



Our future on the coast

NSW Coastal Management Manual Part B:
Stage 1 – Identify the scope of a coastal
management program

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Identify the scope of a coastal management program

The scoping study is the first stage in the process of preparing a coastal management program.

The scoping study assists council to:

- identify the community and stakeholders and prepare an engagement strategy
- determine the strategic context of coastal management
- establish the purpose, vision and objectives
- determine the key coastal management issues and the spatial extent of management areas
- review current coastal management arrangements
- establish roles, responsibilities and governance
- determine where action is required through a first-pass risk assessment
- identify knowledge gaps and information needs
- prepare a preliminary business case
- determine whether a planning proposal will be prepared to amend coastal management area maps and the Local Environmental Plan
- develop a forward program for subsequent stages of the coastal management program, including a fast-tracking pathway.

1.1 Purpose and overview of Stage 1 – scoping study

The following sections of the *Coastal Management Act 2016* and associated mandatory requirements in Part A are most relevant to this stage

Section 12 Purpose of coastal management programs.

Section 13 Requirement for coastal management programs.

Section 14 Preparation of coastal management programs.

Section 15 Matters to be dealt with in coastal management program.

Section 16 Consultation.

Section 18 Review, amendment and replacement of coastal management programs.

The *Coastal Management Act 2016* (CM Act) provides for the integrated management of the coastal environment of New South Wales consistent with the principles of ecologically sustainable development, for the social, cultural and economic wellbeing of the people of the State.

The CM Act sets out the strategic vision for managing our future coastal landscape. It sets overarching objects for the coast of New South Wales and management objectives for four different management areas that comprise the coastal zone.

Coastal management programs (CMPs) set the long-term strategy for the coordinated management of the coastal zone. Councils are to ensure that their CMP is to be reviewed at least once every 10 years. A CMP may be amended (in whole or in part) or replaced by another CMP at any time. It is recommended that councils complete Stage 1 (scoping study) for new and updated CMPs, regardless of whether a council already has a CMP, coastal zone management plan (CZMP) or other management plans, policies and practices.

The primary purposes of Stage 1 (scoping study) are to:

- review progress made in managing issues in coastal areas
- develop a shared understanding of the current situation
- identify the focus of the new CMP.

Stage 1 builds on and integrates with previous work, including existing plans and strategies, technical studies and stakeholder input. Where a council has been implementing an existing CMP or CZMP, Stage 1 continues the planning cycle following the evaluation and review of previous plans or programs.

In situations where no CMP or CZMP exists, councils may use Stage 1 to determine whether any existing management arrangements, such as plans of management for foreshore reserves, adequately identify coastal issues and manage them in a way that meets the requirements of the CM Act and the State Environmental Planning Policy (Coastal Management) 2018 (CM SEPP).

1.1.1 Stage 1 process overview

Stage 1 sets up a collaborative, risk-based and outcome focused process using best available information. It guides council in formulating appropriate strategies and actions in later stages of the planning process.

Stage 1 is designed to assist councils to:

- review the strategic context for coastal management in the local area
- determine the purpose of the CMP and the key outcomes that it is intended to deliver
- identify the appropriate scope for the CMP, consider the area and range of issues to be dealt with and identify which organisations or communities need to be involved
- determine the adequacy of available information and management actions and identify subsequent stages in the preparation of a CMP, including the possibility of fast-tracking (see **Figure B1.1**).



Figure B1.1 Steps in determining the context, purpose and scope of a CMP

During Stage 1 councils may draw on information such as management reports, mapping, monitoring, survey responses, population and economic statistics, and completed studies. This stage does not involve new studies; if new studies are necessary, they will be part of Stage 2.

The information gathered may be used to:

- engage with the local community and key stakeholders including relevant public authorities (**Section 1.2.1**)
- determine the strategic context for coastal management, including the interdependence of the environmental, social and economic characteristics of the coast (**Section 1.3**)
- confirm the purpose of the CMP and council's vision and objectives for the coastal zone including all four coastal management areas (**Section 1.4**)
- identify the scope of the CMP including:
 - key management issues, trends and risks affecting the area now and for scenarios that are likely in the foreseeable future, including demographic projections, potential impacts of climate change and socioeconomic changes (**Section 1.5.1**)
 - which coastal management areas will be included in the CMP (**Section 1.5.2**)
 - whether a planning proposal will be prepared to amend council's Local Environmental Plan (LEP) to include updated boundaries for any coastal management area (**Section 1.5.2**)
- review current coastal management arrangements (**Section 1.6**)
- review existing mapping of coastal management areas and land affected by coastal hazards and identify areas where further refinement may be required to redefine and map coastal management areas (**Sections 1.6.1, 1.6.2, 1.6.3 and 1.6.4**)
- establish roles, responsibilities and governance arrangements (**Section 1.7**)

- determine where additional action may be required and opportunities for improvement (**Section 1.8**)
- identify knowledge gaps and information needed to inform decisions (**Section 1.8.1**)
- undertake a first-pass risk assessment to establish what is known about impacts of coastal hazards and vulnerabilities of coastal values and assets (**Section 1.8.2**)
- assess the community's attitude to risk in terms of acceptable, tolerable and unacceptable risk (**Section 1.8.2**)
- develop a preliminary business case for preparing the CMP (**Section 1.9**)
- present the findings in a clear report, that explains the proposed way forward (**Section 1.10**)
- prepare a forward program for subsequent stages in the preparation of a CMP, including 'fast-tracking' (**Section 1.11**), and
- consult with Office of Environment and Heritage (OEH) and (through the Minister) the NSW Coastal Council about the proposed scope of the CMP, to confirm that proposed steps in the preparation of the CMP are consistent with the requirements of the CM Act, CM SEPP and manual (**Section 1.12**).

1.2 Getting started

The effectiveness of a CMP largely depends on the quality of the information used to inform the planning process and the extent to which stakeholders and decision-makers are actively engaged. Matters to consider may include:

- Is this a new CMP or a review or amendment of a CZMP or CMP?
- Is the CMP review in response to specific Ministerial Directions or a performance audit report from the NSW Coastal Council?
- Are there specific timeframes for the preparation of the CMP?
- Are there other engagement processes that should be aligned with the preparation of the CMP?

The preparation of a CMP will be enhanced if, at the outset, there is a broad level of awareness across council officers, councillors and stakeholders about the purpose of a CMP. This includes an understanding of what is involved in preparing and implementing a CMP within the context of council's other roles and responsibilities. Effective early preparation activities will help reduce unintended consequences and miscommunication.

Preliminary work should aim to establish:

- A clear understanding within council and its communities of the coastal management framework.
- Strong relationships with the community.
- Clear lines of communication.
- An understanding of roles, responsibilities and governance processes.
- The level of engagement and collaboration with public authorities to facilitate the preparation, certification and implementation of the CMP.
- A collaborative approach with neighbouring councils. Consultation with other local councils on the draft CMP is required by s16 (1) (b) (i) and (ii) of the CM Act where those councils share a coastal sediment compartment or estuary as specified in Schedule 1 of the CM Act.

When scoping a new or updating an existing CMP, council may consider:

- how a CMP can inform land use planning controls and operational priorities and budgets
- the links between the CMP and council's strategic and operational planning processes
- councillors' awareness of any emerging coastal management issues
- the potential risks in the CMP planning process, for instance in relation to timing, misunderstanding or conflicting perspectives and aspirations
- how much time should be set aside to prepare a CMP to ensure that the process will align with Integrated Planning and Reporting (IP&R) timeframes
- the resources required, in terms of staff and budget, for obtaining relevant detailed information for community engagement, communication and delivery
- whether there are specific implementation processes and mapping aspects that need to be revisited
- whether changes to the boundaries of the coastal zone or any one of the coastal management areas are likely to be required
- how the preparation of the CMP will be aligned with the preparation of a Planning Proposal to amend the Local Environmental Plan (LEP) and subsequently the CM SEPP
- how their CMP relates to the management of the marine estate
- how adjoining councils and public authorities will be involved in preparing and implementing the CMP to achieve an integrated approach to managing the coast
- the key messages for the community about council's approach to coastal management.

1.2.1 Engage with stakeholders and the community

Effective engagement and communication are important aspects of a successful CMP. It is recommended that councils engage with stakeholders from the outset and during various stage of the process.

Prior to or during Stage 1, councils will find it useful to raise stakeholders' awareness of the requirements of the CM Act and the CM SEPP. It is of value that stakeholders are aware of the links with other legislation such as the *Environmental Planning and Assessment Act 1979* (EP&A Act), *Marine Estate Management Act 2014* (MEM Act), *Biodiversity Conservation Act 2016*, *Crown Lands Act 1989* and *Crown Lands Management Act 2016* and the *Local Government Act 1993*.

Engaged communities and stakeholders can facilitate the preparation of a representative CMP and enable the planning process to remain flexible and responsive to changing values. Through active engagement, a shared understanding of the risks and uncertainties can be established. Community and stakeholder support for the actions included in a CMP will be beneficial during the implementation phase.

At this early stage, it is recommended that councils develop a community and stakeholder engagement strategy. Such as strategy outlines:

- which individuals and organisations should be involved in the review, preparation and implementation of the CMP
- how and when they will be offered engagement opportunities
- how their input will be incorporated into the planning process.

For the Stage 1 scoping study, relevant information about the community and its interests and aspirations for the coast may be drawn from results of previous community engagement or surveys.

Considerations in preparing an engagement strategy include:

- the time elapsed since any previous coastal planning process
- changes to the demographic structure of the community including length of residence, and future projections of population growth
- the complexity of coastal management issues and the level of risk
- which individuals, organisations and public authorities are relevant and their relative interest and influence in CMP outcomes
- specific consultation required to align with the preparation of a planning proposal
- the community's values, aspirations, perceptions and attitudes to the coast
- the level of community satisfaction with council's previous consultation and coastal management performance
- diverse community preferences as to how and when they are engaged in the planning processes
- how to design an equitable, inclusive and legitimate process
- specific consultation requirements that may apply, for example, when management issues involve the Aboriginal community.

