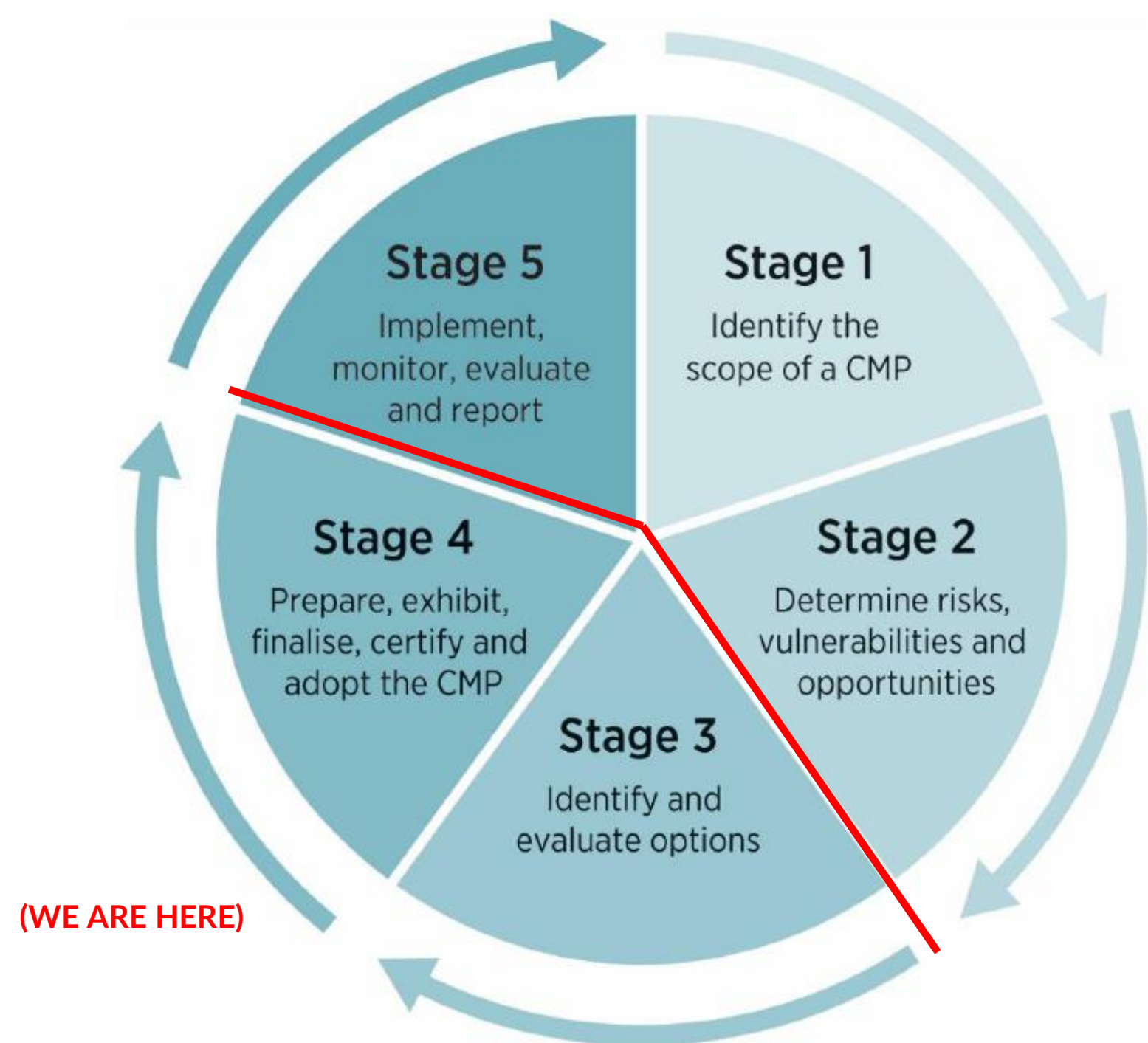


# Central Coast Open Coast Coastal Management Program



## What is a Coastal Management Program?

Central Coast Council, with the assistance of the NSW Government, is preparing their Coastal Management Program (CMP) for the Open Coast. The CMP replaces the previous Coastal Zone Management Plan done under the previous Coastal Protection Act. New coastal legislation was introduced in 2016, requiring all coastal councils in NSW to develop new CMPs in line with updated coastal reforms.

Coastal management programs (CMPs) set the long-term strategy for the coordinated management of the coast, with a focus on achieving the objectives of the Coastal Management Act 2016 (CM Act).

CMPs identify coastal management issues and the actions required to address these issues in a strategic and integrated way. CMPs detail how and when those actions are to be implemented, their costs, how they will be funded and by whom.

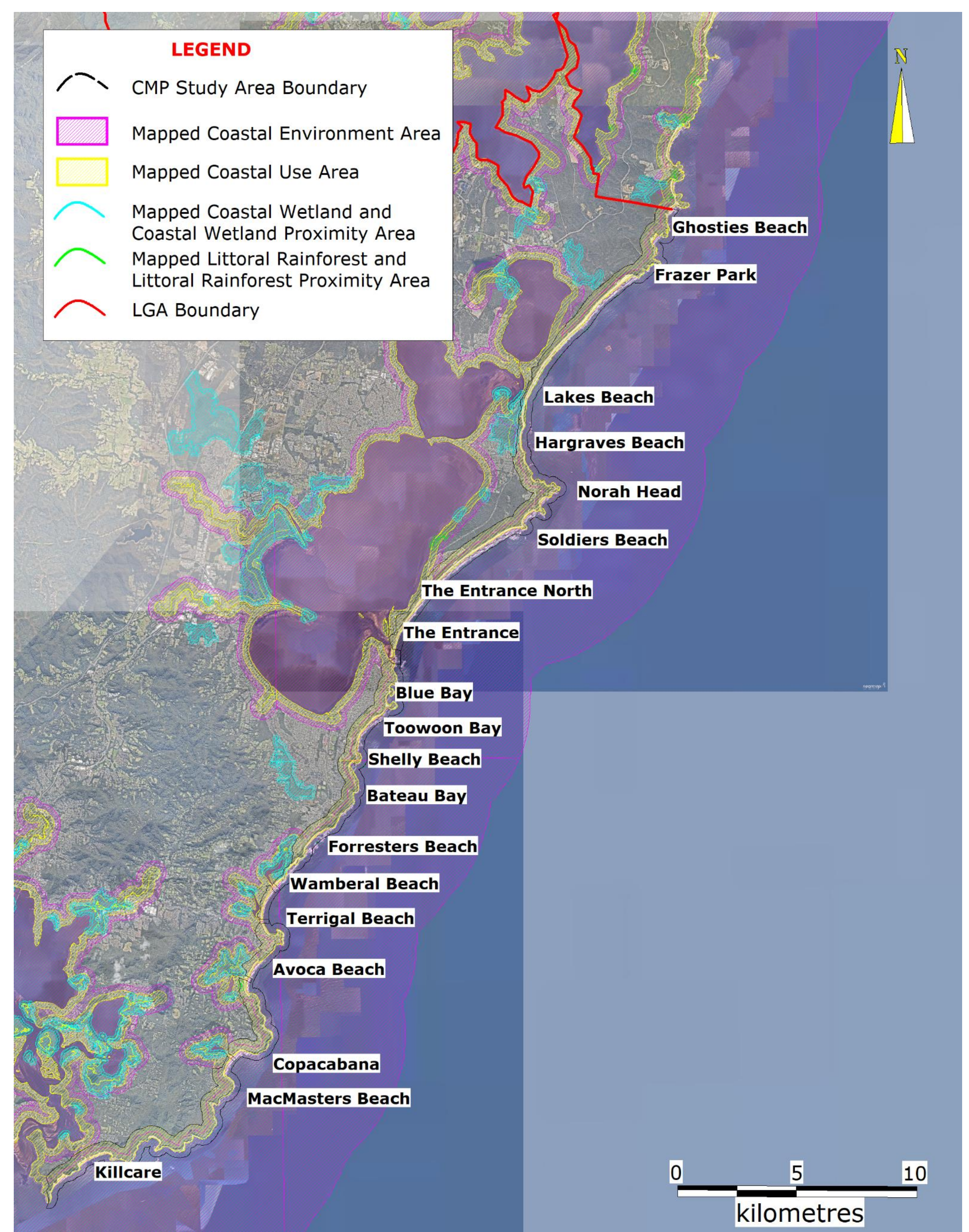
## What locations does the CMP cover?

