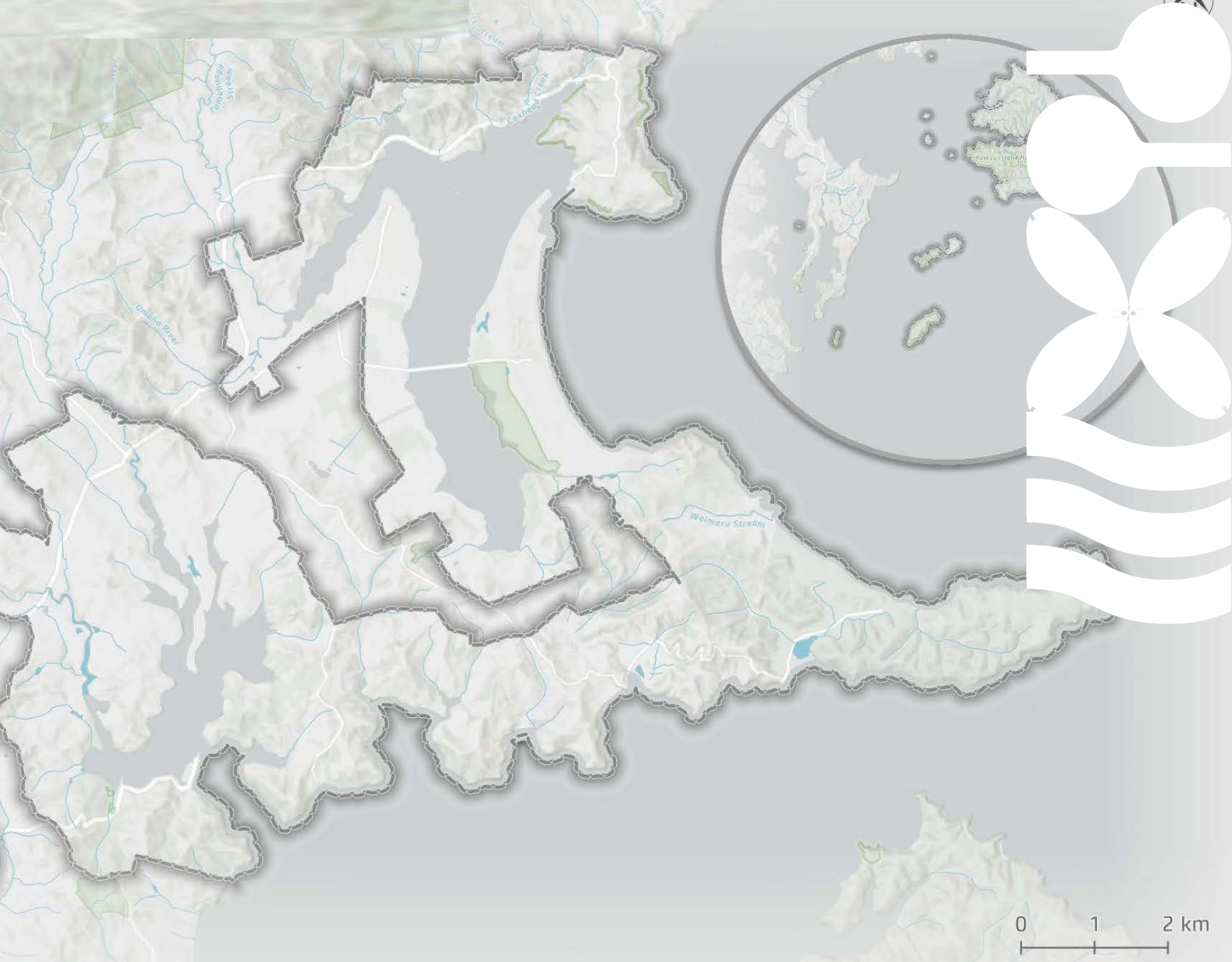




Ngā mahere whakaurutau mō te takutai

Shoreline Adaptation Plan

Ti Point to Sandspit

Volume 3: Adaptation Strategies

June 2025, Version 1.0

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Shoreline Adaptation Plan

Ti Point to Sandspit

Volume 3: Adaptation Strategies

June 2025

Auckland Council

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Front Cover

Shoreline Adaptations Plan area overview map for Ti Point to Sandspit. Prepared for Auckland Council by Tonkin + Taylor 2023.

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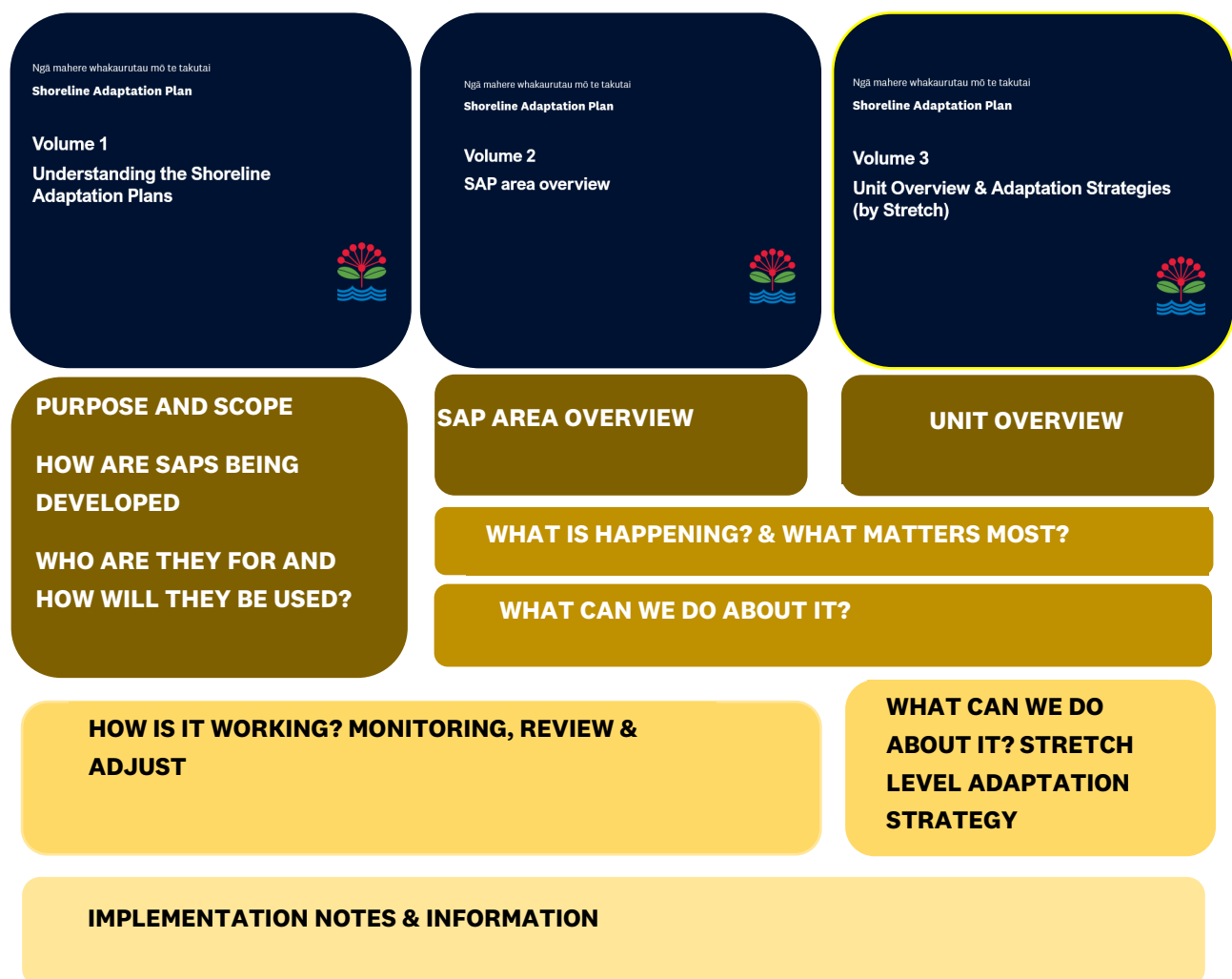
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Quick Reference

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, e.g. 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 SAP Program can be found in *Volume 1: Understanding the Shoreline Adaptation Plans*. Twenty SAPs make up Auckland's ~3200 km of coast as follows:

- Aotea Great Barrier and the 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 Hauraki Gulf islands
- Waimanawa Little Shoal Bay mini SAP
- Waitemata Harbour West
- Ti Point to Sandspit Peninsula
- Whangaparāoa
- Whatipu to South Head

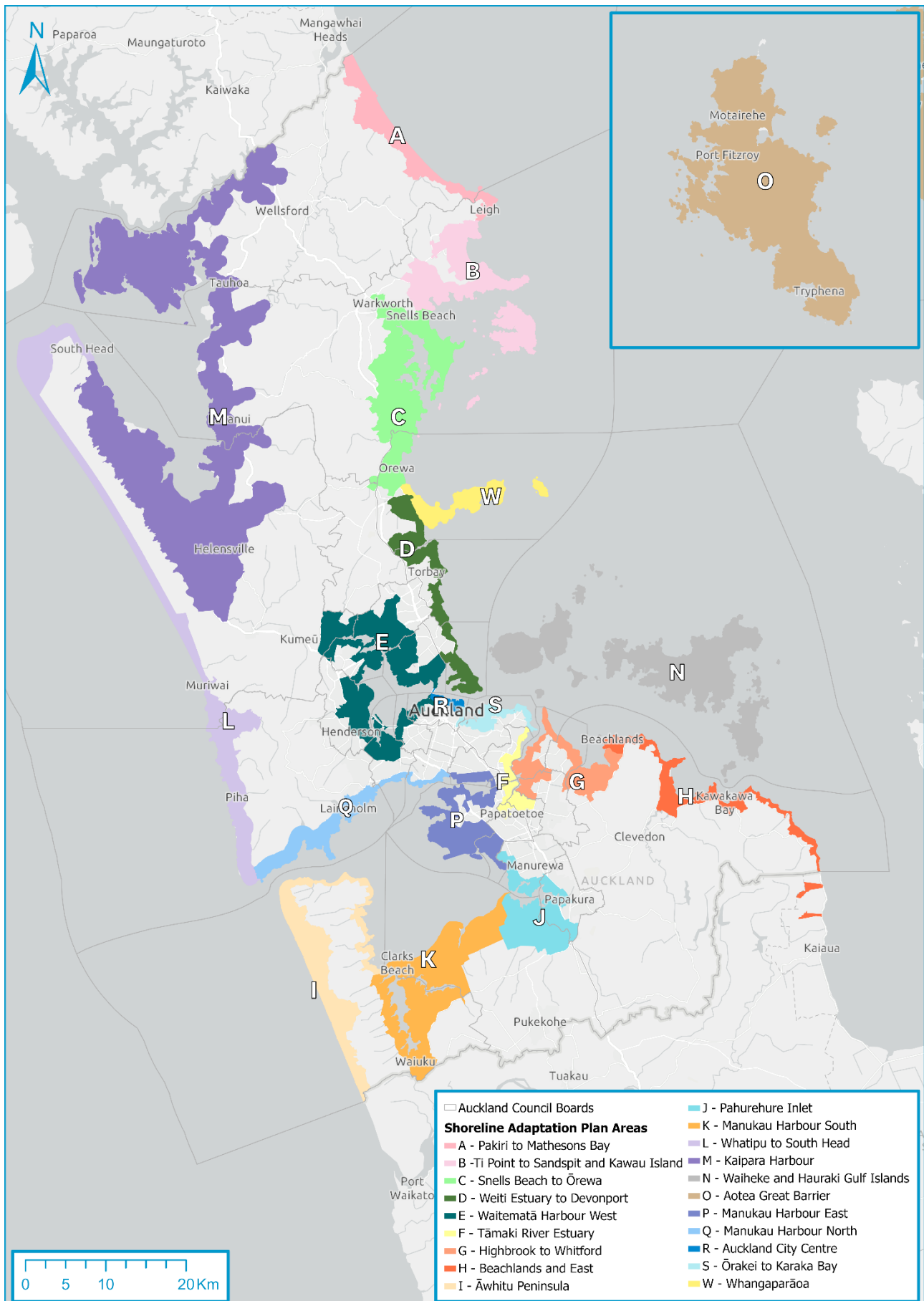
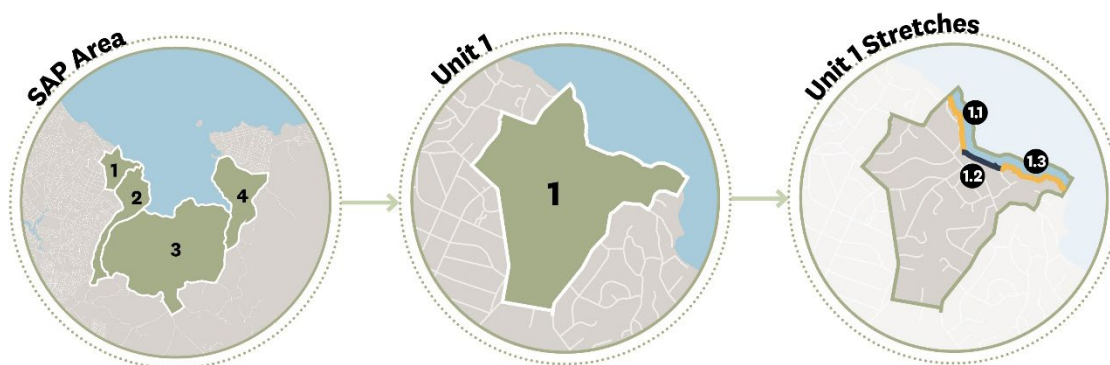