Studies to collect and analyse more detailed information about the community and stakeholders may be included in Stage 2.

1.3 Determine the strategic context of the CMP

To understand and address coastal management issues in a risk framework, councils need to have a clear understanding of the internal and external context in which they are operating. This includes:

- the strategic direction established for the coast in regional or local planning documents
- environmental context, including physical features and processes such as coastal sediment compartment, habitat extent and health, catchment characteristics and climate change
- political and governance context and the relationships between the council, adjoining councils and other public authorities
- legal context such as relevant legislation and policies, land tenure and land managed as national park or Crown reserve
- social context such as population growth and seasonal demographic changes
- cultural context, including the cultural background of residents and other stakeholders and the presence of places of historical or cultural significance such as Aboriginal sites
- economic context such as equity, distribution of wealth, willingness to pay and the reliance of the community on coastal related tourism or other coast-dependent businesses such as aquaculture

- technical context such as the understanding of coastal processes and climate change or the need to review and amend the mapping of the coastal management areas
- the significance and sensitivity of coastal values and issues in the local council area
- the nature and extent of existing development and proposed future development scenarios and infrastructure (regional growth plans)
- the vulnerability of coastal assets, infrastructure and communities
- the community's attitude to risk including what level of risk is considered acceptable, tolerable and unacceptable
- whether there are any barriers within council or its community that may constrain or add complexity to the CMP planning process
- the existence of a previous CMP (or CZMP) and any key learnings, significant coastal hazard events, emerging or changed threats that have arisen during its implementation which may affect strategic priorities.

1.4 Establish the purpose, vision and objectives

The CM Act sets out the statewide objects and objectives for managing the NSW coast by councils and public authorities.

A local vision statement that is consistent with the state's vision while reflecting the local context will help communities to identify with the future of their coast, encourage a sense of community ownership of the actions in the CMP and foster commitment to its preparation and implementation.

Local objectives developed during Stage 1 may be stated in broad terms, to establish council's overall strategic direction, and undergo further refinement at later stages of the planning process.

In identifying coastal management objectives for their area, councils may consider:

- specific local and regional-scale coastal objectives (from the Community Strategic Plan or other strategic plans), that reflect community values and any special characteristics of the local area
- how progress towards achieving the objectives will be measured, such as relevant indicators.

1.5 Identify the scope of the CMP, including key management issues and areas

1.5.1 Identify key management issues

During Stage 1, background information to determine key coastal management issues will be reviewed. The regional priority risks identified through the Threat and Risk Assessment (TARA) for the Marine Estate and associated background reports will be a useful resource.

Councils should consider planning timeframes and pathways from now, to 20, 50, 100 years and beyond, where appropriate. Councils may also consider the vulnerabilities and risks associated with a range of future scenarios, likelihoods and consequences including rare or potentially catastrophic events.

The coastal issues may be associated with:

- threats to natural coastal processes and environmental values
- threats to social and cultural values including public access, amenity values, usage and safety
- threats to Aboriginal peoples' spiritual, social, customary and economic use of the coast
- existing impacts on cultural heritage values, both Aboriginal and historical
- threats to sustainable coastal economies
- future economic development and changing drivers of economic activity in coastal towns (for instance, tourism rather than primary production)
- conflicts associated with land use and access to coastal resources
- current and future risks from coastal hazards including climate change
- potential impacts of climate change on a broad range of built and natural assets and values including coastal ecological communities, water quality and river flows, cultural values and recreational opportunities
- the evolving, ambulatory and dynamic nature of coastal landforms and habitats
- lack of integrated and coordinated policies, planning and management
- the vulnerability or resilience of coastal assets and infrastructure including the need to upgrade public facilities
- the need to amend the council's Local Environmental Plan (LEP) or Development Control Plan (DCP)
- increasing demand for residential land and land suitable for coast-dependent businesses
- social changes including changes to popular recreational activities and the role of volunteers
- barriers to public participation in decision-making
- the acquisition of land by public or local authorities.

When undertaking a scoping study, councils may consider a range of future scenarios for their coastal zone that are plausible and scientifically credible, including worst case, mid-range and best-case scenarios. This may include a range of development and demographic scenarios, physical changes to the coast, future sea level and extreme water level values and projected impacts of climate change.

These scenarios may assist decision-makers to understand sensitivity to change when managing their risks. Decision-makers may use these scenarios for relative vulnerability or risk assessments across the council area.

More detailed discussion of potential management issues for the four coastal management areas is included in **Sections 1.6.1 to 1.6.4**.

1.5.2 Identify and map the spatial extent of coastal management areas

The coastal zone is made up of a combination of four coastal management areas (as defined in the CM Act and CM SEPP). The area covered by a CMP may include all or any part of the coastal zone within the council area, but may also extend outside the council boundaries, and be prepared in cooperation with adjoining councils.

The CMP may also cover areas outside the mapped coastal zone, where the management of the external area has a significant impact on issues within the coastal zone, for instance,

wider estuarine catchments. This helps to ensure that actions are integrated and undertaken at an appropriate scale to address the issues.

The CM SEPP maps of the coastal zone provide a starting point and can be modified by planning proposals or by the NSW Government as further information becomes available. Local studies and modelling undertaken by or on behalf of councils when preparing their CMP will assist in better defining the coastal management areas. The community and government will have the opportunity to be involved in any proposed changes to the mapped areas through the preparation of a planning proposal under the EP&A Act, in parallel with the preparation of the CMP.

In the CM SEPP, the coastal wetlands and littoral rainforests area are based on state-level mapping of lands that display the hydrological and floristic character of coastal wetlands, littoral rainforests and adjoining features.

The maps reflect an improved knowledge of coastal wetlands and littoral rainforests and include information from recent studies undertaken by public authorities, local councils and academic institutions. However, additional local scale mapping undertaken by or on behalf of councils will be able to improve mapping over time.

The sensitivity, adaptive capacity and tolerance of the community to coastal hazards may be considerations in mapping of the proposed coastal vulnerability area for land use planning purposes in the local council area.

Some councils have mapped areas affected by some coastal hazards in LEPs and DCPs, based on previous coastal hazard studies. Local coastal hazard modelling and mapping may be used to inform the mapping of the coastal vulnerability area for all coastal hazards.

Where areas affected by coastal hazards have not been previously defined at the local level (e.g. by or on behalf of a council) broader mapping may be applied during the scoping study. Further studies to ensure the impacts of coastal hazards are fully considered may be developed in Stage 2.

The NSW Government will work with councils and communities to ensure that coastal hazards are further considered, and where appropriate, reflected in CMPs and land use planning instruments.

The coastal environment area and coastal use area, as mapped in the CM SEPP, are based on defined distances around coastal water bodies and the open coast. Local studies undertaken by council may provide the evidence to amend these areas based on local information.

Under the section 9.1 direction for coastal management, councils may prepare a planning proposal to amend the maps in their LEP to increase or decrease the area mapped in any of the four coastal management areas in their local area.

Councils are advised to be aware of the potential overlap of the coastal management areas and the interdependence and spatial extent of the coastal management issues where these cross-council boundaries.

In Stage 1, a council may identify:

- Which of the four coastal management areas were covered in their previous CZMP or CMP and what issues were regarded as significant?
- Which of the four coastal management areas (all or in part) are applicable to the issues that will be the focus of the new or updated CMP?
- Whether the boundaries of the management areas are appropriate to address the management issues. Councils will highlight locations where amendments to the mapped coastal management areas are likely to be proposed.

- Where coastal management areas overlap and the hierarchy of management objectives applies.

1.6 Review the current coastal management arrangements

The NSW Government recognises that many coastal councils have prepared CZMPs and worked with public authorities and their community to implement actions. The intent is that councils and public authorities will continue to build on what has already been achieved, but recognises that some CZMPs relate to specific issues or parts of the coastal zone.

During Stage 1 councils may review management issues and challenges and the effectiveness of existing management arrangements. This review helps identify the strengths and weaknesses of past and present responses, any previous barriers to implementation, and potential opportunities to respond and adapt to future challenges.

Matters which may be considered in the management review are summarised in **Figure B1.2**.

