

Ngā mahere whakaurutau mō te takutai

Shoreline Adaptation Plan

Aotea Great Barrier Island & the Outer
Hauraki Gulf Islands

Volume 3: Adaptation Strategies

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Shoreline Adaptation Plan Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Volume 3: Adaptation Strategies

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Prepared by:

Name: Coastal Management Team

Position: Engineering, Assets & Technical Advisory

Reviewed and recommended for issue by:

Name: Lara Clarke

Position: Principal Coastal Adaptation Specialist, Engineering, Assets & Technical Advisory

Approved for issue by:

Name: Natasha Carpenter

Position: Head of Coastal Management, Engineering, Assets & Technical Advisory

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Front Cover

Shoreline Adaptations Plan map for Great Barrier Island. Prepared for Auckland Council by Tonkin + Taylor 2025.

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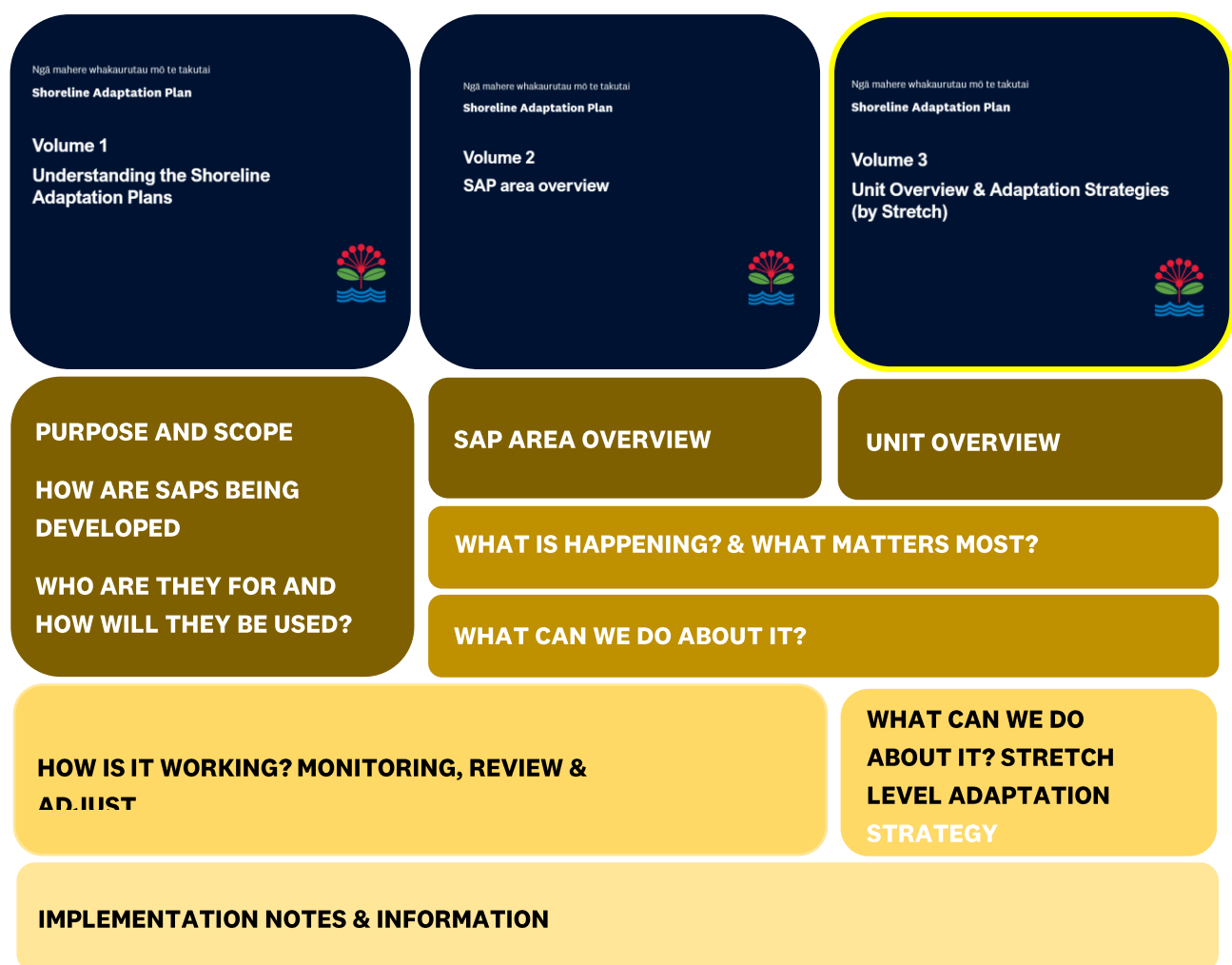
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Quick Reference

The Shoreline Adaptation Plan (SAP) programme is presented across three volumes of reporting:

- **Volume 1:** Understanding the Shoreline Adaptation Plans - programme and regional scale context
- **Volume 2:** Shoreline Adaptation Plan area specific overview – subregional scale (across 20 SAP areas)
- **Volume 3:** Unit (and stretch) context and adaptation strategies set for each section of Auckland's 3,200 km of coastline.



Glossary

Key terminology and infographics commonly used within this volume and all of the shoreline adaptation plan documents are outlined below.

Term	Definition
Adaptive planning	Adaptive planning encompasses the hazard assessments, the values and objectives and the vulnerability and risk assessments that feed into the dynamic adaptive pathways planning approach, and the measures to implement them through the Resource Management Act 1991, Long-Term Plans, asset plans and other Auckland Council plans, along with the monitoring framework for review and adjustment (Ministry for the Environment, 2024).
Annual Exceedance Probability (AEP)	The probability of an event occurring in any given year. For example, the 1% AEP has a 1% chance of being met or exceeded in any given year.
Biodiversity Focus Area (BFA)	Prioritised areas of ecological significance that guide a delivery of conservation activity and were identified as they protect a representative range of all indigenous species and ecosystems within the region.
Catchment flooding	Flooding which occurs when the amount of rainfall exceeds the capacity of an urban stormwater network or the ground to absorb it.
Climate hazard	The potential occurrence of climate-related physical events or trends that may cause damage and/or loss.
Coastal erosion	The removal of the material forming the land due to natural processes, resulting in the coastline moving inland over time.
Coastal inundation	The flooding of low-lying coastal land that is normally dry, due to elevated sea levels.
Council-controlled organisation (CCO)	Organisations in which Auckland Council has the responsibility to appoint at least 50% of the board of directors or trustees. Auckland Council has four substantive CCOs: Auckland Transport, Tātaki Auckland Unlimited, Eke Panuku Development Auckland, and Watercare.
Council	Auckland Council
Cultural Heritage Inventory (CHI)	An Auckland Council database which contains records for archaeological sites, historic buildings, historic botanical sites, shipwrecks, and other places of heritage interest in the Auckland region.
Dynamic Adaptive Pathways Planning (DAPP)	A decision-making approach to analyse the flexibility of options and pathways under conditions of uncertainty using scenarios for stress testing options and monitoring of signals and triggers for anticipatory planning (MfE).
Exposure	The nature and degree to which a system is exposed to significant climate variations.
Hazardscape	The net result of natural and man-made hazards and the risks they pose to an area.
Indigenous biodiversity	A living organism that occurs naturally in Aotearoa, and the ecological complexes of which they are part of – this includes all forms of indigenous flora, fauna, fungi, and their associated habitats.

Term	Definition
Nature-based solution	A collection of approaches to address societal issues, including climate change, through the protection, management, and restoration of ecosystems.
SAP	Shoreline Adaptation Plan
SAP area	An identified area for the purposes of the SAP development of Shoreline Adaptation Plans. There are 20 SAPs for the Auckland region.
SAP stretch	Each SAP unit is typically broken down into smaller stretches considering coastal processes, Auckland Council-owned land and asset location, public-land boundaries, and infrastructure considerations.
SAP unit	The SAP area is divided into smaller SAP units to enable a more detailed and comparative view of how risk is attributed across the subject area.
Sea-level rise	The increase in the level of the ocean, caused by the melting of glaciers and ice sheets and thermal expansion of water as it warms.
Significant Ecological Area	- Significant Ecological Areas (SEAs) have been identified by the Auckland Unitary Plan (AUP: OP) for terrestrial areas, and parts of the coastal marine area. Marine Significant Ecological Area (SEA-M): - Identified areas of important indigenous vegetation or habitats of indigenous fauna located in the coastal marine area, and are afforded protection under the AUP:OP. Terrestrial Significant Ecological Area (SEA-T): - Identified areas of important indigenous vegetation or habitats of indigenous fauna located on land or in freshwater environments and are afforded protection from the adverse effects of subdivision, use and development.
Site and place of significance to Mana Whenua	Sites and Places of Significance to Mana Whenua applies to sites and places in the Tāmaki Makaurau/ Auckland region that are protected for their significance to mana whenua. It acknowledges that sites and places have tangible and intangible cultural values in association with historic events, occupation, and cultural activities.
Statutory Acknowledgement Areas (SAA)	A statutory acknowledgement is an acknowledgement by the Crown that recognises the mana of a tangata whenua group in relation to specified areas - particularly the cultural, spiritual, historical, and traditional associations with an area.
Social Infrastructure	Facilities and assets that support social activities, interactions, and wellbeing within a community.

Shoreline Adaptation Plan Areas

Tāmaki Makaurau, Auckland, is a coastal city, bounded to the east and west by the South Pacific Ocean and the Tasman Sea. The region has around 3,200 km of dynamic coastline and encompasses three major harbours: the Kaipara, Manukau and Waitemata. Due to its location, much of the city’s urban development and supporting infrastructure is concentrated in coastal areas and exposed to coastal processes such as erosion and inundation. These natural processes are considered hazards when they impact on things or locations of value. Climate change related to greenhouse gas emissions is contributing to rising sea levels, which have a range of impacts including increasing the frequency and magnitude of coastal hazard events. Auckland Council began developing a series of Shoreline Adaptation Plans (SAPs) in 2021. These area-based plans form the first step for the SAP programme in achieving a resilient future for Auckland’s coasts. A more detailed discussion on the Shoreline Adaptation Plan Program can be found in *Volume 1: Understanding the Shoreline Adaptation Plans*. Twenty separate SAPs make up Auckland’s ~3200 km of coast as follows:

- Aotea Great Barrier Island & the Outer Hauraki Gulf Islands
- Āwhitu
- Beachlands and East
- Central Auckland
- Highbrook to Whitford
- Kaipara Harbour Moana
- Manukau Harbour East
- Manukau Harbour North
- Manukau Harbour South
- Orakei to Tahuna Torea
- Pahurehure Inlet
- Pākiri to Matheson Bay
- Snells Beach to Orewa
- Tamaki Estuary
- Ti Point to Sandspit
- Waiheke Island and the Inner Hauraki Gulf Islands
- Waimanawa Little Shoal Bay mini SAP
- Waitemata Harbour West
- Weiti Estuary to Devonport Peninsula
- Whangaparāoa
- Whatipu to South Head

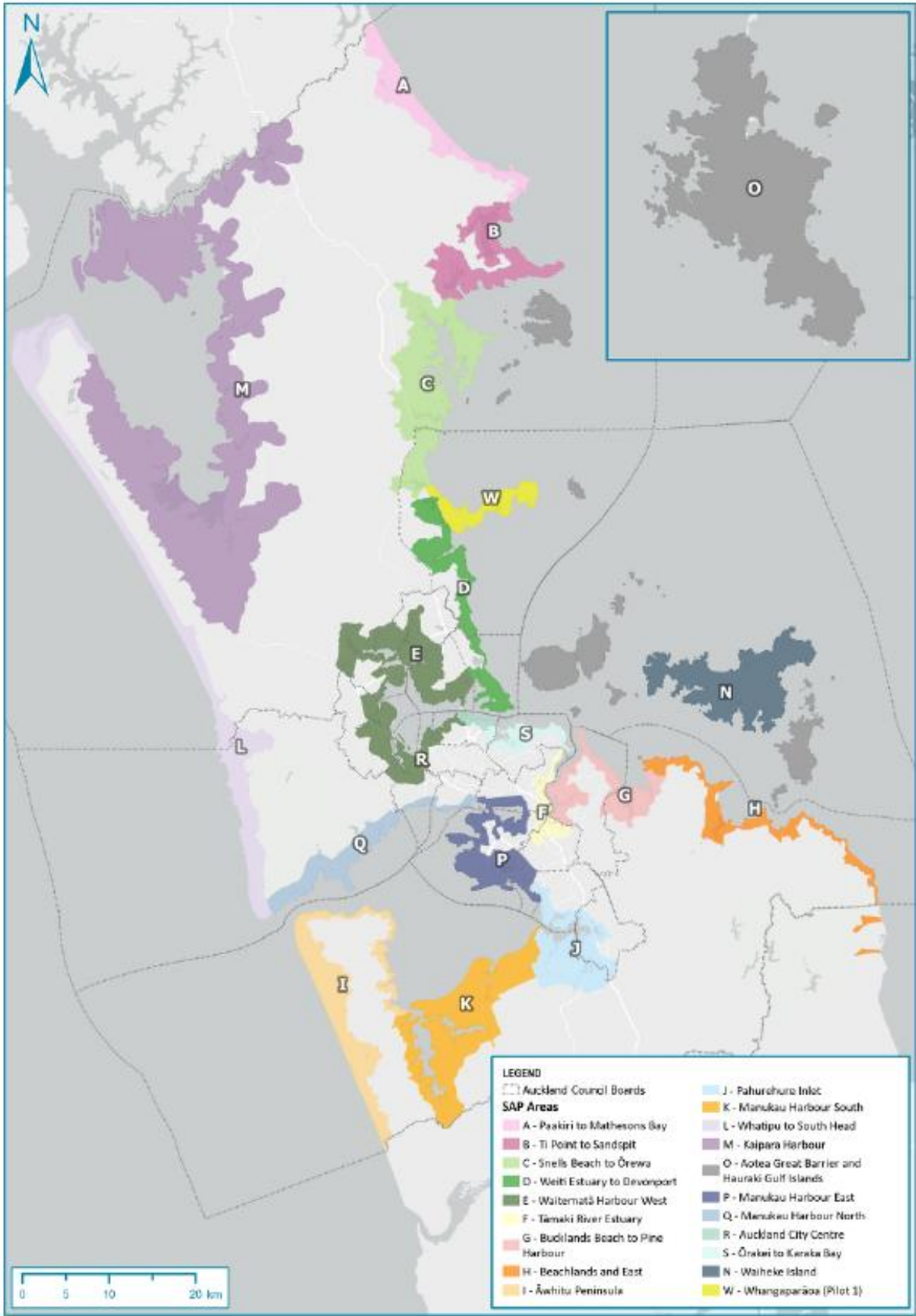
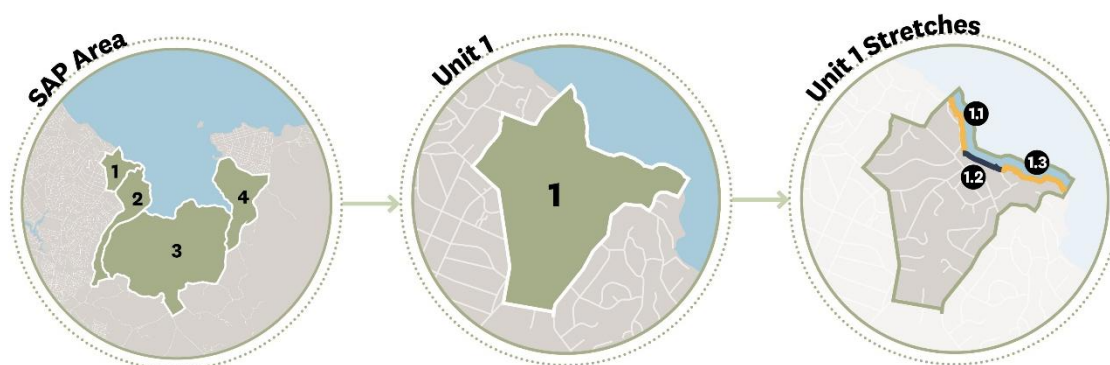


