



Potential Management Options

There is a broad range of coastal management options available to address coastal hazards. These management options can be broadly defined as:

- Foreshore Protection (Defend),
- Accommodate,
- Retreat,
- Maintain the status quo, and
- Repurpose.

Foreshore Protection

Protect portions of the coastal hazard area with either hard or assimilating coastal engineering structures to reduce or remove storm-tide inundation or erosion risks. Coastal defence may combine long-term strategies for defence and maintenance, including regenerative and structural options such as beach nourishment, revegetation, dune construction, dykes, sea walls, groynes and storm-tide barriers.

Defending private properties

Foreshore property owners are able to undertake private foreshore works, such as constructing a sea wall, in order to defend their property. As a local government authority, Redland City Council would be responsible for assessing such proposals in accordance with the provisions of the *Sustainable Planning Act 2009*.

It is important to note that any shoreline erosion management strategy, including private works, needs to consider the risks, including the effectiveness of proposed and existing works, and ensuring no increase to coastal hazard risk for adjacent areas.

Prescribed tidal works

Tidal works is relevant work undertaken on land that is in, on, or above land under tidal water, or land that will, or may be, under tidal water because of development on or near the land, and work that is an integral part of the relevant work, wherever located. Tidal works include the construction or demolition of a basin, boat ramp, breakwater, bridge, dam, dock, dockyard, embankment, groyne, jetty, pipeline, pontoon, powerline, sea wall, slip, small-craft facility, training wall or wharf, and works in tidal water necessarily associated with the construction or demolition.

Prescribed tidal works are tidal works that are completely or partly within a local government tidal area and includes parts of the structure that extends onto land above the high water mark.



Accommodate

Maintain the current levels of use within the coastal hazard areas and raise the tolerance to periodic storm-tide inundation or erosion events by means of innovative designs for buildings and infrastructure (e.g. elevating, strengthening or change in use). This includes actions that will reduce the impacts from coastal hazards to an acceptable level of risk. Works are placed into two categories, being:

- I. Works that will allow the current use to continue; or
- II. Physical works and legislative amendments that provide for more appropriate future use of the land that can tolerate a higher level of risk (i.e. changing zoning of land from residential to open space) or operational works to raise the height of developable land above the height of potential sea level rise.

Retreat

Retreat entails implementing actions to withdraw from the coastal hazard impacts through relocation or abandonment. This option involves removing vulnerable uses from the identified coastal hazard and this can be achieved by relocating the community (i.e. land swap arrangement) or abandoning the area (e.g. buy-back mechanism or rezoning of land to a more suitable use).

Maintain Status Quo

In the process of assessing the suitability of the above management options, “maintaining the status quo” should also be considered. Maintaining the status quo allows for the continuation of the existing use in an area but prevent any further intensification of those areas.

The decision to maintain status quo demonstrates a clear intention that intensification of development will not occur in identified areas, but without creating a community expectation that a particular action (defend, accommodate or retreat) will be undertaken at a future date. If supported by public education on the risks associated with coastal hazards, it enables the community to understand and better prepare.

This option may be appropriate where there is a low level of infrastructure or assets and further intensification is unlikely to occur. Or, in locations where other management options, such as defence or retreat, are not cost effective or technically feasible.

Repurpose

This management option focuses on strategic planning as a mechanism to regulate future land uses. This option evaluates the vulnerability of land impacted by coastal hazards to determine whether the land can be reused for an alternative purpose. The decision to repurpose an identified area could be a result of managing community expectations of an already popular destination. Key elements that need to be considered when determining an area for repurpose is:

- The vulnerability to coastal hazards
- Current level of development and population
- Possibility to achieve desired outcomes through land use criteria
- Projected population growth and presence of critical infrastructure and services



Monitor and Evaluate

Monitoring and evaluating coastal hazards will ensure that the most effective management and adaptation options are identified and implemented and also ensures the coastal adaptation strategy is a responsive and adaptive strategic plan.

The methods for available for Monitor and Review of hazard locations are:

- **Annual Inspection Program:** When an identified coastal hazard has been assessed and does not pose a level of risk to justify implementing a management option, the proposed method will be to include the hazard area on a regular inspection program. It is anticipated that hazard areas will be reviewed and reassessed annually with an option to increase the number of inspections on an as-needed basis.
- **Surveys:** The completion of surveys will generally be recommended on areas where it is necessary to understand the long-term movement of the foreshore area, such as open beaches which have been subject to consistent beach erosion. This option can also be used for bathymetric surveys to record the movement of sediment and water depth.
- **Desktop monitoring:** There are areas of the coastline that are remote and not easily accessible to undertake a visual inspection or survey. In these instances, it is recommended that a feasible alternative to on-site methods is to rely on aerial photography, through desktop monitoring, to monitor the hazard location.

Monitor and Evaluate is an essential component of the assessment framework and is recommended to be implemented as part of the ongoing management of coastal hazards.