The Central Coast CMP covers the open coast areas managed by Central Coast Council shown in the map, from Lakes Beach in the north to Killcare in the south.

The beaches of Broken Bay, the estuaries of Tuggerah Lake and the lagoons at Avoca, Terrigal, Wamberal and Copacabana are covered in separate CMPs.

## What work has been undertaken to date?

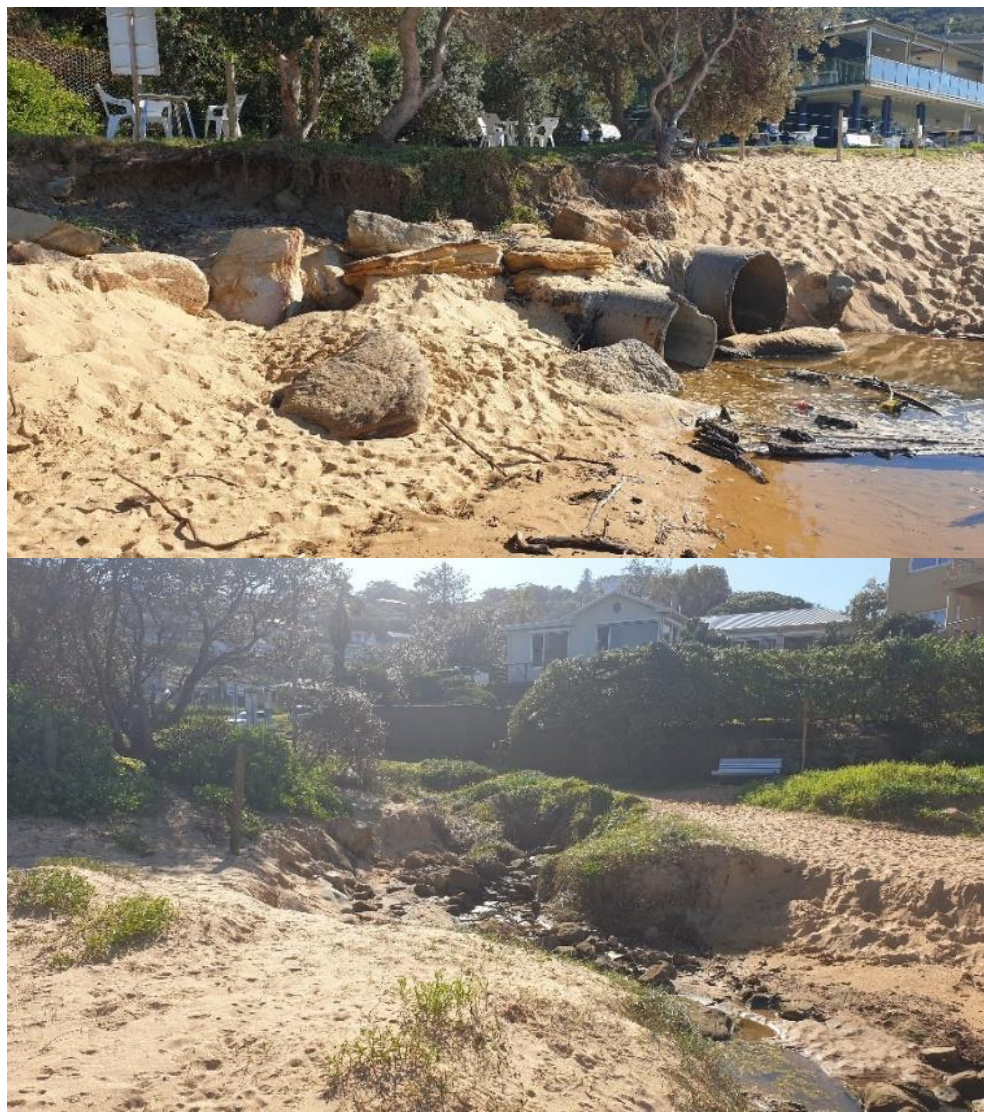
- **Stage 1** (Royal Haskoning DHV, 2021) included a review of relevant background information, a first pass risk assessment, data gap analysis and proposed a forward program for the CMP.
- **Stage 2** (Bluecoast Consulting Engineers, 2024-2025) included a Coastal Hazard Study, which investigated beach erosion/recession, cliff recession, coastal inundation and tidal inundation for immediate, 2040, 2050, 2070 and 2120 planning periods throughout the Central Coast. Those areas most affected include MacMasters Beach/Copacabana, Avoca, Terrigal/Wamberal, The Entrance/The Entrance North.
- In addition, the Central Coast Recreational Use Study (Vision Environment, 2022) was undertaken to identify the coastal recreational activities occurring in the area and determine the adequacy of public amenities and infrastructure to accommodate for those activities now and into the future.
- **Stage 3** involves the identification and evaluation of management actions based on the information gleaned in the previous two stages.





