


Coastal Adaptation Strategy

A Redlands journey



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Redlands Coastal Adaptation Strategy

Presentation Aim

- The journey we are taking
- Where we are currently
- Relationship with QCoast 2100 Funding Program

- Approximately 220km of coastline
- Estimated population of 155,000 - mainland and island communities
- Diverse coastal environment –
 - Open beaches
 - Sheltered bays
 - Large tidal areas
 - Estuary inlets





Project Background

- The Coastal Adaptation Strategy was initiated in the 2nd half of 2014
- Council decided an overarching strategy was needed to inform future decision making and policies
- Result of previous attempts to develop Shoreline Erosion Management Plans for Amity Point and Coochiemudlo Island

Project Governance

- A Steering Committee was established responsible for providing high level direction to the Project Manager.
- Membership includes Traditional Owners, State Government Agencies, Non-government organisations and Industry bodies.
- The Technical Working Group membership is key internal stakeholders





Project Structure

Coastal Adaptation Strategy

Part 1 – Current Hazards & Part 2 – Emerging Risks

SEMPs

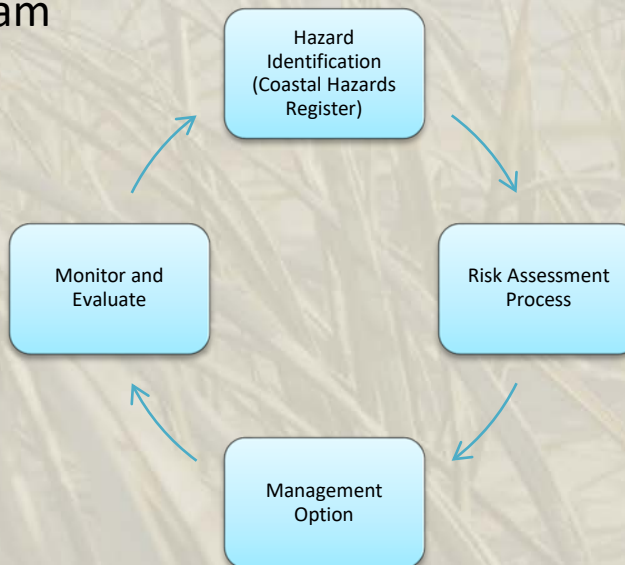
Other Detailed Planning


The Coastal Adaptation Strategy is an overarching strategic plan that will be developed in two parts:

- Part 1 Current Hazards has been completed in-house; and
- Part 2 Emerging Risks will utilise QCoast 2100 Funding Program.
- Detailed planning, such as SEMPs and other specific projects, will be guided by the Coastal Adaptation Strategy
- *Community engagement is being managed primarily in-house

Part 1 – Current Hazards

- The objective of this project is to establish a consistent policy and process for the assessment and management of identified erosion areas
- An adaptive and flexible framework ensures the most appropriate management actions are implemented.
- Complimented by a live database where all hazards are registered and included on an annual inspection program





Risk Assessment Process

- The Risk Assessment has been created for the purpose of assessing and prioritising a wide range of hazards across the City
- The objectives of this assessment framework is to create a framework that is logical, consistent and transparent.
- The risk assessment follows a 4 step process:

Preliminary Assessment

- Initial screen of identified hazard location
- Determines if identified hazard can be addressed under business as usual, or whether a more detailed assessment is required

Hazard Assessment Matrix

- Triple Bottom Line Assessment
- Objective criteria
- Determine the consequence of each identified hazard
- A weighting was used to test the robustness of the assessment process

Erosion Factor

- Multiplier factor to further refine the risk assessment process
- Replaces the 'likelihood' component of the standard risk assessment equation

Risk Rating

- Attributes a risk rating to each hazard location
- Utilises the outcomes of the Hazard Assessment Matrix and Erosion Factor
- Risk = Consequence x Erosion Factor
- Consistent with Council's Risk Assessment Handbook