Figure 1: Regional Overview of Shoreline Adaptation Plans

SAP areas, units & stretches

Within each SAP area, the coastline has been broken up into coastal stretches based on coastal processes, Auckland Council-owned land and asset location, public land boundaries, and infrastructure considerations. Coastal stretches have been grouped into broader coastal unit areas. It is important to note here that coastal units and stretches do not strictly reflect the historical cultural boundaries which often extend over multiple units or coastal stretches. The figure below outlines the delineation of scale between each SAP area, its sub-units and stretches:



Climate change scenarios (timeframes for change)

For the SAPs, the following scenarios are used to evaluate how exposure to coastal inundation, erosion and instability and sea-level rise may impact coastal land and assets.

Table 1: Shoreline Adaptation Plan climate change scenarios

	 Sea-level Rise	 Coastal Inundation	 Coastal Erosion	 Catchment flooding
Low climate change	- Present day (relative) sea level - Up to 0.5 m	1% AEP storm surge event	- Erosion & instability susceptibility line '2050' (RCP 4.5) - Includes consideration of 0.28 m of sea-level rise)	1% AEP rainfall event + climate change projections for rainfall
Moderate climate change	0.5 m - Up to 1 m	1% AEP storm surge event plus 0.5 m of sea-level rise	- Erosion & instability susceptibility line '2080 RCP 4.5 and 8.5' - Includes consideration of 0.55 m of sea-level rise	
High climate change	1.0 m - Up to 2 m	1% AEP storm surge event plus 1.0 m, 1.5 and 2 m of sea-level rise	- ASCIE 2130 (RCP8.5 and 8.5H+) - Includes consideration of 1.18 m and up to 1.52 m of sea-level rise	

Auckland Council's adaptation strategies

High-level adaptation strategies are developed for each coastal stretch under a low, moderate and high climate change scenario (inclusive of sea-level rise projections), with an indication of how these choices reflect the escalating risk, considerations of infrastructure providers, and the values and objectives of local iwi and the local community. Importantly, strategies outlined within each unit and subsequent coastal stretch apply only to the area of Auckland Council-owned land and assets along the coastal margin. These recommended strategies do not apply to offshore activities (such as marine farms) or private property. Each high-level strategy provides flexibility for how it is applied to different assets. The value of the strategic approach is to ensure general continuity across asset management, acknowledging hazard risks and impacts of management of one asset class may impact on or have implications for others. Coastal adaptation strategies applied to each coastal stretch are described in further detail below:



No Action

- There are limited risks identified to Auckland Council land and assets as a result of coastal hazards and climate change.
- Natural coastal processes may be complementary to the natural coastal environment or its values.



Maintain

- Better decision-making today for Auckland Council land and assets.
- Actions manage risk, build resilience and support best practice coastal management outcomes.



Protect

- Uses and assets are maintained in their current location.
- Protection measures (mitigations) are required to manage risk, and nature-based solutions and hard protection may be utilised.



Adaptation Priority Area

- Auckland Council land and assets are exposed to hazard risk including the impacts of climate change.
- The value and importance of assets, complexity of the hazardscape and social, cultural or ecological values are present which requires further adaptation planning to determine a management response.



Unit 1

Aotea Great Barrier and the Hauraki Gulf Islands



The landscape of this unit is of high cultural significance to local iwi, with marae affiliated with Ngāti Rehua, Ngāti Wai, and the coastal area within the interest of Ngāti Manuhiri, Ngāti Maru, Ngāi Tai ki Tāmaki, and Te Kawerau ā Maki. Multiple sites of significance (including wāhi tapu and urupā) have been recorded

Glenfern Sanctuary Regional Park Map

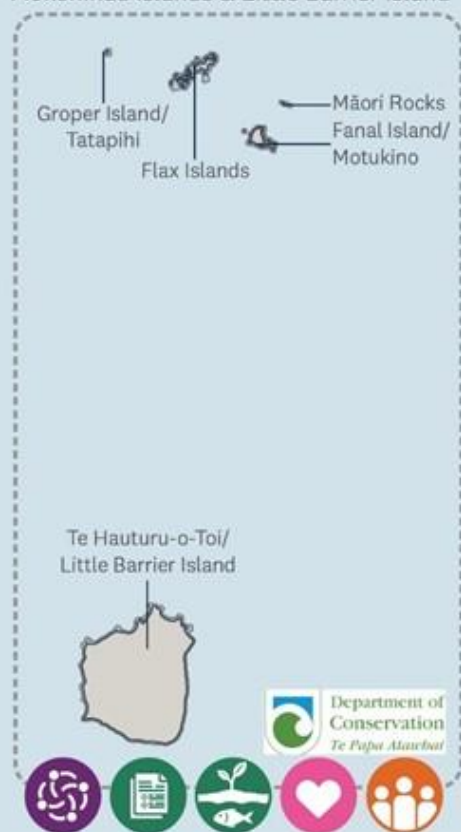


Aotea Road, Motairehe Road, Glenfern Road and Kaiaraara Bay Road are critical transport routes in this unit, vulnerable to coastal hazards



Mokohinau to Pokohinu

Mokohinau Islands & Little Barrier Island



Bird Rocks

Wood Island

Motuhaku Island

Motu Kaikoura

Moturako Island

Grey Group Islands

Opakau Island

Motutaiko Island

Rangiahua Island/ Flat Island

Mahuki Island/ Anvil Island

Junction Islands

Whāngārā Island



Private landownership in the northern areas

Rangiwahakaea Bay



Whangapoua Path Road

Rakitū Island/ Arid Island



Māhara Rd



Ōkiwi Airfield



Harataonga Coastal Walkway

Mount Young - Hirakimata



The Mount Young - Hirakimata biodiversity focus area is situated on public land on Aotea / Great Barrier Island (land is administered by the Department of Conservation). It is an extensive area of continuous native vegetation on rugged volcanic terrain.

Port Fitzroy



Unit boundary

1.1 1.2 Stretch

Informal recreation park

0 2km 4km

Unit 1: Aotea Great Barrier Island North

Unit 1 includes the northern half of Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island, extending from just north of Whangaparapara on the west coast around to Overtons Beach on the east coast. The unit also includes several other nearby uninhabited islands, most notably Rakitu Island (Arid Island), Te Hauturu-o-Toi / Little Barrier Island, and the Mokohinau Islands.

The main settlement areas are Port Fitzroy, Kawa, Motairehe, and Ōkiwi, each containing no more than a few dozen buildings. Council assets are located in these settlements. There are very few roads through the unit, with Aotea, Mabey, and Motairehe Roads particularly critical connections.

Port Fitzroy has a wharf with weekly ferry services to Auckland and sits adjacent to Glenfern Sanctuary Regional Park. Ōkiwi contains a primary school and a sealed airstrip as well as the largest area of farmland on the island. Aotea Great Barrier's two marae are located in Kawa and Motairehe.

Most of the unit is conservation land, largely managed by the Department of Conservation (DOC), or DOC in partnership with mana whenua. Hauturu-ō-Toi / Little Barrier is co-governed between Ngāti Manuhiri and the Crown. These areas are mostly covered with native forest, with the exception of some areas of pasture around Ōkiwi.

Many of the islands around Aotea provide important habitat and roosting sites for a range of native species (i.e. nesting sites for Cook's petrel and black petrel). Local iwi and community groups (i.e. Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Environmental Trust) are actively working on improving protection of the marine environment around these islands, with community concern for a decline in biodiversity caused by overfishing and pollution, as well as the ongoing issue of the invasive seaweed *Caulerpa*.

Because of their isolated location at the edge of the continental shelf, the Mokohinau Islands are home for unique wildlife species found nowhere else in New Zealand, or the world. The Mokohinau Islands Nature Reserves provide a safe refuge for some of New Zealand's smallest endangered species, including the Mokohinau skink, the robust skink, the Mokohinau stag beetle and several threatened plants. Several species of burrowing and ground-nesting seabirds find refuge on the islands, as do a range of forest birds.

Te Hauturu-o-Toi Little Barrier Island was New Zealand's first nature reserve and is one of the last remnants of primeval forest in the country. It became pest-free in 2006.

What is happening? Coastal context and hazardscape

The coastline is exposed to a range of wave energies. There is full exposure along the northern and eastern-facing coastline to longer period swell events generated from some distance away. This coastline, and the remaining western coastline of the unit, is also exposed to more localised shorter period storm waves generated by strong onshore winds.

Much of this coastline is inaccessible from land, and undeveloped with little or no historical modification of the coastline. Coastal protection structures within this unit are subsequently limited. An Auckland Transport-owned (AT) coastal edge armouring is present at Port Fitzroy associated with the wharf and boat ramp facility, and adjacent roading (Auckland Council, 2024b). A 60 m long rock

seawall is also present on customary Māori land at Motairehe (Motairehe Burial Reserve Block). This was constructed in 2018 to protect an urupa that was being impacted by coastal erosion.

Figure 2 outlines the extent of coastal hazards exposure across this unit. While much of the Unit 1 coastline is rocky and more resilient to wave attack, Whangapoua Beach and the spit feature at the Whangapoua Estuary mouth are more dynamic in response to wave energies. Erosion of Whangapoua Beach can occur during significant storm events, but there are no adjacent assets at risk, and the beach is backed by a significant dune system (Auckland Council, 2024b).

The spit feature at the Whangapoua Estuary mouth will be increasingly inundated with sea-level rise. Changes to the spit and estuary mouth have occurred in recent years, with a widening of the estuary mouth and development of a secondary opening through the spit over 2022. This is likely the result of significant spit overtopping during extreme storm events. An increase in the estuary mouth opening may result in increased propagation of wave energy into the estuary mouth area (Auckland Council, 2024b).

The islands off Aotea (Great Barrier) including Little Barrier, Hauturu and Mokohinau Islands are exposed to longer period swell events generated from some distance away, and more localised shorter period storm waves generated by strong onshore winds. The coastlines of these islands are characterised by well-vegetated coastal cliffs and rocky foreshore, with a lack of any significant sandy beaches. There are no coastal erosion structures present along these islands' coastlines, and no operational interventions are undertaken (Auckland Council, 2024b).

Catchment flooding is primarily identified in relation to the eastern edge of north Barrier, with a large floodplain at Ōkiwi discharging at Whangapoua. Upper areas of the catchment are highly vegetated reserve areas.