Figure 1-1: Shoreline Adaptation Plans (regional)

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.

	 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.



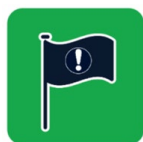
Maintain

- 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

Ti Point to Sandspit

Leigh



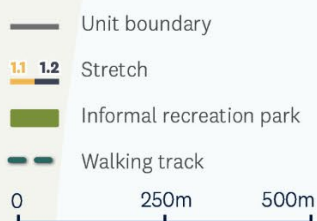
Te Kohuroa /
Mathesons Bay



"I snorkel here and walk over the rocks - and all around this area, I swim long distance with googles. I have noticed there are more kina, and the area is more barren, here and in surrounding areas. We are trying to clear the kina and feed the young snapper to support them, but more needs to be done"

Torkington Bay

"Ti Point is the site of fabulous sea cliffs, including a cave and rock arch. It is a mecca for rock climbers as it offers the best rock climbing experience in the Auckland region. It is also one of only two places within the Auckland region where outdoor rock climbing is permitted. As such, continued access to Ti Point crags is vital to the Auckland region rock climbing community"



Ti Point walkway - highly valued coastal connection along this unit, with many locals using it on a regular basis. This walkway is also a known nesting habitat for Kororā/little blue penguin. Community - led groups (eg. Warkworth Forest & Bird Little Penguin Project in collaboration with the Leigh community) are actively managing this area to protect little bluepenguin and their nests. Community commentary has also highlighted the vulnerability of this walkway to coastal hazards



Unit 1: Torkington Bay to Ti Point

This unit includes approximately 4 km of coastline, extending south from Mathesons Bay Reserve around Ti Point including the southern shoreline of the headland, which is predominantly a rocky shoreline backed by vegetated coastal cliffs.

Established low density and lifestyle residential development is present at Ti Point. Public access from land to the foreshore along this unit's coastline is generally limited and on the open east coast small areas of disconnected esplanade reserve are located alongside isolated parcels of Crown land. Auckland Council Parks' Team maintains this land, although it is identified as a road reserve.

What is happening? Coastal context and hazardscape

While there is some sheltering from Cape Rodney, Hauturu (Little Barrier Island) and Aotea (Great Barrier Island), the Ti Point coastline is periodically exposed to moderate to high wave energies from the northeast to southeast angles. A long, sandy pocket beach is present between rocky headlands.

This sandy pocket beach of Torkington Bay along Ti Point is dynamic in response to coastal processes, going through cycles of erosion and accretion. Intertidal rock shelves along this beach help dissipate wave energies arriving at the beach. The remainder of the rocky coastline is less dynamic in terms of sediment transport and movement.

Coastal erosion is projected to have a significant impact on Torkington Bay in the northeastern portion of this area. Currently, there are no existing coastal protection structures, e.g. seawalls, for erosion management within this unit.



The impacts of inundation are less severe due to the high cliffs that surround the coastline in this area. The NZSearise project estimates the vertical land movement in the area at 1.6 mm per year (NZ SeaRise, 2024) which contributes to the relatively low severity of sea-level rise for this unit (Auckland Council, 2024c).



Unit 1 is located within the southern portion of the Matheson Bay catchment, and the eastern portion of Ti Point catchment. Areas of catchment flooding are sparse due to the small number of tributaries located in this unit. Flood plains can be observed south of Ti Point Road, crossing the Ti Point Coastal Walkway to drain into the coastline, and in small branches crossing the reserve west of Leigh Road.



Figure 1-1: Coastal hazardscape for the Torkington Bay to Ti Point 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.

At the unit level, the predominant groupings with more than low risk ratings are environmental, culture and heritage. This is reflected in the coastal erosion susceptibility results where risk is moderate to environmental (e.g. ecological area at Torkington Bay), culture and heritage assets on the coastal edge. Risk to culture and heritage assets from coastal inundation is high but low for environmental assets.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (0.8 ha) Buildings, wharves (0 No.)			Park amenity structures, carparks, accessways, buildings (0 ha)			AT roads (1.5 km) Bridges (0 m ²)			Water pipes (0.1 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Low	Low	Low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low
Coastal inundation											
Low	Low	Low	Very low	Very low	Very low	Very low	Very low	Very low	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.



- Auckland Council assets in this unit are limited to three reserves with no developed assets (Matheson Bay Reserve, 227 Leigh Road, Ti Point Road Esplanade).



- Key walking track:** Ti Point Coast Walkway extends along Ti Point Road Reserve and Ti Point Marginal Strip.

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.



- There is one identified cultural feature within this unit located on Stretch 1.1: Te Kohuroa Matheson Bay, Leigh (AUP:OP Schedule ID 101): Kāinga, wāhi tapu and pakanga.
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in the report.



- The Torkington Bay to Ti Point Unit contains largely private land. It includes a popular walking track along the southern coast of Ti Point with a well-established climbing rock at the end of this walk. Climbing at Ti Point first started in the early 70s. Since then, the crag has remained a favourite day trip for Tāmaki Makaurau and Whangārei-based climbers due to the proximity to these urban centres, the picturesque setting of the crag, and the concentration of quality rock climbing.
- No historic heritage features have been identified within this unit.
- Torkington Bay and Te Kohuroa/Mathesons Bay are small, secluded beaches that are only accessible through private land or the Ti Point Walkway. These beaches are sheltered due to the surrounding reef making them popular locations for dive training.



- Ti Point is recognised as a Significant Ecological Area Marine 1, valued for the scattered pōhutukawa forests around the cliffs and broadleaved taraire forests on the headland area. Ti Point is a buffer to Whangateau Harbour.
- The reefs offer habitat for the threatened reef heron.
- The rocky coastline from Ti Point north to Mathesons Bay includes breeding habitat for kororā / little blue penguin, with known nesting habitat along the Ti Point Walkway. Auckland Council and community-led groups are actively managing this area to protect little penguin and their nests.

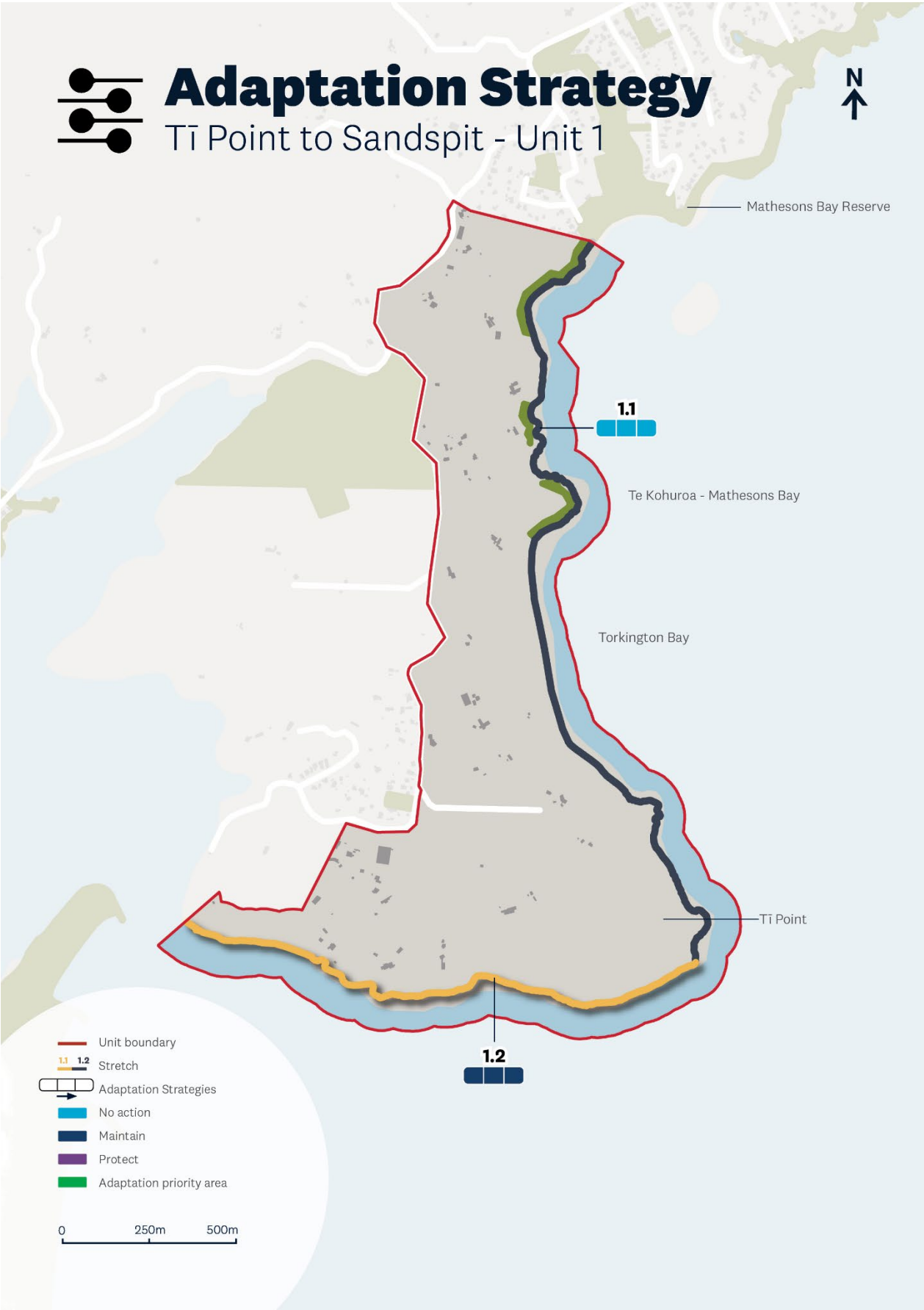
Community feedback



Who have we heard from?

