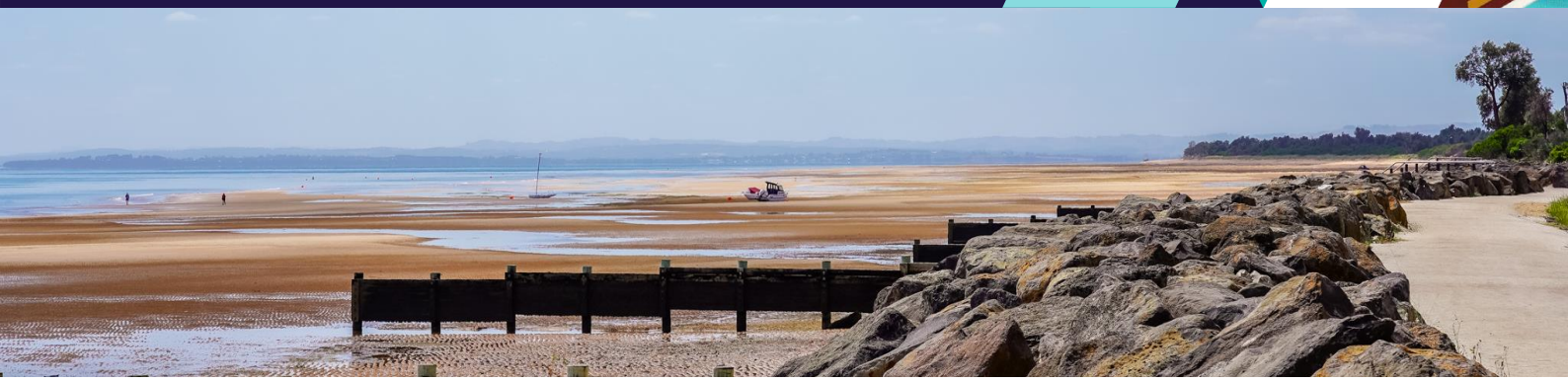
Gippsland Coastal Projects

FACTSHEET #4 Strategic Approach to Adaptation



This fact sheet provides an overview of how we use coastal adaptation to manage coastal hazard risks. This includes the Victoria's policy framework, our strategic approach to adaptation and the range of coastal adaptation actions available.

What is adaptation?

Across Australia and internationally, coastal land managers are taking a strategic approach to managing the risk of coastal hazards.

In coastal hazard management, adaptation can be defined as "the process of adjustment to actual or expected climate and its effects, such as coastal hazards".

Adaptation seeks to proactively manage or avoid harm or make use of beneficial opportunities. This includes managing risks associated with coastal hazards.

Picture 1: Mangrove planters at Jam Jerrup (DEECA)

Shaping our adaptation approach

To develop our adaptation approach, we bring together what we know about a coastal area including technical, strategic and engagement work, and use it to start developing potential adaptation options to manage coastal hazards.

We are informed by:

- consultation with partners, land managers, local communities, and other interested stakeholders
- the values and objectives for different locations
- an understanding of the risk of coastal hazards at different localities
- a regional-scale perspective of the range of values, uses and pressures in the coastal zone
- State guidance, including Victoria's Marine and Coastal Policy (2020) and Victoria's Resilient Coast, a statewide approach to coastal hazard risk management and adaptation.

Our approach to adaptation:

- will vary from site to site within the region
- is tailored to the needs of local communities
- considers the relative impacts of coastal hazards
- seeks to safeguard the community values (social, cultural, environmental and economic) and character of the landscape.

Statewide context

Victoria's Marine and Coastal Policy (2020), frames how coastal hazards are to be managed across the state. The policy approach to adaptation is intended to enable land managers to develop more balanced and positive management options for the long-term benefit of Victoria's coastline.

Once we identify "at risk" coastal areas, there are six **adaptation options** to consider when developing an adaptation plan to manage (mitigate) the hazard risk. Each option is a different strategic approach and must be considered in the policy defined order when planning a suitable adaptation response.