# Central Coast Coastal Management Program

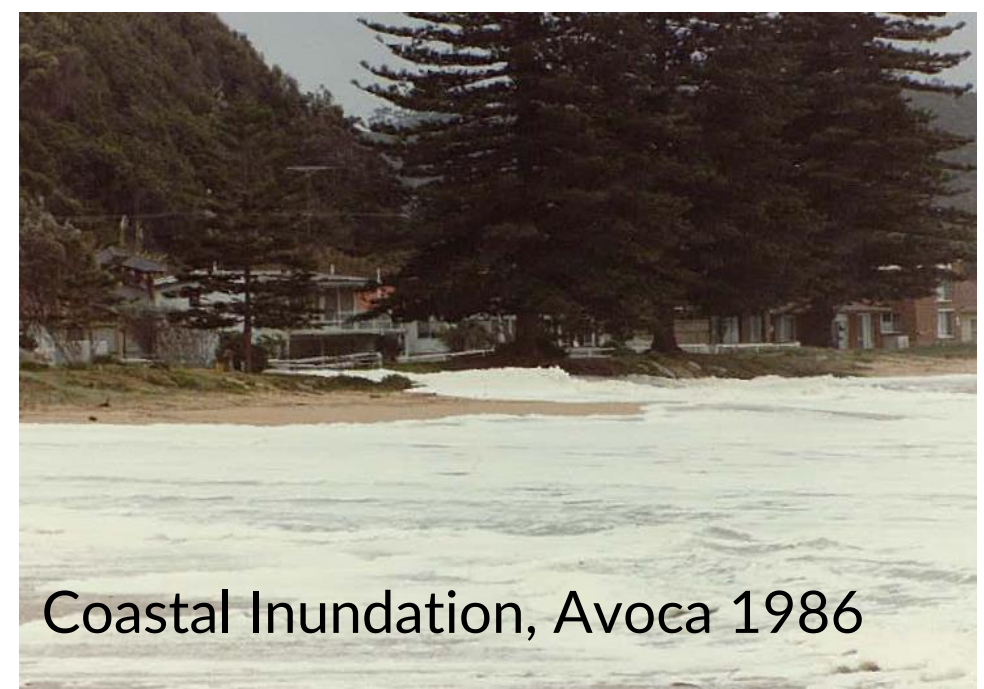
## Coastal Issues



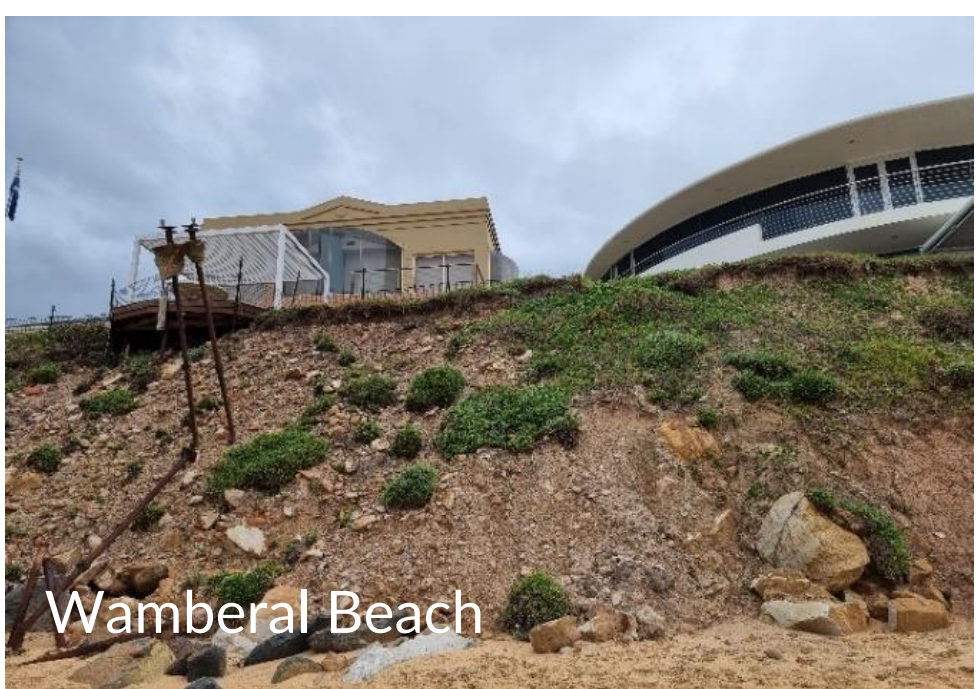
Stormwater scour – Top Killcare SLSC, Bottom – North Avoca



Ad-hoc coastal protection works – Top MacMasters Beach SLSC; bottom – Curtis Parade, The Entrance North



Coastal Inundation, Avoca 1986



Wamberal Beach



Slope Instability and stormwater scour at Forrester's Beach



Undermined seawall at The Entrance

### What are some of the coastal issues identified so far?

- **Wamberal Beach:** Immediate damage to private and public assets/infrastructure due to coastal erosion.
- **Avoca/North Avoca:** Damage to public and private property and infrastructure caused by coastal floodwaters, particularly in the open coast area adjacent to the entrance to Avoca Lagoon.
- **Cabbage Tree Harbour:** Damage to amenity and infrastructure due to the slope at Cabbage Tree Harbour being undermined due to ongoing toe trimming by wave action, land slippages at upper part of slope.
- **MacMasters Beach/Copacabana:** Damage to Surf Club at the southern end of the beach, as well as carpark along Marine Parade, seaward portion of properties along Tudibaring Parade and future erosion affecting Copacabana Surf Club, Del Monte Place and properties along Del Monte Place.
- **The Entrance North Beach:** The southern end of the beach can be subject to coastal erosion with properties at Hutton Road and Curtis Parade within the zone impacted by coastal processes.
- **Soldiers Beach:** Windblown sand affecting carpark at southern end of beach.
- **The Entrance:** The rock revetment structure at Marine Parade at the southern side of the entrance channel has been undermined by scour.
- **LGA-wide:**
  - Legacy coastal emergency works on beaches which no longer serve purpose, causing detrimental impacts or timeframe expired.
  - Need for stronger planning controls to manage development in the coastal zone in relation to coastal hazards
  - Lack of guidance for implementing and assessing coastal protection works
  - Aging or incompatible coastal recreation amenity infrastructure not compliant with engineering standards or industry best practice
  - Coastal hazards impacting viability of existing and future infrastructure long term, need for long-term coastal adaptation planning







# Central Coast Coastal Management Program Management Actions



## How have we developed the draft Management Actions?

### Step 1 – Confirm Strategic Direction

In Step 1, the strategic direction was reviewed to confirm:

- the character, values and management objectives of the coastal management areas
- the vulnerability and risks to coastal assets and values identified in studies conducted in Stage 2
- opportunities to enhance the environmental, social, cultural and economic wellbeing of coastal communities.

The key issues for the Central Coast Open Coast were identified through Stages 1 and 2 of the CMP process. Many of the proposed actions from the Gosford Beaches Coastal Zone Management Plan (WorleyParsons 2017) and the Wyong Coastal Zone Management Plan (Umwelt 2011) have either been implemented, or are no longer current and require review.