- For the Unit 1 area, key uses and activities include walking or running along coastal walkways, passive water-based activities such as swimming and coastal fishing. Some submitters visited the area for active recreation, with one noting this unit is one of only two places within the Auckland region where outdoor rock climbing is permitted.
- Sea-level rise was identified as the hazard of greatest concern by those who provided feedback.
- Concerns regarding development near the coast were raised by several respondents.
- Concerns regarding access to the coast, and maintenance of existing coastal walkways were also raised by submitters.
- Community submitters sought a more collaborative approach to managing coastal risks, emphasising the need for community involvement and practical solutions.

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



1.1: Te Kohuroa South

This stretch commences at the southern end of Te Kohuroa Bay and continues south to the rocky headland of Ti Point.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
No action reflects the limited Auckland Council land and assets located within this open east coastal stretch.		
Implementation Notes		
• Cultural: Te Kohuroa, an area of significance to mana whenua, is located in this stretch. Engagement with mana whenua is required to further understand the cultural values associated with this site and the impacts of coastal hazards over time.		

1.2: Ti Point Walkway

This stretch commences at Ti Point Pā and extends east towards the entrance to Whangateau Harbour and culminates on the northern shoreline opposite Ōmaha spit.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
Maintain over all timeframes reflects the erosion risk to walking access track, and how highly valued the track is to the community while recognising the coastal character of the area and its identified ecological and cultural values. Parts of the walkway are within the predicted extent of coastal inundation flooding in the moderate to high change scenario, and in the long term may require further management of walking access to ensure safety. No coastal protection structures are envisaged; risk should primarily be managed through design and management of accessways.		
Implementation Notes		
• Ecology: The Ti Point Walkway is a known nesting habitat for kororā / little penguin. Community-led groups are actively managing this area. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed. • Management: As Ti Point Walkway is located along a road reserve, discussions with Auckland Transport will be required on implementation of adaptation strategies.		



Unit 2

Ti Point to Sandspit



Whangateau Reserve, Holiday Park & Hall and Whangateau Domain

The Whangateau Domain and its associated facilities are deeply valued by the local community, with strong support for their protection and upkeep. Community feedback has emphasised the areas vulnerability to coastal hazards, with flooding and ongoing erosion identified as persistent challenges. Concern for low lying road connections providing key access routes along this unit has also been noted by communities. Whangateau Hall near to the domain is also highly valued by the local community



Locals value this part of the coast as a place to walk and enjoy being close to nature, especially with native birds often seen roosting in the area. Advocacy for building a pedestrian bridge over the Inlet and a raised board walk through the mangrove, connecting Whangateau to the wharf



Community submissions (i.e. from the Point Wells Community and Ratepayers Association) strongly advocate for the council to assess and improve the existing network of roadside ditches and pipes designed to drain excess water during storm events



Whangateau estuary is highly valued for wildlife, providing rich feeding grounds for many migratory and endemic shore birds. Whangateau Harbour Care Group and the local community highlighted the importance of protecting ecosystems around Horseshoe Island and the channel and sandstone reefs towards Point Wells, advocating for a no take marine reserve



- Unit boundary
- 2.1 2.2 Stretch
- Informal recreation park*
- Auckland Council owned land

0 500m 1km

People in the Point Wells area have been strong advocates for protecting and looking after the coastal features they really value - from boat ramps to the open green spaces that many use for walking and recreation along the Point Wells Foreshore Reserve. Coastal hazards are a known issue here, affecting how these spaces and assets are used. There's strong community interest in maintaining and improving the existing coastal protection structures to keep these areas accessible and safe. Plans are currently underway for the future management of the Point Wells Reserve network, this is reflected in the pop out displayed connecting Whangateau to the wharf

Unit 2: Whangateau Harbour (Point Wells)

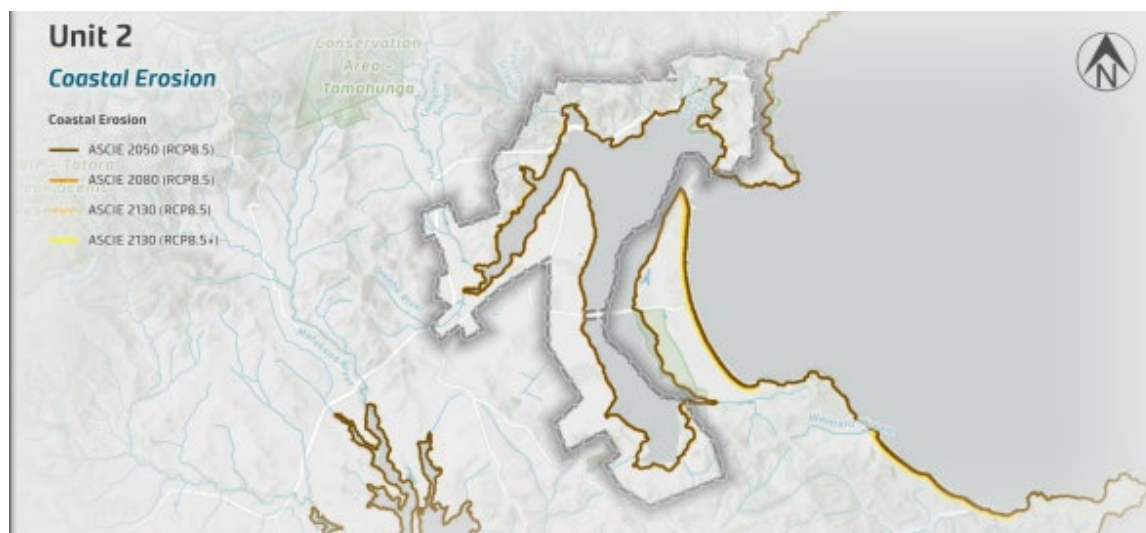
This unit covers approximately 20 km of indented shoreline around Whangateau Harbour, excluding the inner coastline of Ōmaha Spit, and the estuarine Ōmaha River which connects to Whangateau Harbour. The unit contains two distinct communities, Whangateau and Point Wells, as well as a small cluster of houses near Ti Point located on the northeastern end of the unit. This settlement contains a small community centre with residential houses. Whangateau is in the northwestern portion of this SAP area, with Ti Point located to the east of the settlement.

What is happening? Coastal context and hazardscape

This is an estuarine coastline, with relatively short, inner-harbour fetch distances, exposed to low, short period, depth-restricted wind-waves. There are several inlets branching from the main Whangateau Harbour basin including the wide southern inlet (Waikokopua Creek) that extends along the lee shore of the Ōmaha spit; Ōmaha River that branches to the west and southwest; and smaller inlets on the northern shoreline (Opango Creek/ Coxshead Creek). Established mangroves and saltmarsh fringing the harbour and tidal inlets are indicative of this low energy environment.

Through extreme events, storm surge from the open coast can elevate water levels within the harbour. During these elevated water levels and strong winds, localised short period, wind-waves can transport sediment within Whangateau Harbour as evidenced by its mobile sand bars. Stronger tidally-induced currents, particularly within the all-tide channels, can entrain and transport bed sediments.

Coastal erosion is an ongoing management issue for the Whangateau Domain Reserve area. Coastal hazard risk and impacts are also identified in the local park's plan in relation to shore/sea bird habitat on Horseshoe Island. Established mangroves in Whangateau Harbour provide a buffer to the adjacent coastline from wave energies generated within the inlet, however considerable areas have been removed. There is evidence of very slow rates of erosion occurring along this estuarine coastline around Point Wells. However, this has typically occurred where mangroves or coastal edge saltmarsh habitat has been removed.



There are multiple existing coastal protection structures along this section of coastline. Several seawalls are present along the Whangateau Estuary coastline of various designs, including stabilised sediment, rock rip rap, rock masonry, and concrete seawalls. Alongside Auckland Council-owned coastal structures, there are several privately-owned structures. Some of these are located within parcels of Auckland Council land and encroach onto the esplanade reserve.

Some of the key features of this coastline are depicted below.

The small pocket beaches adjacent the Whangateau Domain Recreation Reserve are periodically topped up with imported sand under an existing resource consent.



Rock revetment seawall adjacent the campground at Whangateau.



Several seawalls are present along the Whangateau Estuary coastline comprising various designs, including stabilised sediment, rock rip-rap, rock masonry, and concrete seawalls.



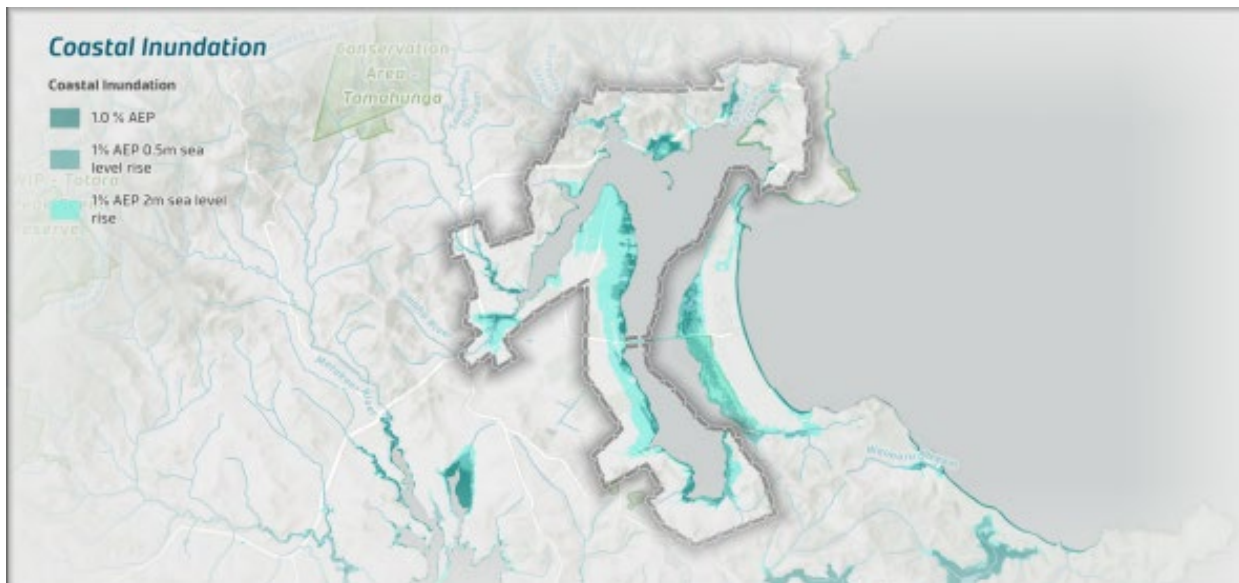
Recently renewed rock masonry seawall adjacent to Big Ōmaha Wharf Road toilet block.