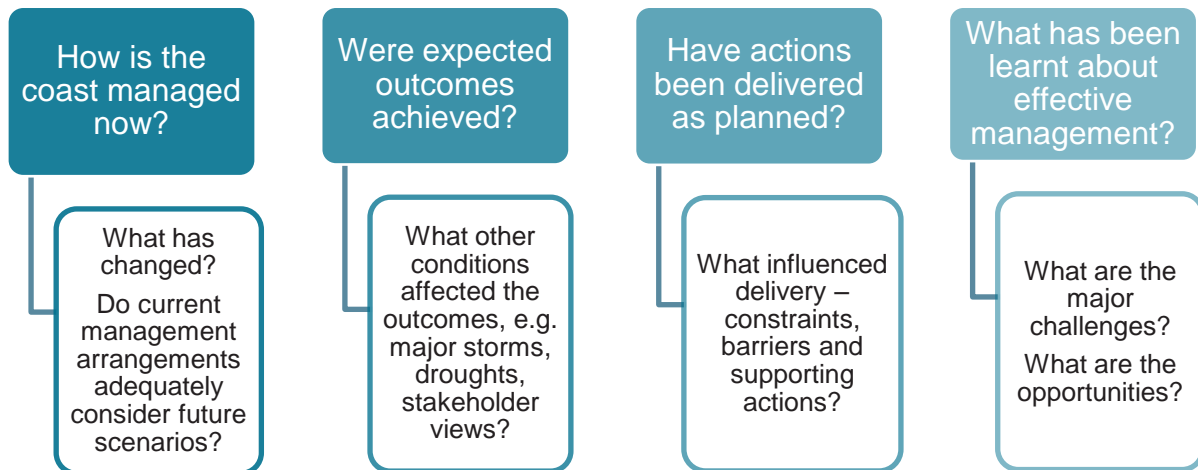


Figure B1.2 Reviewing current management arrangements

When reviewing the performance of existing management responses and land use planning instruments, a council may consider whether:

- actions proposed were implemented as intended and any lessons learned about practicality and effectiveness
- the implemented actions have achieved intended objectives and outcomes (including the resilience of outcomes achieved) and the relative costs and benefits involved
- management actions that have been implemented are consistent with the requirements of the CM Act and CM SEPP
- the vulnerability of existing coastal assets and infrastructure is compatible with the level of exposure to current and future risk from coastal hazards
- council and stakeholder responses to coastal hazard events and emergencies have been coordinated and appropriate
- the current mapping of coastal management areas encompasses the spatial extent of management issues, natural features, habitats and coastal hazards as population continues to grow and development pressures increase

- trends in water quality, aquatic productivity, habitats, beach and foreshore accessibility and usage pose a threat to coastal values
- there are likely changes in the distribution, frequency or intensity of coastal hazards or threats to coastal values
- any previously identified monitoring triggers or thresholds have been reached
- the level of community understanding and involvement in coastal management is changing
- community satisfaction with the direction and outcomes of current management is changing.

Sections 1.6.1 to 1.6.4 provide further information about the issues that councils may consider when reviewing the effectiveness of current management responses for any of the four coastal management areas.

Much of the information needed to assess current management responses may be available from the monitoring, review and reporting programs that are linked to the council's Community Strategic Plan, Delivery Program, annual reports and State of the Environment reporting. Information may also be available from mapping and reports or reviews prepared by public authorities and other organisations.

Where councils have already integrated coastal management within their IP&R framework, they will have the results of four-yearly progress and performance reviews. This information can be used to evaluate what has been achieved and what has been learned since their previous CMP (or CZMP) was prepared. For instance, community satisfaction surveys conducted for the preparation of the Community Strategic Plan may provide feedback on the effectiveness of coastal management.

The review may also consider management in adjoining local government areas, where councils share a sediment compartment or estuary as specified in Schedule 1 of the CM Act.

1.6.1 Coastal wetlands and littoral rainforests

Section 6(2) of the CM Act states –

The management objectives for the coastal wetlands and littoral rainforests area are as follows:

- a. *to protect coastal wetlands and littoral rainforests in their natural state, including their biological diversity and ecosystem integrity,*
- b. *to promote the rehabilitation and restoration of degraded coastal wetlands and littoral rainforests,*
- c. *to improve the resilience of coastal wetlands and littoral rainforests to the impacts of climate change, including opportunities for migration,*
- d. *to support the social and cultural values of coastal wetlands and littoral rainforests,*
- e. *to promote the objectives of State policies and programs for wetlands or littoral rainforest management.*

Coastal wetland and littoral rainforest communities have high biodiversity values and are of regional and state significance. These communities are very sensitive to certain types of development and environmental threats.

In Stage 1, a council may compile existing information to describe how management is currently undertaken for the coastal wetlands and littoral rainforests area. The scoping study may identify any significant impacts through the first-pass risk assessment (Section 1.8.2) to determine whether coastal wetlands and littoral rainforest management areas may benefit from:

- a change of management approach to provide an appropriate level of protection and resilience
- more information to improve management decisions or reduce uncertainty.

This could involve working collaboratively to:

- identify management objectives and outcomes for coastal wetland and littoral rainforest areas
- review the maps of coastal wetland and littoral rainforest areas and compare them with existing local studies and mapping for the local area
- identify whether a planning proposal will be prepared in relation to the mapping of the wetland and littoral rainforest area
- establish a baseline and review information about the trends in the condition of the coastal wetland and littoral rainforest area, using the most up-to-date information that is available
- identify any gaps in knowledge about the functions and responses to threats and to management actions in coastal wetlands and littoral rainforests
- identify current and future threats to the resilience and functions of coastal wetlands and littoral rainforests areas (and relevant proximity areas), over planning horizons of at least 50 years
- review how coastal wetland and littoral rainforest areas are currently managed and evidence about the success of current management approaches in reducing vulnerability and threats

- identify potential vulnerabilities of the existing ecosystems, and opportunities to improve their resilience and adapt to the impacts of climate change over planning horizons of at least 50 years
- identify opportunities to enhance outcomes for wetlands to achieve the relevant coastal management objectives.

Potential management issues and threats to coastal wetland and littoral rainforest areas include, but are not limited to:

- acidic or low dissolved oxygen events
- changes to salinity and/or the salinity regime of surface and groundwater
- changing hydrology – through groundwater or drainage modification
- contraction of saltmarsh areas and ability for migration of wetland communities
- entrance management activities
- foreshore erosion, reclamation (including filling and foreshore structures) or dredging
- inappropriate fire regimes
- inappropriate plant or firewood collection
- increased frequency of inundation, or persistent inundation, due to sea level rise or changes to hydrology
- invasive plant and animal species and pathogens
- mowing, clearing and fragmentation
- sediment runoff and/or water discharge
- shipping and boating activities
- stock grazing
- structures such as levees, seawalls and floodgates that constrain the area and movement of wetland communities
- tracks and trails used by pedestrians, bicycles and off-road vehicles
- urban expansion and edge effects
- waste dumping.

1.6.2 Coastal vulnerability areas

Section 7(2) of the CM Act states –

The management objectives for the coastal vulnerability area are as follows:

- a. *to ensure public safety and prevent risks to human life,*
- b. *to mitigate current and future risk from coastal hazards by taking into account the effects of coastal processes and climate change,*
- c. *to maintain the presence of beaches, dunes and the natural features of foreshores, considering the beach system operating at the relevant place,*
- d. *to maintain public access, amenity and use of beaches and foreshores,*
- e. *to encourage land use that reduces exposure to risks from coastal hazards, including through siting, design, construction and operational decisions,*
- f. *to adopt coastal management strategies that reduce exposure to coastal hazards:*
 - i. *in the first instance and wherever possible, by restoring or enhancing natural defences including coastal dunes, vegetation and wetlands, and*
 - ii. *if that is not sufficient, by taking other action to reduce exposure to those coastal hazards,*
- g. *if taking other action to reduce exposure to coastal hazards:*
 - i. *to avoid significant degradation of biological diversity and ecosystem integrity,*
 - ii. *to avoid significant degradation of or disruption to ecological, biophysical, geological and geomorphological coastal processes,*
 - iii. *to avoid significant degradation of or disruption to beach and coastal foreshore amenity and social and cultural values,*
 - iv. *to avoid adverse impacts on adjoining land, resources or assets,*
 - v. *to provide for the restoration of a beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by actions to reduce exposure to coastal hazards,*
- h. *to prioritise actions that support the continued functionality of essential infrastructure during and immediately after a coastal hazard emergency,*
- i. *to improve the resilience of coastal development and communities by improving adaptive capacity and reducing reliance on emergency responses.*

Coastal hazards are defined in s 4 (1) of the CM Act as:

- a) beach erosion
- b) shoreline recession
- c) coastal lake or watercourse entrance instability
- d) coastal inundation
- e) coastal cliff or slope instability
- f) tidal inundation
- g) erosion and inundation of foreshores caused by tidal waters and the action of waves, including the interaction of those waters with catchment floodwaters.

In Stage 1, compiling information on coastal hazards may assist council to:

- Identify management objectives and outcomes for areas subject to coastal hazards.
- Review current information about coastal geomorphology, including landform types and histories, features and processes that are relevant to the council area.
- Identify relevant coastal sediment compartments, sediment budgets and pathways and related factors in the geomorphic evolution and dynamics of the coast.
- Determine whether more than one council area is located within coastal sediment compartments (Schedule 1 of the CM Act) and the catchments of sensitive coastal lakes (Schedule 1 of the CM SEPP). **Figure B1.3** illustrates sediment compartments.
- Identify relevant coastal processes acting singularly or in combination, which affect coastal hazards, including:
 - coastal processes, such as tides, waves, currents, winds and storm patterns, including factors such as tidal anomalies, coastally trapped waves, wave runup and extreme ocean level events
 - the interaction between coastal, geologic and geomorphic processes for areas subject to coastal cliff and slope instability
 - catchment characteristics and flows and the potential for river floods to coincide with extreme oceanic events
 - the interaction of coastal and catchment processes in estuaries and coastal lakes
 - the predicted and foreseeable impacts of climate change.
- Identify and review any existing coastal hazard, risk and vulnerability studies for the local area. Assess adequacy of methods and potential to inform decision-making.
- Identify the information required to map the coastal vulnerability area and prepare a planning proposal.
- Identify any gaps in knowledge about areas exposed to current and future risk from coastal hazards or coastal vulnerability areas.
- Review the effectiveness of existing management actions and emergency responses to mitigate current, future and residual risk from coastal hazards.
- Identify areas potentially exposed to current and future risk from coastal hazards for a range of probabilities and timeframes for the purposes of risk assessment in Stages 2 and 3 and to help determine and map the coastal vulnerability area for the purposes of land use planning in Stage 4.
- Identify risk to life and public safety from identified coastal hazards. These may include:
 - coastal cliff and slope instability (e.g. catastrophic failure of cliffs and headlands and hazards associated with rock platforms)
 - beach erosion, where materials which have been placed on the beach in protection works become dislodged onto the beach and into the surf zone
 - coastal inundation due to extreme storm events or other events such as tsunamis
 - inappropriate access to or recreational use of coastal waterways, entrances or shore platforms where coastal processes are severe, intermittent or unpredictable.
- Ascertain community awareness about the likelihood and consequences of coastal hazards, vulnerability and risk to life and public safety, potential management actions, emergency preparedness and responses, and roles and responsibilities.
- Identify opportunities to reduce exposure to risk from coastal hazards to achieve the coastal management objectives; for instance, this could include activities to mitigate the risk from coastal hazards, preserve beaches, maintain public access and amenity, restore or enhance natural defences and avoid degradation if undertaking mitigation works.

