

Victoria's Resilient Coast – Adapting for 2100+



ACS Webinar
5 September 2022



Environment,
Land, Water
and Planning

Introduction



- Marine and Coastal Strategy 2022 context
- Victoria's Resilient Coast – Adapting for 2100+
 - Objectives
 - Framework
 - Guidelines
 - Funding support
- Next steps

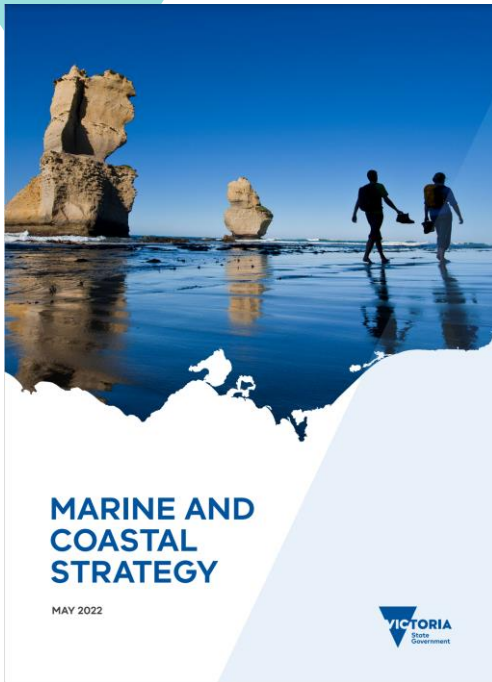
Marine and Coastal Strategy 2022 context



Marine and Coastal Act 2018



- ***Marine and Coastal Act 2018*** provides integrated and coordinated approach to planning and managing the marine and coastal environment
- **Marine and Coastal Policy** guides decision makers in the planning, management and sustainable use of our coastal and marine environment – 15 year life
- **Marine and Coastal Strategy** is a five-year action plan to implement the Marine and Coastal Policy.



- First of 3 strategies to implement the Marine and Coastal Policy 2020
- 6 priority actions critical to achieving the vision and intended outcomes of the Policy
- Actions delivered through 54 activities - timeframes and responsibilities for delivery over next 5 years
- Supported by \$16.9m Vic Coasts budget announced for 2022-23

Whole-of-government approach to managing the marine and coastal environment, approved by Ministers for:

- Energy, Environment and Climate Change
- Water
- Planning
- Ports and Freight
- Fishing and Boating
- Agriculture
- Resources

Includes an important message drafted by coastal Traditional Owners

'The time is now — to speak, listen and act with courage; to make decisions together and transparently that are in the interests of our oceans, coastlines, connected landscapes and waterways for generations to follow... We must forge a future together to make things better...'

Action 1	Traditional Owners determine how their rights and obligations are embedded into planning and management of the marine and coastal environment
Action 2	Improve the condition and ecological connectivity of habitats and respect and care for our marine and coastal areas
Action 3	Adapting to impacts of climate change
Action 4	Support sustainable use and development of the marine and coastal environment
Action 5	Implement the Marine Spatial Planning Framework
Action 6	Identify resource needs for sustainable marine and coastal management

- Activity 3.12 – Applying the Vic Resilient Coast state-wide adaptation framework and guidelines, including:
- For all strategic coastal hazard risk management and adaptation planning
 - Rolling out the grant programs to support implementation across the state

<https://www.marineandcoasts.vic.gov.au/coastal-management/marine-and-coastal-strategy>

Victoria's Resilient Coast – Adapting for 2100+ program



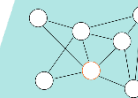


Victoria's Resilient Coast – Adapting for 2100+

A strategic approach to coastal hazard risk management and adaptation.

Purpose:

- To support Local Government, land managers and communities to adapt to the impacts of climate change on the coast
- To enable place-based, best practice, long-term (2100+) coastal hazard adaptation
- To build on the directions in the Marine and Coastal Policy.



Approach includes:

Framework



Guidelines



Funding support

Coastal hazards

- Natural processes such as erosion and inundation continually shape our diverse and dynamic coastline.
- When these processes may have a negative impact on safety, environmental, cultural, social and economic values along the coast, we refer to them as coastal hazards.