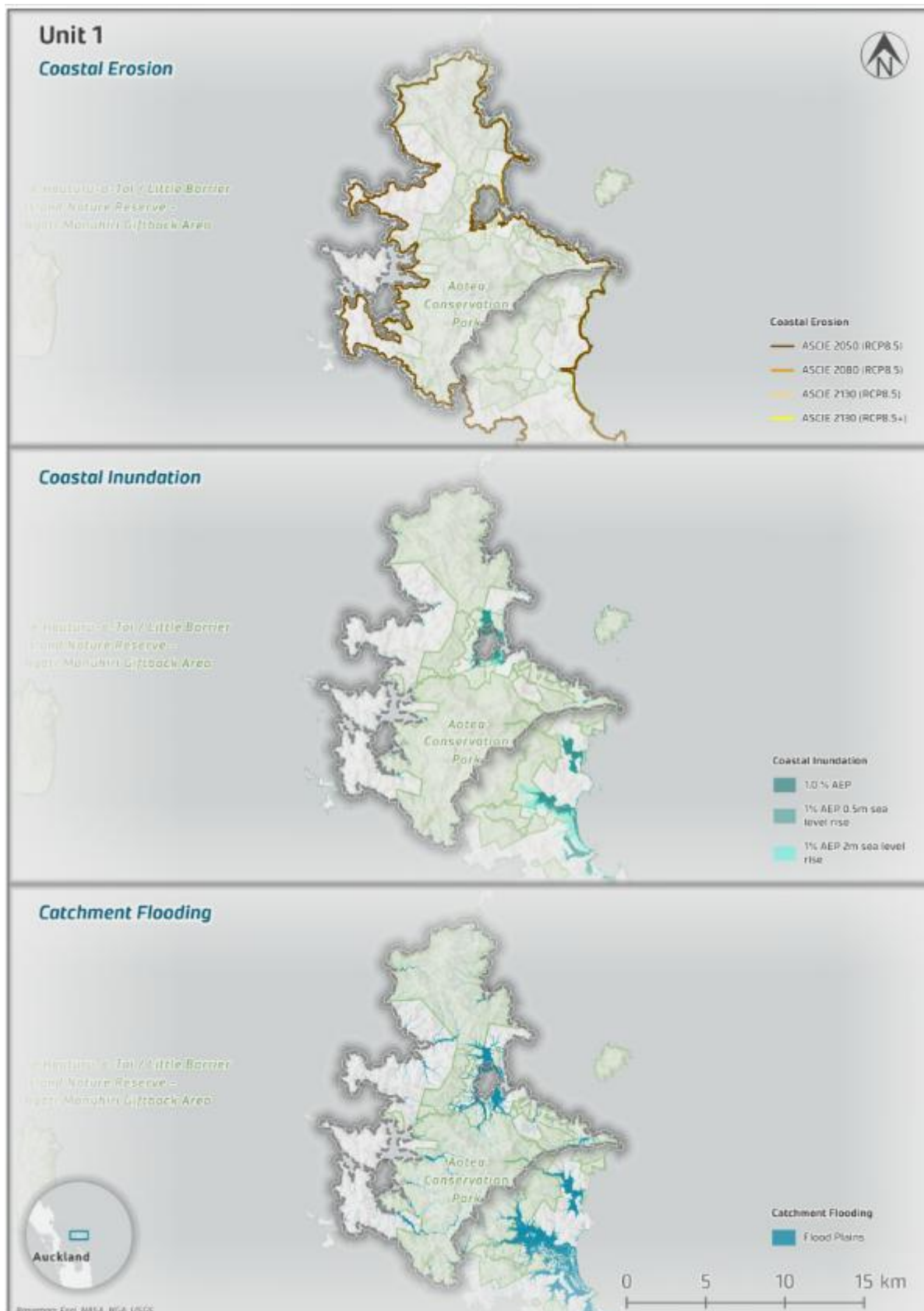


Figure 2: Coastal hazardscape for the Aotea Great Barrier Island North Unit reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

The table below summarises the risk levels for Auckland Council asset types in the short, medium, and long-term using low, moderate and high climate scenarios.

The risk table represents key groups of assets (e.g. Auckland Council-owned land, buildings, road extents) which are supported by the regionally consistent data set. The risk assessment provides a regionally consistent method for comparing risk to Auckland Council-owned land and assets allowing for identification of areas with highest risk for potential future assessment.

Coastal erosion typically presents a moderate risk to all Council-owned land and assets (except water infrastructure) over all change scenarios. The highest risk over all change scenarios is to Council-owned community facilities from coastal inundation.

Unit 1 Council-owned land & assets metrics and associated risk scores (short, medium, long terms)												
Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure			
Park and reserve land (132.9 ha) Buildings, wharves (31 No.)			Park amenity structures, carparks, accessways, buildings (2.3 ha)			AT roads (32.6 km) Bridges (81.5 m ²)			Water pipes (0.02 km)			
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	
Coastal erosion and instability susceptibility												
Moderate	Moderate	High	Moderate	Moderate	High	Moderate	Moderate	Moderate	Very low	Very low	Very low	
Coastal inundation												
Moderate	Moderate	High	High	High	High	Low	Low	Low	Very low	Very low	Low	
Key												
Very Low		Low		Moderate		High		Very High				

What matters most



Auckland Council land and assets: This section identifies key Auckland Council-owned land and assets within this unit that may be impacted by coastal hazards (inclusive of catchment flooding) over changing climate scenarios.



- Glenfern Regional Park
- Kaiaraara Bay Esplanade Reserve 1
- Motairehe Reserve
- Ōkiwi Airfield
- Whangapoua Esplanade Reserve
- Whangaparapara Cemetery



- Glenfern Regional Park buildings
- Motairehe playground
- Toilet blocks at Port Fitzroy, Motairehe Whangapoua Beach



- Harataonga Walkway
- Whangapoua Path
- Stream crossing road bridge (access to Glenfern Regional Park)



- Wharf, gangway, pontoon (Glenfern)
- Boat ramp, wharf and pontoon (Port Fitzroy)

Social, cultural and ecological context: This section identifies key social, cultural and ecological matters, identified through the development of the SAP reports, that may be impacted by coastal hazards (inclusive of catchment flooding) over changing climate scenarios.



- This unit's coastal area is within the area of interest of Ngāti Rehua, Ngāti Manuhiri, Ngāti Maru and Ngāi Tai ki Tāmaki. Where shared by local iwi, cultural narrative has been captured at a stretch scale to help inform an understanding of cultural landscapes and values, noting ongoing engagement in the implementation of adaptation strategies will be required.
- Ngāti Rehua hold Statutory of Acknowledgment over parts of the Aotea Conservation Park within this unit, including but not limited to the Whangapoua area and Fitzroy Bay Landing Recreation Reserve
- Ngāti Maru hold an interest in the Whangapoua Conservation Area (Stretch 1.6) on Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island, with the Crown offering a Deed of Recognition for this area.
- The Deed of Settlement for Ngāti Manuhiri includes an exclusive right of first refusal over Te Hauturu-o-Toi/Little Barrier Island (Stretch 1.13) and provides for co-governance of the island alongside DOC. The island's management plan became operative on 2 October 2017.
- The following marae affiliations have been recorded for this unit:
 - Kawa (Ngāti Wai o Aotea): Ngāti Rehua, Ngātiwai -Ngāti Rēhua
 - Motairehe (known as Whakaruruhau marae): Ngāti Rehua, Ngātiwai - Ngāti Rēhua, Ngātiwai ki Aotea,
- There are four identified cultural heritage features in this unit, as shown below:
 - Kohatutitore (Heritage ID 16957): Wāhi Tapu (Stretch 1.1)
 - Motairehe Urupa (Heritage ID 18984): Urupā (Stretch 1.4 - 1.5)
 - Te Punga o Tainui (Heritage ID 20031): Māori Traditional Area (Stretch 1.5)
 - Burial (Heritage ID 16735): Burial (reported) (Stretch 1.10).
- Note: Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi identified above.



- Most of this unit is uninhabited reserve land. While several trails, huts, and campgrounds are present in parts of the Aotea Conservation Park (the largest park on Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island), most of these areas are rarely accessed and some areas (such as Te Hauturu-o-Toi/Little Barrier Island and Fanal Island/Motukino) have entry restrictions.
- Port Fitzroy, Kawa, Motairehe, and Ōkiwi settlements are small, each containing no more than a few dozen buildings and being largely self-sufficient. Port Fitzroy Store, the two marae at Kawa and Motairehe, and the school at Ōkiwi are the key social hubs for the unit.
 - Within this unit are four "Category A" heritage features identified in the AUP:OP: , SS Wairarapa wreck site and wreckage of SS Wairarapa S08_300, Nagle Cove shipyard site S08_296, Te Tereti S08_327, Slate quarry, Whangaparapara stone working area S09_1 Midden/s and stone working area.
 - In addition, there are four "Category B" heritage features identified in the AUP:OP: Kaiaraara Mill stone seawall S08_71, Miners Head copper mine and battery remains S08_298, Whangaparapara whaling station site S09_117, Kauri Timber Company, Whangaparapara sawmill S09_48 site of sawmill and associated coastal structures.
 - The HGI:DP identifies another eleven heritage sites (all "Category B") within this unit: Coppermine, Miners Head, Miners Village, Kauri driving dam x3, Kaiaraara (1920s), Kauri driving dam x3, Kaiaraara South Fork (1865), Kauri driving dam,

Maungapiko, European camp, Peach Tree Springs (1920s), European camp, Kaiarara South Fork (1865).



Unit 1 is largely covered in regenerating native bush that was historically logged (Auckland Council, 2018a). It is also characterised by significant areas of remnant indigenous forest, sheltered coves, and offshore islands. While much of the indigenous biodiversity in Unit 1 exists outside of Auckland Council and CCO-owned land and assets, it is detailed below for reference.

- Whangaparapara Cemetery is surrounded by regenerating kānuka forest and coastal forest dominated by pōhutukawa and broadleaved species (Stretch 1.1). The following notable species have been recorded within this vegetation and the surrounding environment:
 - Threatened native lizards, including chevron skink
 - Bluegill bully have been recorded in an unnamed stream that discharges into the Whangaparapara Harbour – one of the only known occurrences in the region (NIWA, n.d.).
- The Mount Young – Hirakimata BFA covers a large portion of the southern end of Unit 1 and is administered by DOC (Auckland Council, 2024f). This BFA comprises a mosaic of indigenous ecosystems, including kauri, towai, rātā, and montane podocarp forest on Hirakimata (the highest point on Aotea Great Barrier).
- Port Fitzroy Harbour is located on the western side of Unit 1 and represents the largest naturally occurring harbour in Aotea Great Barrier Island & the Outer Hauraki Gulf Islands (Stretch 1.2, Stretch 1.3). The harbour is recognised as an important fish and shellfish area. Additional species that have been recorded within the harbour and its surrounding coastal environment include several native lizards, giant bully and a range of avifauna.
- Glenfern Regional Park is located to the north of Port Fitzroy and is classified as kānuka forest and kauri, podocarp, broadleaved forest (Stretch 1.4).
- Kaikoura, Nelson, and Motuhaku islands are located offshore from Port Fitzroy, and are classified as kānuka forest, pōhutukawa treeland, and coastal broadleaved forest (WF4) (Stretch 1.1). These islands, particularly Kaikoura Island, are recognised as important ‘fly aways’ for Cook’s petrel and black petrel (Aotea Great Barrier Environmental Trust, 2007).
- The northern head of Unit 1 is called Te Paparahi and identified as a BFA by Auckland Council (Stretch 1.6). Te Paparahi supports a large diversity of native herpetofauna, including shore skink, Hochstetter’s frog and many passerine bird species. The BFA includes a range of important ecosystems including coastal turf, kauri forest and pōhutukawa cliff land.
- Whangapoua Bay is located on the eastern side of the island and is characterised by a large barrier sandspit (Stretch 1.6). The sandspit comprises intact sand dunes and native dune grasses including pingao. It is recognised as an important high-tide bird roost and a key breeding ground for Northern New Zealand dotterel and variable oystercatcher. Giant bully have been recorded within the Whangapoua Stream (Stretch 1.6) (NIWA, n.d.) and shore skink have been record within the coastal environment of the estuary (Department of Conservation, n.d.b). The estuary to the east of the sandspit contains ecosystems that form an important ecological sequence including large stands of mangrove forest and saltmarsh.
- There are several offshore islands that surround the northern mainland section of Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Islan which support a range of ecosystems and species.

Community feedback



Who have we heard from

- Feedback was received via Social Pinpoint and ‘AK Have Your Say’ survey as well as at in-person events and via the Shoreline Adaptation Plan inbox.
- Events local to this area included engagement with youth at Ōkiwi school, as well as engagement with kaumatua at Motairehe Marae.



What is happening

Respondents identified their primary concern as being coastal erosion, followed closely by inundation, sea-level rise, and sedimentation/accretion. One respondent also highlighted concerns about coastal storm events. Respondents specifically noted having observed several changes within the unit area as a result of these processes:

- Loss of sand dunes and the associated habitat.
- A loss of ecological biodiversity (bird and sea life), possibly connected with the above loss of sand dunes.
- Shifting of the Whangapoua Estuary resulting in a changed course. This has impacted the location from which boats can be launched and retrieved. Additionally changes to the bar at Whangapoua Estuary are perceived to cause the wetland to silt up, resulting in flooding issues to low-lying areas nearby. Community aspirations include fixing this issue of silt accumulation, whilst repairing the surf break.



What matters most? Community values

Most respondents visit the coast within this unit area daily. Coastal spaces and places in this unit are primarily utilised for boating and kayaking, fishing, walking, and passive water-based activities. Some respondents commented on also using the beaches for passive recreation (i.e. picnicking, bbq). Biodiversity is identified as the most valuable feature of the coastline within this unit, with mention of needing to protect flora and fauna and coastal habitats/ecosystems (particularly around Glenfern Park and Whangapoua Estuary). Respondents also valued the provision of access to the water via wharves, jetties, and boat ramps for recreation and amenity purposes, with the wharf connection at Port Fitzroy commented on as an important community asset, particularly for the northern communities.