Appropriate coastal hazard and risk studies enable good land use planning. The direction by the Minister for Planning under section 9.1 of the *Environmental Planning and Assessment Act 1979* for coastal management requires that a council must not prepare a planning proposal to rezone land which would enable increased development or more intensive use on land:

- in a coastal vulnerability area identified in the CM SEPP
- identified as affected by a current or future coastal hazard in a study, assessment or plan undertaken by or on behalf of a public authority or the relevant planning authority.
- within a coastal wetlands and littoral rainforests area identified in the CM SEPP

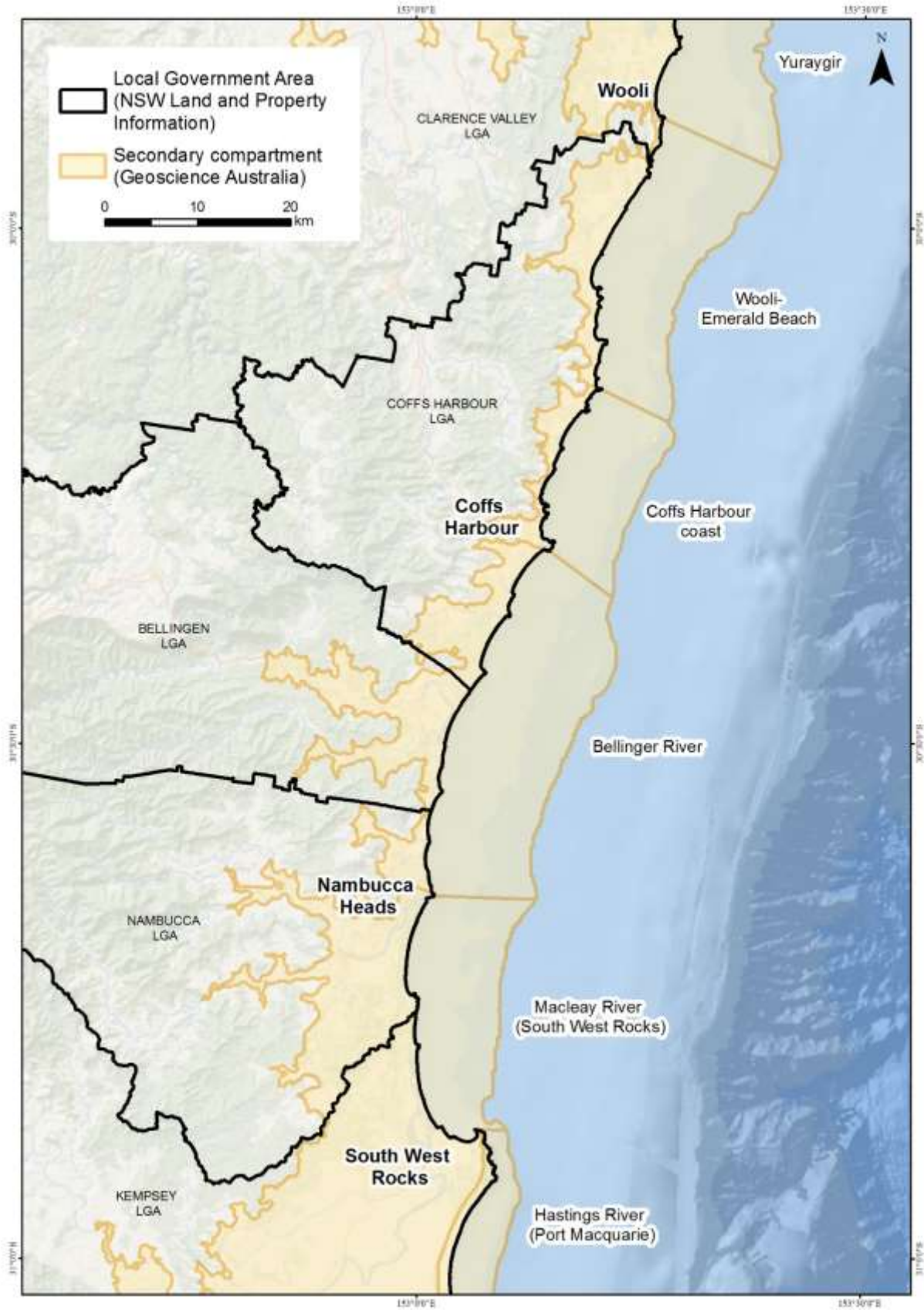


Figure B1.3 Coastal sediment compartments and local government area boundaries

Available coastal process and hazard mapping resources

Coastal hazard information may assist risk assessment and in defining the extent of the coastal vulnerability area for land use planning purposes.

Coastal sediment compartments are referred to in Part 1 of Schedule 1 to the CM Act. Mapping of coastal secondary sediment compartments has been prepared. Councils may also refer to mapping of tertiary sediment compartments where appropriate (refer to Figure B1.3 for an example of a section of the NSW coast showing sediment compartments).

Councils may also be able to draw on statewide information including maps that are based on empirical data and modelling, with clearly stated assumptions. National or statewide coastal hazard mapping may be suitable for a first-pass risk assessment. It may not be suitable for use in further stages when a first-pass risk assessment indicates that risks are greater than 'low' and 'acceptable' (refer to **Section 1.8.2** for further information).

Many councils have previously commissioned detailed coastal hazard assessments for beaches, headlands and/or estuaries when preparing CZMPs. These studies generally provide higher resolution assessment of local areas than national or statewide mapping.

Councils may review the information and the methodology of existing coastal hazard assessments to determine whether they continue to be fit-for-purpose.

Reports from the community and historical records (including photos) may provide longer-term context about the dynamic nature of impacts of coastal erosion and inundation.

Public assets and infrastructure

Councils may use available information when considering coastal hazard risk associated with public infrastructure and/or assets to determine if additional studies are necessary. This may include consideration of the anticipated timing of impact relative to the infrastructure or asset life. This may involve consultation with other public authorities.

The effectiveness and asset life of any existing protection structures or other measures may be a consideration.

Infrastructure assets which may be considered include, but are not limited to:

- beach access ways and lookout structures, including fencing
- boat ramps and wharves
- bridges and walkways
- gas infrastructure
- parkland including council community land, national parks and Crown reserves
- ports and harbours
- power transmission lines and power stations
- roads and rail lines
- seawalls, breakwaters and revetments
- sewage systems and pump stations
- stormwater management systems
- telecommunications infrastructure
- water supply infrastructure systems, pipelines, plants and fire hydrants.

Private assets and uses

In considering risk to private residences and commercial buildings, councils may draw on an existing coastal hazard study or other information. This may include, reports from the community, historical records, photographs or video footage. This local information may assist council to identify areas exposed to coastal hazards, refine the coastal vulnerability area and determine whether further detailed studies are necessary.

Some localities with private assets in areas exposed to coastal hazards are currently afforded a level of protection by a variety of coastal structures (including geotextile bags, rock and rubble walls, sheet piling, concrete walls and tyres). The scoping study may consider the location, legality, liability, structural integrity, sustainability, ongoing maintenance arrangements and effectiveness of these existing structures.

Public use and value

When considering the significance of coastal hazard impacts and the performance of any hazard mitigation (including protection structures), councils may consider the impact of the hazard or management action on continuing safe public access, use and enjoyment of the coast.

1.6.3 Coastal environment areas

Section 8(2) of the CM Act states –

The management objectives for the coastal environment area are as follows

- a. *to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,*
- b. *to reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,*
- c. *to maintain and improve water quality and estuary health,*
- d. *to support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons,*
- e. *to maintain the presence of beaches, dunes and the natural features of foreshores, considering the beach system operating at the relevant place,*
- f. *to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.*

A CMP prepared for a coastal environment area may address significant threats to the condition of the coastal environment area (or where updating a CMP, changes to those threats since the current plan was prepared).

When scoping the CMP, council is advised to consider whether threats to coastal environment areas are being managed by existing mechanisms (set out in the Community Strategic Plan and related strategies) to achieve ‘maintain, protect and enhance’ outcomes for coastal environment areas over planning horizons of at least 50 years.

The assessment and evaluation of threats and the performance of existing management actions may be based on a review of existing mapping, reports and studies and identified

opportunities to enhance a coastal environment area, including current initiatives that may be included in CZMPs or other plans and programs.

Coastal environment areas may overlap with the marine estate (as defined in the MEM Act), in areas such as:

- coastal waters of the State
- estuaries, up to the influence of the highest astronomical tide
- coastal lakes and lagoons that are permanently, periodically or intermittently open to the sea, including bed, banks and riparian areas
- coastal wetlands including saltmarsh, mangroves and seagrass
- lands immediately adjacent to or in the immediate proximity of the coastal waters of the state that are subject to oceanic processes including beaches, dunes, headlands and rock platforms.

When assessing threats and risks to the coastal environment area, councils may also consider the information that has been compiled in

- the Threat and Risk Assessment (TARA) for the Marine Estate
- the Risk-based framework for considering waterway health outcomes in strategic land use planning decisions (OEH 2017).

