by the relevant combat agency or NSW SES; or
 - If the Lessee considers it necessary to ensure the safety of occupants of the SLSC building (i.e. self-initiated evacuation).

Council staff will coordinate with emergency services to initiate an evacuation when advice to do so is received from one or more of the parties identified above .

- **Communications:** SLSC members will be notified of the triggering of a coastal hazard emergency event and initiation of evacuation of the building via email, text alerts, and verbal instructions. Public announcements over the PA system will guide individuals to evacuate, and signage will be placed at key points. NSW SES, Police, and Council staff will be notified to coordinate emergency evacuations and help manage public safety. The Lessee will assist with notifications to relevant stakeholders or groups that may have bookings or events planned at the facility.
- **Evacuation:** Designated evacuation wardens will direct individuals and ensure everyone leaves the building. Alternative routes will be provided if primary access points are unsafe.
- **Temporary fencing:** Once the evacuation is complete, entry to the Newport SLSC will be locked and the power turned off. Temporary fencing will be placed around the perimeter of the premises along with public safety signage.

4.3.2 Wave Overtopping Procedure

- **Triggers:** Council staff will monitor wave overtopping risks, triggered by storm surges, tidal predictions, wave forecasts, and beach state. When conditions are predicted to become unsafe, emergency protective measures will be deployed if safe to do so.
- **Temporary fencing and safety measures:** Temporary barriers and fencing will be installed along the promenade and accessways, restricting public access to hazardous areas prone to wave overtopping. Warning signage will be placed indicating that the area is unsafe due to overtopping risks such as slippery surfaces, sudden waves, and debris. Temporary sandbagging and window boarding will also be installed, if required, to mitigate seawater penetration to openings.
- **Communications:** Council will work closely with emergency services, including the NSW SES, to deploy any additional resources needed. Continuous monitoring of the overtopping risk will be maintained, and updates provided to SLSC members, staff, and the public.

4.3.3 Erosion Event Procedure

- **Triggers:** Real-time monitoring of beach width, scarp formation, and sand loss will inform actions to manage erosional risks. When unsafe conditions are detected, accessways will be closed using temporary fencing.
- **Temporary fencing:** Temporary barriers will close off dangerous accessways until they are safe for use. SLSC members have identified that following severe erosional events, watercraft access to and from

the beach is typically available further north and south along the beach. Where safe to do so, these alternative routes will be communicated to members and beach users, and signage will direct them to safer access points (where available) until suitable closer access is available.

- **Communications:** Timely alerts via signage, the PA system, and social media will inform beach users of access closures and alternative routes during erosional events. Local authorities, NSW SES, and police will be updated continuously to ensure coordinated response efforts, including beach closures, traffic management near the coastal zone, and public safety measures.

4.4 Recovery (Phase 4) Actions

Once the immediate risk has subsided, recovery actions will aim to restore the safety and functionality of the beach and SLSC.

The timing, scope and implementation of any of the recovery actions detailed below will need to be considered as part of a broader recovery effort for Newport Beach as a whole. However, the recommended recovery or post-storm actions to be undertaken by Council, contingent upon available resources and recognising that adverse conditions can persist for several days following the storm's peak (especially if the beach remains eroded) encompass:

- **Managing any unstable beach areas:** continuing to maintain a communication strategy warning of the dangers of any persistent high, unstable or near-vertical erosion escarpments drying out and collapsing without notice (in high-use public areas, the Council may consider making these escarpments 'safe' by reprofiling the escarpment(s) using machinery).
- **Sand management:** conduct and/or oversee beach scraping (in accordance with the methodology described in **Section 4.4.1**) and/or sand nourishment to restore access, beach amenity, and public safety.
- **Safety inspections:** Engineers and Council staff will assess the condition of the SLSC building, accessways, and promenade. Re-entry will only be permitted once the area is confirmed safe, at which time temporary fencing and signage will be removed. If access is still compromised, temporary alternative routes should remain in place until full repairs are completed.
- **Beach cleanup:** Once safe, Council staff will clear debris left by the storm. Large or hazardous objects will be removed to restore public safety and beach use.
- **Communications:** Continue communicating with the community about ongoing risks (such as unstable dunes or escarpments) and the status of recovery efforts.
- **Documenting:** maintaining photographic and written records of events (including an inventory of any damage and photographs and measurements of exposed protective works) and decision-making processes. Details of erosion and inundation extents and the weather conditions under which they were caused should be recorded.
- **Debrief:** A debrief session will be held with SLSC personnel and Council to review the response to the event. Lessons learned will be incorporated into future planning and preparation efforts.
- **Re-supply:** In addition, Council should replenish any emergency materials and supplies for future emergency events.

4.4.1 Beach Scraping

Beach scraping involves the relocation by mechanical means of sand from the intertidal zone to the upper beach or dune. Post-event beach scraping can be used to redistribute sand (where sand is available) and enhance the natural process of beach recovery.

Beach scraping may be undertaken by Council, potentially as part of a broader beach recovery process, if required to restore safe beach access following significant storm erosion and to assist beach recovery. This would include the beach area near the coastal protection works and the SLSC building. Beach scraping can assist in providing safe public access and ensure access for surf life-saving personnel and equipment. The scale of beach scraping activities will depend on the erosion caused by the event and will need to be determined following the event.

Beach scraping should be undertaken where needed to restore safe access as the first priority. The following provides general guidance for undertaking beach scraping:

- Borrow areas will be within the intertidal area. Sand is to be moved with a bulldozer in layers, with a shallow depth of 0.2 to 0.3 m per pass, to a maximum overall depth of up to 0.5 m.
- Sand is to be placed in the identified placement areas which could be at the base of the dune scarp to form an incipient dune (space permitting) or to widen the dune face (steeper beach profile with less space or to reinstate beach access areas), and at the bottom of the beach access stairs, bleachers, and watercraft access ramp. Where placement is for an incipient dune, a small swale is left between the crest of sand placement and the existing dune system.
- If required, the beach berm and dune face should be groomed on completion as necessary to reduce public safety risks and/or improve beach amenity.
- Survey data (e.g. drone survey or real-time kinematic survey (RTK) of beach profiles) should be collected pre- and post-works.

5 Review

This SEMP is to be reviewed at least once every three years or after a major incident. A copy of any updated or amended SEMP should be kept by the Council and Lessee and provided to designated SLSC and Council personnel.

6 References

- Australian Geomechanics Society [AGS] (2007), Practice Note Guidelines for Landslide Risk Management 2007, and (2007b), Commentary on Practice Note Guidelines for Landslide Risk Management, Australian Geomechanics Society Landslide Taskforce, Landslide Practice Note Working Group, Australian Geomechanics, Volume 42, No. 1, March, pp. 63-114 and pp. 115 – 158.
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- NSW SES (2023a), *New South Wales Emergency Management Plan (EMPLAN)*.
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- Water Research laboratory [WRL] (2024), *Newport SLSC Stepped Seawall Physical Modelling* WRL Ref: WRL2024007, August 2024



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