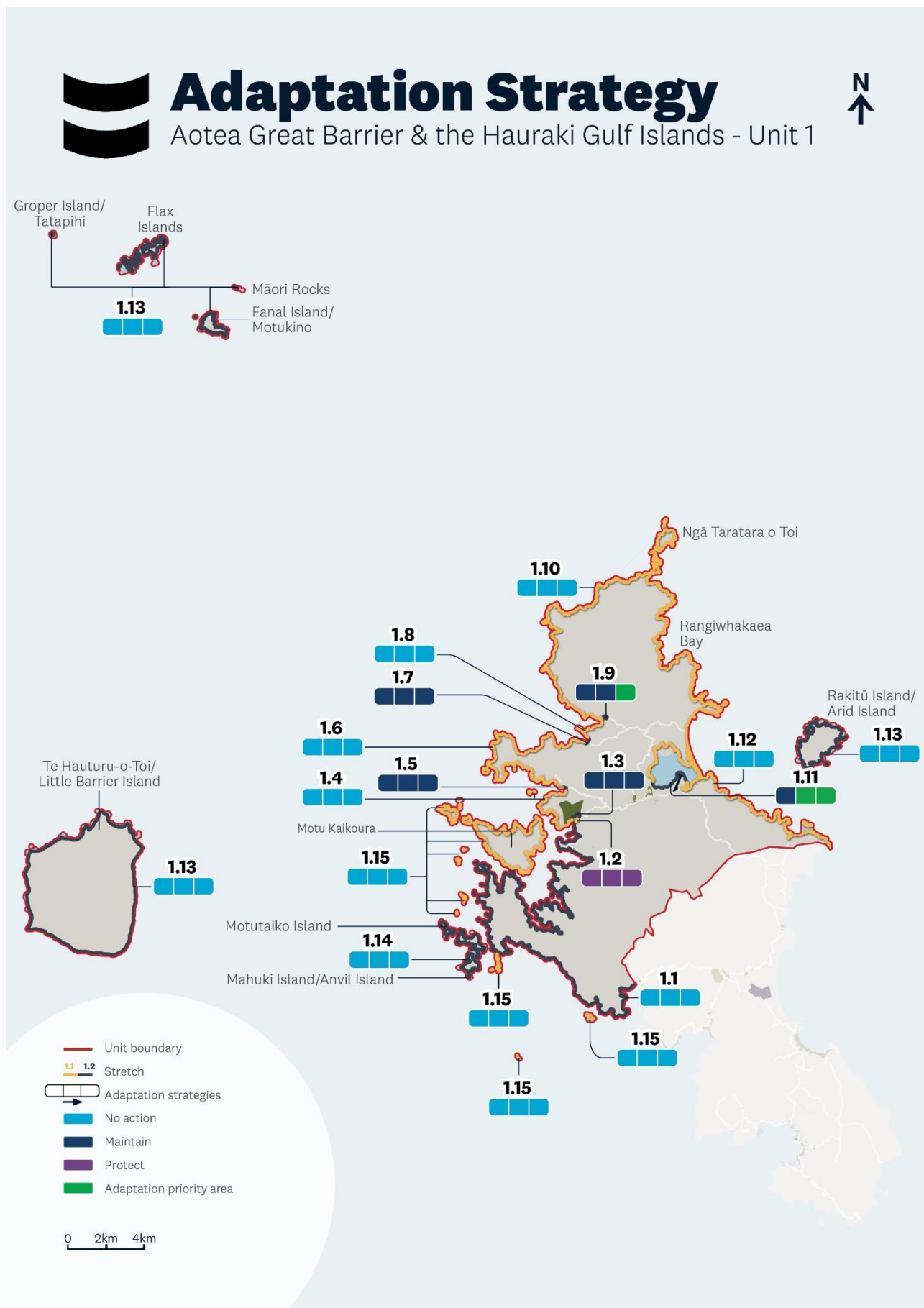
What can we do about it? Community feedback and aspirations

Most respondents are supportive of Council’s adaption strategies for Unit 1. They believe that a do-nothing/ no active intervention approach is damaging, and valuable features such as heritage and assets such as roading and coastal access should be actively maintained. One respondent noted some of these assets such as the wharf are “Lifeline and critical infrastructure for residents”.

In contrast, a minority of respondents (approximately 12%) do not agree with intervention strategies which they view as “fighting nature”. Perceptions of projected sea-level rise varied, with some believing that the rocky nature of the coastline within this unit would mitigate any significant adverse impacts.

Supporting and improving community resilience and resilience of infrastructure in northern Aotea was a reoccurring theme in community feedback, noting aspirations for maintaining Port Fitzroy wharf and emergency helicopter pads and access points at Glenfern Regional Park in response to coastal hazards.

What can we do about it? Adaptation strategy summary for Unit 1



1.1: Central West Aotea

This stretch includes the central-western coastline of Aotea Great Barrier, extending from Whangaparapara and ending just shy of Port Fitzroy Reserve. Isolated dwellings can be found along Kaiaraara Bay Road, south of Port Fitzroy, and along the peninsula west of Wairahi Bay, noting that informal dirt roads work to connect settlements in this area.

Scenarios for change					
Low		Moderate		High	
No Action		No Action		No Action	
					
Explanation					
No action is reflective of the limited Auckland Council land and assets located in this stretch and the identified coastal hazard exposure of assets and land.					
Implementation Notes					
Ecology: A large portion of the Mount Young – Hirakimata BFA is located within this stretch and supports threatened seabirds, vascular plants, and other native species. Ongoing consideration of natural landscapes and supporting ecological corridors to expand across the coast is provided for via this approach. Management: DOC’s Aotea Conservation Park occupies a large amount of this stretch, with much of the remainder comprised of wild native bush. Ongoing engagement with DOC may be required to ensure alignment in coastal management approaches where appropriate. Heritage: Several scheduled heritage sites are located within this stretch, all of which are coastal – Kaiaraara mill stone seawall (Category B), Kauri Timber Company Whangaparapara sawmill and associated coastal structures (Category B), Whangaparapara stone working area and midden (Category A), and the Whangaparapara whaling station site (Category B). Engagement with the heritage team may be required over time to assess the impact of coastal hazards on these features. Cultural: This stretch is of high cultural significance to local iwi Ngāti Rehua, noting various pā and urupā all line the coastline marking the cultural landscape of this stretch. This strategy supports cultural landscapes, noting ongoing engagement with Ngāti Rehua to acknowledge and support cultural values may still be provided for.					

1.2: Port Fitzroy (roading connection and services)

This stretch includes the (privately owned) Port Fitzroy wharf and boat ramp, off Kaiaraara Bay Road, and Fitzroy Bay Landing Recreation Reserve, ending just shy of Glenfern Road.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Port Fitzroy is an important local community hub for north of Aotea Great Barrier, providing for informal recreation (vessel launching, water access, walking, cycling), with the wharf (owned and maintained by the North Barrier Residents and Ratepayers' Association) a key piece of lifeline infrastructure for Aotea Great Barrier, especially for the northern settlements. It is the island's secondary wharf after Tryphena and has a regular (approximately weekly) ferry service (Sealink) to Auckland which takes passengers, vehicles and freight. The wharf is also used by local residents and visitors. Protect across all climate change scenarios reflects the need for continued management of exposure to coastal hazards risk of Council-owned assets including the road.		
Implementation Notes • Protect reflects the need to take a more proactive approach to managing infrastructure (roading) in the high change scenario to allow for their continued use. • Note: This stretch covers the area around the privately owned (residents and ratepayer) Port Fitzroy Wharf which provides a valued additional ferry connection to the island, however management strategies only apply to Council-owned land and assets in this stretch of coast (predominantly the road network). • Cultural: Fitzroy Bay Landing Recreation Reserve is recognised as a Statutory Acknowledged Area for Ngāti Rehua. Ongoing engagement with Ngāti Rehua will be required across all climate change scenarios.		

1.3 Glenfern Sanctuary Regional Park

This stretch follows the coastline of the Glenfern Sanctuary Regional Park, accessed via Glenfern Road and a recently renewed stream crossing road bridge. It includes Glenfern wharf facilities. Most Auckland Council owned assets in this stretch are located sufficiently inland such that they are not exposed to coastal hazards, except for the Glenfern Wharf facilities which have a functional need to be situated at the coast.

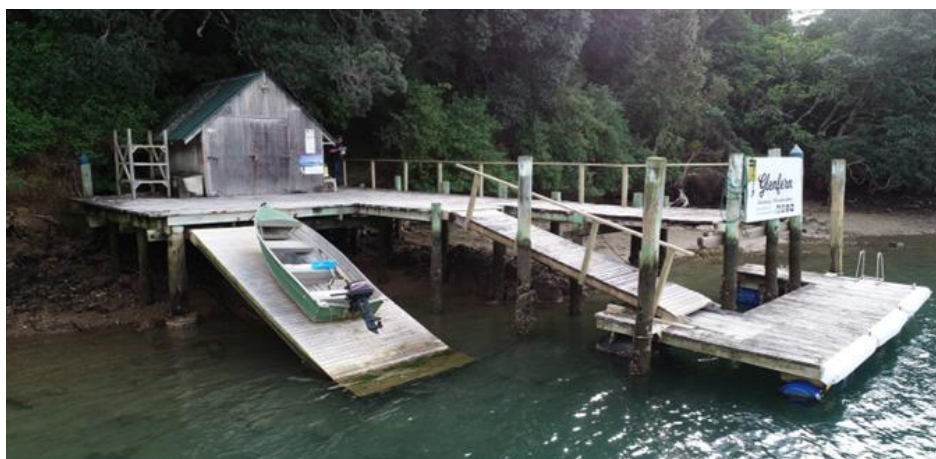


Figure 3: Glenfern Regional Park wharf

Scenarios for change			
Low		Moderate	High
Maintain		Maintain	
Explanation Maintain provides for the management of risk to assets located within Glenfern Regional Park. Maintain indicates that the coastline is not fixed and localised realignment may be required to maintain recreational amenity, support ecological outcomes and coastal character. Maintain also provides for the maintenance of current coastal structures including Glenfern Wharf, connecting and park roads and crossings.			
Implementation Notes • Management: Future assets should be located so that they are not exposed to coastal hazards. This also reflects the intention to manage the Regional Park in line with the strategies and actions outlined in the Regional Parks Management Plan. • Roading infrastructure: Sections of Aotea Road and Glenfern Road are exposed to erosion/instability. This strategy does not preclude localised interventions as required for roading connections. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Ecology: Glenfern Sanctuary Regional Park is classified as kānuka forest and kauri, podocarp, broadleaved forest and is part of the larger Kotuku Peninsula, which is protected by a predator-proof fence. Several threatened and rare native species can be found within the park, including black petrel, black teal, and chevron skink (Glenfern Sanctuary, 2024). Ongoing consideration of ecological values and opportunities in the implementation of adaptation strategies is advocated for. • Cultural: This area is of high cultural significance to local iwi Ngāti Rehua, with some very old stone structures which are evidence of early mara kai. Aspirations for Ngāti Rehua include returning the area as part of Te Tiriti.			

1.4 Kotuku Point

This stretch extends from the Glenfern Sanctuary Regional Park to Karaka Bay Road, encompassing Kotuku Point Scenic Reserve. The coastline is characterised by DOC land and privately-owned sections of rocky coastline, with small pocket beaches, backed by vegetated coastal cliffs.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation No action is reflective of limited Auckland Council land and assets located in this stretch, as well as the predominantly private ownership of this section of the coast.		
Implementation Notes • Ecology: This strategy does not preclude ongoing advocacy for ecological interventions to support this valued environmental area. • Cultural: Pā of Te Rangituangahuru and Ranginui is located within this stretch (as identified by Ngāti Rehua). Ongoing engagement with Ngāti Rehua to acknowledge and support cultural values may still be provided for via this approach.		

1.5: Orama/ Karaka Bay/ Waikaraka

This stretch covers Karaka Bay, a pocket beach and shallow intertidal embayment. The shoreline is armoured with a rock seawall and includes a wharf and boat ramp associated with the Orama retreat facilities (also private).

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain reflects the intention to manage exposure of road ends to coastal hazards (as required) through design and location of assets across all climate change scenarios.		
Implementation Notes • Roading infrastructure: Sections of Karaka Bay Road may be exposed to coastal hazards across all change scenarios. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Cultural: Waikaraka - named for the abundance of wildlife attracted to the area by the karaka berries. Ngāti Rehua shared the narrative that members of the iwi would gather these berries, wash the kernels in the nearby stream, then pound them for use in cooking. Ongoing engagement with Ngāti Rehua in the implementation of coastal strategies will be required to support cultural values associated within this site.		

1.6: Maunganui / Separation Point

This stretch extends from Orama Bay to the west of Moanauriuri Bay (before Kawa Road) and is characterised by rocky foreshore and small pocket beaches backed by steep vegetated coastal cliffs/ Several isolated dwellings and associated private wharves intersperse this coastline.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
• Cultural: According to local iwi Ngāti Rehua, this stretch marks the starting point of the “Māori Reservation” on Aotea - He Pukapuka Pupuri Whenua, Na Te Mariri Na Ngatiwai Katoa” Whetu o te Tau, Volume 1, Issue 2, 1 November 1857. There is an urupā called pā-iti. Ongoing engagement with Ngāti Rehua may still be provided for, noting a no action strategy acknowledges the cultural landscape of this stretch.		

1.7: Moanauriuri Bay (Kawa Marae)

This stretch covers Moanauriuri Bay, a small pocket sandy and cobble beach. It includes the small settlement of Kawa and the Kawa Marae (Ngāti Wai o Aotea).

Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
A maintain approach over all climate change scenarios recognises the need to maintain road access to the coast and provides for the localised realignment of the road end as exposed to coastal hazards over time.		
Implementation Notes		
• Roading: Road access to the coast may be exposed to coastal hazards with climate change. Localised landward realignment of the road may be required to retain safe access to the coast. • Cultural: Land in this stretch has been identified as part of the Māori Reservation (by Ngāti Rehua). Ongoing engagement with the Ngatiwai o Aotea Kawa Marae Trust aka Kawa 3 Part Māori Reservation Trust and local iwi will be required across all climate change scenarios.		