In Stage 1, compilation and assessment of existing information is designed to assist council to:

- Identify management objectives and outcomes for coastal environment areas.
- Review the statewide maps of coastal environment areas and compare them with existing local studies and mapping.
- Identify whether a planning proposal will be prepared in relation to the mapping of the coastal environment area.
- Establish a baseline and review information about the trends in the condition of the coastal environment area, using the most up-to-date information that is available (including measures of water quality, ecosystem health and human health).
- Identify any gaps in knowledge about coastal environment areas.
- Identify current and future threats to the resilience and functions of coastal environment areas (and relevant proximity areas), over planning horizons of at least 50 years.
- Review how coastal environment areas are currently managed and evidence about the success of current management approaches in reducing vulnerability and threats. This may include a review of existing planning instruments and practices to achieve coastal management objectives over planning horizons of at least 50 years.
- Identify potential vulnerabilities of the existing ecosystems, opportunities to improve their resilience and adapt to the impacts of climate change.
- Identify opportunities to enhance outcomes for coastal environment areas to achieve the relevant coastal management objectives. This could include enhancing biodiversity, rehabilitating and restoring degraded areas, mitigating contaminated areas, establishing connectivity corridors and facilitating habitat migration.

The CM SEPP (Schedule 1) lists sensitive coastal lakes. These lakes require comprehensive protection; therefore, management of the catchments of these areas may be a consideration in the scope of a CMP for a coastal environment area.

Where a council demonstrates that the catchment of other estuaries and coastal lakes and lagoons is a critical factor in estuary health, the catchment area may be nominated as part of a planning proposal to amend the coastal environment area maps in the CM SEPP.

Issues and threats in coastal environment areas

When scoping a CMP for a coastal environment area, it is desirable that council consider the relevance of a range of issues and threats, including but not limited to those listed below. Issues and threats may relate to the coastal waters of New South Wales, estuaries, coastal lakes and lagoons, and the foreshores of coastal waters, estuaries, lakes and lagoons.

Council is also advised to consider whether the area mapped as the coastal environment area in the CM SEPP is consistent with their local assessment and mapping of the relevant environmental features in the coastal landscape.

Examples of issues affecting coastal waters and waterways:

- changed water level and salinity regimes due to entrance management to overcome flooding issues
- entrance management and its impacts on health and ecology of a water body
- estuary, lake and lagoon health considerations, particularly water quality
- excessive collection of invertebrate species and/or overfishing
- excessive nutrient loads
- extent and condition of marine and aquatic vegetation communities, including seagrass, mangrove, saltmarsh, benthic communities and intertidal communities on rocky shores
- heavy metal contamination and pollutants
- impacts on groundwater dependant ecosystems and aquifer recharge
- inappropriate access arrangements such as moorings over seagrass endangered ecological communities and the effects of boat wash
- litter such as plastics, micro-plastics and fishing line
- location and management of public infrastructure, especially discharge points for stormwater or other drainage systems
- low acidity events
- low dissolved oxygen events
- migration of foreshore flora and fauna with water level change
- riverbank (river estuary) erosion and loss of riparian habitats
- shoreline erosion/accretion history and trends
- structures that restrict migration of habitats.

Examples of issues affecting foreshores of coastal waters of the state (including headlands, beaches and dunes), estuaries and coastal lakes:

- acidification (acid sulfate soils)
- changing groundwater levels
- clearing of foreshores
- drainage works
- effects of changes to land tenure on the management of the coastal environment area
- extent and condition of estuary and lake foreshore, headland and dune vegetation
- flood mitigation works and structures
- foreshore erosion, reclamation or dredging
- grazing in riparian zones
- impacts on migratory waders and other coastal bird species
- impacts on the geomorphic processes, features and values of coastal dunes
- impacts on threatened plants and animals
- inappropriate access arrangements such as 4WD, trail bike or quad bike tracks over coastal dunes and on coastal headlands
- intermittent tidal and coastal inundation of foreshores
- invasive plant and animal species
- ongoing erosion in frontal dunes, that undermines coastal vegetation or exposes sensitive vegetation to salt impacts
- over exploitation of coastal aquifers
- persistent inundation by tidal waters
- presence of private land in the coastal environment which is the subject of a formal private conservation agreement
- reduced biodiversity and connectivity corridors
- sediment run-on and/or discharge
- sedimentation and siltation
- the hazard posed by ingress of seawater
- the impacts of sea level rise and other aspects of climate change on existing conservation areas including marine park conservation zones, national parks, state conservation areas and Crown reserves
- urban expansion including management of the quality and quantity of water runoff from urban development and vegetation clearance.

1.6.4 Coastal use areas

Section 9(2) of the CM Act states –

*The management objectives for the **coastal use area** are as follows:*

- a. *to protect and enhance the scenic, social and cultural values of the coast by ensuring that:

 - i. *the type, bulk, scale and size of development is appropriate for the location and natural scenic quality of the coast, and*
 - ii. *adverse impacts of development on cultural and built environment heritage are avoided or mitigated, and*
 - iii. *urban design, including water sensitive urban design, is supported and incorporated into development activities, and*
 - iv. *adequate public open space is provided, including for recreational activities and associated infrastructure, and*
 - v. *the use of the surf zone is considered.**
- b. *to accommodate both urbanised and natural stretches of coastline.*

This section applies when a CMP is being prepared for coastal use areas. Coastal use areas are lands adjacent to coastal waters, estuaries, coastal lakes and lagoons, where impacts of development on the use and enjoyment of the beaches, dunes, foreshores, lakes and the ocean need to be considered.

In Stage 1, compilation of information will assist council to:

- determine the baseline or current condition of the relevant assets and values in the coastal use area
- identify any gaps in knowledge about coastal use areas
- identify relevant land use planning processes and policies, processes and practices that provide the framework for coastal design, coastal access and use, visual amenity and coastal risk management
- identify whether a planning proposal will be prepared in relation to the mapping of the coastal use area.

Access, use and amenity

It is recommended that the scoping study considers the costs and benefits and community satisfaction associated with assets and facilities which support coastal access, use and amenity values including (as relevant), but not limited to:

- beach access ways, including paths, stairs and ramps, and including access for people with a disability
- boat launching ramps
- carparks at beaches and headlands
- entrance training walls including access for fishing and observation
- foreshore promenades (e.g. on a seawall or breakwater)
- foreshore reserves
- jetties and wharves

- lookouts and viewing platforms; consider also the safety and visual amenity of these assets
- marinas and moorings
- off-road vehicle access ways
- pedestrian paths and cycleways, on foreshores, dunes and headlands
- picnic facilities and playgrounds
- public transport access points
- safety of surfers and swimmers
- signage, safety rings and rescue points
- specific use access such as commercial beach haul fishing
- surf clubs, surf rescue craft access ways and surf life-saving lookouts
- the balance between development and naturalness
- the social and economic value of national surfing reserves and other surf breaks
- toilet blocks and showers
- water sensitive urban design.

The scoping analysis may be based on existing documents and include a review of the outcomes of consultation conducted for the Community Strategic Plan or for coastal recreation planning or for economic development planning for coast-dependent businesses.

Councils may also consider the ways in which they currently generate revenue from the coastal zone, such as rates, parking fees, or other council sponsored events. The review of the coastal use area may identify gaps in the provision of assets and facilities that support coastal access and amenity for appropriate coastal uses.

Some councils may choose to conduct an initial community use survey during the scoping stage, to gain a better understanding of which assets are most valued by coast users and why.

Social, cultural and heritage assets

Where a CMP is to be prepared to address social, cultural and heritage issues, the aim in Stage 1 is to identify known social, cultural and heritage assets and values which are threatened by coastal hazards or by coastal uses.

These cultural and heritage assets could include (but are not limited to):

- Aboriginal sites (objects) and Aboriginal Places (as specified in the Aboriginal Heritage Information Management System (AHIMS) register and protected under the *National Parks and Wildlife Act 1974*), and places that have traditional Aboriginal resource or cultural connections, or are identified in local Aboriginal cultural heritage studies.
- Historic heritage places that are listed in the NSW and local government heritage lists. These could include:
 - historic shipwreck sites
 - historic wharves, or coast-dependent industry sites (e.g. related to ports, fisheries, whaling or other uses)
 - historic military sites and infrastructure.
- Cultural landscapes that are identified in state or local heritage registers.
- National surfing reserves.

- Other cultural places that are significant at the local scale and are identified by local Aboriginal and other community stakeholders.

State heritage listings and local heritage studies may provide relevant information about these sites and places.

In relation to Aboriginal cultural and heritage sites and places, the views of the local Aboriginal community are important. Separate and specific culturally appropriate consultation about the management of Aboriginal sites, places and cultural landscapes may be necessary and permission must be obtained for the publication of specific cultural information, including the locations of sites and places.

Coastal urban design

Where a CMP is to be prepared to address urban design issues, the five principles of urban design described in the *Coastal Design Guidelines for NSW* (2003) are relevant. The principles help define elements of the public domain and the built form to best reflect and protect the natural beauty of the coast.

The principles are:

- defining the footprint and boundary of the settlement
- connecting open spaces
- protecting the natural edges
- reinforcing the street pattern
- ensuring that building type, height, bulk and form relates to a site's natural features and its location within a settlement.

In Stage 1, councils are advised to consider the extent to which existing urban design is consistent with the principles and any opportunities to enhance the coastal living experience, minimise risk and create social and economic opportunities for the future. Councils may also consider how both urbanised and natural stretches of coastline are being accommodated.

CMPs for coastal use areas may also consider urban design issues in conjunction with urban land use planning (through regional strategies, LEPs and DCPs) in relation to resilience to coastal hazards.

The direction by the Minister for Planning under section 9.1 of the *Environmental Planning and Assessment Act 1979* for coastal management requires that councils not prepare planning proposals for rezoning that would enable increased development or more intensive land use on land:

- in a mapped coastal vulnerability area identified in the CM SEPP
- identified as being affected in areas exposed to current and or future risk from coastal hazards in a study, assessment or plan undertaken by or on behalf of a public authority or the relevant planning authority
- within a coastal wetlands and littoral rainforests area identified in the CM SEPP.