### Step 2 – Identify Potential Options

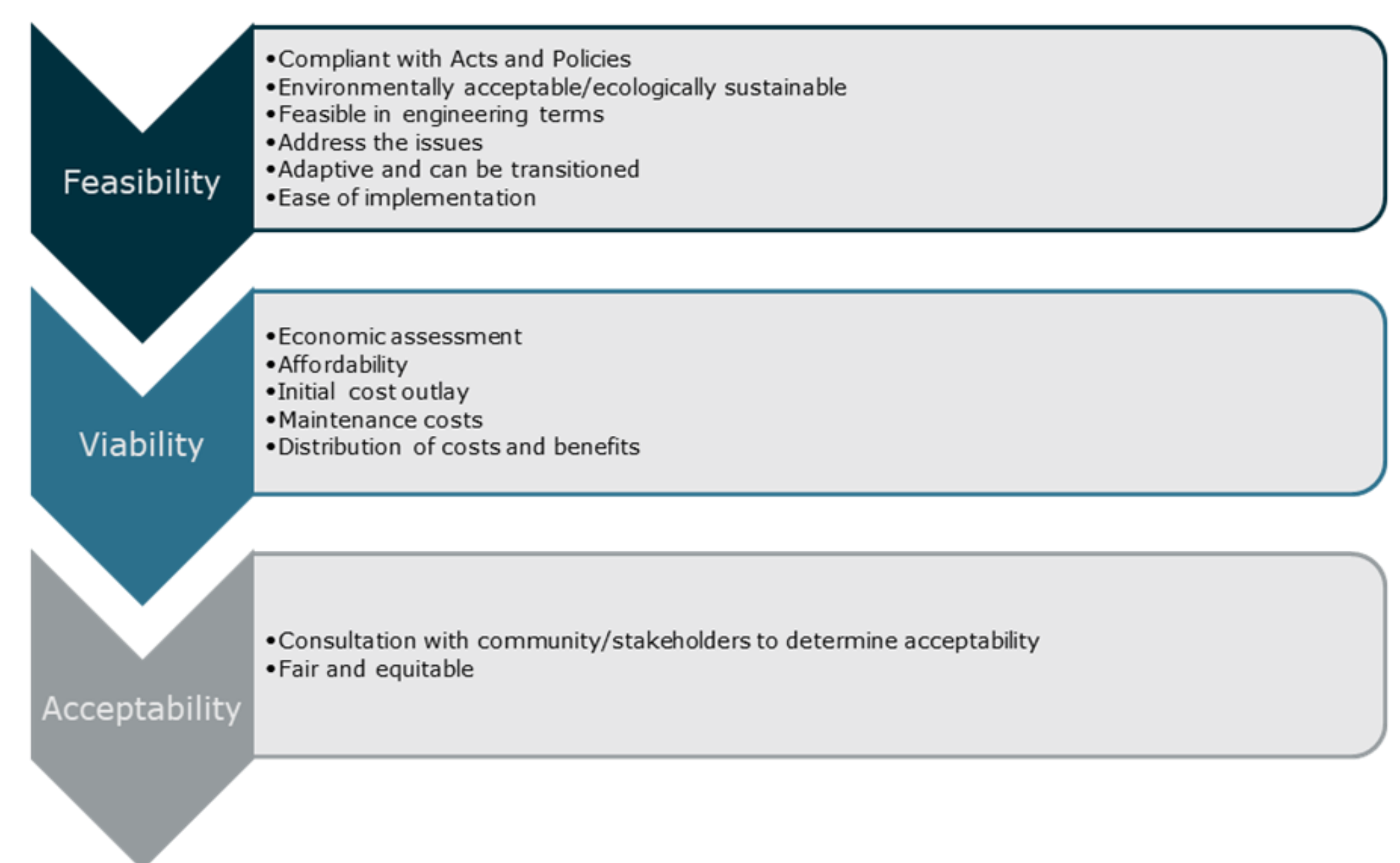
The community and Agency engagement that has been carried out throughout the project has enabled the key issues to be identified and risks quantified through a Detailed Risk Assessment. From the Risk Assessment, the Central Coast Recreational Use Study and the coastal hazard study outcomes, a suite of potential management actions was developed and categorised in terms of the issues and particular locations which they relate to. As part of this process, the strategic partnerships required to deliver these options were identified, and engagement with relevant stakeholders (including Government Agencies and community) was undertaken to canvass and refine the potential management actions.

## How have we assessed and prioritised Management Actions?

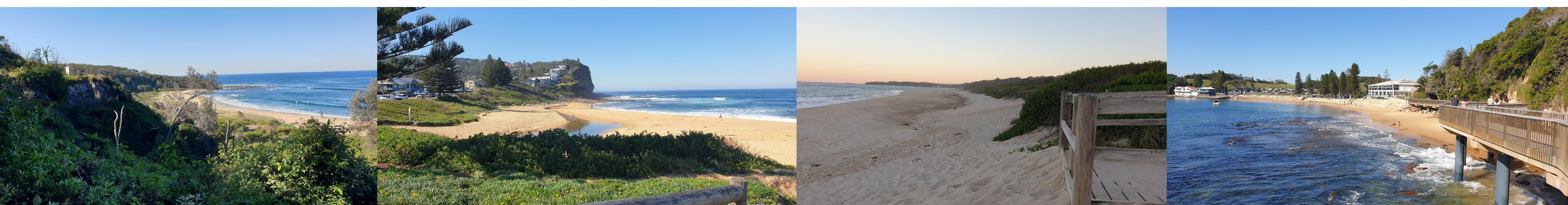
### Step 3 – Evaluate Potential Management Actions

Step 3 involved evaluating the potential management actions in terms of Feasibility, Viability and. This assessment was completed to ensure the final Stage 4 program of management options are appropriate, achievable, and meet the objectives of the CM Act.

In **Step 4**, a business plan was developed which outlined how the proposed coastal management actions will be implemented over time, within an adaptive pathway that includes thresholds and triggers for change.



Options Assessment Process





# Central Coast Coastal Management Program

## Management Actions



### What Actions are included in the CMP?

**Strategy 1 - ALERT** - Where the risks from coastal hazards are relatively low, 'watch and wait' actions have been adopted, including monitoring change, low regret responses and research to improve knowledge.

This approach has been adopted across much of the CMP area, and broadly includes the following types of no-regrets actions:

- Dune Management/vegetation management
- Stormwater management
- Monitoring, research and data collection
- Community education
- Repair of damaged public infrastructure

**Strategy 2 - AVOID** – These options seek to avoid the risk, by implementing proactive planning controls and encouraging development only in areas of low risk. This is appropriate where the risk is currently known and well-defined, with planning controls tailored to the changing risk profile over time. The approach recognises that it may not be possible to avoid the risk at some locations in the future and seeks to limit development in areas of high risk. The types of measures that fit into this category include:

- Planning/Development controls
- Infrastructure setbacks
- Building and infrastructure design criteria.

**Strategy 3 – ACTIVE INTERVENTION** – These options involve active intervention in an effort to reduce the risk, for example, coastal protection works.

Council has undertaken beach nourishment opportunistically at The Entrance North and The Entrance beach, using sand dredged from the entrance to Tuggerah Lakes. There is an action in the CMP to continue this practice as beneficial reuse of dredge sand to reduce erosion risk at The Entrance North.

### Examples of Active Intervention Actions

There is an action in the NSW State Disaster Mitigation Plan to: “Assess the feasibility of large-scale offshore sand reserves and other sources for beach nourishment including where it might be suitable” and will continue to work with the NSW Government on the outcomes of this study. This study was due for completion in mid 2025 and Wamberal/Terrigal and The Entrance North Beaches were included in the list of beaches that were given a more detailed assessment of feasibility of beach nourishment in the study. Council has included an action in the CMP to work with the NSW Government on the next stages of this project such as physical testing of potential sand source locations.