1.8: Tūkari /Reef Point

This stretch extends from the east of Moanauriuri Bay to the west of Motairehe. It is characterised by rocky foreshore backed by well-vegetated coastal cliffs.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
• Cultural: Cultural narrative shared identified Tūkari as the first pā of Te Rangituangahuru and many other chiefs after him. It then became an urupā (multiple culturally significant sites are located within this stretch). Ongoing engagement with Ngati Rehua to reflect and support cultural landscapes and aspirations in coastal management approaches may still be provided for via this approach.		

1.9: Motairehe (Whakaruruhau Marae)

This stretch covers the small settlement of Motairehe. The stretch includes Motairehe Road, passive reserve space and a coastal playground. The Motairehe Marae (Whakaruruhau marae) (Ngātiwai - Ngāti Rēhua, Ngātiwai ki Aotea) and urupā is also located within this stretch, with a recorded midden at the southern end (both CHI sites) as shown in Figure 6 below.



Figure 4: Private rock revetment protecting the Motairehe urupā

Scenarios for change			
Low		Moderate	
High			
Maintain		Maintain	
		Adaptation priority	
Explanation			
A maintain approach signals exposure of Auckland Council land and road ends to coastal inundation and erosion, requiring management through design and location under a low to moderate climate change scenario. Adaptation priority under a high climate change scenario signals the need to proactively plan for the continued safe access to the coast at this location.			
Implementation Notes			
• Cultural: The Motairehe Urupā and the Motairehe (known as Whakaruruhau) Marae are located within this stretch. Ongoing engagement with local iwi will be required in the implementation of adaptation strategies to ensure alignment in management intentions for this area of the coast. • Note: Engagement with adjacent landowners in this stretch is likely required in the management of risks to assets and land.			

1.10 North East to Whangapoua

This stretch extends from the north of Motairehe to inside the Whangapoua Estuary. Much of this coastline is rocky foreshore backed by steep well vegetated coastal cliffs. It includes the dynamic Whangapoua Beach, dunes and sandspit, and much of the Whangapoua Estuary. The sandspit is at risk to erosion and coastal inundation from the short term.



Figure 5: Whangapoua Estuary and spit

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation A no action approach over all climate change scenarios is reflective of the limited Auckland Council land and assets located in this stretch. This stretch includes the discrete area of Whangapoua Esplanade Reserve and the Mabey Road connection.		
Implementation Notes • Management: This strategy does not preclude the management of risk presented by identified catchment flooding risk (and in future coastal inundation risk) to Mabey Road, as required through future maintenance and renewal. • Ecological: The Whangapoua and Te Paparahi BFAs are located within this stretch. The Ecology Team will advise on any potential impacts of coastal hazards on ecological values, and how these may need to be managed, if required. • Heritage: The Miners Head copper mine and battery remains, and the SS Wairarapa wreck site heritage features are located within this stretch. Engagement with the Heritage Team and/or Heritage New Zealand may be needed to determine any specific management of these features. • Cultural: Whangapoua was the site of the first raupatu between Rehua and Ngāti Te Hauwhenua. Rehua's pā is located here, along with other pā and urupā of great significance to Ngāti Rehua. In 1838, the final battle of the musket wars in the Hauraki Gulf took place on this land. Acknowledging the historic significance, this area is of high cultural significance to Ngāti Rehua, with ongoing engagement required to further understand cultural values associated with this section of coast. • Cultural: Ngāti Maru hold a statutory acknowledgment which encompasses the Whangapoua conservation area (within this stretch and Stretch 1.7). Ongoing engagement is required to further understand the cultural values associated with this site and the impact of coastal hazards.		

1.11 Ōkiwi

This stretch extends around the southern coast of the Whangapoua Creek Estuary and includes the Ōkiwi Station Aerodrome and Ōkiwi settlement.

Most dwellings and civic buildings (including Ōkiwi School) are located sufficiently inland to be outside of the identified coastal hazard area. However, the aerodrome is exposed to coastal inundation hazards from the short term. There are important ecological sequences from coastal saline vegetation (salt marsh, mangroves) to low dunes.

Scenarios for change			
Low		Moderate	High
Maintain		Adaptation priority	Adaptation priority
Explanation A maintain approach transitioning to adaptation priority in the moderate change scenario signals the increasing exposure of land to coastal inundation with sea-level rise and the need for further adaptation planning to ensure assets, uses and roading connections provide for safe and functional future use.			
Implementation Notes • Cultural: Ngāti Rehua kainga and pā is located within this coastal stretch. Ongoing engagement will be required to further understand the cultural values associated with this site and how this may impact implementation of adaptation strategies. • Cultural: Ngāti Maru hold a statutory acknowledgment which encompasses the Whangapoua conservation area (within this stretch and Stretch 1.6). Ongoing engagement will be required to further understand the cultural values associated with this site and how this may impact implementation of adaptation strategies. • Ecology: The Whangapoua BFA is located within this stretch. Ongoing consideration of the potential impacts of adaptation strategies on ecological values, and how these may need to be managed will need to be considered.			

1.12: Harataonga Coastal Walkway

This stretch extends from Ōkiwi Station Airport, along the southern entrance of Whangateau Estuary, and along the exposed rocky eastern coastline to Whakatautuna Point. At each end is an area of grassed paddocks, each with several dwellings. The remainder is native forest, much of it forming part of DOC's Harataonga Recreation Reserve/Scenic Reserve. These are blocks of land contiguous with the large Aotea Conservation Park. Tracks connect through these reserves, linking the Harataonga DOC campsite with Ōkiwi.

The Harataonga Coastal Walkway extends along this eastern coastline, which is characterised by a rocky shoreline with pocket beaches including Overtons Beach.



Figure 6: Overtons Beach and low dunes

Scenarios for change					
Low		Moderate		High	
No Action		No Action		No Action	
Explanation					
No action is reflective of limited Auckland Council land and assets located in this stretch.					
Implementation Notes					
• Management: This strategy does not preclude localised interventions to key roading connections, Whangapoua Path or Harataonga Coastal Walkway as required. • Cultural: This coastal stretch is of high cultural significance to Ngāti Rehua, with cultural narrative shared explaining that Harataonga is the 'hara' felt by Te Rangituanahuru when he heard his father, Rehua had been burnt alive on Rakitū. Additionally, there is a pā and urupā which Te Ikamimirua the son of Rehua is buried. Ongoing engagement with Ngāti Rehua to support landscapes and acknowledge cultural values may be provided for via this approach.					

1.13: Te Hauturu-o-Toi Little Barrier Island & Pokohinu Mokohinau Islands & Rakitu / Arid Island

This stretch is comprised of Te Hauturu-o-Toi Little Barrier Island and the Pokohinu / Mokohinau (made up of four larger islands - Pokohinu (Burgess Island), Motukino (Fanal Island), Hokoromea, and Atihau - as well as many smaller islands, islets, and rock outcrops), and Rakitu /Arid Island. These are all remote uninhabited islands and each (with the exception of Pokohinu Burgess Island) are nature reserves which require permits for landing. Less than a dozen buildings are present overall, with most of them clustered near Titoki Point on Te Hauturu-o-Toi Little Barrier Island. There are no Auckland Council assets on these islands.

Te Hauturu-o-Toi Little Barrier Island is co-governed in a partnership between DOC and Ngāti Manuhiri. It was New Zealand's first nature reserve and is one of the last remnants of primeval forest, becoming pest-free in 2006. Te Hauturu-o-Toi Little Barrier Island is home to a rich array of ecological features and values, including intact ecological sequences, and a diverse range of native species, many of which are highly endangered. Te Hauturu-o-Toi Little Barrier, the Mokohinau Islands group and Rakitu Island are recognised as important seabird and lizard hotspots

Scenarios for change					
Low		Moderate		High	
No Action		No Action		No Action	
Explanation					
No Action is reflective that there are no Auckland Council assets located in this stretch.					
Implementation Notes					
• Cultural: Te Hauturu-o-Toi/Little Barrier is co-governed by Ngāti Manuhiri and the Crown (DOC). A reported burial CHI place is also located on Te Hauturu-o-Toi Little Barrier Island. Ongoing engagement with Ngāti Manuhiri and Ngāti Rehua Ngāti Wai will be required to further understand the cultural values associated with this site and any impacts of coastal hazards. • Cultural: Pokohinu Mokohinau Islands was known to be occupied early in the nineteenth century by Ngati Rehua - Ngatiwai ki Aotea. Ngati Rehua - Ngatiwai ki Aotea tradition records that they historically exercised ahi ka and they have upheld their tikanga and customary rights on the Mokohinau Islands, noting that local iwi continue these practices to the present day. • Ecology: The Mokohinau Islands, Rakitu Island (forms the Rakitu Island Scenic Reserve) and Te Hauturu-o-Toi BFAs are located within this stretch. Ongoing consideration of ecological values and opportunities to support natural based solutions for this stretch can still be accommodated within this approach, noting a no action strategy supports natural landscapes to be maintained.					

1.14: Broken Islands/ Pig Islands (Ngāti Rehua islands)

This stretch includes several nearby islands to Aotea grouped together in what is commonly known as “Broken Islands/ Pig Islands” This cluster of islands includes Rangiahua Island (Flat Island), which has several dwellings and a wharf, Motutaiko Island, Papakuri Island, Mahuki Island/ Anvil Island and Little Mahuki Island.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
• Ecology: The eastern side of Mahuki Island supports a major breeding colony of Australasian gannet – one of the largest in the Auckland region. Kaikoura, Nelson, and Motuhaku islands are recognised as important ‘fly-aways’ for Cook’s petrel and black petrel. Ongoing consideration of ecological values and providing/ supporting for ecological corridors may stay be provided via this approach. • Cultural: The islands within this coastal stretch are of high cultural significance to local iwi Ngati Rehua, noting that many of these islands sit within the Ngati Rehua - Ngatiwai ki Aotea cultural redress. Ongoing engagement with Ngati Rehua - Ngatiwai ki Aotea to uphold cultural values associated with these islands may still be accommodated via this approach.		

1.15: All other nearshore islands off the northern area of Aotea

This stretch covers all remaining nearshore islands off the coast of northern Aotea Great Barrier, notable ones being Kaikoura (a conservation reserve, containing a grass airstrip and CHI place (wāhi tapu - Kohatutitore), Motuhaku Island, Nelson Island/ Peter Island, Grey Group Islands, Moturako Island, Opakau Island, Whangara Island, Aiguilles Island (Ngā Taratara o Toi), and Junction Islands.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
• Ecology: Ongoing consideration of ecological values and providing/ supporting for ecological corridors may stay be provided via this approach. • Cultural: Islands within this stretch, specifically Kaikoura, are of high cultural significance to local iwi Ngati Rehua, with the island of Kaikoura known to be historically occupied permanently by mana whenua. Ongoing engagement with Ngati Rehua - Ngatiwai ki Aotea to uphold cultural values associated with these islands may still be accommodated via this approach.		



Unit 2

Aotea Great Barrier and the Hauraki Gulf Islands



Kaitoke Beach



Shag Harbour

Te Kurae o Turi



Coastal roads (e.g. Shoal Bay Road and Pah Point) are exposed to ongoing coastal hazard impacts.

- Unit boundary
- Stretch
- Informal recreation park
- Auckland Council owned land

0 2km 4km



Unit 2: Aotea Great Barrier Island South

Unit 2 incorporates the southern half of Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island, following the coast south of Whakatautuna Point on the east coast around to Whangaparapara on the west coast. It includes the key settlements of Tryphena and Claris, which are the location of the primary wharf and airport for the island. Tryphena and Claris are Aotea Great Barrier's main population centres and each contain several shops, a school, and other community facilities.

Other settlements within this unit include Medlands Beach, Okupu, and Whangaparapara. For most of these settlements there is only one road connecting them to other areas. Critical roads include Aotea Road/Gray Road, Whangaparapara Road, Blind Bay Road, Hector Sanderson Road/Walter Blackwell Road/Medland Road, and Puriri Bay Road/Shoal Bay Road.

Despite hosting several settlements, most of this unit is conservation land or is otherwise native bush kept in a largely natural state. DOC manages the Aotea Conservation Park, the largest reserve on the island, which stretches across both Units 1 and 2.

What is happening? Coastal context and hazardscape

Unit 2's coastline is exposed to a range of wave energies. The eastern-facing portion of this unit has full exposure to longer period swell events generated from some distance away. The western-facing portion is exposed to more localised shorter period storm waves generated by strong onshore winds.

Figure 7 outlines the predicted extent of coastal hazard exposure across this unit. The east coast beaches of Awana, Palmers, Kaitoke and Medlands are relatively high energy, being fully exposed to longer period swell events and more localised shorter period waves generated by onshore winds. As a result, these beaches are highly dynamic in response to the wave climate. Significant storm events combined with elevated water levels can result in upper beach and dune toe erosion. These beaches are backed by robust dune systems that provide a buffer to storm events and enable them to function within a more natural 'dynamic envelope'. There is a lack of immediately adjacent assets along these beaches, however Sandhills Road runs along the back of the dunes for the length of Medlands Beach. Previously, dune planting at Medlands Beach was periodically undertaken by a community coast care group, and these dunes remain well vegetated. Ōkiwi airfield runway is also located behind the dunes of Kaitoke Beach (Auckland Council, 2024b).