1.7 Identify roles and responsibilities

Section 1.2.1 discusses the identification of stakeholders with interests in the preparation and implementation of the CMP.

In addition to preparing an engagement strategy outlining how it will engage with stakeholders, a council is advised to document:

- how the scope of the CMP relates to the roles and responsibilities of adjoining councils and public authorities
- when information and feedback is expected to be required from other councils and public authorities
- issues to be addressed in the CMP where councils will seek a collaborative approach.

1.8 Determine where action is required

1.8.1 Identify knowledge gaps

A consolidated list of knowledge gaps identified for each of the coastal management areas will assist to plan for additional studies to be undertaken in Stage 2. These will include gaps in knowledge and understanding of:

- coastal hazards and threats
- natural, social, cultural and economic coastal values and assets (including built assets and infrastructure), which contribute to risks and opportunities
- socioeconomic information necessary to evaluate potential management options.

This scope forms part of the work to be completed in subsequent stages of the CMP.

1.8.2 Apply a first-pass risk assessment

Section 21 (3) (b) of the CM Act requires councils to follow a risk management process when preparing their CMPs and identifying where management actions are required. This includes identifying and assessing risks to environmental, social and economic values and benefits and evaluating and selecting management actions to address those risks.

In Stage 1, councils prepare a first-pass risk assessment. This is a qualitative risk assessment using available information, to help inform the scope of the CMP.

In Stage 2, councils may refine the risk assessment through a detailed process, which incorporates additional information from studies prepared in Stage 2.

In Stage 3, councils identify and evaluate management actions to address the identified risks. It is critical that stakeholders are engaged throughout this process.

The AS/NZS ISO 31000: Risk Management – Principles and Guidelines outlines a process for risk management and defines many of the common terms associated with risk management practice.

Overview of risk assessment principles

The purpose of a risk assessment is to highlight priorities for management actions while recognising the inherent uncertainties associated with natural systems, future scenarios and the management of the coast. Despite these uncertainties, councils are required to make coastal management decisions that make best use of incomplete knowledge.

Risk is a function of the likelihood of a hazard or threat occurring and the consequences of the hazard or threat, with the consequences combining the concepts of magnitude, sensitivity and duration (**Tables B1.1** and **B1.2** show examples of a consequence and likelihood scale).

Figure B1.4 outlines the steps involved in the risk management process.

In general terms:

- **Exposure** is the potential for assets or values to be impacted by a hazard or threat.
- **Hazards and threats** are dangerous phenomena, substances, human activities or conditions that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
- **Likelihood** refers to the chance or probability that a hazard or threat will occur within a specified timeframe or planning horizon.
- **Consequences** refers to the outcome or impact of a hazard or threat.
- **Sensitivity** is the degree to which a community or ecosystem is affected by a coastal hazard or threat.
- **Vulnerability** is a function of exposure, sensitivity and adaptive capacity. It can apply to built and natural assets as well as communities and economies.
- **Adaptive capacity** is the ability of a system (human or natural) to adjust to hazards or threats (including variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.
- **Resilience** is the ability of a system (human or natural) to resist, absorb and recover from the effects of hazards and threats in a timely and efficient manner, preserving or restoring its essential basic structures, functions and identity.
- **Potential impacts** include damage, harm or losses to exposed communities, property, services, livelihoods, ecosystems and the environment.

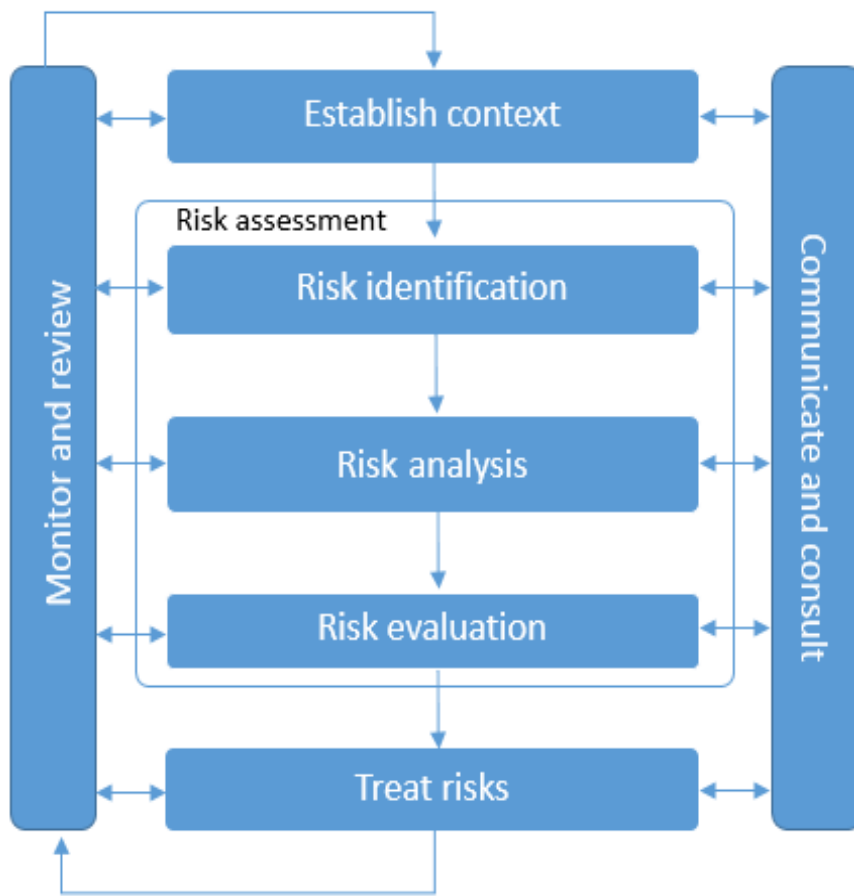


Figure B1.4 Risk management process (Source: AS/NZS ISO 31000: Risk Management – Principles and Guidelines)

First-pass risk assessment

A first-pass risk assessment is a relatively straightforward way to prioritise the threats to the coastal environment and risks from coastal hazards. The goal is to identify what values and assets might be at risk and then establish whether the risk is large enough to warrant a more detailed assessment. At this stage, the risk assessment will be based on existing information.

Sometimes the risk is sufficiently small, or so far in the future, that further investigation is not required and that continuing current management arrangements in a CMP will manage the risk or threat. This category of risk may be referred to as acceptable or tolerable.

Conversely, the risk assessment may demonstrate that the resourcing of a more in-depth assessment of a particular risk or threat is a priority and that additional information may need to be collected as part of Stage 2.

A first-pass assessment can be undertaken using existing information such as regional mapping, simple conceptual or numerical models and expert judgement. The levels of risk are generally qualitative.

When undertaking a first-pass risk assessment, it may be helpful to consider the regional priority risks identified through the Threat and Risk Assessment (TARA) for the Marine Estate.

Where a CMP will be addressing coastal hazards, the first-pass risk assessment may involve overlaying available hazard mapping over various GIS layers held by council (such as assets and zoning layers). This may highlight where more robust information will be required in later stages to give an understanding of risk.

The assessment process should be systematic and demonstrate that both likelihood and consequence have been considered. This generally involves applying qualitative scales of likelihood and consequence. Likelihood and consequence scales that are consistent with national risk standards, but are tailored to consider the objectives of the council and its communities and other risk assessments conducted by their organisation are appropriate.

The information and assessment can be recorded in a simple spreadsheet.

Tables B1.1 and **B1.2** provide generic examples of scales of consequence which are relevant to coastal contexts. **Tables B1.3** and **B1.4** provide examples of likelihood scales. Scales from the Marine Estate Threat and Risk Assessment (TARA) describe consequences and likelihood at the spatial scale of the NSW environment and the NSW community.

Table B1.1 Example of consequence scale (Source: AGO 2006)

Rating	Success criteria				
	Public safety	Local economy and growth	Community and lifestyle	Environment and sustainability	Public administration
Catastrophic	Large numbers of serious injuries or loss of lives	Regional decline leading to widespread business failure, loss of employment and hardship	Region would be seen as very unattractive, moribund and unable to support its community	Major widespread loss of environmental amenity and progressive irrecoverable environmental damage	Public Administration would fall into decay and cease to be effective
Major	Isolated instances of serious injuries or loss of lives	Regional stagnation such that businesses are unable to thrive and employment does not keep pace with population growth	Severe and widespread decline in services and quality of life within the community	Severe loss of environmental amenity and danger of continuing environmental damage	Public administration would struggle to remain effective and be seen as in danger of failing completely
Moderate	Small numbers of injuries	Significant general reduction in economic performance relative to current forecasts	General appreciable decline in services	Isolated but significant instances of environmental damage that might be reversed with intensive efforts	Public administration would be under severe pressure on several fronts
Minor	Serious near misses or minor injuries	Individually significant but isolated areas of reduction in economic performance relative to current forecasts	Isolated but noticeable examples of decline in services	Minor instances of environmental damage that could be reversed	Isolated instances of public administration being under severe pressure
Insignificant	Appearance of a threat but no actual harm	Minor shortfall relative to current forecasts	There would be minor areas in which the region was unable to maintain its current services	No environmental damage	There would be minor instances of public administration being under more than usual stress but it could be managed

Table B1.2 Social and economic consequence scale (adapted from the NSW Marine Estate TARA, MEMA 2017)

Consequence level	Consequence of impacts on social and economic benefits
Insignificant	No or barely discernible negative impacts on the social and economic benefits enjoyed by the NSW community are or will be evident on a statewide scale. There may be minor impacts on the social and economic benefits derived in one region, or across one sector or user group.
Minor	Discernible and/or temporary negative impacts on the social and economic benefits enjoyed by the NSW community are or will be evident on a statewide scale. There may be moderate impacts on the social and economic benefits derived in one region, or across one sector or user group.
Moderate	Measurable and ongoing negative impacts on the social and economic benefits enjoyed by the NSW community are or will be evident on a statewide scale. There may be major impacts on the social and economic benefits derived in one region, or by one sector or user group.
Major	Substantial measurable and ongoing negative impacts on the social benefits enjoyed by the NSW community are or will be evident on a statewide scale. There may be catastrophic impacts on the social and economic benefits derived in one region, or across one or more sector or user group.
Catastrophic	Significant ongoing and/or permanent negative impacts are or are almost certain to be evident on social and economic benefits enjoyed by the NSW community that are widespread and affect a large proportion of the sectors and user groups (including the broader community).