Sand Nourishment. Left: Jimmys Beach NSW. Right: “Rainbowing” – dredge pumping nourishment sand from offshore into the active beach zone (NSW Reconstruction Authority State Disaster Mitigation Plan, 2023)



Examples of coastal protection structures. Left – Terrigal Seawall, right – Avoca rock revetment

CMP Actions falling under the ACTIVE INTERVENTION Strategy
• Investigate and develop a Coastal Hazard Adaptation Strategy for affected coastal communities
• Investigate feasibility and responsibilities of long-term sand nourishment licences
• Develop and implement Coastal Engineering Design Requirements
• Identify the extent, nature and condition of existing coastal emergency works (including potential removal or remediation)
• Design and construct Stage 2 of the existing Cabbage Tree Harbour toe drainage structure
• Complete coastal risk and options assessment for Marine Parade at MacMasters Beach
• Continue to nourish The Entrance North Beach with sand from The Entrance channel berm management or dredging activities when available to increase beach amenity and resilience.
• Review the structural integrity and extent of the foreshore revetment and embankment protecting Marine Parade, The Entrance, and undertake remedial works as required
• Undertake an engineering review of the Wamberal Beach engineering design requirements (EDR) so that they may be referred to in future revisions of Council's Coastal Development Control Plan (DCP)
• Implement whole of embayment terminal protection solution for Wamberal Beach Council owned land in accordance with the principles of the Engineering Design Requirements
• Options study for replacement of aging seawall at The Haven

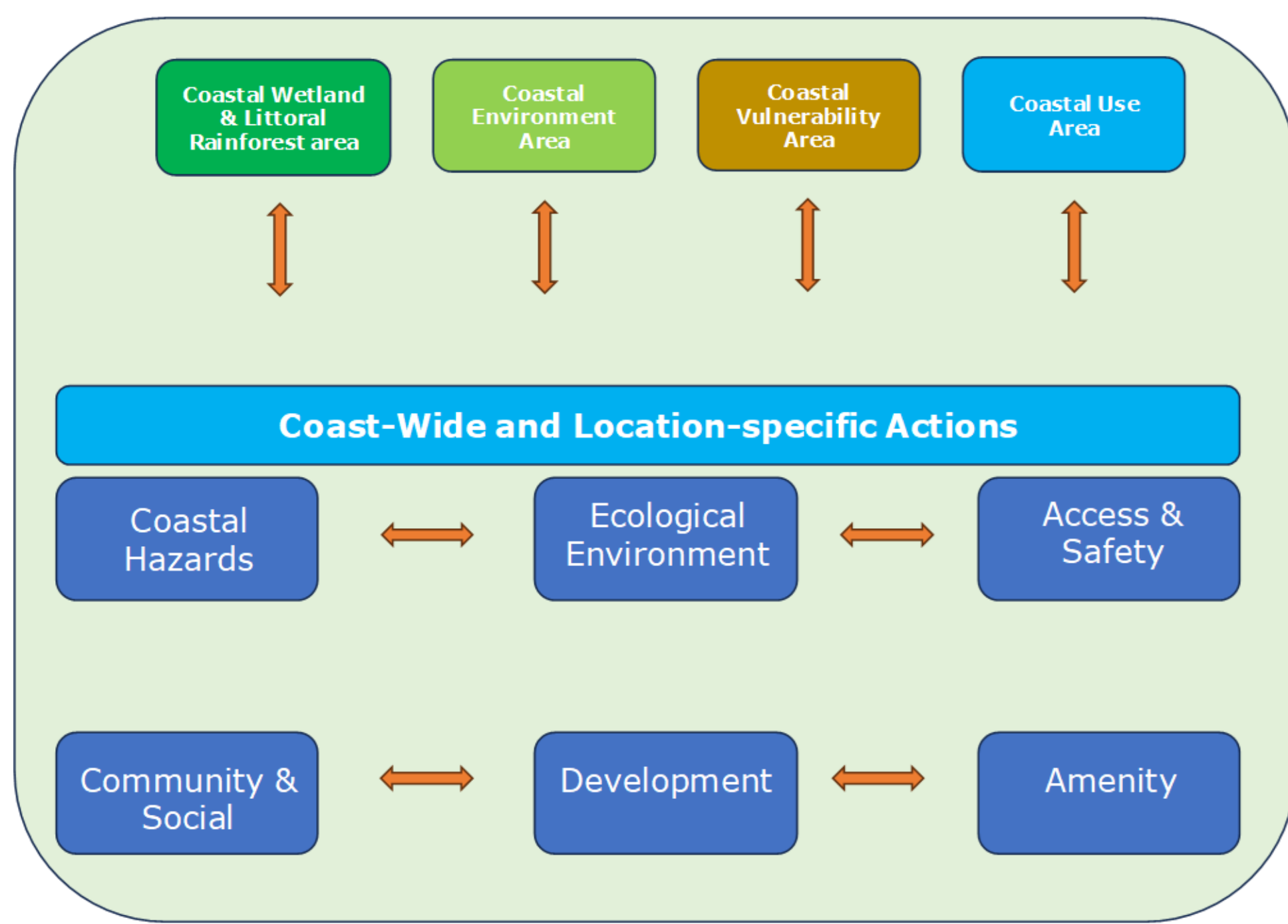


This project is being supported with funding from the NSW Government's Coastal and Estuary Grant Program.





# Central Coast Coastal Management Program Management Actions



Structure of the CMP

## Long Term Strategies

**Strategy 4 – PLANNING FOR CHANGE** – includes coastal management actions that seek to facilitate habitat migration and transformative changes to natural systems. For built areas, this includes planning to relocate or redevelop assets to consider dynamic and ambulatory nature of the shoreline. It may be timed to commence as opportunities arise or when thresholds of exposure, impact and risk are exceeded.

The key action included in the CMP under the Planning for Change strategy is to:

- Investigate and develop a Coastal Hazard Adaptation Strategy for affected coastal communities

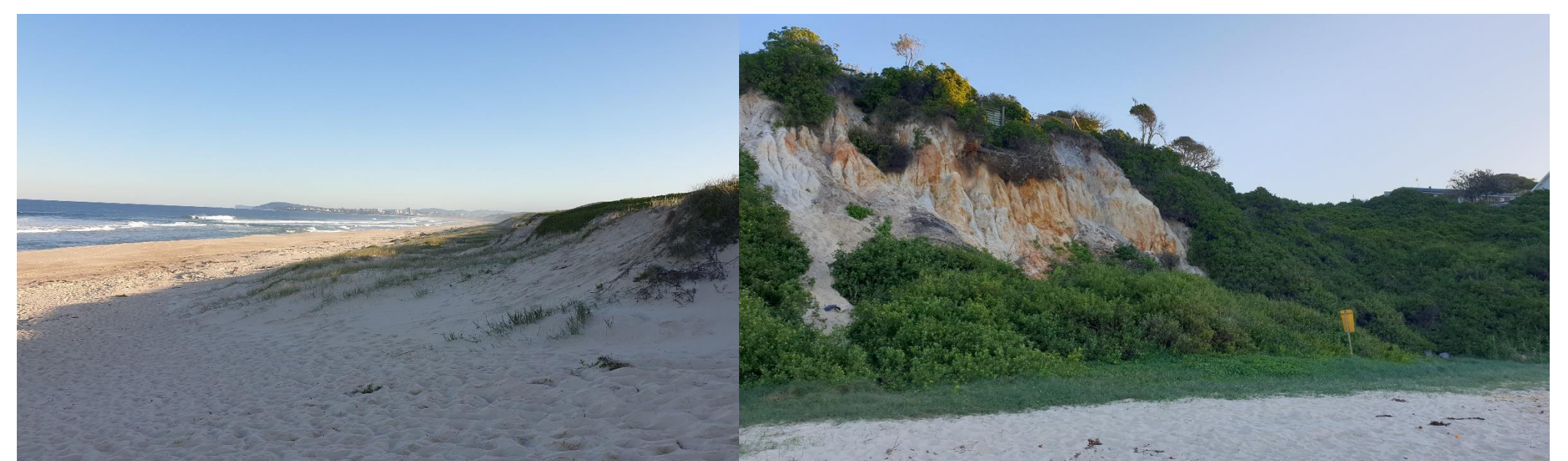
This action recognises that even with active intervention in areas that are currently at the highest risk from coastal hazards (e.g. Wamberal and The Entrance North), the risk will eventually become so great that it cannot be reduced to a tolerable level by interventions such as engineering works, and that some form of retreat or relocation from the high risk area may be necessary in the future.