The dunes at Awana Beach and Medlands Beach were impacted by the 2021-2023 La Nina weather phase related storm events. This resulted in high erosion scarps on the dune faces and lowering of upper beach sand levels. Medlands Beach and Awana had visually recovered by early 2024, and the dune erosion scarps softened. These beaches remain highly dynamic, and (other than at the stream mouths) no operational intervention is undertaken (Auckland Council, 2024b).

The west coast of this unit includes pocket beaches and the Tryphena Harbour coastline. There are several Auckland Council and Auckland Transport-owned seawalls and erosion control structures along this coast. During extreme storm events and elevated water levels, overtopping of seawalls, roading, and unarmoured reserve edges can occur. Along unprotected sections, slow ongoing erosion of the low coastal cliffs along the Tryphena coastline, behind which Shoal Bay Road extends, is a risk to the road with the road carriageway now close to the cliff edge along Pah Point.

Catchment stream mouths that discharge across Medlands Beach and Kaitoke Beach periodically become blocked or impounded, during times of low rainfall or when storm events deposit sand. This can result in elevated upstream water levels and associated flooding risks to roads and private property (Auckland Council, 2024b).

Shoal Bay Road, Tryphena (opposite Blackwell Drive).



Mulberry grove seawall, with salt tolerant vegetation behind seawall crest.



Medlands Beach and dunes.



Awana Beach and dunes.

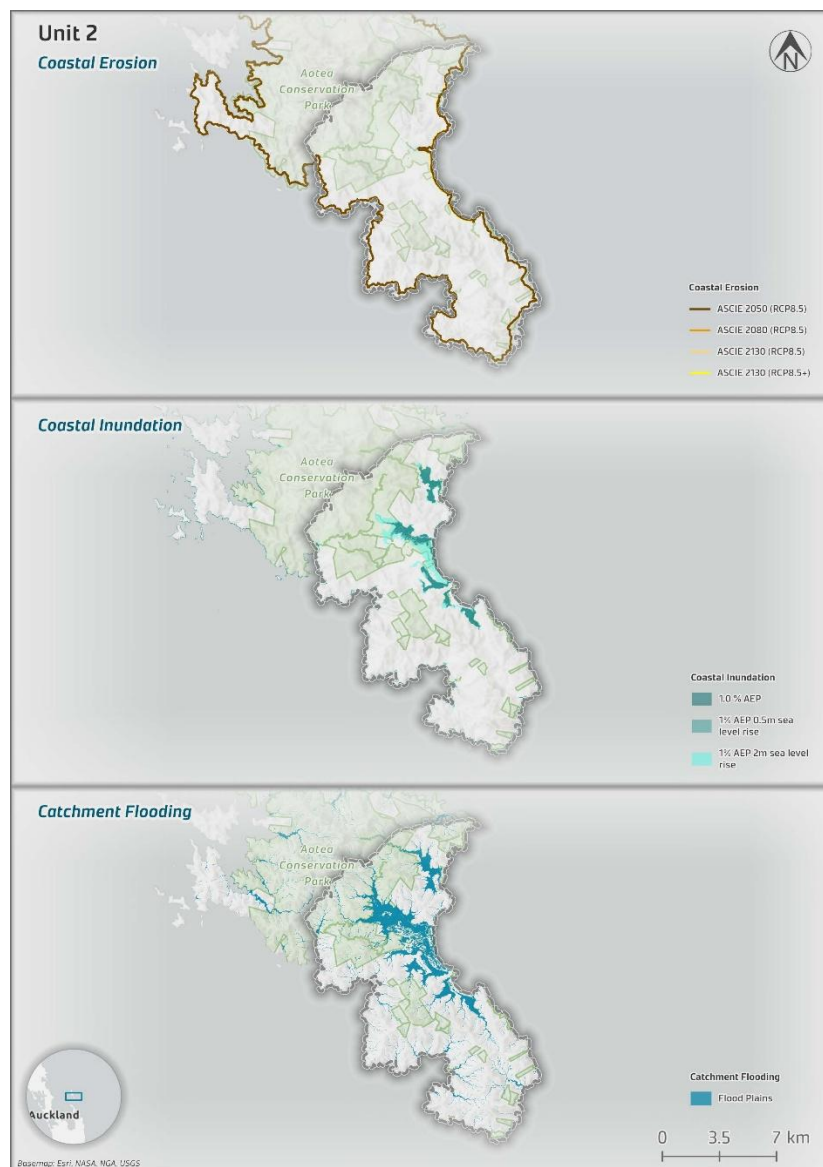


Figure 7: Coastal hazardscape for the Aotea Great Barrier Island South Unit reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

The table below summarises the risk levels for Auckland Council asset types in the short, medium, and long-term using low, moderate and high climate scenarios.

The risk table represents key groups of assets (e.g. Auckland Council-owned land, buildings, road extents) which are supported by the regionally consistent data set. The risk assessment provides a regionally consistent method for comparing risk to Auckland Council-owned land and assets allowing for identification of areas with highest risk for potential future assessment (e.g. Series 2).

Unit 2 Council-owned land & assets metrics and associated risk scores (short, medium, long terms)												
Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure			
Park and reserve land (106.3 ha) Buildings, wharves (59 No.)			Park amenity structures, carparks, accessways, buildings (1.6 ha)			AT roads (77.5 km) Bridges (835.7 m ²)			Water pipes (0.1 km)			
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	
Coastal erosion and instability susceptibility												
High	High	High	Moderate	Moderate	High	High	High	Very high	Very low	Very low	Very low	
Coastal inundation												
Moderate	Moderate	Moderate	High	High	High	High	Very high	Very high	Very low	Very low	Very low	
Key												
Very Low		Low		Moderate		High		Very High				

What matters most?



Auckland Council land and assets: This section identifies key Auckland Council-owned land and assets within this unit that may be impacted by coastal hazards (inclusive of catchment flooding) over changing climate scenarios.



- Awana Hill Reserve
- Awana Road Reserve
- Blind Bay Esplanade Reserve
- Blind Bay Wharf Reserve
- Gooseberry Flat
- Gooseberry Flat Cemetery
- Harpoon Hill Recreation Reserve
- Little Shoal Bay Reserve - Great Barrier
- Medlands Beach Carpark
- Medlands Playground Reserve
- Millers Look Out
- Mulberry Grove Reserve & School
- Okupu Reserves 1 and 3
- Oruawharo Lane
- Pa Point Reserve
- Sandhills Reserve
- Schooner Bay Beach



- Aotea Family Support Group building
- Medlands Playground, Okupu Beach, Mulberry Grove and Pa Beach toilet blocks



- Dolphin Bay Walkway
- Island Bay Walkway
- Medland's Beach Path
- Millers Hill Subdivision Walkway
- Ruahine Walkway
- Todds Walkway
- Tryphena Path



- **Water access:** Puriri Road, Puriri Bay Road, Shoal Bay Road, Tryphena Hall Reserve, Tryphena Harbour Road

Social, cultural and ecological context: This section identifies key social, cultural and ecological matters, identified through the development of the SAP reports, that may be impacted by coastal hazards (inclusive of catchment flooding) over changing climate scenarios.



- The coastal area of this unit is within the area of interest of Ngāti Rehua, Ngāti Manuhiri, Ngāi Tai ki Tāmaki, and Ngāti Maru. Where shared by local iwi, cultural narrative has been captured at a stretch scale to help inform an understanding of cultural landscapes and values, noting ongoing engagement in the implementation of adaptation strategies may be required.
- Identification of sites of significance to mana whenua is a District Plan matter with this unit governed by the Hauraki Gulf Islands District Plan (HGI:DP). It has not specifically identified sites of significance to mana whenua to date.
- One site within this unit has been identified on the Cultural Heritage Inventory (CHI), as shown below.
 - Te Pa o Wana (Heritage ID 17600): Wāhi Tapu (Stretch 2.1)



- Unit 2 contains the main settlements of Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island; Tryphena and Claris.
- Tryphena Wharf is the primary gateway for most people and freight coming to Aotea Great Barrier Island & the Outer Hauraki Gulf Islands Island. The surrounding settlement contains key social amenities such as the community hall and family support centre, a primary school, the Stonewall grocery store, and lodge. Much of this area is located along the coast and is exposed to coastal hazards.
- Claris contains many of the key social amenities for the island and is also the location of Great Barrier Aerodrome, the main gateway to the island by air. Near the airport is the Auckland Council Service Centre and Local Board, the library, fire station, police station, and several stores and an art gallery. Just inland is a transfer station as well as a golf and sports social club. Most residential properties are located just south of Claris, near Medlands Beach - this large sandy beach is a popular attraction. Several accommodation options, hospitality sites, campgrounds, and wedding venues are also located around Medlands. Many of the popular hiking trails of the Aotea Conservation Park can also be accessed just north of Claris, making this area a key tourist hub for the island.
- Within this unit is one heritage features identified in the AUP:OP, a “Category A” site in Smith’s Bay: Richard Smith’s shipyard site S09_153.



- Similar to Unit 1, the southern end of Aotea Great Barrier Island & the Outer Hauraki Gulf Islands is covered in significant expanses of regenerating native bush. There are many regionally important and/or vulnerable ecological values within Unit 2:
 - Awana Road Reserve and Awana Hill Reserve are comprised of regenerating kānuka forest and support records of egg-laying skink, moko skink, Raukawa gecko and shore skink (Stretch 2.2).
 - Kaitoke Beach is one of the only two places in the Auckland region which three native sand biding plants (spinifex, pīngao, and sand tussock) are found growing together (Stretch 2.2).
 - There are regionally important ecological sequences at Kaitoke Beach from spinifex, pīngao dunes grading into dune plains to regenerating kānuka forest (Stretch 2.2).
 - The Kaitoke Swamp is a wetland mosaic of mānuka, tangle fern, fernland and raupō reedland (Stretch 2.2). Some of the largest populations of fernbird are found within the wetland margins and upper reaches of the Kaitoke Swamp (Auckland Council, 2018).
 - A variety of other threatened avifauna utilise the wetland mosaic and coastal environment near Kaitoke Beach, including spotless crane, fairy prion, banded dotterel, and little penguin (iNaturalist, n.d.) (Anderson & Odgen, 2003).
 - Black petrel and grey-faced petrel burrows have been found at Windy Hill Sanctuary – a community conservation project which involves pest animal control across 770 hectares of land (Stretch 2.3). The sanctuary has been recognised as a BFA by Auckland Council.
 - Shoal Bay Esplanade Reserve, Shoal Bay Reserve, and Gooseberry Flat are characterised as coastal broadleaved forest and support many native lizard records (Stretch 2.8, Stretch 2.9, Stretch 2.10).
 - The reserves surrounding Blind Bay and Okupu Bay, including okupu Reserve (Stretch 2.14) and Blind Bay Esplanade Reserve (Stretch 2.15) comprise regenerating kānuka forest and coastal broadleaved forest. Duvaucel’s gecko, chevron skink, forest gecko, and Pacific gecko have been recorded at these coastal reserves (Department of Conservation, n.d.b)

Community feedback



Who have we heard from

- Feedback was primarily received via Social Pinpoint and 'AK Have Your Say' survey forms as well as at in-person events and via the Shoreline Adaptation Plan inbox.
- Events local to this area included drop-in sessions at the Mulberry Grove Store and the Aotea Local Board office, with a market stall at the Aotea Growers and Makers Market.



What is happening

Concerns were raised with coastal erosion (particularly of beaches and dunes), inundation, and coastal storms, all seen as ongoing issues for their communities. Respondents identified or were aware of several hazards for parts of the coast including:

- Erosion damage to both sand dunes and roading connections, specifically around Sandfills Road and Pūriri Bay Road (concern for resilience of road networks/ access, with some road networks reduced to one lane since the Auckland floods, raising serious concerns about losing access entirely — affecting transport, supplies, and livelihoods).
- Inundation of coastal wetlands.
- Accretion of sediment in the bay and coastal creeks.
- Impacts upon endemic species and the fish population.
- Disrupted beach access.