Table B1.3 Example of likelihood scale (Source: AGO 2006)

Rating	Recurrent risk	Single event
Almost certain	Could occur several times per year	More likely than not: probability greater than 50%
Likely	May arise about once per year	As likely as not: 50/50 chance
Possible	May arise about once in 10 years	Less likely than not but still appreciable: probability less than 50% but still quite high
Unlikely	May arise about once in 25 years	Unlikely but not negligible: probability noticeably greater than zero
Rare	Unlikely during the next 25 years	Negligible. Probability very small, close to zero

Table B1.4 Likelihood scale relevant to social and economic objectives (adapted from NSW Marine Estate TARA, MEMA 2017)

Likelihood level	Likelihood of impacts
Rare	Never reported for this situation, but still plausible within the timeframe (< 5%).
Unlikely	Uncommon, but has been known to occur elsewhere. Expected to occur here only in specific circumstances within the timeframe (5-30%).
Possible	There is clear evidence to suggest this is possible in this situation within the timeframe (30-50%).
Likely	Expected to occur in this situation within the timeframe. There is a history of frequent occurrence (50-90%).
Almost certain	Very likely. A very large certainty that this will occur in this situation within the timeframe; a history of regular occurrence (>90%).

The risk assessment involves attributing likelihood and consequence from the adopted scales for each hazard or threat. These are entered in a risk rating matrix to provide an overall risk rating for each hazard or threat.

This part of the process enables risks to be ranked and prioritised. An example of a risk rating matrix is shown in **Figure B1.5**.

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	High	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

Figure B1.5 Generic risk assessment matrix (Source: AGO 2006, Climate Change Impacts and Risk Management: A guide for business and government, report by Broadleaf International & Marsden Jacobs Associates for the Australian Greenhouse Office, Canberra)

Information from the first-pass risk assessment can be used to provide a broader understanding of the risks and help identify:

- where the overall risks are low or very low, because the consequences are insignificant or the likelihood is barely credible
- which current and emerging management issues are a priority for their CMP
- which issues and geographic areas may need to be examined in more detail and where further studies or mapping may be required in Stage 2
- where the level of risk has not been reduced to an acceptable level by current management actions and further management actions will be required
- where risks are likely to increase in the foreseeable future due to changes in the hazards, the area impacted or the vulnerability of assets and values
- where there may be significant gaps in knowledge and understanding of hazards, threats and uncertainties

- where additional socioeconomic information may be required to identify or evaluate management actions and make decisions in Stage 3
- where there is potential exposure of public and private assets to physical, structural, ecological or public safety hazards
- where and when there may be opportunities to reduce the impacts and liability of coastal hazards and threats and reduce private and public losses
- matters for engagement with decision-makers and stakeholders
- where there may be new opportunities to enhance the wellbeing of coastal communities given anticipated increases in population and associated development pressures.

It is important that the process and the information compiled is well documented as this will act as a baseline for any later risk assessments. However, in some low-risk situations, the available data, knowledge and understanding of the local coastal systems may be insufficient to support anything other than a first-pass risk assessment. Where there is insufficient information to assess the risk, a precautionary approach is advised and the risk should be further considered in later stages.

Where the first-pass risk assessment indicates that a more detailed economic evaluation or cost-benefit analysis is likely to be required, additional studies may include:

- preparation of a comprehensive asset register, including built assets, natural assets and sociocultural assets
- detailed socioeconomic analysis and stakeholder profiling (including non-resident landowners and others with business interests in the area)
- detailed estimates of potential costs of actions
- clear identification of beneficiaries, the value of benefits and distribution analysis.

It is intended that the information provided by the first-pass risk assessment:

- is suitable for supporting initial discussions with communities and stakeholders about key management issues and management options
- will inform clear recommendations about any additional studies to be prepared in Stage 2 so that appropriate information is available to support the option identification and evaluation of actions in Stage 3.

In general, a detailed risk assessment will be required when there are proposals for significant new infill or greenfield development in areas exposed to current and future risk from coastal hazards, or there is a high degree of uncertainty.

Table B1.5 gives an example vulnerability scale for various land uses. Where there is a very strategic or high-value land use it may be pertinent to look at extremely rare scenarios during Stage 2.

Table B1.5 Land use vulnerability classification (modified from Guidance – Flood risk and coastal change, UK Department for Communities and Local Government 2014)

Classification	Land use
Most vulnerable uses	Hospitals, police stations, command centres, ambulance stations and telecommunications used for disaster response, isolated dwellings, housing (including group homes) and residential care facilities for seniors and disabled persons, prisons, childcare facilities and accommodation associated with an educational establishment, mobile homes used for permanent residential purposes.
Highly vulnerable uses	Multi-dwelling housing, dual occupancy, residential accommodation, residential flat building, backpackers' accommodation, boarding house, hostel, hotel accommodation, moveable dwelling, caravan park, serviced apartment, tourist and visitor accommodation.
Less vulnerable uses	Commercial development, shops, financial and professional services, restaurants and cafes, hotels, offices, general industry, agriculture and forestry, waste treatment, short-term caravans and camping (subject to early warning and evacuation plans).
Essential infrastructure	Essential transport and utility infrastructure, power stations, primary substations, sewage treatment plants and water treatment works.
Compatible uses	Coastal hazard and flood mitigation structures, water supply infrastructure and pumping stations, docks, marinas and wharves, shipbuilding, water-based recreation, surf clubs, amenity and open space, nature conservation and biodiversity, outdoor sports and recreation facilities and changing rooms.

This first-pass risk assessment is essentially a tool for the prioritisation of risks to identify those that need to be further assessed in subsequent stages of the CMP.

A key consideration in identifying the necessary further assessments and risk management actions will be the risk tolerance. This needs to be locally specific and evaluated with the local community. A council and its community may evaluate a risk to be acceptable, tolerable or unacceptable. Examples of the definition of these levels of risk tolerance are provided in **Table B1.6**.

Table B1.6 Definitions of acceptable, tolerable and unacceptable risk

Acceptable risk	A risk that, following an understanding of the likelihood and consequences, is sufficiently low to require no new treatments or actions to reduce risk further. Individuals and society can live with this risk without feeling the necessity to reduce the risk any further.
Tolerable risk	A risk that, following an understanding of the likelihood and consequences, is low enough to allow the exposure to continue, and at the same time high enough to require new treatments or actions to reduce risk. Society can live with this risk but believes that as much as is reasonably practical should be done to reduce the risk further.
Unacceptable risk	A risk that, following an understanding of the likelihood and consequences, is so high that it requires actions to avoid or reduce the risk. Individuals and society will not accept this risk and measures are to be put in place to reduce the risk to at least a tolerable level. Generally, in a council or public authority, unacceptable risks and proposed risk treatments will need to be reported to and accepted by senior decision-makers. Regular review of progress in reducing the risk will be required.

Figure B1.6 shows the relationship between the first-pass risk assessment, and the studies and detailed risk assessment in Stage 2 linked to risk treatment options in Stage 3.

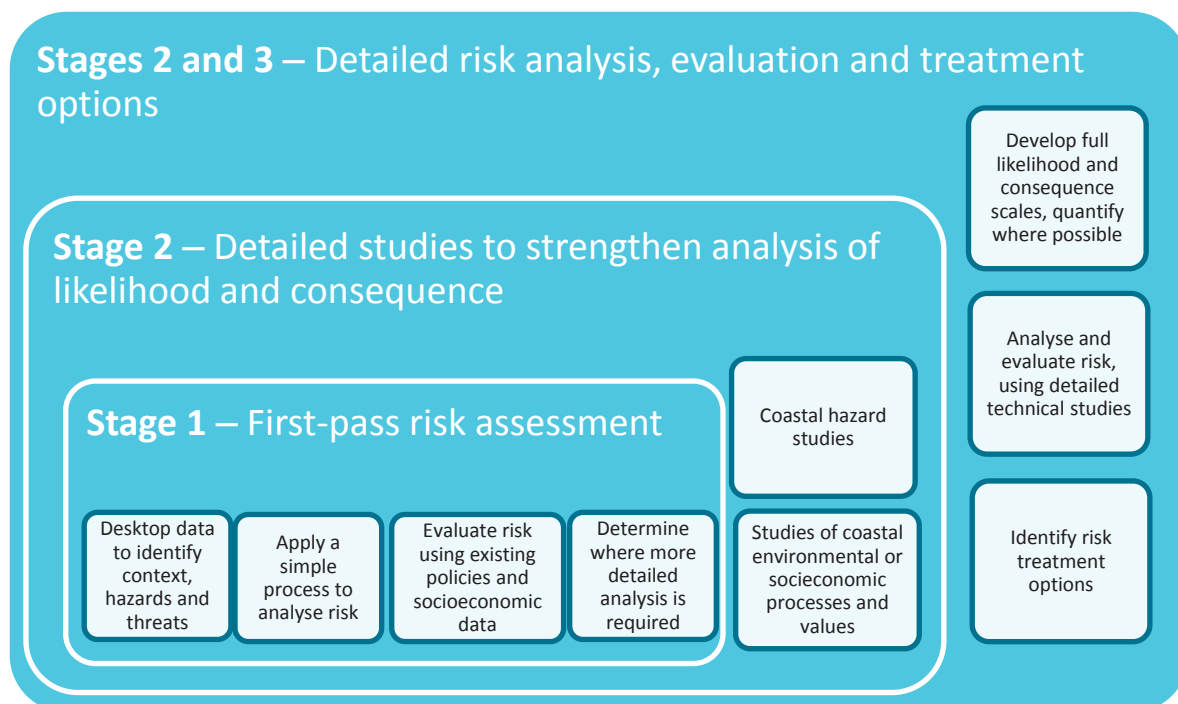


Figure B1.6 Stage 1 first-pass risk assessment as a subset of the Stages 2 and 3 risk management process

1.9 Prepare a preliminary business case

A preliminary business case can be used to gain support and commitment to undertake additional studies and activities that are required to prepare a CMP. Note that a detailed business plan must be included in a CMP to support implementation of the coastal management actions contained in a CMP.