## Action Timing

The management actions have been designed to be implemented within the 10-year timespan of the CMP, with long-term actions defined that will carry over to subsequent iterations of the CMP at the end of the 10-year cycle.

The timeframes defined against each action within the CMP are:

- Short-term actions – designed to be implemented within 1 – 2 years
- Medium-term actions – designed to be fully implemented within 3 – 6 years i.e. within the 10-year planning period of the CMP
- Long-term actions – designed to be initiated within 7 – 10 years, but which may take longer than 10 years to fully implement and would likely carry over to the next iteration of the CMP.
- Ongoing – designed to be implemented on a continual basis throughout the implementation phase of the CMP.



## Private Coastal Protection

The draft CMP proposes that property owners that own properties at risk of coastal erosion, continue to be responsible for the funding and implementation of any coastal protection works for their own properties. This is consistent with the resolution by Council for Wamberal Beach in October 2022.

Private coastal protection works will continue to have a planning pathway under the NSW planning legislation and the NSW Coastal Framework. The CMP does not outline where private residents should or should not lodge development applications for coastal protection works. These development applications will continue to be assessed on their merits by the Regional Planning Panel. The proposed action by Council to develop region wide Engineering Design Requirements for Coastal Protection Works will help guide the preparation and assessment of development applications for coastal protection works.

Even with the completion of the actions in the CMP there will still be a significant residual risk to private property on the Central Coast from coastal hazards over the life of the plan. There is limited scope for Council or other public authorities to mitigate this risk over the life of the plan. The responsibility for private coastal protection ultimately remains with private owners via approved planning pathways (obtaining development consent). In the absence of suitable private coastal protection works, and with continuing coastal erosion impacts occurring in these locations, there will be a continued burden on Council and emergency services when coastal erosion events occur.