Coastal inundation is predicted to have the greatest impact on the harbour environments of this SAP area, particularly in Point Wells and Whangateau (Unit 2) and the back of Ōmaha (Unit 3) bordering Whangateau Harbour. During extreme events, storm surge from the open coast can elevate water levels within the harbour.

The land adjacent this coastline is low-lying in places and already impacted by coastal inundation during extreme events which will be exacerbated by future sea-level rise. This includes impacts on transport infrastructure (i.e. Leigh Road), and existing residential development at Point Wells (Figure 3) and Whangateau with these areas significantly impacted by coastal inundation with sea-level rise.

The Holiday Park at Whangateau is exposed to coastal inundation and the campground managers have already needed to manage the sites available for use when coastal inundation via king tides and storm surge have been an issue. This is anticipated to become an increasing issue for future management of the grounds and associated infrastructure (water and wastewater) within the wider Whangateau Domain.



Unit 2 is situated on three stormwater catchments: the northern part of the Unit 2 is located on the lower east margins of Whangateau; the centre of the unit captures eastern portions of the Point Wells catchment, and the southern part of unit captures the whole of Ōmaha West catchment.

In the northern part of Unit 2, flood plains can be seen on low-lying plains next to Birdsall Stream and Coxhead's Creek. Further floods plains can be seen travelling down the coastline, on land situated next to Ōmaha River in Whangateau Harbour and Waikōkopu Creek in Ōmaha Bay.

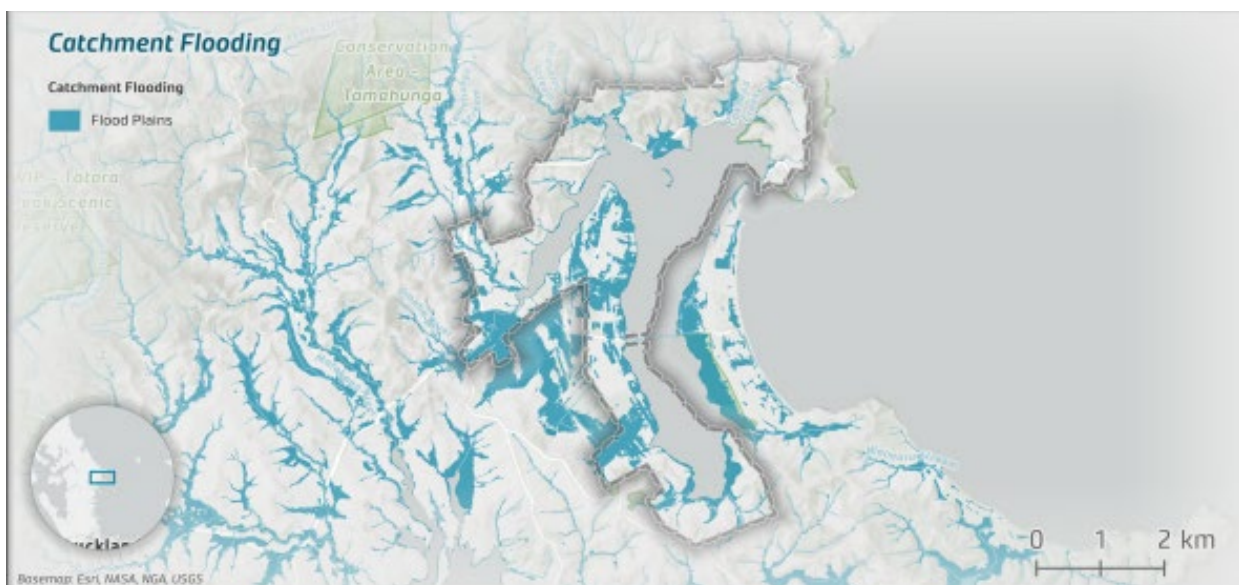


Figure 2-1: Coastal hazardscape for Whangateau Harbour (Point Wells) reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification 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 the low, moderate and high climate scenarios.

At the unit level, coastal inundation risk is generally higher than coastal erosion susceptibility. Coastal inundation risk is very high to Auckland Council community facilities. Risk to Auckland Council-owned land (i.e. Whangateau Reserve) and transport infrastructure (i.e. Leigh Road) is moderate in the short term, increasing to high in the medium term. In comparison, the risk to water infrastructure and environment which is low in the short term, and increases to moderate in the medium term. In the long term, the water infrastructure grouping increases to high risk (e.g. residential network at Point Wells and Whangateau).

Risk from coastal erosion susceptibility is high for Auckland Council community facilities (i.e. Whangateau Holiday Park), transport infrastructure (i.e. Leigh Road) and moderate for Auckland Council-owned land and environmental. Of interest is the culture and heritage grouping which is at high risk from coastal erosion susceptibility and coastal inundation from the short term (e.g. Big Ōmaha Wharf and historic structures on the coastal edge of Whangateau and Ti Point). There are two indicative closed landfills identified at the corner of Ashton Road and Leigh Road as well as the corner of Leigh Road and Ti Point Road.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (59.0 ha) Buildings, wharves (58 No.)			Park amenity structures, carparks, accessways, buildings (0.9 ha)			AT roads (23.2 km) Bridges (472.1 m ²)			Water pipes (25.2 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	High	High	High	High	High	High	Low	Low	Moderate
Coastal inundation											
Moderate	High	High	Very high	Very high	Very high	Moderate	High	High	Low	Moderate	High
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.



- Unit 2 contains the largest quantity of Auckland Council assets within the Ti Point to Sandspit SAP area, with 21 reserves and 33 buildings. Most of these assets are concentrated in Whangateau Domain.



- **Community buildings:** Whangateau Community Hall, Point Wells Community Centre.
- Point Wells Reserve: carpark, toilet, playground, ramp; playgrounds and carpark.
- Whangateau Holiday Park (cabins, amenity blocks).



- **Auckland Council-owned closed landfills:** Whangateau Closed Landfill; Ashton Road Closed Landfill.



- **Pump Sheds / Pump Stations:** HP Pump Shed.



- **Key walking tracks:** Ōmaha Flats Road for connecting to Matakana, Matakana Cycle Trail.
- **Local roading:** Northern inlets of Whangateau Harbour, roading connections provide access to northern areas of Leigh and Mathesons Bay.



- **Harbour access:** Point Wells boat ramp. Smaller boat ramps include Ti Point, Leigh Road, Big Ōmaha, Whangateau, Point Wells Harbour View.
- Wharves and jetties: Point Wells wharf, Big Ōmaha Wharf.

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.



- There are two identified cultural features within this unit : Ra Iti – Pā Hill (CHI Heritage ID 19245): Māori Heritage Area (Stretch 2.7), Māori Camp (CHI Heritage ID 19352) (Stretch 2.8)
- There is one pā within Unit 2 that has been identified as a ‘Category B’ Heritage site in the AUP:OP (Auckland Council, 2016b).
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes informing the development of adaptation strategies have been identified earlier in the report.



- The unit contains two distinct communities; Whangateau and Point Wells as well as a small cluster of houses near Ti Point located on the northeastern end of the unit. This settlement contains a small community centre with residential houses.
- Whangateau is in the northwestern portion of this SAP area. Whangateau Holiday Park is a popular destination in the area.
- Point Wells is a larger community located to the south of the Whangateau settlement, surrounded by the Whangateau Harbour. It contains most of the unit’s social infrastructure including the Matakana Fire Station, Point Wells Hall, Point Wells Club and multiple businesses. The area is subject to development pressure and subdivision. As a means of demonstrating hazard mitigation, extensive earthworks to raise ground levels above the future coastal inundation extreme water levels has become a common approach (subject to resource consent approval on a case-by-case basis) (Auckland Council, 2024c).
- Matakana (outside this unit) serves as the primary hub for social and commercial uses from residents living in this unit. The area is connected to Matakana through Ōmaha Flats Road.
- David McKay Darroch’s shipyard site R09_705 is a ‘Category A’ heritage feature that is in Unit 2.

- There are 3 ‘Category B’ heritage features identified in the AUP:OP within this unit (Auckland Council, 2016b): St Andrew’s Presbyterian Church (former); Big Ōmaha Wharf, including shed; Whangateau.
- Rodney Local Board, Greenways Paths and Trails Plan – Puhoi to Pākiri May 2017 identifies aspirations for walking connections in this unit.



- The Whangateau Harbour estuarine environment contains a diverse range of ecosystems, including sandflats, saltmarsh, seagrass meadows, and mangrove forests. It is a Significant Ecological Area M2 (SEA_M2_83a), recognised because the estuary, tidal river and intertidal flats are of moderate high wildlife value. It is an important east coast harbour characterised by a sequence of depositional sands including a large unconsolidated Holocene barrier sand spit which provide several different habitats for a variety of animal and plant communities.
- The intertidal sand banks are a rich feeding ground for many international migratory and New Zealand endemic wading birds including Caspian tern, white faced heron, bar tailed godwit, New Zealand dotterel, South Island pied oystercatcher, variable oystercatcher, little egret, reef heron, pied stilt, banded dotterel and vagrant international migrants. The harbour is an important stepping stone in migratory species journeys. The waters of the harbour are a feeding ground for a variety of coastal birds.
- The Ōmaha River and northern stream estuaries have high ecological values, reflected in the SEA_M1 status, with these areas containing older stands of mangroves and saltmarsh which will provide habitat for banded rail. This estuarine vegetation is contiguous with coastal forest in several places.
- South of the causeway there are important areas of mangroves and saltmarsh, much of it judged to be amongst the best in the ecological district (SEA_M1_83c). There is an important gradation from this significant saline vegetation into a large and rare area of coastal kahikatea swamp forest beyond the coastal marine area. The saline vegetation both here and in other parts of the harbour provides high quality habitat for threatened secretive coastal fringe birds, such as banded rail and fern bird, particularly in saltmarshes where there is terrestrial vegetation which provides roosts for the birds and potential nesting sites.

Additional regionally important and/or vulnerable ecological features within this unit include:

- Coastal broadleaved forest within Whangateau Reserve and Leigh Road Reserve.
- Kauri forest which borders the upper reaches of the Ōmaha River.
- Important ecological sequences from mangrove forest to saltmarsh to wetland ecosystems to coastal forest. Wetland ecosystems include mānuka, tangle fern, scrub, fernland and raupō reedland.

Community feedback



Who have we heard from?