Category	Process/ hazard
Erosion	Short-term erosion: Event-based erosion of sediment (storm-bite) and recovery Long-term erosion (recession): Progressive retreat of shoreline position over time
Accretion	Short- or long-term build-up of sediment in a localised area
Inundation	Storm tide inundation Temporary event-based inundation Permanent inundation Regular or persistent inundation by the regular tidal cycle
Estuary dynamics	Changes in form and processes associated with estuarine and tidal areas
Off-shore sediment dynamics	Changes in form and processes associated with offshore bathymetry and sediment transport
Saline intrusion	Movement of saltwater into freshwater aquifers/groundwater



WE ARE HERE



Framework, guidelines and funding support development

Guideline and program
refinement & pilots
commence

Broader implementation
commences
(adaptation planning underway)

Dec 2020

Dec 2021

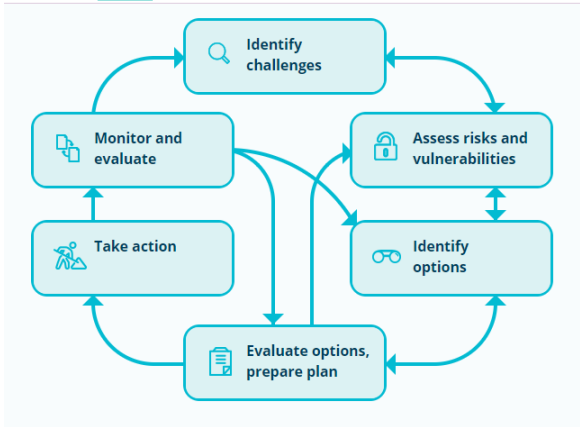
July 2022

DELWP
working group

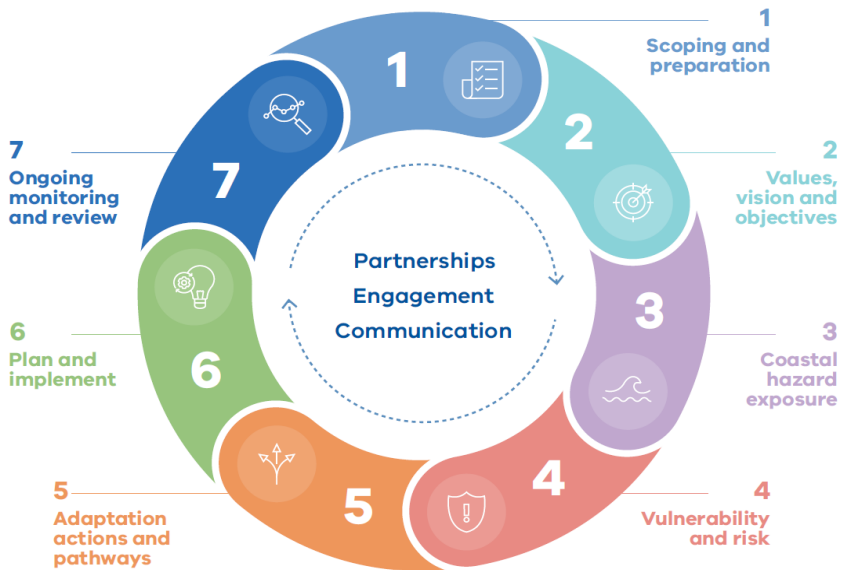
Project partnership with
Traditional Owners

Collaborative working group

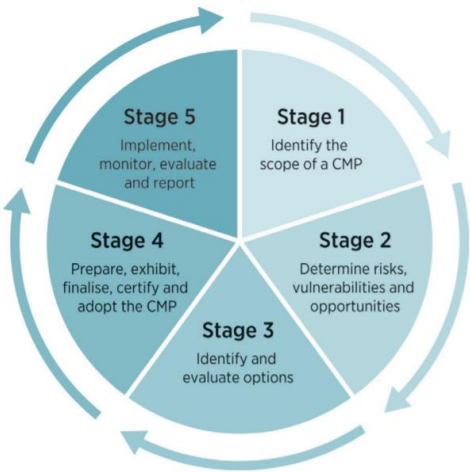
National
(CoastAdapt)