Risk Assessment Process

Criteria	Scoring Method					
	1	2	3	4	5	Score
The loss of the foreshore area from an erosion event (m ²)	<99m ²	100m ² – 999m ²	1,000m ²	2,000m ² –	>4,000m ²	eg. 3
Adjoining terrestrial value (BPA 3.5); or Vegetation regulated under the Vegetation Management Act 1999	Minimal ecological value (i.e. cleared for invasive species etc.)					
Marine Park Zoning	No Marine Park					
Ramsar listed	Not Ramsar					
Fish habitat area	Not in					
EPBC-listed endangered ecological community	Not present					
Nature Conservation Act Species Present	No species present					

$$\text{Risk} = \text{Consequence Rating} \times \text{Erosion Factor}$$

Table: Risk Matrix

		Prioritisation Score				
		1	2	3	4	5
Consequence Rating	Severe	M10	H20	H30	E40	E50
	Major	M8	M16	H24	E32	E40
	Medium	L6	M12	M18	H24	E30
	Low	L4	L8	M12	M16	H20
	Insignificant	L2	L4	L6	M8	M10

NB: Aligns with Redland City Council Risk Assessment Handbook

	Scoring Criteria				
	1	2	3	4	5
Severity of Erosion	Minimal erosion occurring	Low level of erosion occurring (i.e. recession and regeneration or continual fluctuation of shoreline)	Medium level of erosion occurring (i.e. transformation of location – natural process of recession occurring in one location and progression at another)	High level of erosion occurring (i.e. permanent loss of shoreline)	Severe erosion occurring (i.e. significant permanent loss of foreshore, often resulting in sudden and significant events)

Criteria	Scoring Method					Score
	1	2	3	4	5	
Refers to the visual quality and appreciation of the foreshore area by the community	Minimal visual amenity	Low value of visual amenity	Moderate level of visual amenity	Local Important visual amenity	Very high level of visual amenity	eg. 3
				Local recreational value to the community	High recreational value to broader community, can be considered a recreation 'destination'	
				Historically important cultural heritage site identified	Significant cultural heritage site identified	
				< 99	> 100	
Social Score (Total Average)						
				0,000 – 9,999	> \$1,000,000	eg. 3
				0,000 – 9,999	> \$1,000,000	
Economic Score (Total Average)						
Total Score (Environment average + Social average + Economic Average)						

Management Options

- A multi-criteria analysis was created to assess each potential management option
- The MCA criteria included:
 - Costs (implementation and life-cycle)
 - Social and Environmental Impacts
 - Effectiveness
- A simple scoring scale was applied being:
 - 1 (unacceptable to poor) to 4 (acceptable to excellent)

Location	Consequence rating	Erosion Factor	Risk Rating	Recommended Management Option(s)	Priority	Planning cost estimate* (2016\$)
Amity Point	Major	5	E40	Shoreline Erosion Management Plan	Very High	\$150,000
Norfolk Beach, Coochiemudlo Island	Medium	3	M18	Monitor – annual survey	Ongoing	\$3,000
Main Beach, Coochiemudlo Island	Medium	2	M12	Monitor – annual inspection	Ongoing	Internal Cost
Southeast Beach, Coochiemudlo Island	Low	2	L8	Monitor – annual survey	Ongoing	\$3,000
Melaleuca Beach, Coochiemudlo Island	Low	2	L8	Foreshore Protection – beach nourishment	Low	\$70/m ³




Part 2 – Emerging Risks

- Part 2 will address future coastal hazards:
 - Storm tide inundation
 - Sea level rise
 - Erosion Prone Area
- Planning period of 2100 with considerations beyond
- A key aim of Part 2 is to define the level of risk and vulnerability to assets, property and the community





QCoast 2100 Program

- Council is intending to utilise the QCoast 2100 program for the second part of the Coastal Adaptation Strategy (Emerging Risks)
- Funding has been secured for Phases 1 to 5
 - The scope of work includes a review of all work completed to date (including Part 1 - Current Hazards)
 - Ensure all available data, mapping, etc. is ‘fit for purpose’
- A second funding application is being prepared for Phases 6 to 8
- Aligns with the Stakeholder and Community Engagement Program – allows Council to engage with the community and key stakeholders on Part 1 while Part 2 begins



Community Engagement Program

- Developed a two stage engagement program
 1. Current Hazards (Coastal Erosion)
 2. Emerging Risks
- Current hazard engagement program is in progress
 - Created a process that engages key stakeholders and broader community (engagement events & digital platform)
 - Seeks to create a dialogue with the community in the first instance about ‘real hazards’, also outline values and expectations
 - Allow Council to leverage of this engagement process when moving into Emerging Risks
- Visit <https://yoursay.redland.qld.gov.au/coastal-adaptation>




Thanks



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