Matters that may be considered in the preparation of the preliminary business case include:

- the complexity of management issues and decisions
- the level of understanding about coastal issues and coastal change
- the level of uncertainty about risks and outcomes
- the budget allocated to coastal management activities
- the capacity and willingness of the community and other private and public entities to contribute to the future cost of coastal management, particularly to the ongoing cost of management in areas exposed to current and future risk from coastal hazards or coastal vulnerability areas
- the value of economic activity in the area that is dependent on the coast (such as commercial and recreational fishing, tourism and surfing-based businesses)
- the economic and ecosystem service value of a healthy coastal environment
- the potential cost and liability of future coastal impacts if known threats are not addressed; conversely the added social, economic and environmental value if coastal threats and opportunities are well managed
- how council currently generates funding and allocates resources to priorities and whether these sources and mechanisms are sustainable for coastal management
- the proposed timeframe for preparing the CMP.

1.10 Presentation of the scoping study

The scoping study will consolidate information gathered during Stage 1 and outline the proposed pathway through the other stages of preparing a CMP.

Key components of a scoping study include:

1. A description of the strategic context of coastal management.
2. The purpose, vision and objectives of the CMP.
3. The scope of the CMP, including management issues and the spatial extent of management areas.
4. A review of the effectiveness of current management practices and arrangements, including identification of changes required to manage the relevant coastal management area(s) effectively.
5. Details of roles and responsibilities and how the council will be working with other councils or public authorities – particularly where coastal sediment compartments or an estuary catchment is shared between councils.
6. Results of a first-pass risk assessment and details of where action is required including any additional studies that are proposed to fill knowledge gaps.
7. A stakeholder and community engagement strategy. If council intends to prepare a planning proposal, the engagement strategy is also advised to consider the requirements set out in relevant guidelines for preparing a planning proposal.
8. A preliminary business case to prepare a CMP.
9. A forward plan for subsequent stages of the CMP process – including any fast-track proposals and how the stages will align with council's IP&R framework.

Figure B1.7 summarises the key components of the scoping study.

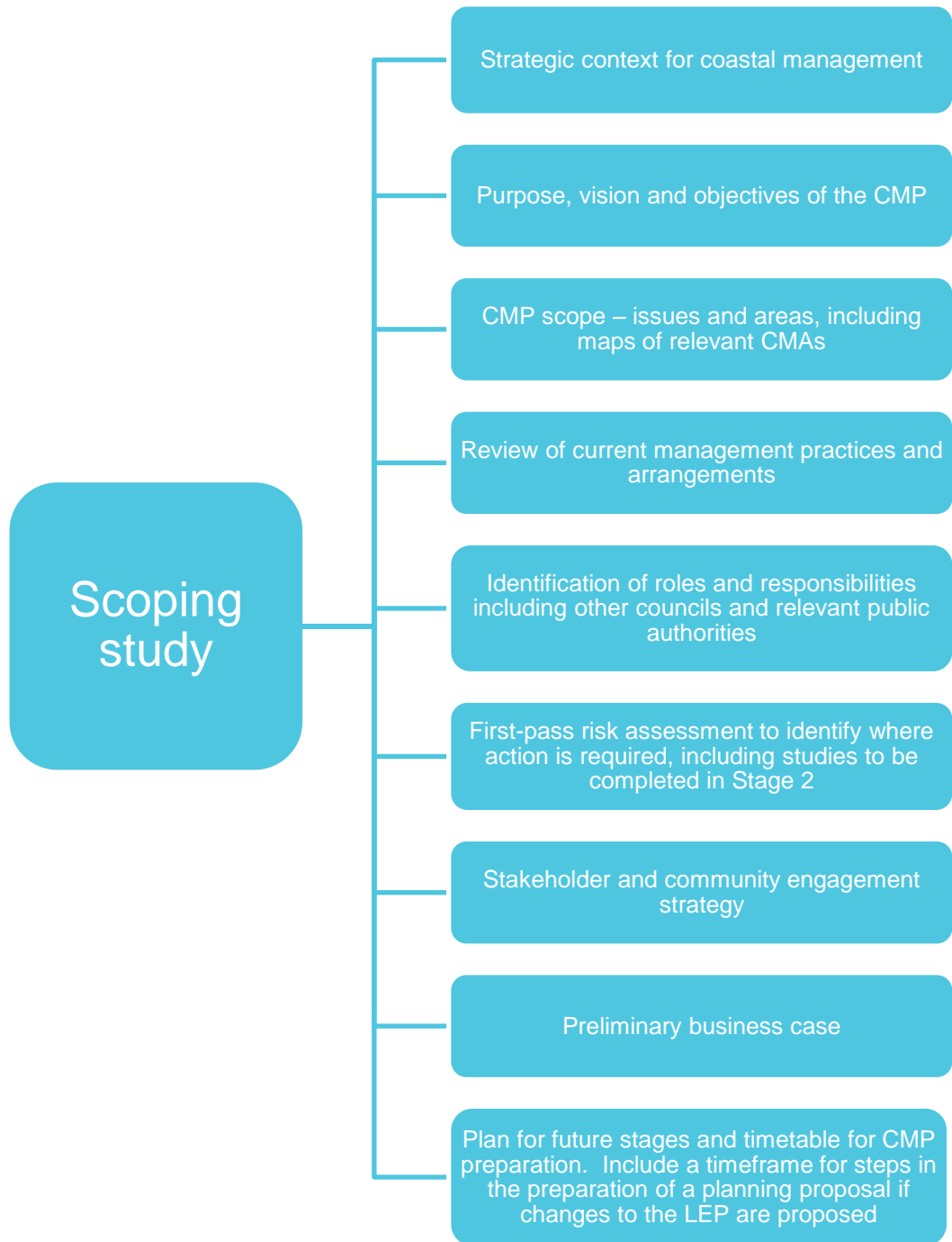


Figure B1.7 Components of the scoping study

1.11 Subsequent stages of the CMP

1.11.1 Studies to be prepared in Stage 2

The scoping study may identify further studies that will be prepared in Stage 2 to fill knowledge gaps, to refine the risk assessment and to support option evaluation and decisions about priorities.

Relevant information regarding each recommended study includes:

- why the further study is recommended and how it will be used in preparing the CMP
- where it will be conducted
- whether council will do the work in-house or seek external expertise
- the anticipated scheduling of the work.

1.11.2 Deciding whether to fast-track the planning process

In some cases, council may 'fast-track' from stage 1 to 4, or only complete parts of stages 2 to 3. A fast-track process for the preparation or review of a CMP may be appropriate where:

- the first-pass risk assessment indicates that the vulnerability is low and the risks are acceptable
- the management issues are not complex and the council can demonstrate that they are adequately managed
- there are few stakeholders and/or there is an existing, successful management partnership between stakeholders, including adjoining councils, public authorities and key community groups
- council has previously prepared a detailed study to evaluate all relevant coastal hazards and risks and has robust, up-to-date scientific information about coastal change, and
- council has a clear understanding of trends in the condition of natural systems in the coastal environment area, and the ecosystem services they provide, based on up-to-date scientific evidence
- the council demonstrates that it has adopted and is implementing best practices in its role in protecting the condition of the coast
- there have been no major events or new studies released that would change the previous assessment of risk, including likely changes in socioeconomic conditions
- council has a clear understanding of community satisfaction with coastal management processes, costs and benefits distribution and outcomes, that supports continuation of the current approach
- council has a sustainable funding strategy in place for coastal management, which is integrated with its resourcing strategy and asset management plan under the IP&R process.

1.12 Review of the scoping study

At the conclusion of Stage 1, a council may take the opportunity to provide a copy of its scoping study to OEH for review. A council or OEH may, through the Minister, seek advice from the NSW Coastal Council.

If requested by the Minister, the NSW Coastal Council's advice may be sought on:

- whether the scoping study is acceptable
- whether any fast-track proposals are appropriate
- any issues that require further consideration in subsequent stages.

1.13 Planning ahead

Before concluding Stage 1 councils should consider what steps are required to finalise the preparation of a CMP. Considerations for council officers include:

- Confirming internal governance arrangements for preparation and implementation of the CMP. This may include establishing committees or changing the terms of reference for an existing group.
- Preparing a briefing package for senior council officers, councillors and the community, highlighting what will be involved in preparing the remaining stages of the CMP.
- Confirming with relevant public authorities (including adjoining councils) how they will be involved in subsequent stages of the preparation of the CMP, including a discussion of timeframes.
- Consulting the community about the next steps and timeframes.
- Preparing the briefs for Stages 2–4 of the preparation of the CMP, ensuring the scope is consistent with the findings of Stage 1.
- Confirming how the budget requirements for subsequent stages will be met.
- Compiling information required for completion of subsequent stages including funding and financing mechanisms.