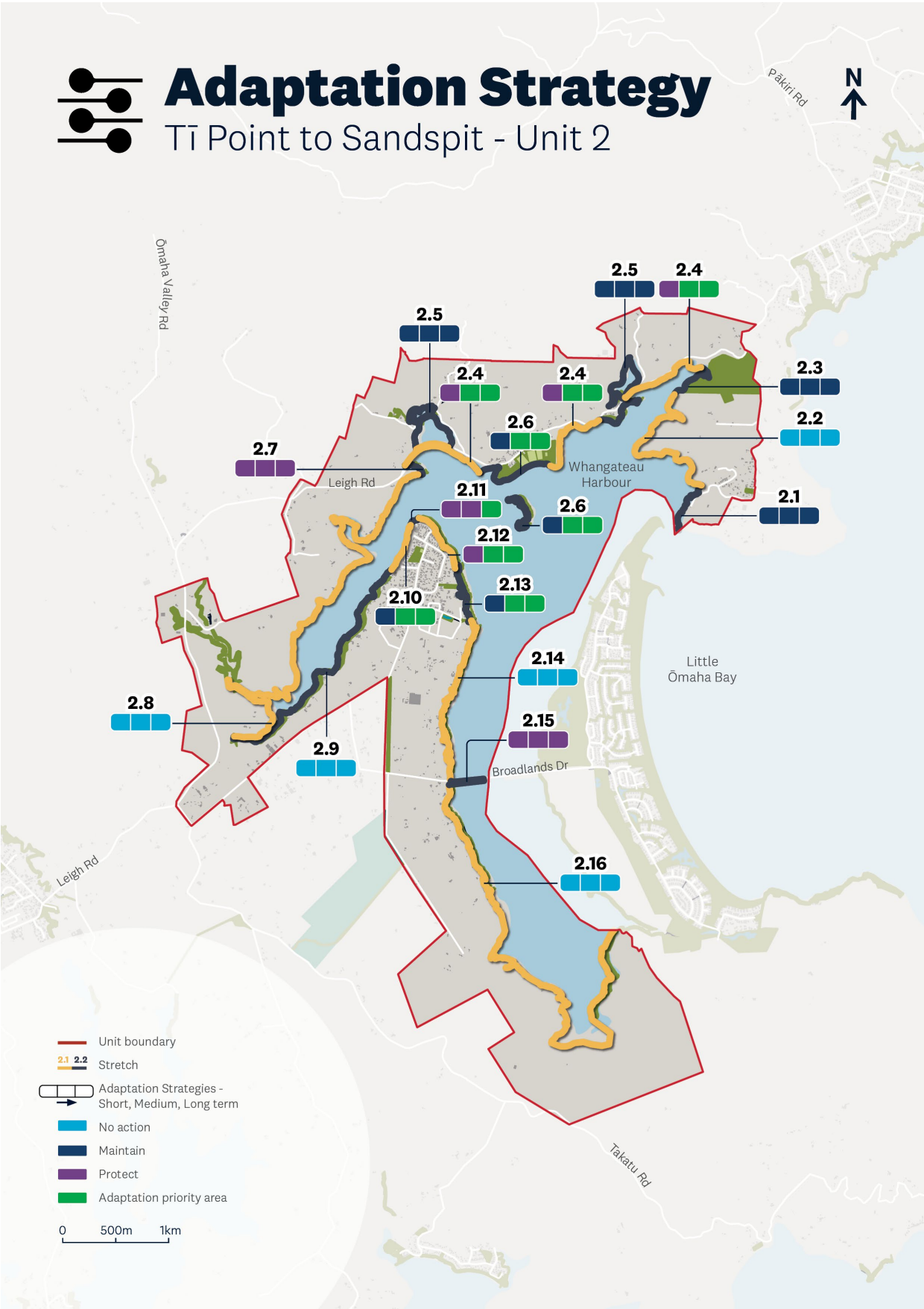
Feedback was received via Social Pinpoint, Community Submissions and 'AK Have Your Say' survey. Events local to this area include the Point Wells Residents and Ratepayers' Meeting, with neighbouring events taking place in Leigh, Matakana, Orewa and Warkworth. A high amount of feedback was received for this unit, with community submissions including the Whangateau HarbourCare Group, the Planning Collective, and the Point Wells Community and Ratepayers' Association. Key themes in community submissions included but were not limited to:

- Commentary on the importance of the Point Wells Foreshore Reserve.
- Point Wells Community Centre and Recreational Reserve and advocacy to support networks of walking tracks.
- The Ōmaha River Point Wells Reserve and advocacy to support and acknowledge networks of walking tracks.
- The walking tracks in Waimanu Reserve and the Point Wells drainage systems.
- The importance of Whangateau Harbour (biodiversity values) and maintaining natural coastline to support roosting shorebirds, noting that there was a strong theme around nature-based solutions.

Outside of community submissions, key uses and activities included walking or running along the coast, boating and water-based activities such as swimming and kayaking. Whangateau Holiday Park is a popular location for passive recreation.

- Some respondents also visited the unit for nature watching, noting that the area has 'incredible wildlife' in the area.
- Coastal erosion was identified as the hazard of greatest concern by those who provided feedback, with most respondents observing the impacts of coastal erosion in different areas of this unit such as Whangateau Estuary. Most respondents desired further protection from coastal erosion was required.
- Additional concerns regarding coastal accretion was also raised, with most respondents observing increased sedimentation of Whangateau Harbour over time. Changes in water quality were also noted by respondents.
- Feedback identified the importance of maintaining access to the coast. Concerns were identified about the need for more infrastructure (i.e. more boat ramps) to ensure that these connections remain resilient.

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



2.1: Ti Point Access

This stretch covers a 500 m length of coastline commencing at the harbour entrance (unit boundary) culminating in the northwest where Ti Point Road turns inland (east) from the coast.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation This stretch includes the start of the Ti Point Coastal Walkway, a small carpark and a popular boat launching wharf and dinghy ramp. There is also existing armouring (precast concrete block retaining wall) providing protection to the Ti Point Road close to the wharf, that is affected by coastal erosion in the low change scenario. This stretch includes roading and boat launching facilities with maintain reflecting the continued management of these valued harbour access and roading connections.		
Implementation Notes Ecology: Ti Point Walkway is a known nesting habitat for kororā / little penguin. Auckland Council and community-led groups are actively managing this area to protect little penguin and their nests and shall be engaged with on any adaptation strategies for the area. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. Management: Ti Point Road is exposed to coastal erosion from the short term, noting that there is an existing retaining wall. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options.		

2.2: Ti Point West

This stretch commences in the south where Ti Point Road turns inland (east) from the coast and extends north, ending south of Whangateau Tip Landfill Reserve.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action reflects the absence of Auckland Council-owned land and assets.		
Implementation Notes No action does not preclude advocacy for actions to support ecological outcomes.		

2.3: Whangateau Tip Landfill

This stretch covers the shoreline of the Whangateau Tip Landfill Reserve. This reserve is currently managed by Eke Panuku with a portion of the land leased to Manuhiri Kaitiaki Charitable Trust.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
Maintain is recommended acknowledging the location of the Whangateau closed landfill at this discrete location.		
Implementation Notes		
• Closed landfill: This stretch includes Whangateau closed landfill which is to be managed under the Closed Landfill Asset Management Plan. • Management: Implementation of management options for Whangateau Tip Landfill Reserve will require engagement with Eke Panuku and Manuhiri Kaitiaki Charitable.		

2.4: Whangateau Leigh roading connection

As indicated in the summary adaptation strategy map, this stretch focusses on key sections of Leigh Road. Other key coastal areas are noted to intersperse the road (e.g. Whangateau Domain) and are addressed as separate stretches as detailed overleaf.

This stretch commences in the east at the start of the reserve landholding including the coast (Coxhead Creek inlet) west and south, culminating at Big Ōmaha Wharf Road.

Scenarios for change		
Low	Moderate	High
Protect 	Adaptation priority 	Adaptation priority 
Explanation		
Maintain in the low change scenario confirms maintenance of important roading connections providing north/south access for communities of Mathesons Bay and Leigh immediately to the north. Adaptation priority in the moderate to high change signals the need to consider how risk is managed to landholdings and Auckland Council assets given the identified ecological, social (historic heritage) and cultural values and the increasing coastal hazard risks. Note: This stretch includes a roading connection and reserve areas. Areas of private land, including Whangateau Cemetery, are not subject to the strategies in the SAP.		
Implementation Notes		
• Management: Maintain in the short to medium term 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.		

2.5: Opango, Cox Creek and Youngs Creek

This stretch straddles Leigh Road and considers the inlet/estuary areas of Opanga Creek Reserve and Coxhead Creek to the northeast, and Youngs Creek to the west, including Ashton Road and Ashton Road Closed Landfill.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain over all change scenarios provides for the continued management of risk to arterial and other roading assets which traverse this stretch, i.e. Ashton Road and Coxhead Creek Road. Management through design and location of uses and assets is preferred, noting the presence of historic heritage sites within this stretch.		
Implementation Notes • Management: Ashton Road Closed Landfill is located within this stretch. 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. • Heritage/Social: The stretch contains Darroch Shipyard Bridge Reserve which holds heritage value. Engagement with Auckland Council Parks and/or Heritage Team should occur to understand how implementation of adaptation strategies may need to be managed with heritage protection in mind.		

2.6: Whangateau Domain and Holiday Park

This stretch encompasses Whangateau Domain Recreation Reserve on the northern shore of the harbour, culminating at the western side of the Leigh Road Layby/ boat ramp access. It includes Whangateau Holiday Park, reserve areas and facilities, water assets and harbour access points. This area is also traversed by Leigh Road, a key roading connection. The stretch also extends offshore to encompass Horseshoe Island.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Maintain in the low change scenario confirms the continued maintenance of existing coastal protection measures and the continued need to consider how risk to uses within Auckland Council-owned land is managed, including localised realignment of uses and assets. Adaptation priority in the moderate to high change scenario is reflective of the increasing inundation risk (with inundation impacts already experienced) and the need to consider highly valued reserve areas, leases, assets and infrastructure and provides for further engagement with iwi, communities, key stakeholders and asset owners regarding how risks can be managed and values maintained.		

Implementation Notes

- **Social:** Whangateau Domain is a highly valued community asset. Any adaptation planning will need to consider the reserve areas, leases, assets and infrastructure and continue further engagement with iwi, communities, key stakeholders and asset owners regarding how risks can be managed and values maintained.
- **Management:** Maintain in the short term does not preclude asset-specific measures to confirm continued safe roading connections (particularly with regards to Leigh Road). Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options.
- **Ecology:** Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values of Horseshoe Island.

2.7: Big Ōmaha Wharf

This stretch commences at the northern side of the wharf access road and reserve, including the wharf and associated access from Leigh Road, culminating to the south of the wharf structures in the west.

Scenarios for change					
Low		Moderate		High	
Protect		Protect		Protect	
Explanation					
The stretch contains a boat ramp, a wharf/shelter and a toilet block. Protect is identified reflective of the historic heritage value, important harbour access location and existing coastal protection structures (recently renewed). Response to inundation risks and management of historic heritage values may require further design consideration in the long term. It is noted that assets such as the toilet block are able to be moved away from the coastline.					
Implementation Notes					
• Heritage: The stretch contains Parapara Pā and Big Ōmaha Wharf which hold heritage value. Engagement with Heritage New Zealand may be required for any specific actions undertaken in this area. • Cultural: Parapara Pā is located within this stretch and is exposed to coastal erosion from the short term. Engagement with mana whenua to further understand the cultural values associated with the pā site and the impacts of coastal hazards over time.					

