

**CoastAdapt: C-CADS 3 Identify options** (<http://coastadapt.com.au/C-CADS/c-cads-step-3-identify-options-action>)

**Table 1:** Examples of various adaptation options including the climate stressor being addressed, and the benefits and risks associated with each option.

Adaptation options	Climate stressors being addressed	Benefits	Risks
<b>Planning</b>			
<b>Avoidance:</b> Ensure that new developments of private and public infrastructure and assets are not permitted in areas likely to be affected by climate change, without substantial planning controls being implemented.	Coastal and estuarine flooding and erosion. Bushfire	Reduces exposure to future risk. If new developments are permitted, and developments are affected by climate impacts, there are potential legal implications for local and state governments.	Potential for developers and property owners to be negatively affected financially in the short- term. On top of that, there is a risk that decisions will be challenged in court by developers and property owners. However, with better planning the impact of these risks will be reduced in the future.
<b>Hold the line:</b> Incorporate sea-level rise and storm tide and, where appropriate cyclone criteria (including soft barriers such as mangroves), in design standards to retrofit existing development (when owners apply for a development approval to renovate), and for new climate smart precincts.	Sea-level rise. Increased wind velocities (cyclones, storms)	Increase longevity of existing housing and infrastructure costs. Increase resilience to current extreme events.	If developments and precincts are more resilient, but surrounding infrastructure is not, it could leave residents isolated during extreme events which exacerbate the risks.
<b>Engineering</b>			
Design and construct a seawall to prevent beachfront infrastructure from being undermined and lost through excessive beach erosion.	Sea-level rise, storm surge and associated beach erosion.	Well designed seawalls can provide hard substrate as potential habitat; they can also help to ensure beach access.	Loss of beach and associated amenity; potential effects on local economy from loss of tourism
Construct levees to reduce flooding along estuaries and coastal streams.	Changes in rainfall, sea level rise.	Reduced flooding of built up areas.	Transfer risks to other areas. Changing hydrology can change erosion risk. Cause a disconnect between estuary and surrounding wetlands.

<b>Adaptation options</b>	<b>Climate stressors being addressed</b>	<b>Benefits</b>	<b>Risks</b>
<b><i>Environmental</i></b>			
Revegetation of coastal dunes.	Sea level rise, storm surge and associated erosion.	Increased stability of dunes. Habitat for fauna and flora. Shade for beach users. Wildlife corridors.	Bushfire risk (minor).
Rehabilitate degraded ecosystems.	All.	Increased habitat. Increased biodiversity. Potential for carbon sequestration.	There are limits to the extent of climate impacts that these measures will address.
<b><i>Social, community and education measures</i></b>			
Engage communities of place and interest on climate change risk, vulnerabilities and adaptation pathways. Work through existing community networks to discuss the need and process for adaptation planning, to get interest and involvement from beyond those directly affected.	Social, community and education measures essentially build the capacity to effectively implement adaptation options and thus apply to most climate stressors. The effort required to implement options will be dependent on the particular stressors and impacts being addressed and the scale and geographical extent of these.	People who are meaningfully included in the development and selection of adaptation options may be more likely to support the decision outcomes and also help facilitate implementation.	Poorly designed and/or implemented engagement approaches may alienate communities. Lack of good examples and case studies to inspire and inform on this.
Incorporate traditional knowledge into vulnerability assessments and adaptation planning.	All.	Including a range of knowledge sources may improve decision outcomes and also lead to enhanced engagement of those groups whose knowledge is included.	If done poorly, Indigenous protocols may not be recognised and respected. Insufficient expertise and resources to adequately engage with bearers of traditional knowledge.

**CoastAdapt: C-CADS 3 Identify options** (<http://coastadapt.com.au/C-CADS/c-cads-step-3-identify-options-action>)