Victoria



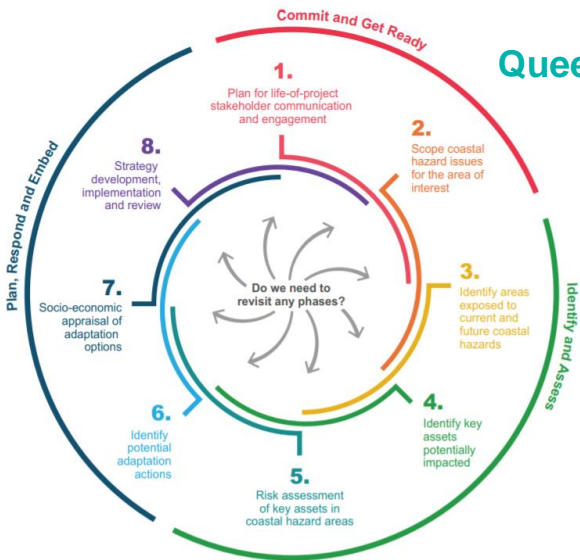
New South Wales



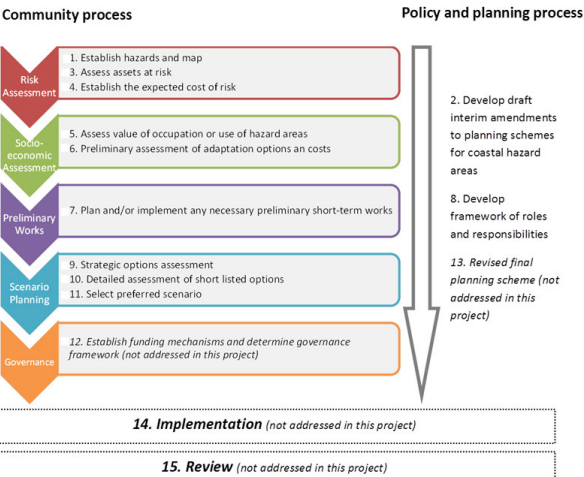
New Zealand

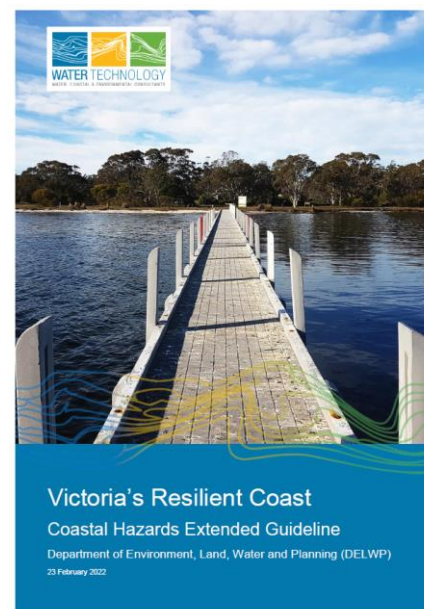
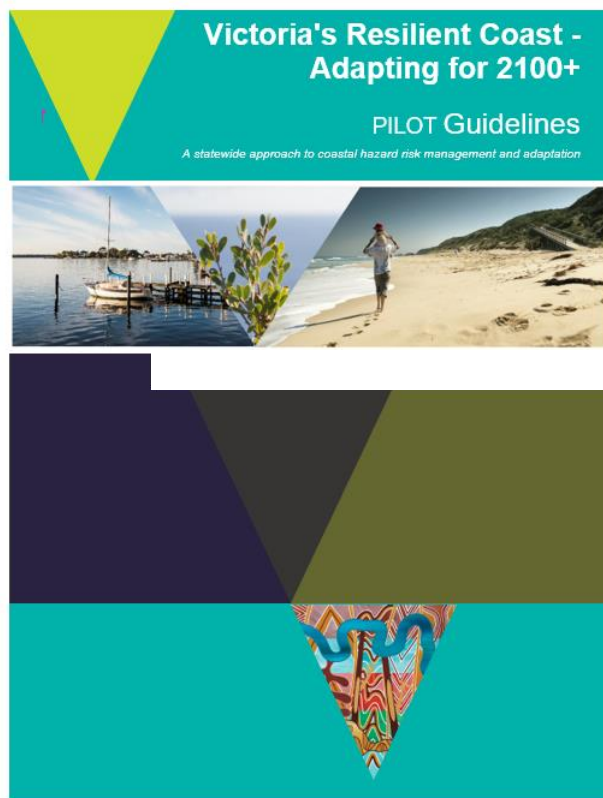