2.8: Ōmaha River Inlet West

This stretch commences southwest of Big Ōmaha Wharf and extends along the western shoreline of the narrow mangrove infilled inlet to the upper reaches, culminating in Ōmaha River Point Wells reserve. This stretch is largely privately-owned rural areas or unmaintained esplanade reserve.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation There are limited Auckland Council-owned land and assets located within this stretch. No action does not preclude support for ecological outcomes or the management of risk to cultural and historic heritage values and sites.		
Implementation Notes • Ecology: Coastal broadleaved forest and kauri forest are located within this stretch.		

2.9: Point Wells West

This stretch commences on the southern side of Ōmaha River inlet, including the western side of Point Wells Peninsula, extending north to where Riverside Road meets the coast.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation Ōmaha River Point Wells Reserve is currently an unmaintained esplanade reserve that extends along the shoreline of this stretch. There is no public access along the reserve and there are no Auckland Council-owned assets developed in this stretch. No action is identified to be reflective of the current uses and assets, supporting a natural coastal edge in this location.		
Implementation Notes • Social: Aspirations for further public access and walkway connections are identified in the Rodney Greenways Plan. • Cultural: A Māori camp is located in this stretch and is an area of cultural significance. Engagement with mana whenua to further understand the cultural values associated with the pā site and the impacts of coastal hazards over time.		

2.10: Riverside Drive

This stretch of shoreline commences where Riverside Drive meets the coastal edge and extends north to the intersection with Dunbar Road. The Point Wells Community Centre reserve land is located east of Riverside Drive and is a focal point for the community with sports fields, tennis/basketball courts, croquet club, playgrounds and a community centre building. While the community centre is adequately set back from the coastal erosion hazard, it is within the predicted extent of coastal inundation flooding in the high change scenario along with a significant portion of the entire northeastern peninsula area.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Maintain in the low change scenario provides for the management of risk to Council land (road reserve) through design and location of assets. Adaptation priority is identified in the moderate and high change scenarios to signal the need for further consideration and engagement regarding how increasing coastal hazard risk and identified values can be managed within this stretch.		
Implementation Notes • Management: Maintain does not preclude asset-specific measures that may need to be identified to confirm continued safe roading connections along Riverside Drive. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options.		

2.11: Point Wells Wharf

This short stretch commences at the Dunbar Road intersection with Riverside Drive on the western side of the peninsula and extends from the wharf to the northern reserve area including the boat ramp and associated facilities (parking and toilet amenities).

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Adaptation Priority 
Explanation Point Wells Foreshore Reserve is highly utilised and valued by the community. Protect is identified in response to coastal erosion. This provides for the maintenance of highly valued coastal access connections and reserve uses. Nature-based and soft engineering solutions are preferred to manage coastal hazard risk. Inundation risks in the moderate and high change scenarios will present the need for further adaptation planning which will need to respond to the identified values and priorities for this low-lying coastal area.		

Implementation Notes

- **Management:** Dunbar Road is exposed to coastal inundation from the long term. This strategy does not preclude localised interventions as required for roading connections. Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of these assets.

2.12: Point Wells Coastal Reserves North

This stretch extends around the northeastern shoreline of Point Wells Peninsula, along approximately 620 m of Point Wells Foreshore Reserve, where there are large sections of coastal protection and coastal access points/ boat ramps.

Scenarios for change					
Low		Moderate		High	
Protect		Adaptation Priority		Adaptation Priority	
Explanation					
At Point Wells Foreshore Reserve, a coastal renewals project is currently in development to assess the condition of the existing coastal protection structures and to rationalise the number of coastal access points and boat launching facilities available, reflected by protect in the low change scenario. Noting all reserve land in this stretch is exposed to coastal inundation flooding from the low change scenario, adaptation priority signals the need for further discussion regarding the approach to maintain values and manage risk to uses.					
Implementation Notes					
• Management: Harbourview Road is exposed to coastal inundation from the moderate change scenario. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Social: Engagement with the Point Wells community is recommended to understand future implementation actions.					

2.13: Point Wells East

This stretch covers the eastern shoreline of the peninsula along the portion of Point Wells Foreshore Reserve that has a more natural unmodified edge (approximately adjacent to 70 Harbour View Road) and is fringed with saltmarsh, culminating at Sandpiper Avenue stormwater reserve to the south.

Scenarios for change					
Low		Moderate		High	
Maintain		Adaptation Priority		Adaptation Priority	
Explanation					
Maintain reflects the need to manage risk to assets, recognising the coastal edge is not fixed and that access is limited with a short length of boardwalk through saltmarsh in proximity to Waimanu Reserve access. Maintain relates to the management of stormwater devices and coastal access points provided from Sand Piper Avenue. All reserves in this stretch are exposed to coastal inundation flooding from the low change scenario. Adaptation priority is identified in the moderate to high change scenario to signal the need to consider how risk to landholdings is managed, coastal access along reserves and roading connections is maintained with increasing coastal inundation risk, and ecological and cultural values supported.					
Implementation Notes					
• Ecology: Ecological features (shell banks and bird habitats) are located within this stretch. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. • Policy: The Rodney Local Board, Greenways Paths and Trails Plan – Puhoi to Pākiri May 2017 identifies aspirations for access located within this stretch. • Management: Dotterel Lane and Sandpiper Avenue are exposed to coastal inundation from the moderate change scenario. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options.					

2.14: Point Wells South

This stretch commences at the Sand Piper Avenue stormwater reserve access to the coast and includes the shoreline south culminating on the northern side of the causeway. Point Wells Foreshore Reserve is a narrow, undeveloped reserve along this shoreline fringed with saltmarsh.

Scenarios for change					
Low		Moderate		High	
No action		No action		No action	
Explanation					
A no action approach for the management of risk to Auckland Council assets is identified reflective of the current uses and assets, supporting a natural coastal edge and high coastal ecology and amenity values in this location.					

Implementation Notes

- **Ecology:** Ecological features (shell banks and bird habitats) are located within this stretch. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values.
- **Social:** Aspirations for further public access and walkway connections is identified in the Rodney Greenways Plan and private coastal defences are located within this stretch. Engagement with Rodney Local Board will need to occur to understand any future changes in adaptation strategies should this be realised.

2.15: Ōmaha Causeway

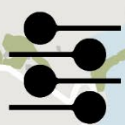
This stretch is the Broadlands Drive Causeway. Noting the linkage to Ōmaha, the strategies are also reinforced in Stretch 3.3 of the next unit.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation A rock seawall extends along the length of Broadlands Drive Causeway. Protect recognises that the causeway roading connection is a critical arterial road link providing access to the spit area and it also conveys the wastewater connections servicing the Ōmaha residential development within the spit.		
Implementation Notes • Management: The main asset in this stretch is Broadlands Drive Causeway managed by Auckland Transport.		

2.16: Waikopua Creek

This stretch commences at the northern boundary of the scenic reserves culminating in the southern side of the inlet.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of limited Auckland Council land and assets. No active intervention does not preclude the advocacy for management of risk to ecological values or proactive measures to support ecological outcomes.		
Implementation Notes • Ecology: Ecological features (the Ōmaha Sequence BFA) are located within this stretch. • Management: Aspirations for further public access and walkway connections to form the Ōmaha Wetlands Walk have been identified. Engagement with Rodney Local Board will need to occur to understand any future changes in adaptation strategies should this be realised.		



Unit 3

Ti Point to Sandspit



Ōmaha sandspit and the wider coastal landscape is of high cultural significance to local iwi, historically used for gathering kai moana and other related activities. Numerous sites (including pā) have been identified along this stretch of coast, with pouwhenua along the coast marking the places of historic settlements and battlefields. These pouwhenua have been gifted by Ngāti Manuhiri to act as kaitiaki



Ōmaha spit is important for a range of native shorebirds, which feed on the estuary at low tide. Community groups (e.g. Ōmaha Shorebird Protection Trust and the Ōmaha Beach Community Association) are active in protecting shorebird nesting sites along this area of coast



Community submissions highlighted an awareness for the diversity and dynamic nature of Ōmaha Beach and spit, with a strong advocacy for maintaining existing coastal protection structures and infrastructure, whilst supporting community led initiatives to proactively manage this dynamic beach environment for residents and visitors alike

Highly valued walking tracks/ networks span the coastal edge of Ōmaha, with community aspirations for extending the walkways around Ōmaha beach along the south east of the coast

Causeway valued for connectivity between Ōmaha and Point Wells communities



Aspirations for extending the walkways around Ōmaha beach along the coast



Ōmaha Beach is a compact area with a high population density and a wide range of coastal amenities. Council-owned facilities in the area include an extensive coastal walkway network, esplanade reserves, a harbourside golf course, a community centre, tennis courts, a boat ramp, and a designated shorebird reserve. The area also features numerous parks, reserves, and playgrounds. Ōmaha Surf Lifesaving operates from Ōmaha Beach, a highly valued lifeline facility

—

 Unit boundary

—

 Walking Tracks

3.1 3.2

 Stretch

—

 Informal recreation park

—

 Auckland Council owned land

0 500m 1km

Unit 3: Ōmaha

This unit commences within Whangateau Harbour Inlet to the west of Ōmaha Peninsula and includes the wider Ōmaha area, stretching for approximately 9 km length of coastline. It includes both the exposed Ōmaha Ocean Beach and sheltered inner harbour side of Ōmaha barrier sandspit. On the western side of the peninsula, Broadlands Drive Causeway crosses Whangateau Harbour connecting to Ōmaha Spit and includes a bridge section towards the middle enabling tidal movements. Auckland Council reserve land extends along the seaward and inner harbour coastal edge of Ōmaha Spit. The area has been significantly developed with residential and holiday homes.

What is happening? Coastal context and hazardscape

Ōmaha Beach is a large Holocene barrier sand spit, with the northern position of the spit controlled by three large rock revetment groynes constructed in 1979. The moderately exposed dynamic ocean beach extends for approximately 4 km. While not as exposed to the same wave-energies as Te Arai and Pākiri beaches, Ōmaha Beach is exposed to significant fetch distances from the northeast to southeast angles. As a result, the beach is periodically subject to medium to high wave-energies from these angles.

Established sand dunes vegetated with native spinifex and pingao are located along the backshore in northern areas and further south. The dune buffer is wider for the southern approximately 1.7 km length of beach, with the more recent residential development to the south set back further than the original, northern development. Rope and bollard-defined pedestrian accessways, and timber boardwalks extend through the sand dunes for the length of the ocean beach.

During extreme storm events and elevated water levels, erosion of the dune toe along Ōmaha Beach can occur, following which sand levels typically recover. Regular beach profile surveys across Ōmaha Beach undertaken since 1978 (Auckland Council's most extensive beach monitoring area) show net minor accretion of the beach over this period.

The harbour environment is significantly low energy in terms of coastal processes. Within Whangateau Harbour, the Waikokopua Creek inlet branches south along the lee of Ōmaha barrier sand spit. Established mangroves are present in shallow inlets and south of the causeway.



There are multiple existing coastal management responses along this section of coastline, including rock groynes, mudcrete and gabion structures. Some of the key features are depicted below.

Planting of native dune grasses (spinifex and pingao) is periodically undertaken on the Ōmaha Beach sand dunes, including the steep inner spit coastal edge slope, immediately north of the wharf.



To the south of the wharf extending as far south as the causeway, stabilised sediment and gabion basket seawalls armour the inner harbour Ōmaha Spit coastline.