What matters most? Community values

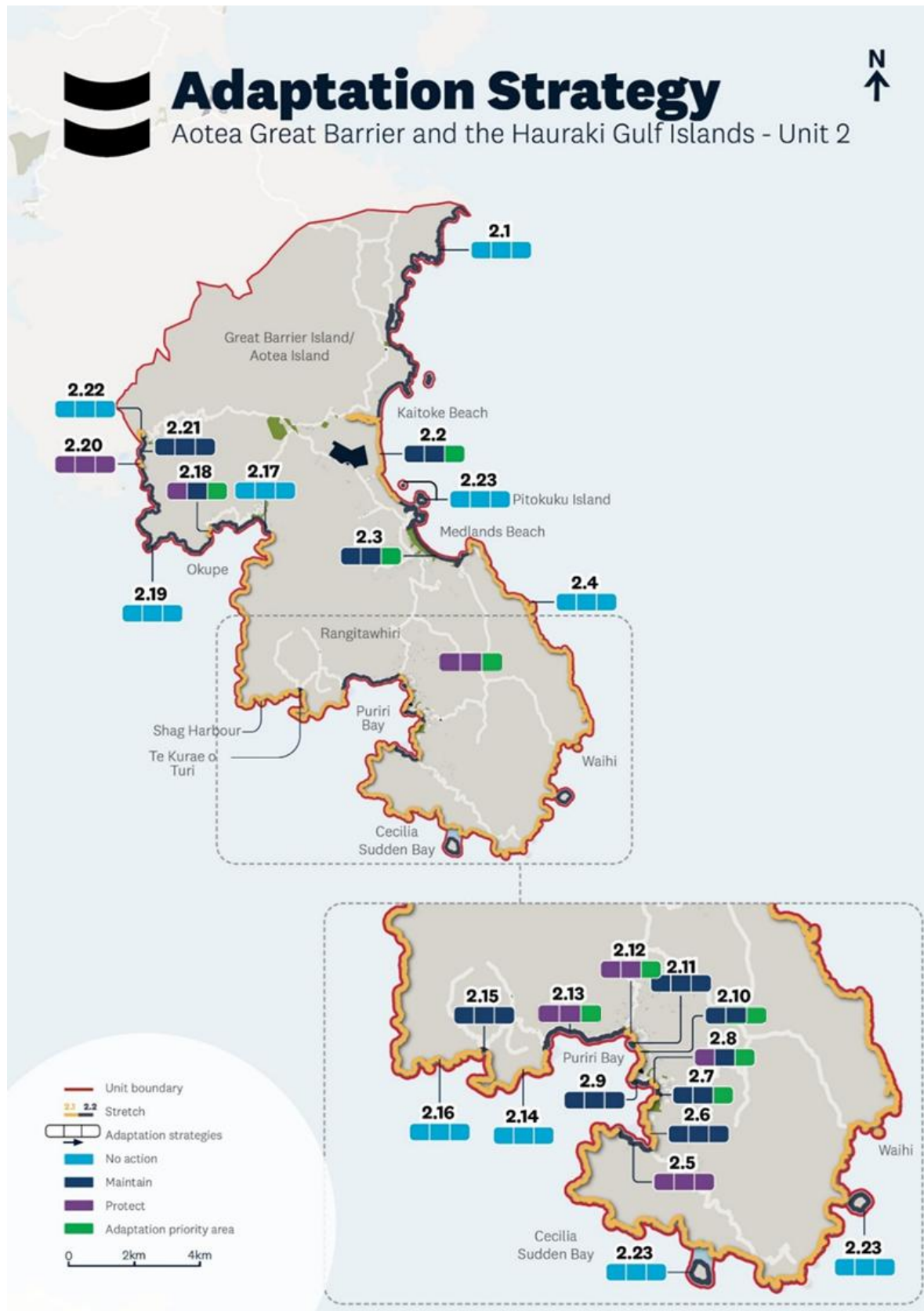
- Coastal spaces are primarily used for walking, passive water-based activities, and passive recreation. Some commented on enjoying cycling and boating/sailing activities, relying on public boat ramps for water based activities.
- Access was identified as one of the primary values which needs to be considered. One respondent highlighted Claris Airfield as a 'lifeline' asset, and several recommended the development of existing paper roads to increase resilience. Coastal pōhutukawa are also identified as 'iconic' features which should be protected. Coastal planting was seen as important to improving the resilience of coastlines to storm events.



What can we do about it? Community feedback and aspirations

- Most respondents supported proposed adaption strategies for Unit 2 including active intervention (protect and maintain). The need to maintain highly important assets, such as wharves and roading infrastructure, was key to protect access to and along the coast for coastal communities.
- Other aspirations identified included active management of stream outlets at Medlands Beach and maintenance of walkways in alignment with natural environments (i.e. dune ecosystems, along with limiting impervious surfaces and restricting building and development at/near the coast to manage flooding and coastal inundation hazards).
- Supporting nature-based solutions and preserving natural ecosystems (e.g. wetlands) was also a clear community aspiration in community feedback, with native planting important in supporting coastal margins.
- A minority of respondents (approximately 7%) consider there to be 'no point in fighting nature', aligning with a non-intervention or retreat approach.

What can we do about it? Adaptation strategy summary for Unit 2



2.1: Whakatautuna Point to Palmers Beach

This stretch extends from Whakatautuna Point to the end of Palmers Beach on the northern side of Kaitoke. Several paddocks and dwellings are located along Aotea Road, along the low-lying land near Awana Stream. Aotea Road is a key road for Aotea Great Barrier Island & the Outer Hauraki Gulf Islands as it is the sole route between the north and south of the island. Low-lying areas along this stretch are exposed to coastal inundation hazards from the low change scenario, particularly at Awana, noting Gray Road provides access to Aotea Road.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation No action is reflective of limited Auckland Council land and assets located within this wider stretch. Noting the Awana Road Reserve provides a key access point to the coast and presence of Aotea Road; this does not preclude localised management in response to coastal hazard exposure.		
Implementation Notes • Roading: The strategy of no action does not preclude localised management of roading connections (Aotea Road) and Awana Road reserve in response to coastal hazard risks. Auckland Transport, as the asset owner, will continue to monitor how coastal hazards may impact on operation of these assets and future implementation options. • Cultural: A Cultural Heritage Inventory place is in Awana Bay – Te Pa o Wana. • Cultural: Based on cultural narrative from Ngāti Rehua, Whakatautuna is named after the gathering place of eels. Additionally, Ngati Rehua would gather oi, whapuku and harvest kelp. Awana is the pā site of Waipahihi and old ancestral urupā. Ongoing engagement and collaboration with local iwi Ngāti Rehua can still be accommodated within this approach to ensure cultural landscapes and values are reflected and supported. • Ecology: Awana Stream is a tidal stream, which in conjunction with the freshwater areas, scrub areas, and roosting sites in the coastal environment above Mean High Water Springs, is an internationally significant habitat for brown teal, an endangered waterfowl (stream provides the best feeding area on Great Barrier Island for brown teal). A no action approach supports natural landscapes and roosting sites, noting that management intentions to support ecological landscapes may still be provided via this strategy.		

2.2: Kaitoke Bay/ Claris Waiparera

This stretch extends from the northern end of Kaitoke Beach, including the Kaitoke Stream up to the road bridge, to the southern end of Kaitoke Beach (approximately where Walter Blackwell Road intersects with Kaitoke Lane).

The settlement of Claris Waiparera is located within this coastal stretch, with residential dwellings primarily situated along Hector Sanderson Road and Oceanview Road (these roads link together to form continuous roading through this stretch, noting that this roading connection also provides access to the north of barrier). Claris Airfield is marginally affected by coastal inundation in the high change scenario. Claris itself contains numerous key social and commercial amenities, noting that most are located outside of the identified coastal hazard area. There is also a commercial/ civic centre located on Hector Sanderson Road.

Scenarios for change			
Low	Moderate		High
Maintain 	Maintain 	Adaptation priority 	
Explanation Maintain provides for the continued management of land and assets through design and location. Interventions in this highly dynamic environment are generally limited to dune planting, maintaining roads and access tracks to the coastal edge and limited stream mouth management. A transition to adaptation priority under a high climate change scenario signals a need to proactively plan for increasing inundation risk and undertake further adaptation planning for this highly valued area which includes multiple landholdings, assets, important community uses and roading connections.			
Implementation Notes • Roading: Roding connections in several locations are identified as being exposed to increasing inundation risk (from both coast and catchment flooding) over the moderate and high climate change scenario. Design and management of such connections will require further consideration and ongoing engagement between Auckland Transport (as the asset owner) and local communities. • Ecology: Kaitoke Beach is an important dune system, being one of only two places in the region in which the three native sand binding plants, spinifex, pingao and the sand tussock grow together. Additionally, Kaitoke Stream provides important habitat for Brown teal (endangered waterfowl). Ongoing consideration of ecological values is required in the implementation of adaptation strategies. • Claris Airfield: Claris Airfield is the main airfield for Aotea Great Barrier Island & the Outer Hauraki Gulf Islands (the other being Ōkiwi). Given the increasing importance of air travel to and from Great Barrier Island, ongoing consideration will need to be given to ensure that Claris Airfield can operate effectively over all climate change scenarios, noting likely exposure to coastal inundation. Ongoing engagement with Claris Airfield management will be required. • Aotea Transfer Station (formally known as Claris landfill): This is to be managed under the Closed Landfill Asset Management Plan. The Closed Landfill Team will advise on any specific considerations that may impact the implementation of adaptation strategies. • Cultural: Based on cultural narrative from Ngāti Rehua, this is a culturally significant stretch of coast, noting that only the rangatira of Ngāti Rehua could collect eels from here historically. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected and supported in coastal management practices.			



Figure 8: Kaitoke Beach

2.3: Oruawharo Medlands Beach

This stretch extends from the southern end of Kaitoke Beach (approx. where Walter Blackwell Road intersects with Kaitoke Lane) and concludes at the southern end of Medlands Beach, just before Shakespeare Point.

The settlement of Medlands is located within this coastal stretch, with low density detached homes primarily located along Sandhills Road, Oruawharo Lane and Medlands. Low-lying areas behind the northern and southern ends of the beach are exposed to coastal inundation hazards in the low change scenario, with elevated water levels able to propagate inland via the Sugarloaf and Oruawharo Stream mouths.

Scenarios for change			
Low		Moderate	High
Maintain		Maintain	
			Adaptation priority
			
Explanation			
Assets and landholdings Oruawharo Medlands playground reserve and Sandhills Road, car park and facilities are identified as being at risk from coastal and catchment hazards under a high climate change scenario. A maintain approach transitioning to adaptation priority signals the increasing exposure of assets and landholdings and the need for further adaptation planning to ensure assets, uses and roading connections provide for safe and functional future use.			
Implementation Notes			
• Roading: Roding connections in several locations are identified as being exposed to increasing inundation risk (from both coast and catchment flooding) over the moderate and high climate change scenario and design and management of such connections will require further consideration and ongoing engagement between Auckland Transport (as the asset owner) and local communities. • Ecology: Sugarloaf and Oruawharo Streams provide important habitat for Brown teal (endangered waterfowl). • Cultural: Medlands Wildlife Management Reserve within this coastal stretch is a recognised Statutory Acknowledgement Area for Ngāti Rehua. • Cultural: Based on cultural narrative from Ngāti Rehua, Oruawharo is named after Ruawharo from Takitimu waka. They built tūahu here when they arrived and laid down the mauri. Te Toka o Kahukura is also where Kahukura tohunga off Takitimu built an altar. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected.			

2.4: Southernmost Aotea Great Barrier

This stretch extends around the southern end of Aotea Great Barrier, from Shakespeare Point at Medlands Beach to before Tryphena Wharf. This large area is mostly a rugged and rocky coastline with a few pocket beaches. The stretch is uninhabited and covered with native forest in most areas, very little of it is reserve land, with scattered dwellings located along Cape Barrier Road and Rosalie Bay. At the end of the stretch, next to Tryphena Wharf, is Little Shoal Bay Reserve, a beachside reserve which contains a pier and adjacent boat ramp (private). A mooring zone is located in this bay.

Scenarios for change					
Low		Moderate		High	
No Action		No Action		No Action	
Explanation					
No action is reflective of limited Auckland Council land and assets located in this stretch. Note: this does not preclude the management of risk to assets located at Little Shoal Bay. The Ruahine walkway is managed by DOC.					
Implementation Notes					
Ecology: Windy Hill Sanctuary is located within this stretch and is recognised as a BFA by Auckland Council. Heritage: One scheduled heritage site is located near this stretch – the Wreck site and wreckage of SS Wiltshire (Category B), north of Rosalie Bay. Cultural: Cultural narrative shared by Ngāti Rehua identified that starting at Taitiumata and moving up the west coast, Matarehu marks the southernmost pā, kāinga, and urupā. Te Wharangi (Sandy Bay) is wāhi tapu, being the site of the final battle of Te Kahukura o Te Rangituangahuru and a seasonal home for him. Inland, Te Atamira served as a strategic lookout and had both pā and kāinga. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected and supported in coastal management practices.					

2.5: Rangitawhiri Tryphena Wharf

This stretch extends from Tryphena Wharf, along Shoal Bay Road to the intersection with Cape Barrier Road (the sole road access to the southernmost parts of the island). This wharf is Aotea Great Barrier's primary ferry terminal, catering for passengers, vehicles, and freight, making it a critical piece of lifeline infrastructure. It is located at the end of Shoal Bay Road, in Shoal Bay in Tryphena Harbour. There is a mooring zone located nearby offshore.

Toilets and carparking are also located at Tryphena Wharf. This area, and much of Shoal Bay Road is protected by seawalls; however, inundation is still anticipated over a high climate change scenario.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Protect reflects the defended coastal edge and associated roading connection to this key transport facility. Inundation risk under a moderate to high climate scenario to low-lying areas of the roading connection will require further consideration of road design and location.		
Implementation Notes Note: This approach acknowledges the requirement to provide ongoing connections to Tryphena wharf, as well as the wharf itself (i.e. roading connections, as discussed above). Several private properties are also located along Shoal Bay Road within this stretch. Adaptation strategies apply to council-owned land and assets only. Cultural: Te Rangi Tāwhiri a Kupe o ngā Tini o Toi is a significant site named to commemorate Kupe's visit, as remembered by the many descendants of Toi. It is a historical landing place for Toi, Kupe, and Turi, a site of conflict during the <i>raupatu</i>, and holds sacred <i>karakia</i> linked to its deep ancestral importance. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected and supported in coastal management practices.		

2.6: Shoal Bay Road to Mulberry

This stretch extends between Shoal Bay and Mulberry Grove, along Shoal Bay Road from the intersection with Cape Barrier Road to the intersection with Garden Road.

Many private dwellings are dispersed along this road. The coastline is mostly rocky, with one small sandy area which can be accessed by a short pathway from Shoal Bay Road through Todd's Walkway Reserve. Other than the road and reserve land there are no Auckland Council assets within this stretch.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain reflects the need to proactively manage risk to key roading connections (i.e. Shoal Bay Road) within this stretch, which provide critical connections between the Tryphena Wharf and most of the rest of the island.		
Implementation Notes Note: This approach acknowledges the requirement to provide ongoing connections to and from Tryphena wharf, however this strategy does not apply to private property/ private assets. Ecology: Shoal Bay Stream mouth provides important habitat for Brown teal (endangered waterfowl). Cultural: Many pā and kainga occupied by Ngāti Rehua are located within this stretch of coast. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected and supported in coastal management practices.		