Table 1: Adaptation options and definitions:

Adaptation options (to consider in order)	Definition (as per Marine and Coastal Policy)
1. Non-intervention	Allow marine and coastal processes, and the hazards they may pose, to occur.
2. Avoid	Locate new uses, development and redevelopment away from areas that are or will be negatively impacted by coastal hazards.
3. Nature-based methods	Enhancing or restoring natural features to mitigate coastal hazard risk.
4. Accommodate	Structures can be designed to reduce the exposure to, or decrease the impact of, coastal hazard risk, thus 'accommodating' the risk.
5. Retreat	Existing structures, assets or uses may be decommissioned or relocated away from areas that are, or will be, negatively impacted by coastal hazards.
6. Protect (through major engineering)	Existing physical barriers are enhanced, or new ones constructed, to mitigate the impact of coastal hazards. Protect is an option of last resort; it is often expensive, its benefits tend to be very localised, and it frequently transfers problems to nearby areas.

By thinking through the adaptation options in this order, it allows management to first focus on avoiding the risk, and then explores opportunities for nature-based methods and working with natural coastal processes.

Types of adaptation options

Aligned with our six strategic adaptation options, are adaptation actions. These actions are a range of tools, decisions and works that can be implemented to assist with managing coastal hazard risk.

There is a wide range of adaptation actions that can be used to assist with managing coastal hazard risk.

Adaptation actions can be broadly classified under three key types:

- Land management, planning and design
- Nature-based
- Engineering

Adaptation actions are not mutually exclusive, and often a suite of measures is required to effectively manage coastal hazard risk.

Picture 2: Seawall at Lang Lang (DEECA)

Adaptation pathways

We use a "pathways approach" to help determine what combinations of adaptation actions might be feasible where and when. This allows us to be planning our adaptation from present day to longer-term (out to 2100), bringing together multiple actions in response to the risks and responding to changes over time.

A pathways approach:

- Is a decision making process
- Is made up of a sequence of steps or decision points over time
- Uses thresholds and triggers for when new decisions need to be made
- Is forward looking
- Recognises the changing nature of climate change impacts
- Aims to ensure the most effective tools are being used at the most effective time.

It enables a range of actions to be identified, along with their relative sequencing and timing, dependencies (actions that rely on each other) and triggers for implementation.

Some adaptation actions might include (but are not limited to):

Table 2: A collection of adaptation actions to demonstrate types and categories:

Type	Sub-category
Land management, planning and design Use policy, planning instruments, guidance materials, communication, capacity building and strategic processes to enact change.	**Land use** Access control, planning overlays, planning scheme amendments, rolling easements, land acquisition
	Resilient design / development Design standards, materials and setbacks
Nature-based Use the creation or restoration of coastal habitats for hazard risk reduction. This may be achieved through restoration of habitat alone ("soft" approach), or in combination with hard structures that support habitat establishment ("hybrid" approaches).	**Coastal wetlands / blue carbon ecosystems** Mangroves, seagrass, saltmarsh
	Dune ecosystems Dune protection / vegetation, beach nourishment*/scraping
	Hybrid actions Sand fencing
Engineering Use engineering and design to develop coastal structures, engineered changes to landform, and infrastructure modifications. Includes both "hard" and "soft" engineering and can be used in conjunction with some nature-based methods.	**Beach nourishment** Beach scraping, cart and place, dredging, sand bypassing
	Seawalls
	Groynes
	Breakwaters
	Changes to drainage network Pipes, valves (size, functionality, network location, materials)
	Changes to road network Network, material, drainage

Picture 3: Coastal protection structures at Cowes (DEECA)

Picture 4: Sandbag seawall at Inverloch (DEECA)

We acknowledge Victorian Traditional Owners and their Elders past and present as the original custodians of Victoria's land and waters and commit to genuinely partnering with them and Victoria's Aboriginal community to progress their aspirations.

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