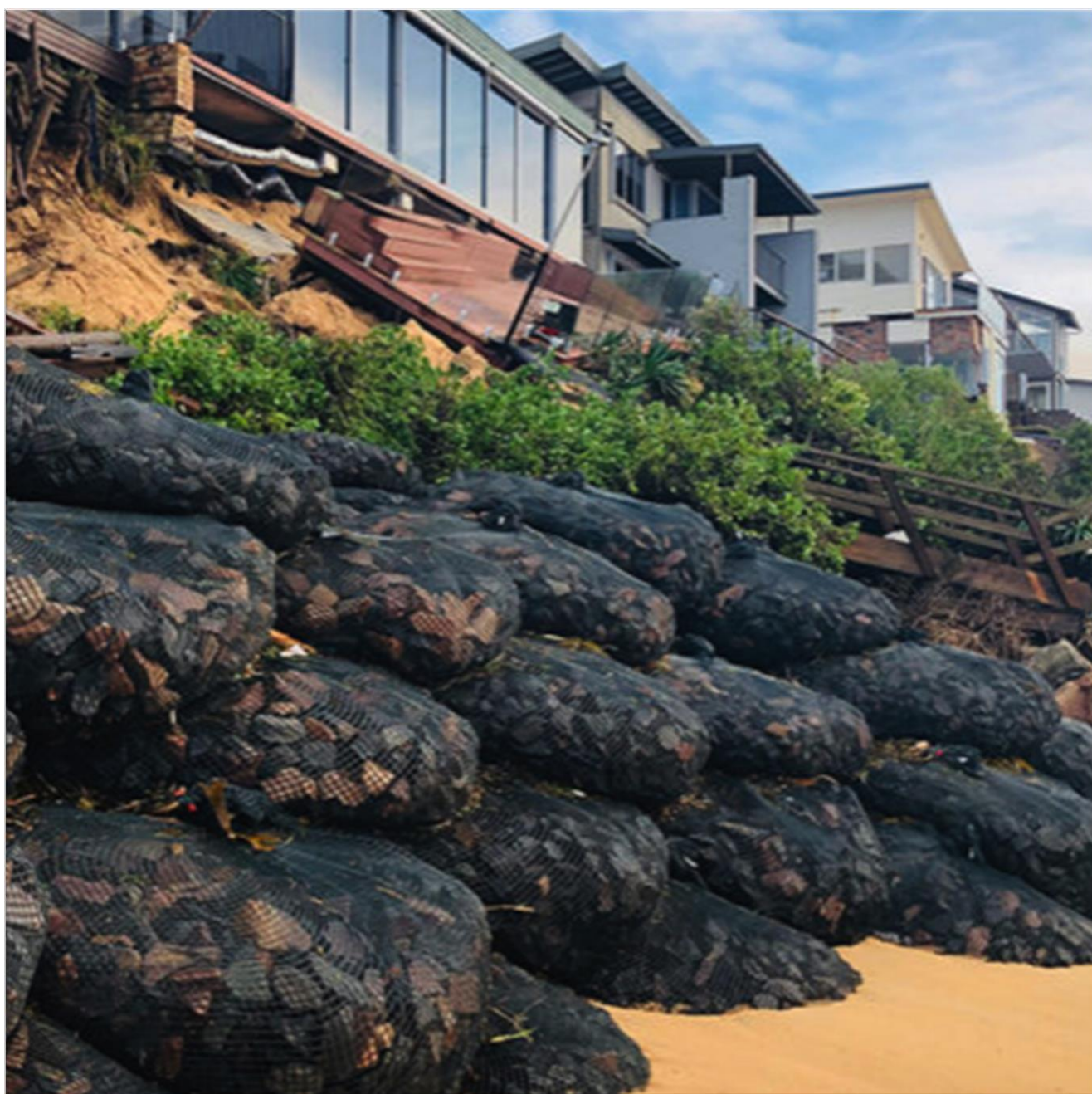


# Central Coast Coastal Management Program Emergency Response

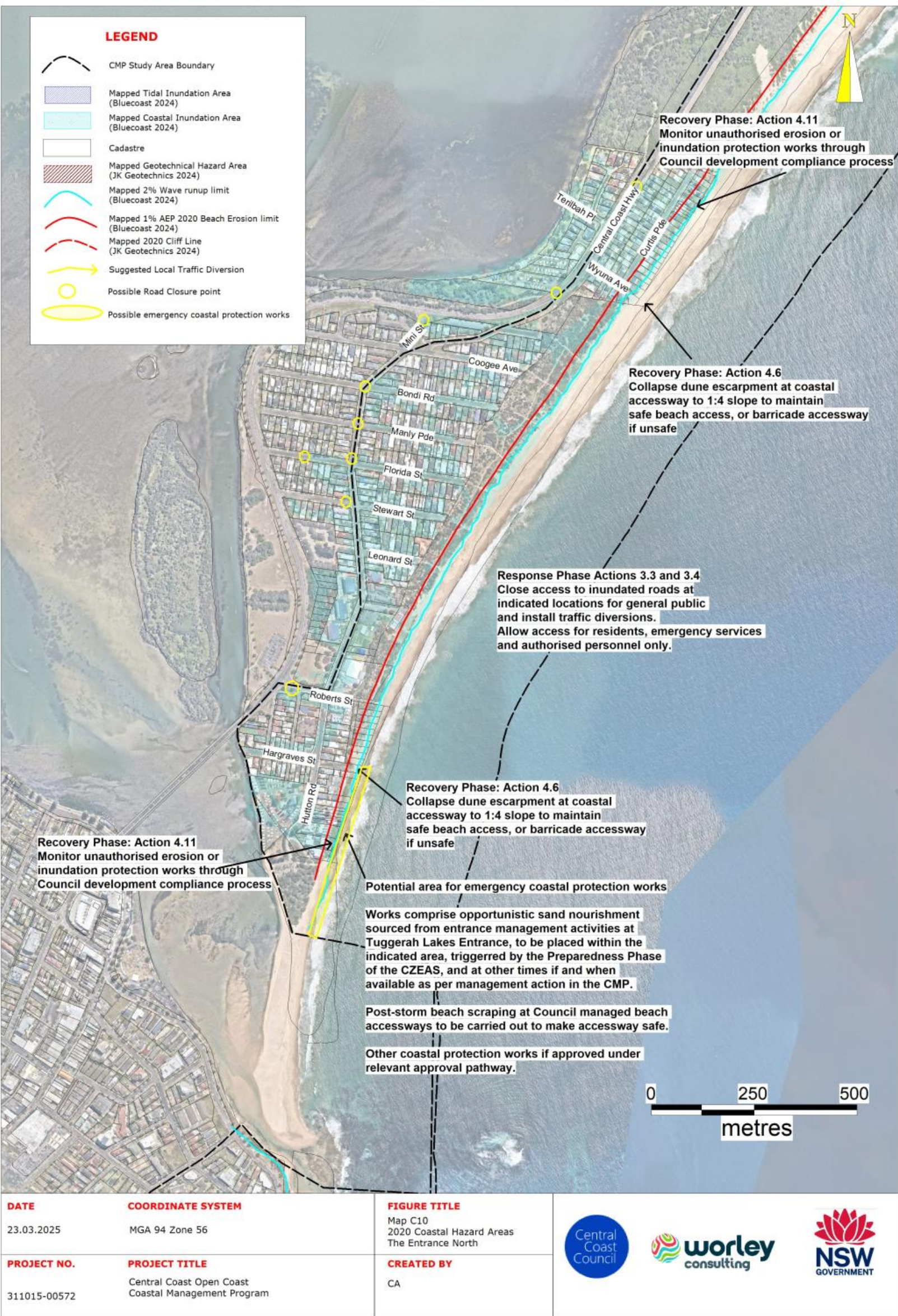


## Strategy 5 – Emergency Response

The coastal management actions address residual risk in emergency situations. The Coastal Zone Emergency Action Subplan (CZEAS) provides a list of management actions for Council to undertake specifically in a coastal emergency. Council has on occasion installed emergency protection works under the provisions of the State Emergency and Rescue Act 1989, for example at Wamberal in July 2020. However, private landholders are responsible for their own land parcels, and Council does not have an obligation to protect private property from erosion events. Council must, however, consider development applications lodged by property owners for coastal protection works.



Example Emergency Protection Works installed at Wamberal, July 2020



Example Local Area Emergency Action Subplan

## Coastal Zone Emergency Action Subplan

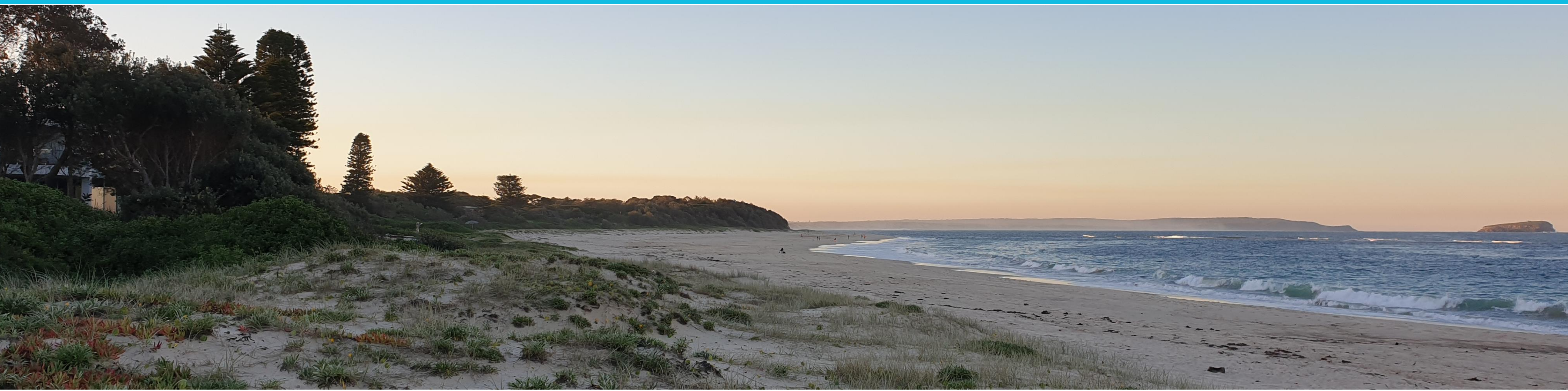
A Coastal Zone Emergency Action Subplan (CZEAS) has been developed for the CMP area, for those areas subject to immediate hazards from coastal hazards. Specific management actions for Council before, during, and after a coastal emergency are outlined in this document.

The objectives of the CZEAS are to:

- outline measures to reduce the risk to public safety, the coastal environment and public assets arising from the coastal hazards of coastal erosion, inundation and cliff/slope instability brought about by storm activity
- identify key actions to be carried out by Council before, during and following a coastal emergency to reduce the risk to public safety, the coastal environment and public assets
- identify the responsibilities of other public authorities during a coastal emergency
- identify key areas and assets subject to immediate hazards and prioritise actions to reduce the risks to those areas and assets.



# Central Coast Coastal Management Program Have Your Say



## How has Council engaged with the community?

Council have undertaken extensive community and stakeholder engagement throughout Stage 1, 2 and 3 of the CMP process which have informed the management actions presented in this CMP.