Queensland



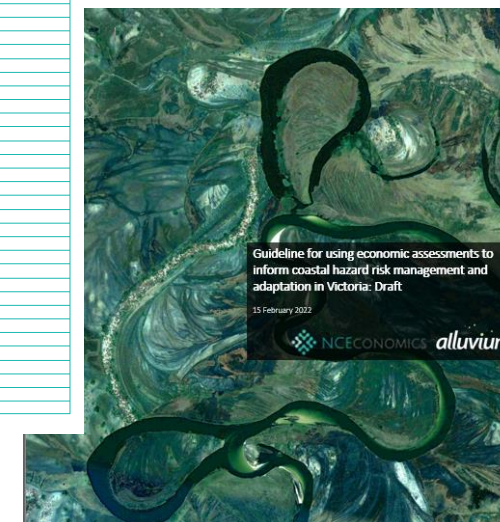
Tasmania





Functional zone		
Document last modified: 1h ago		
Land management, planning and design	Land use	Land acquisition
		Land swap
		Controlled access
		Planning scheme zone amendment
		Planning overlays
	Resilient design / development	Rolling easements
		Relocation of infrastructure
		Special area planning
		Development setbacks
		Design standards / provisions
Nature-based	Coastal wetlands / blue carbon ecosystems	Codes of practice
		Retrofit / use resilient infrastructure materials
		Retrofit / use resilient infrastructure design (e.g. floor levels, layout)
		Mangrove forests
		Seagrass
	Dune ecosystems	Salt marsh
		Kelp forests
		Dune protection / vegetation
		Beach scraping / nourishment*
		Use of on-site natural materials
Engineering	Hybrid actions	Shellfish reefs
		Living shorelines
		Living seawalls
		Sand fencing
		Beach scraping
	Nourishment*	Cart and place
		Dredge and pump
		Sand by-pass system
		Dredging
		Management of offshore channels / dynamics
Engineering	Seawalls	Vertical seawall
		Rock revetment / wall
		Rock
		Geotag
		Timber
	Groyne	Off-shore
		Near-shore
		Tomboles
		Lowest/riptides
		Tidal / surge barriers
Engineering	Flood/tidal barriers	Tidal gates
		Saline groundwater intrusion barrier
		Pipes, valves (size, function)
		Road network, materials, drainage
		Drainage network
	Breakwaters	Off-shore
		Near-shore
		Tomboles
		Lowest/riptides
		Tidal / surge barriers

With thanks to:
Water Technology
BMT
Alluvium &
Natural Capital Economics



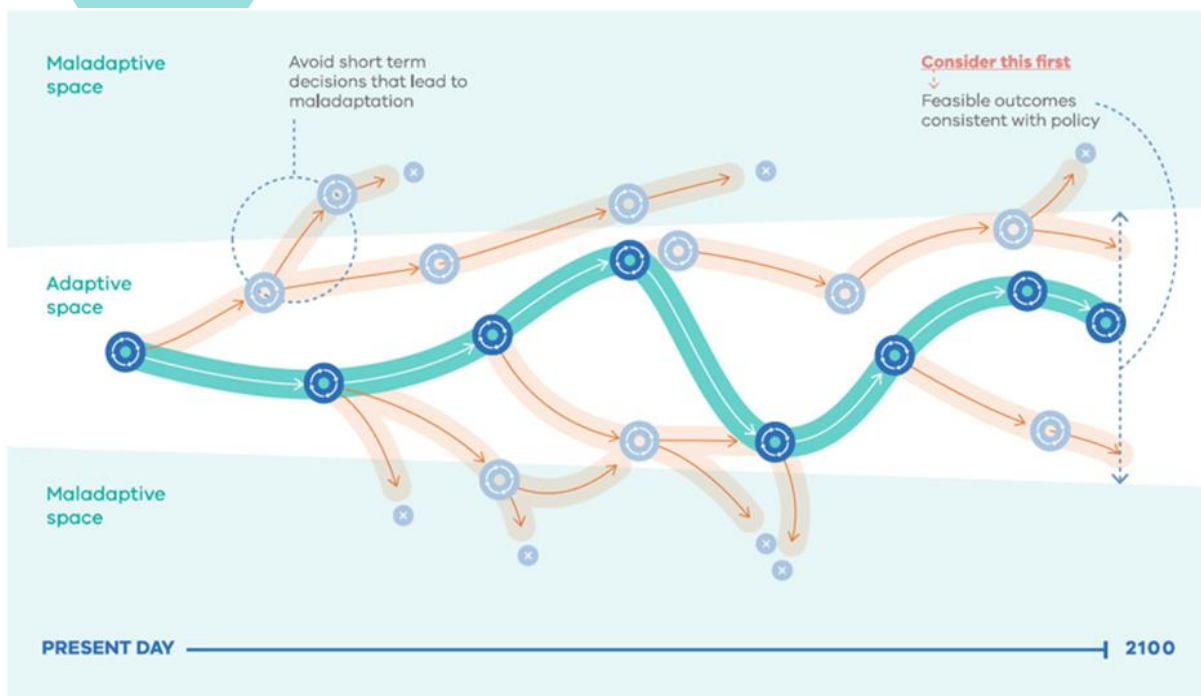
Module A – Coastal hazards extended guideline
Module B – Adaptation options compendium
Module C – Economics approach to inform adaptation



