

Coastal Adaptation Pathway: Kuaotunu

Policy Unit 86, Management Area E4

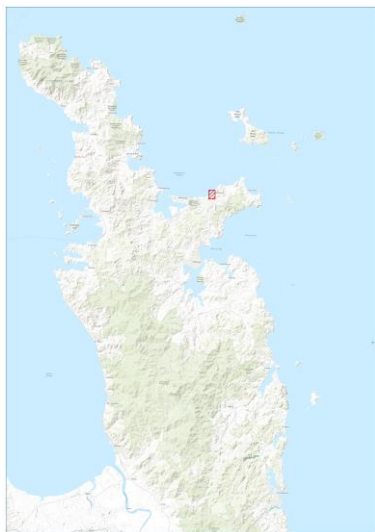
Introduction

Kuaotunu Beach is a sandy pocket beach on the Coromandel's east coast. Kuaotunu River outfalls at the eastern end of the beach. SH25 runs through the Policy Unit, generally following an alignment parallel to the coastline until it turns inland and crosses the river near its mouth.

Between the highway and the beach is a modified dune system, with some cleared open space reserve, and a few coastal properties. Landward of the road, there are further residential properties and open space.



The District Plan's Current and Future Coastal Erosion Lines are available for this location and show that the properties seaward of SH25 are at risk from erosion; see photo from July 2008 storm. Push-ups helped to restore the dune in this location.



The Hazard



The Risk

Type	Year/SLR	Storm	Exposure	Vulnerability	Consequence
Erosion	2020	1% AEP	Low	High	Moderate
Erosion	2120	1% AEP	Moderate	Extreme	Major
Inundation	0 m SLR	1% AEP	Low	Low	Insignificant
Inundation	1.2 m SLR	1% AEP	Low	Low	Insignificant

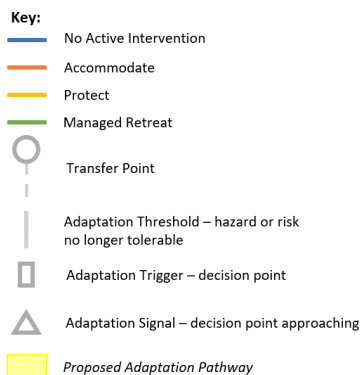
The Response

At the option assessment stage, the following adaptation options were considered:

Policy	Option
Be Prepared	Provide regular information to affected stakeholders on hazards, risks and management measures.
Be Prepared	Implement hazard warning systems and prepare emergency response plans.
Accommodate	Maintain natural defences through dune management; maintenance of sediment supply; maintaining foreshore vegetation and wetlands; and managing stock access to the foreshore.
Managed Retreat	Changing planning practices.
Managed Retreat	Relocate assets.
Managed Retreat	Provide accommodation space (e.g. space for habitats).

On further examination, the 'Protect' option involving adopting soft-engineering practices was also considered.

Adaptation Pathway



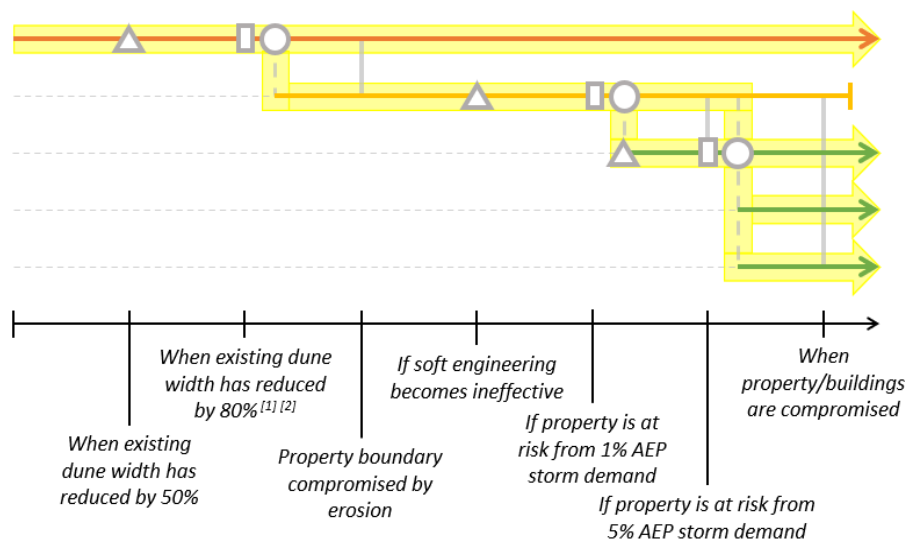
Maintain / rehabilitate dunes and manage access – strategy required regarding replacement of macrocarpa trees

Enhance the dune through push-ups and native planting

Change planning practices in preparation for the relocation of hazard affected assets and properties

Relocate assets in hazard affected areas

Provide space for nature in hazard affected areas where there is no existing development or where assets are relocated



¹ and a recessionary trend outside the normal erosion and accretion cycle has been demonstrated

² The width of the dune varies along the length of the beach

Strategy

The adaptation strategy advocated for Kuaotunu is to maintain natural defences through planting native dune stabilising species and managing access. With climate change this is not expected to be sufficient to limit erosion on its own. Therefore, if 50% of the foredune is eroded, planting should be enhanced by push-ups. Measures such as these may require management and potentially continued push-ups, planting and even reprofiling over time. In the long term, with continued sea level rise, these measures are also predicted to become ineffective or uneconomic. If they do, there is likely to come a point in the future when some coastal properties will need to be moved back/relocated or removed (and it is suggested that the trigger for this is when buildings are at risk of being damaged by a 1% AEP storm). This solution is advocated over the construction of hard defences in this location to maintain the natural beach in the long term.