Within this unit, the areas most exposed to coastal flooding inundation include the southern lee shore of Ōmaha barrier spit and the northern tip. The Ōmaha Taniko wetlands scientific reserve on the inner harbour shoreline is exposed across all climate change scenarios. With future sea-level rise, the extent of coastal flooding inundation will increase at the southern end of Ōmaha Beach.



With respect to catchment flooding, Unit 2 captures the whole of Ōmaha East catchment in its upper portion, along with the majority of Ōmaha South catchment in its lower portion. On the seaward harbour edge of Ōmaha Spit, flood plains in a 1% AEP event can be observed in pockets of land where the level is relatively low in comparison to inland of this unit. Flood plains can also be observed on the inner harbour edge of Ōmaha Spit where land levels slope down towards the coast.



Figure 3-1: Coastal hazardscape for the Ōmaha Unit reflecting coastal erosion susceptibility for the years 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. At a unit level, coastal erosion susceptibility and coastal inundation risk is generally high for Auckland Council-owned land, transport infrastructure and environmental grouping (i.e. Ōmaha Shorebird Godwit Sanctuary and Mangatāwhiri Spit).

Coastal erosion susceptibility risk is moderate for Auckland Council community facilities, water infrastructure, culture and heritage in the short term. Risk to Auckland Council community facilities and water infrastructure increases to high risk in the long term.

Coastal inundation risk is moderate in the short term for Auckland Council community facilities, increasing to high risk in the medium term. Risk from coastal inundation to water infrastructure also increases from low to moderate risk in the medium term.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (140.2 ha) Buildings, wharves (17 No.)			Park amenity structures, car parks, accessways, buildings (0.9 ha)			AT roads (15.4 km) Bridges (1,523.6 m ²)			Water pipes (65.0 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	High	Moderate	Moderate	High
Coastal inundation											
High	High	High	Moderate	High	High	High	High	High	Low	Moderate	Moderate
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.



- Auckland Council reserve land extends along the seaward and inner harbour coastal edge of Ōmaha Spit.
- Larger coastal reserve areas include Golf Course Reserve, Ōmaha Golf Course Bush, Whangateau Harbour Esplanade Reserve, Ōmaha South Quarry Reserve, Ōmaha Reserve, Ōmaha Beach boat launching & wharf, Ōmaha Beach Reserve, William Fraser Reserve, Dune Walkway (South Ōmaha Beach), Pukemateko Reserve Ōmaha South, Rahui Te Kiri Reserve, Manuhiri Reserve.



- Ōmaha Beach boat launching & wharf reserve toilets, boat trailer parking, carparking.
- Ōmaha Reserve: Ōmaha Community Centre building and toilets, carparking.
- William Fraser Reserve: Ōmaha Surf Lifesaving Club, playground and changing rooms.
- Sports fields and community uses (ground leases): Ōmaha Golf Course, Ōmaha Bowling Club, Ōmaha Tennis Club.



- Underground and aboveground stormwater infrastructure servicing settlements within this unit, including Ōmaha Golf Course stormwater pond; Southern Ōmaha Beach stormwater ponds.
- **Wastewater infrastructure:** Magatāwhiri pump station, Anchorage pump station, boat ramp pump station, Paraoa pump station, Taumata pump station.



- Whangateau Harbour unformed walkway along the harbour esplanade reserve; Ōmaha South Quarry Track, Ōmaha Beach Dune accessways and southern dune walkway.



- **Harbour access:** Ōmaha Beach boat launch ramp & wharf.
- Smaller ramps: Whangateau Harbour Esplanade Reserve dinghy ramp (opp 187 Ōmaha Drive).

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.



- There are no cultural features within this unit identified in the Cultural Heritage Inventory, AUP:OP sites of significance to mana whenua or heritage overlays. The Rodney Local Board has noted that there are middens located throughout the Ōmaha Beach sandspit and parks network (Rodney Local Board, 2023b).
- Five pouwhenua (sculptures) are located within the Dune Walkway (Stretch 3.7). These were gifted by Ngāti Manuhiri and mark places of historic settlements and battlefields (Rodney Local Board, 2023b).
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in the report.



- Unit 3 is predominantly made up of suburban housing and large open spaces within the Ōmaha Beach community. There is a combination of both conservation, informal recreation and sport and active recreation zones within this open space (Auckland Council, 2016b). These are primarily made up of the golf course, beach access reserves and Ōmaha Taniko Wetland Reserve - an important biodiversity focus area owned by DOC.
- Key social infrastructure in the unit includes Ōmaha Surf Club, Ōmaha Beach Café and Ōmaha Beach Golf Club. The golf club contains multiple community facilities including a Civil Defence tsunami evacuation safe zone.
- Ōmaha Beach is a popular holiday destination, with the area containing a high number of holiday homes and as a result can have a high summer population. Ōmaha Beach is also well known for having great east-coast surf conditions, adding to its popularity.
- Ōmaha boat ramp is a well-used asset due to its all-weather, all-tides launching facilities.
- The Ōmaha Beach SLSC (OBSLSC) have been patrolling Ōmaha Beach since 1988 and teaching valuable water safety skills.



Unit 3 contains a variety of regionally important and/or vulnerable ecological features, including:

- Ōmaha Spit which is largely classified as spinifex, pīngao duneland and is recognised as a significant high-tide bird roost (SEA_M1-83b). The tip of the large barrier sand spit has several important natural values. It is a high-tide roost for the wading and coastal birds, a key breeding ground for the threatened New Zealand Dotterel, and a threatened plant habitat.
- Whangateau Harbour is a Significant Ecological Area M2 (SEA_M2_83a), recognised because the estuary, tidal river and intertidal flats are of moderate high wildlife value. It is an important east coast harbour characterised by a sequence of depositional sands including a large unconsolidated Holocene barrier sand spit which provides several different habitats for a variety of animal and plant communities.
- South of the Broadlands Drive Causeway there are important areas of mangroves and saltmarsh, much of it judged to be amongst the best in the ecological district (SEA_M1_83c). There is an important gradation from this significant saline vegetation into a large and rare area of coastal kahikatea swamp forest beyond the coastal marine area. The saline vegetation both here and in other parts of the harbour provides high quality habitat for threatened secretive coastal fringe birds, such as banded rail and fern bird, particularly in saltmarshes where there is terrestrial vegetation which provides roosts for the birds and potential nesting sites.

Community feedback



Who have we heard from?

- Feedback was received via Social Pinpoint, Community Submissions and 'AK Have Your Say' survey. Events local to this area include the Point Wells Residents and Ratepayers' Meeting, with neighbouring events taking place in Leigh and Matakana. A high amount of feedback was received for this unit, with community submissions from the Ōmaha Beach Community, the Planning Collective, Alistair Dryden Family Trust and other local groups/ residents in the Ōmaha area. Key themes in community submissions included but were not limited to:
 - Ōmaha Coastal Reserve and key highly valued connections and the need to consider this in planning.
 - The vulnerability of Ōmaha to coastal hazards and need to ensure consistent management approaches across the coastline covering Ōmaha, along with the need for ongoing meaningful conversations with local communities in implementation of coastal management strategies.
 - Protecting and managing highly ecologically important dunes at Ōmaha, noting the need to consider the diversity of the coastal environment at Ōmaha, from the beach itself to the harbourside on the western site of Ōmaha Spit.
- For the Unit 3 area, other key uses and activities in community feedback included walking and exercising along the coast, boating and passive recreation such as picnicking. Several respondents noted that they visit the area for the coastal walkways.
- Coastal flooding and erosion are the hazards of greatest concern identified by most respondents. Some observed changes to beaches and coastal dunes over time. Others observed a noticeable increase in coastal flooding, specifically in the Point Wells Estuary.
- Community aspirations for maintained access to the coast, protection of existing coastal infrastructure and protection of habitat.
- Submissions frequently mentioned the need for community involvement, and for cost-effective, practical solutions.

What can we do about it? Adaptation strategy summary for Unit 3.



3.1: Ōmaha South

This stretch covers the head of Waikokopua Creek inlet on the southern harbour shoreline at the base of Ōmaha Peninsula, extending along Ōmaha South Quarry Reserve.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation While there are limited coastal assets located within this stretch, maintain is identified across all scenarios specifically in relation to the southern areas where catchment flooding and coastal inundation risks increase to stormwater management areas. The strategy also reflects community feedback that valued the existing inland paths (connected through Ōmaha South Quarry Reserve) across the base of the peninsula/spit.		
Implementation Notes Ecology: Ecological features (Ōmaha Taniko Wetlands) are located within this stretch. The Ecology Team and DOC will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.		

3.2: Ōmaha Taniko Wetlands (Golf Course)

Stretch 3.2 covers the southern Waikokopua Creek shoreline along the inner harbour, commencing at the southern boundary of the golf course and extending along Whangateau Harbour Esplanade Reserve adjacent to Ōmaha Taniko Wetlands culminating at the causeway in the north.

Scenarios for change		
Low	Moderate	High
No action 	Maintain 	Maintain 
Explanation No action is identified in the low change scenario because the Ōmaha Taniko wetlands provide an adequate buffer to the golf course reserve. In the moderate to high change scenario, maintain in relation to golf course areas may require review based on the experience of inundation and the ability to maintain its functions within the landholdings with increased inundation impacts.		
Implementation Notes Ecology: Ecological features (Ōmaha Taniko Wetlands) are located within this stretch. The Ecology Team and DOC will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.		

3.3: Ōmaha Causeway

This stretch is the Broadlands Drive Causeway.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation A rock seawall extends along the length of Broadlands Drive Causeway. Protect is our preferred pathway because the causeway roading connection is a critical arterial road link providing access to the spit area and it also conveys the wastewater connections servicing the Ōmaha residential development within the spit.		
Implementation Notes Management: The main asset in this stretch is Broadlands Drive Causeway managed by Auckland Transport.		

3.4: Golf Course

This stretch extends along the shoreline between the causeway and Ōmaha Reserve, comprising the Whangateau Harbour Esplanade Reserve adjacent to the northern golf course area.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Maintain in the low change scenario is reflective of the low-lying sandcrete structure along the coast of Whangateau Harbour Esplanade Reserve. The low-lying edge, with saltmarsh species establishing along the reserve land, indicates the edge is exposed to frequent inundation and overtopping. Adaptation priority in the moderate and high change scenario, assuming continued sea-level rise, is identified due to increasing coastal hazard risk. This signals the need for further discussion regarding the appropriate approach to maintain values and manage risk to uses and assets.		
Implementation Notes Social: Engagement with the golf course to understand future implementation of triggers, thresholds and actions.		

3.5: Ōmaha Community Facilities

This stretch commences north of the Golf Course Reserve and extends north to the boundary of Boat Ramp Reserve. This stretch includes the areas adjacent to the bowling club, tennis courts and a portion of the Whangateau Harbour Esplanade Reserve.

Scenarios for change					
Low		Moderate		High	
Protect		Adaptation priority		Adaptation priority	
Explanation					
Protect in the low change scenario responds to existing structures along the coastal edge and maintaining this connection between key community facilities. In the moderate change scenario, while the coastal edge is fixed in relation to coastal erosion, the ongoing impact of increased overtopping and inundation on the reserve will require ongoing maintenance and potential adaptation to improve resilience. Adaption priority in the moderate and high change scenario is identified to signal that existing community uses (including ground leases) will need to proactively plan for increased inundation risk that may impact current land uses and assets and the maintenance of the coastal connection.					
Implementation Notes					
Social: Ōmaha Beach Golf Club building is a well-used community club facility that is exposed from the short term. Engagement with this organisation is recommended to understand how implementation of adaptation strategies may impact on the operation of facilities, and how impacts could be managed.					