Strategic planning process

Adaptation pathways approach

Strategic options order	Foundation questions for building an adaptation pathway	
1. Non- intervention	Is non-intervention appropriate?	For which hazards and risks? Where and for how long? What actions do we include? What would trigger a change?
2. Avoid	Can we continue to avoid the hazards?	
3. Nature-based methods	Can we pursue a nature-based approach?	
4. Accommodate	Can we better accommodate the hazards/risk?	
5. Retreat	Can we retreat from the hazards/risk?	
6. Protect (major engineering works)	Do we require a protect approach?	



Adaptation pathways approach

POLICY ORDER OF CONSIDERATION	PRESENT DAY	SLR 0.5m 2070	SLR 0.8m 2100
1. NON-INTERVENTION	Natural dune system dynamics		
2. AVOID		Avoid new non relocatable assets in hazard areas	
3. NATURE-BASED METHODS*	Consider feasibility of nature based methods	Dune enhancement program + monitoring and evaluation	Triggers: • Infrastructure renewal • Nature-based becomes infeasible • Erosion distance/rate • Other
4. ACCOMMODATE STYLE METHODS	Floor level, material, storage areas		
5. RETREAT		Preparation for retreat • Engagement process • Land tenure • Cost/budget • Planning mechanisms	Relocate infrastructure Transition to alternative land uses
6. PROTECT			Protection works (if appropriate) and ongoing maintenance

Functional type	Category	Adaptation Action
Land management, planning and design	Land use	Land acquisition or swap
		Controlled access
		Planning scheme zone amendment
		Planning overlays
		Rolling easements
		Relocation of infrastructure
	Resilient design / development	Development setbacks Use of resilient materials and design in new and retrofitted coastal infrastructure
Nature-based (Nature-based methods use the creation of restoration of coastal habitats for hazard risk reduction)	Cultural landscapes	Survey, document, salvage, other
	Coastal vegetation and blue carbon ecosystems	Mangrove forests
		Seagrass meadow
		Salt marsh
		Kelp forests
	Dune ecosystems	Dune protection / vegetation / management
		Dune nourishment
		Use of on-site natural materials to reduce erosion
	Hybrid actions	Supported littoral vegetation
		Wet sand fencing
Engineering	Nourishment	Shellfish reefs
		Beach scraping
		Beach nourishment
	Dredging	Sand by-pass system
		Configuration dredging
	Seawalls	Vertical seawalls
		Eco-engineering of hard surfaces
		Rock revetments
	Groynes	Geobag revetment / wall
		Groynes (rock, geobag)
	Breakwaters	Breakwaters
	Flood/tidal barriers	Levees / dykes
		Tidal / surge barriers
		Tidal valves on stormwater system
		Saline groundwater intrusion barrier
	Drainage	Upgrade of drainage network Water sensitive urban design
	Road network	Upgrade of road network



Controlled access



Engineering – rock revetment



Nature based methods:
Restoration of blue carbon ecosystems: a) mangrove
b) seagrass c) saltmarsh d) kelp



Grants program

Round 1 grants announced

PROJECT LEAD	PROJECT	VICTORIA'S RESILIENT COAST FRAMEWORK STAGES
City of Port Phillip	Port Phillip Coastal Resilience Project	1 - 4
Mornington Peninsula Shire Council	Mornington Peninsula Coastal Strategy	1 - 4
Corangamite Catchment Management Authority	Aire Valley Estuary Floodplain Project - Part 2	1 - 5
Parks Victoria	Coastal Marine Hazard Assessment - Wilsons Promontory terrestrial and marine parks	1 - 6
Great Ocean Road Coast and Parks Authority	Anglesea Resilient 2100+ Coast Project	1 - 6
	Cape Otway to Point Impossible Scoping Study	1

Round 2 grants opening late 2022 – early 2023

Thank you



[Victoria's Resilient Coast – Adapting for 2100+](http://marineandcoasts.vic.gov.au)
 [\(marineandcoasts.vic.gov.au\)](http://marineandcoasts.vic.gov.au)