2.7: Mulberry Grove School Reserve

This stretch is located on Mulberry Grove Beach, extending along Shoal Bay Road from the intersection with Garden Road. The reserve contains space for boat/trailer parking (for the nearby boat ramp in Stretch 2.7).

The beach side of Shoal Bay Road includes reserve space and recreational assets (e.g. playground, barbecue). These sit next to Mulberry Grove School, one of three primary schools on Aotea Great Barrier Island & the Outer Hauraki Gulf Islands and a key community hub within Tryphena. No coastal protection is identified within this stretch and much of the area is identified as exposed to coastal erosion and inundation in the high change scenario.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Adaptation priority 
Explanation Maintain provides for the continued management of risk through design and location of assets within reserve areas and the management of risk to roading connections. Adaptation priority under a high climate change scenario responds to the increased inundation risk and a need to consider the management of risk to activities and assets through further planning.		
Implementation Notes Note: The school landholding is owned by the Ministry of Education. Management: Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of Shoal Bay Road and future implementation options		

2.8: Mulberry Grove

This short ~160 m stretch extends along Shoal Bay Road from the boat ramp at Mulberry Grove to the bridge across the estuary. Mulberry Grove Store and Mulberry Grove Reserve make this area highly valued by locals. The public toilet within the reserve is not within the coastal hazard area.

Scenarios for change		
Low	Moderate	High
Protect 	Maintain 	Adaptation priority 
Explanation Protect relates to the maintenance of the coastal edge in response to coastal erosion, which is reflected by the current seawall renewal project (2025). Maintain in the moderate change scenario relates to continued maintenance of coast protection structures. Adaptation priority over a high climate scenario (subject to appropriate signals, triggers and thresholds), signals a need to proactively plan for increasing inundation risk and undertake further adaptation planning for this highly valued area which includes multiple landholdings, assets, and important community uses and connections.		

Scenarios for change		
Low	Moderate	High
Implementation Notes Note: A rock masonry seawall extends along the extent of this stretch. Coastal renewal works are proposed for this seawall in 2025. This area also contains parking and the start of Tryphena Path. Roading: Shoal Bay Road transverses this coastal stretch, making up a critical part of the transport network. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation and future implementation options		

2.9: Shoal Bay Road Central

This stretch extends around the southern part of Pā Point Recreation Reserve. The land is characterised by steep, well-vegetated slopes. Shoal Bay Road and Tryphena Path pass through this stretch and are both exposed to coastal erosion/instability hazards. There are no other Auckland Council assets in this stretch.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain provides for the continued management of risk to roading connections through design of roading assets and localised use of protection, as required.		
Implementation Notes Roading: Shoal Bay Road transverses this coastal stretch, making up a critical part of the transport network. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation and future implementation options. Management: Tryphena Path is also located within this stretch, a popular walking connection to and along the coastal for the local community, noting that maintain also enables the continued maintenance of this connection.		

2.10: Gooseberry Flat Beach

This stretch extends from the north side of Pā Point Recreation Reserve along Gooseberry Flat Beach. Shoal Bay Road and Tryphena Path run along most of the coastline and are exposed to coastal hazards and climate change over time. The land around Pā Point is steep, bush-clad hills, while the area along Gooseberry Flat beach includes the playground and the Gooseberry Flat Cemetery. A rock masonry seawall extends along the northern section of this beach.

Scenarios for change			
Low		Moderate	High
Maintain		Maintain	Adaptation priority 
Explanation			
Maintain relates to the continued management of risk to facilities located within the beach reserve. Adaptation priority in the high change scenario signals the opportunity for further adaptation planning to ensure the values of the beach are maintained while considering roading connections, reserves uses and the location of protection structures (including existing seawalls and stream training walls).			
Implementation Notes			
• Roading: Shoal Bay Road transverses this coastal stretch, making up a critical part of the transport network. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation and future implementation options. • Management: Tryphena Path is also located within this stretch, a popular walking connection to and along the coastal for the local community, ongoing maintenance of this connection is noted.			

2.11: Pā (Pah) Point Putuwhera

This stretch is short, including just the Pā Point headland reserve off of Shoal Bay Road which is used for dinghy storage. A section of Tryphena Path runs through this stretch.

Scenarios for change			
Low		Moderate	High
Maintain		Maintain	Maintain 
Explanation			
Maintain refers to the management of uses within the point area in response to coastal hazard risk in a manner which responds to values including cultural significance of the stretch.			
Implementation Notes			
• Cultural: Following the 1883 battle, Te Huaroa settled at two key pā – Putuwhera, a fortified headland and battle site, and nearby Waikirikiri (Puriri Bay), an urupā. Secondly, he occupied Otaimanawa pā. Ongoing engagement and collaboration with local iwi Ngāti Rehua will be required in the implementation of adaptation strategies to ensure cultural landscapes and values are reflected and supported in coastal management practices. • Management: A section of the Tryphena Path is located within this stretch, a popular walking connection to and along the coastal for the local community, noting that Maintain also enables the continued maintenance of this connection.			

2.12: Tryphena Rangitawhiri (Pā Beach)

This stretch extends from Pā Point to Puriri Road with Tryphena Harbour. Shoal Bay Road and the Tryphena Path run along the coast. A rock masonry seawall armours Tryphena Hall Reserve and carpark, with a boat ramp off Shoal Bay Road, noting Tryphena Hall is located in this stretch, an important community asset. This stretch includes private dwellings as well as the Stonewall Store (a local grocery store), café, and pub, which together make this area a hub of community activity.

Scenarios for change			
Low		Moderate	High
Protect		Protect	
			Adaptation priority
			
Explanation			
Protect under a low and moderate change scenario reflects the need to manage risk to land and assets located within this stretch, along with supporting roading connections and coastal edge. Adaptation priority under high change scenario signals an opportunity to undertake further adaptation planning to respond to the ongoing coastal hazard risk.			
Implementation Notes			
• Management: Ongoing engagement with key community groups and asset owners will be required in the implementation of strategies. • Roading: Shoal Bay Road transverses this coastal stretch, making up a critical part of the transport network. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation and future implementation options. • Ecology: Tryphena Stream mouth provides important habitat for Brown teal (endangered waterfowl). • Cultural: This stretch of coast covers the urupā- Waikirikiri, of high cultural significance to local iwi Ngāti Rehua. Ongoing engagement and collaboration with Ngāti Rehua in the implementation of adaptation strategies will be required to ensure cultural landscapes and values are properly understood and supported.			

2.13: Puriri Bay Road (Tryphena north)

This stretch extends along Puriri Bay Road, beginning at the intersection of Shoal Bay, Medland, and Puriri Bay Roads, terminating before Tryphena Harbour Road. This intersection is a key area as Medland Road is the sole road between the main centres of Tryphena and Claris, as well as the northern parts of the island.



Figure 2.1- Puriri Bay Road

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Adaptation priority 
Explanation Protect under a low to moderate change scenario reflects the need to manage risk (utilising existing protection structures) and maintain the roading connections west and boat access ramps (Tipi & Bobs and Puriri Road Boat ramps), noting there is a coastal mooring zone at the end of the street. A transition to adaptation priority in the high climate change scenario signals the need for a further consideration of options to ensure that uses, values and assets remain safe, functional and meet community needs with increasing inundation and erosional risk to this coastal edge.		
Implementation Notes • Roading: Medland Road, Puriri Bay Road and Shoal Bay Road each form part a critical part of the transport network to Tryphena and Claris. Ongoing collaboration with local communities and Auckland Transport will be required to ensure alignment in management approaches.		

2.14: Te Rangitawhiri Road/Hill

Stretch 2.14 extends from the end of Tryphena Harbour Road to Schooner Bay. The land in this stretch is largely remote and densely vegetated. The only Auckland Council asset located in this stretch is the boat ramp off Tryphena Harbour Road.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation No Action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes • Management: No action does not preclude ongoing maintenance of the boat ramp at Tryphena Harbour Road End. • Cultural: Located further inland from the coastal margin is Poutekorua, a site of high cultural significance to Ngāti Rehua (Statutory Acknowledgement Area). Ongoing engagement with Ngāti Rehua to uphold cultural landscapes may still be provided for via this approach.		

2.15: Schooner Bay Te Kurae o Turi

This stretch extends covers the entirety of Schooner Bay and an informal boat launching access point off Schooner Bay Beach, providing access to the beach.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain across all climate change scenarios primarily reflects the need to maintain Schooner Bay Beach Reserve and the associated Schooner Bay roading connection (including the bridge and associated armouring) and informal boat launching access, responding to coastal hazard risk. Other than the roading connection and informal boat launching access point, this stretch is largely in a natural state with limited Auckland Council-owned assets near the coastline. No action in relation to coastal defences for the wider stretch supports a natural coastal edge.		
Implementation Notes • Heritage: One scheduled heritage site is identified in this stretch: Richard Smith's shipyard site. • Note: An informal boat ramp operates as a boat launching point for the local community, noting that consideration of this asset may be required under a moderate to high climate change scenario.		

2.16: Shag Point

This stretch covers the entirety of remote coast from Schooner Bay through to the beginning of Okupu Reserve.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation No Action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes • Cultural: Numerous cultural sites of significance make up the remote landscape. Ongoing engagement with local iwi to uphold cultural landscapes and ensure alignment in coastal management is provided for via this approach.		

2.17: Blind Bay Okupe (Okupu Reserves)

This stretch includes Blind Bay Okupe and the settlement of Okupu which includes several dozen private dwellings. There is a sandy pocket beach at Okupu Bay backed by Okupu Reserve, with the remaining coastline rocky and backed by well-vegetated coastal cliffs.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
• Management: This strategy does not preclude localised interventions to key roading connections and Whangapoua Path as required (note that the section of Blind Bay Road which transverse this stretch is predominantly set back from the coast). • Management: Okupu Reserve contains a boat ramp and a toilet. Potential localised relocation/ realignment of the boat ramp and toilet block under a moderate to high climate change scenario (depending on rates of erosion) may be required. Strategies may be subject to review following signals, triggers and thresholds of change. • Cultural: Cultural narrative set out by Ngāti Rehua identifies Blind Bay as Okupe, named after the eponymous ancestor Kupe. There are many pā and urupā in this area, making it another significant site for Ngāti Rehua. Ongoing engagement with Ngāti Rehua to uphold cultural values associated with this site may still be provided for via this approach.		

2.18: Blind Bay (Okupu Wharf)

This short stretch covers the end of Blind Bay Road including the Blind Bay Road wharf. Blind Bay Road, west of the main settled area of Okupu, is the sole connection to the western parts of this stretch and is exposed to erosion/instability hazards in several locations. At the end of this street is a boat ramp, and a wharf (owned by Auckland Transport). A Mooring Zone is located adjacent to the wharf.



Figure 9: Blind Bay boat ramp and wharf

Scenarios for change			
Low	Moderate	High	
Protect 	Maintain 	Adaptation priority 	
Explanation Protect under a low climate change scenario refers to the maintenance of Blind Bay Road and wharf and associated coastal protection and wharf infrastructure. A maintain approach in the moderate change scenario, transitioning to adaptation priority in the high change scenario, responds to increasing inundation risk to assets and uses within this stretch and the need to consider design and location within a constrained space to ensure hazard risk is managed and facilities and services continue to support community needs.			
Implementation Notes Note: This adaptation pathway applies to just the wharf and Blind Bay Road north (the section of road along the coastal margin) at Blind Bay. Ecology: Dotterels are known to nest along the shoreline at Blind Bay. Ongoing consideration of supporting roosting sites in the implementation of adaptation strategies should be provided via this approach.			

2.19: Open West Coast

This stretch extends between Blind Bay and Whangaparapara. Auckland Council owns some sections of this area, however there are no assets, or notable land developments within this stretch.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
N/A		

2.20: Whangaparapara Wharf

This stretch includes the wharf at Whangaparapara; this lifeline infrastructure provides a critical transport connection for the residents of Whangaparapara. Other Council-owned assets include toilets, carparking, and boat ramp. The coastal edge is armoured with a rock revetment seawall. However, it remains exposed to inundation over the high change scenario.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation		
Protect over all climate change scenarios refers to the maintenance of a fixed coastal edge at the Whangaparapara public wharf facility. The localised relocation or redesign of assets and uses within the landward areas of the stretch may be required under a high change scenario to respond to inundation risk.		
Implementation Notes		
Note: this stretch includes Whangaparapara Esplanade Reserve., This strategy anticipates the management of risk through landward location of the walking connections within the reserve area.		

2.21: Whangaparapara East

This stretch extends north from Whangaparapara Wharf along Whangaparapara Road, including most of the settlement of Whangaparapara. It is a small settlement with dispersed private dwellings. Whangaparapara Road runs along the coast and is exposed to coastal inundation and erosion hazards.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
A maintain approach over all climate change scenarios provides for the management of risk to roading assets through the location and design of this roading connections.		
Implementation Notes		
Roading: Whangaparapara Road is located within this stretch, a key transport network for the Whangaparapara community. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options.		

2.22: Whangaparapara West

This is a short stretch extending for approximately 500 m at the innermost point of the Whangaparapara inlet. The Old Mill Track passes through the forest near this stretch and connects to Whangaparapara Road.

The land appears to be unmodified from its natural state, and there are no Auckland Council assets located here.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
N/A		

2.23: All islands immediately offshore of the southern coast of Aotea

This stretch encompasses all islands off the southern coast of Aotea, including Palmers Island, Lion Rock, Pitokuku Island.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
No Action is reflective of limited Auckland Council land and assets located in this stretch.		
Implementation Notes		
N/A		