Stage 3 community consultation and engagement included:

- Project dedicated website Your Voice Our Coast – Open Coast Coastal Management Program with project background, FAQ's, links to studies and coastal staff contact email.
- Interactive Social Pinpoint page
- Six community pop up events
- Two targeted community stakeholder sessions

## How can I have my say?

We thank you for your participation and your time and feedback throughout this process.

The Draft CMP is now available for community review and feedback on the proposed management actions. Your feedback, suggestions and ideas are key to the success of the Coastal Management Program.

Community and stakeholders will have the opportunity to get involved by providing comments to Council directly via Council's Your Voice Our Coast – Open Coast Coastal Management Program website.

## What Next?



**Stage 1 - Identify the scope of a CMP** Completed 2022



**Stage 2 – Determine Risks, Vulnerabilities and opportunities**  
Completed late 2024



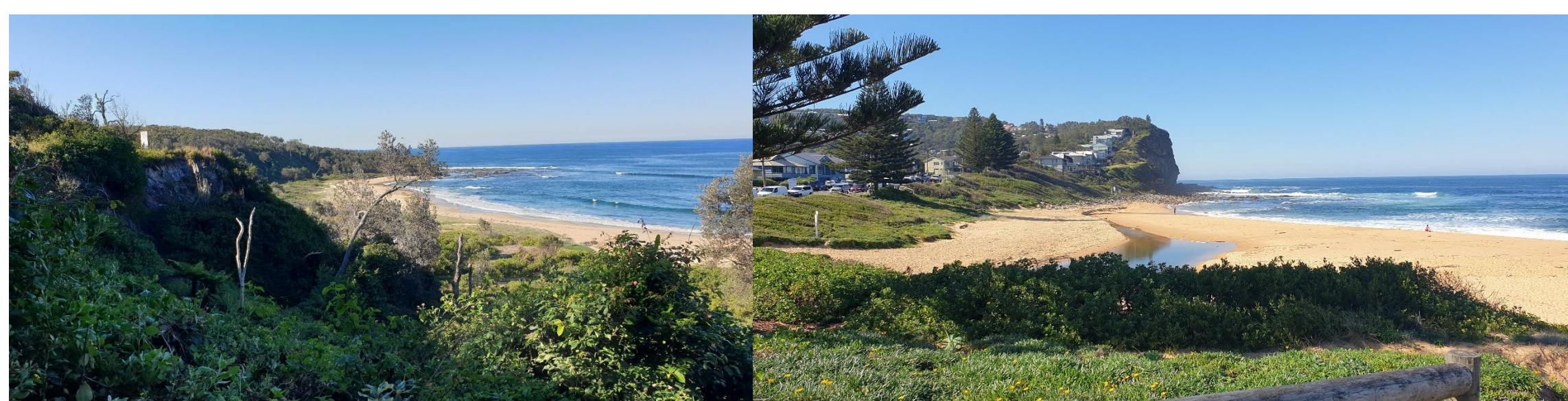
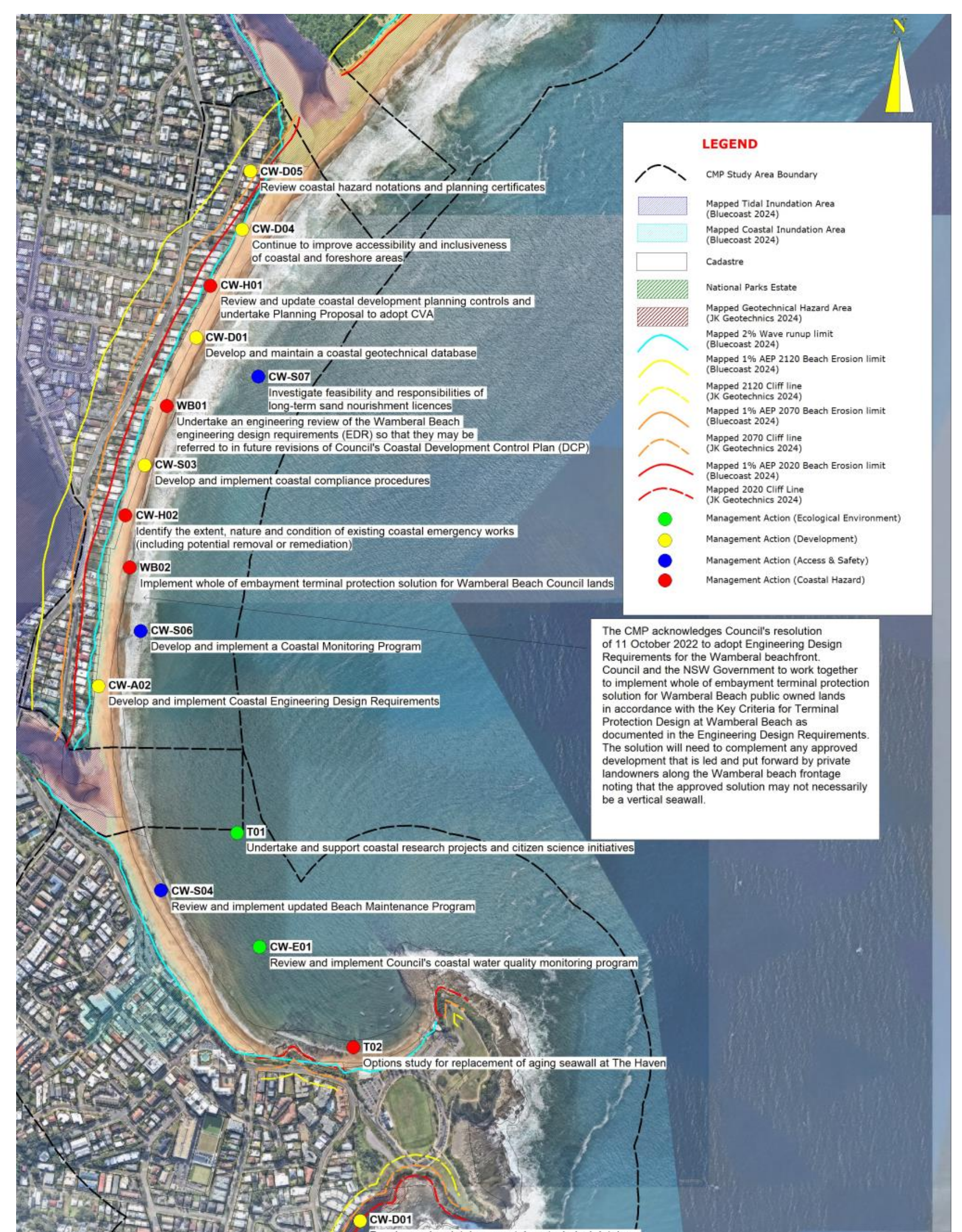
**Stage 3 – Identify and Evaluate Options**  
Completed early 2025



**Stage 4 – Prepare, exhibit, finalise, certify and adopt the CMP**  
Draft CMP on exhibition 14 July – 25 August 2025.



**Stage 5 – Implement, monitor, evaluate and report**  
Late 2025 - Onwards.



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Central  
Coast  
Council