3.6: Ōmaha boat ramp

This small stretch covers the Ōmaha Beach boat launching and wharf reserve, culminating to the north of the wharf structure.

Scenarios for change					
Low		Moderate		High	
Protect		Protect		Protect	
Explanation					
Protect is identified to confirm the maintenance of this key public boat access facility and existing infrastructure (reflective of the recent wharf renewal). While the coastal edge is maintained with access structures, inundation risk to the landward uses may increase and the design and location of associated uses or assets may need to be reviewed/ adapted in the future.					
Implementation Notes					
Social: Ōmaha Beach boat launching facility is a well-used community asset that is exposed from the short term. Engagement with the community is recommended to understand how implementation of adaptation strategies may impact on the operation of these facilities, and how impacts could be managed.					

3.7: Ōmaha Sandcliffs Accessways West

This stretch commences to the north of the wharf towards the tip of the spit (including a portion of Whangateau Harbour Esplanade Reserve) culminating north of Ida Way where the northern spit reserve (fenced area) commences. There is a narrow esplanade reserve along the northern part of this stretch with adjacent residential properties.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
Maintain over all timeframes signals that the coastline is not fixed. Management of risk of assets through location and design of assets and continued maintenance of access to the coast is preferred.		
Implementation Notes		
Maintain supports the consideration of nature-based solutions such as planting, sand push-ups and sand nourishment. Interventions should respond to and support the ecological values, character and beach amenity. Hard engineered structures are not envisaged for this stretch.		

3.8: Ōmaha Sandspit

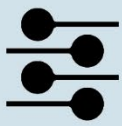
This stretch covers the tip of the sandspit commencing at the start of Ōmaha Beach Reserve on the western side of the inlet including the coast north and east, culminating to the south of the groyne structures and the fenced reserve area.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
On the northern side of the spit, Auckland Council reserve land includes the dune area and an extensive network of walkways providing access to the coast. This stretch includes areas and habitats of significant ecological value. Management of risk to ecological values is provided for through maintain alongside the continued maintenance of the groyne structures and associated dune management. Uncertainty regarding how the spit and associated groyne structures may respond to sea-level rise, and increased inundation events, may prompt review in the future.		
Implementation Notes		
Ecology: Ecological features (high-tide bird roost, dotterel breeding ground and predator fence) are located within this stretch. Ōmaha sandspit is a significant high-tide bird roost. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values and how these may need to be managed. Cultural: More than 200 midden have been found along the southern half of the Ōmaha sandspit. Engagement with mana whenua is recommended to further understand the cultural values associated with this site and how this may impact adaptation strategies.		

3.9: Ōmaha Beach

This long stretch covers the sandy open coast beach, commencing south of the groyne field to the rock headland at the south of Ōmaha Beach. It includes the dune system and the balance of Ōmaha beachfront, associated reserves areas and beach accessways.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain confirms the management of risks through maintenance and support for the nature-based defence provided by the existing dune system. Maintain also confirms the management of accessways and access to the coast to adapt to the dynamic dune environment, including operational responses for redistribution of sand and the realignment and widening of beach accessways to manage impacts of wind-blown sand. Maintain in the long term is based on current data, studies and modelling. Continued monitoring and understanding of coastal processes will be required to confirm the efficacy of this approach in the moderate and high change scenario. In lower-lying southern areas of the stretch, further management of risk via design and location of assets may be required to respond to inundation risk.		
Implementation Notes • Cultural: Dune Walkway is a location of cultural significance. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Social: Ōmaha Beach Surf Lifesaving Club is a well-used community asset that is exposed from the medium term. Engagement with the club is recommended to understand how implementation of adaptation strategies may impact on the operation of these facilities, and how impacts could be managed. • Management: Esme Grove pump station and other stormwater assets are identified in this area. Engagement with Healthy Waters Team will be required.		



Unit 4

Ti Point to Sandspit



Community aspirations for supporting the marine environment, with opportunities to integrate marine platforms into future walking tracks along the coast (nature based solutions)



The coastline across this unit is of high cultural significance to local iwi with numerous sites of significance (known and unknown) located along the shores



Private land ownership



Unit 4: Ōmaha East

This unit covers the shoreline between Ōmaha Beach and the western boundary of Tāwharanui Regional Park, a length of approximately 3 km. Adjacent land is privately owned, and areas of the foreshore are accessible at low tide from Ōmaha Beach and Tāwharanui Regional Park.

What is happening? Coastal context and hazardscape

This section of coastline is characterised by a rocky intertidal shoreline, with small pocket beaches, backed by vegetated coastal cliffs and is periodically exposed to moderate to high wave energies. Wave energies dissipate on the rocky intertidal foreshore. There are no existing coastal protection structures, e.g. seawalls, for erosion management along this section of coastline.

Unit 4 is situated on relatively high land in comparison with the previous Unit 3. There is limited coastal inundation risk in this unit because much of the shoreline comprises elevated coastal cliffs. This unit captures a small portion of the Ōmaha South catchment at the north of this unit and is mainly situated on the upper portion of the Waikarui Bay catchment.

Flood plains in an 1% AEP event can be observed on the north-western area of this unit, where Waikokopu Creek branches inland from a pond located in Ōmaha South Quarry Park, on the eastern edge of this unit where Waimaru Stream drains into the coast, and on the south following the river travelling through the forest area of Tāwharanui Regional Park.

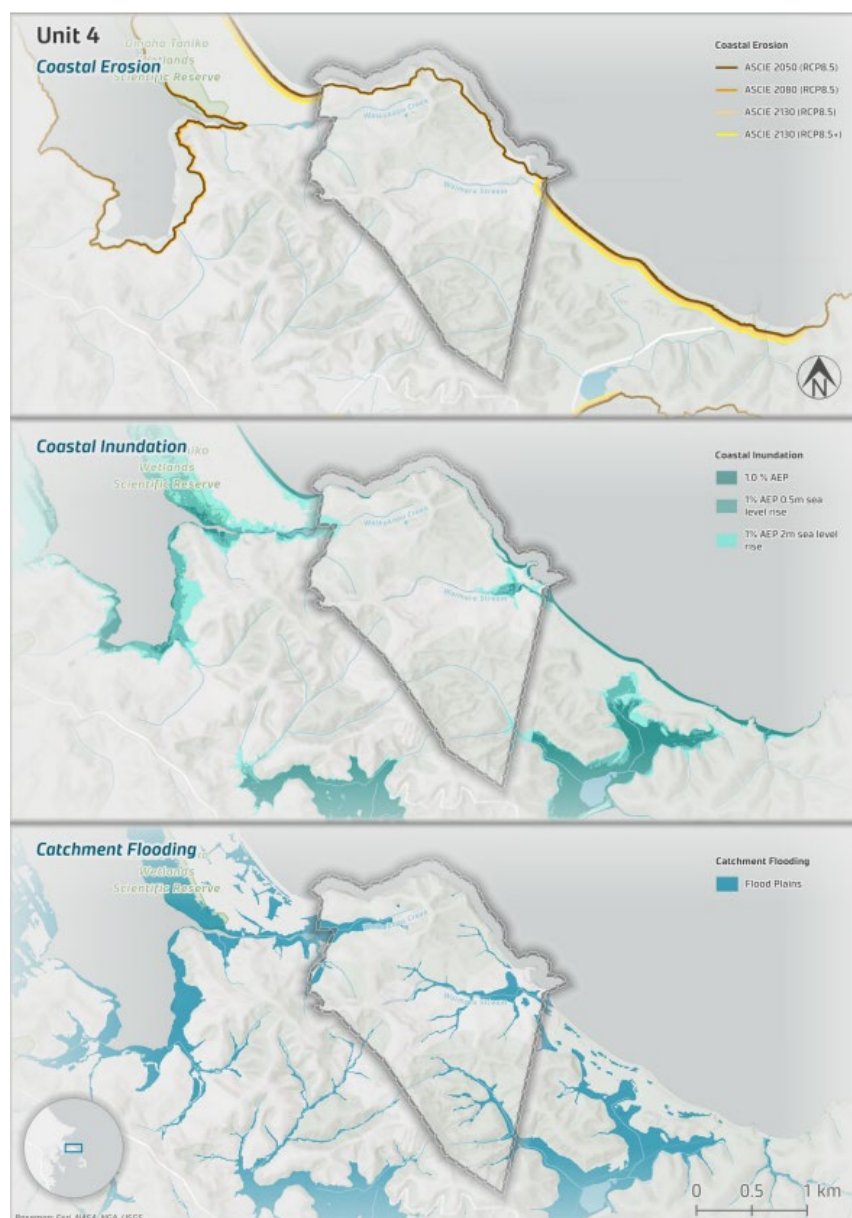


Figure 4-1: Coastal hazardscape for the Ōmaha East Unit reflecting coastal erosion susceptibility for the years 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification 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 the low, moderate and high climate scenarios.

Risk from coastal inundation and coastal erosion susceptibility to transport infrastructure, Auckland Council community facilities and water infrastructure is low to very low. This is reflective of the large rural area in this unit and minimal assets in the groupings.

Risk to Auckland Council-owned land and environment is low for both coastal erosion susceptibility and coastal inundation. These results consider the Auckland Council-owned land reserve to the north of the unit at the top of the cliffs and ecological areas on the coastal edge and to the southeast of Unit 4. Risk from coastal erosion susceptibility and coastal inundation to the culture and heritage grouping is moderate.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (6.1 ha) Buildings, wharves (0 No.)			Park amenity structures, car parks, accessways, buildings (0 ha)			AT roads (0 km) Bridges (0 m ²)			Water pipes (0 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Low	Low	Low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low
Coastal inundation											
Low	Low	Low	Very low	Very low	Very low	Very low	Very low	Very low	None	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.



- A narrow strip of Dune Walkway Reserve extends along the steep high (40 m) eastern cliff area. This reserve is inaccessible.



- Landward connection to Ōmaha South Quarry Track; Northern connection to Ōmaha Beach Dune Walkway.

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.



- There is one pā (Ti Kie Point Pā) within Unit 4 that has been identified as ‘Category B’ Heritage (Auckland Council, 2016b). The Rodney Local Board has noted that there are middens located throughout the Ōmaha sandspit and parks network (Rodney Local Board, 2023b).
- The Dune Walkway extends from Unit 3 into Unit 4 and as noted earlier, has five pouwhenua (sculptures) along it. These were gifted by Ngāti Manuhiri and mark places of historic settlements and battlefields (Rodney Local Board, 2023b).
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in the report.



- There is no social infrastructure in Unit 4 due to the largely rural private land. This unit includes the continuation of the Dune Walkway Reserve from Unit 3, extending for approximately half of this unit; however the steep cliff is inaccessible. There is a proposed walking track along the unit as part of the Rodney Greenway Project (Rodney Local Board, 2017).



Unit 4 is characterised by fragments of coastal forest and small areas of spinifex, pīngao active dunelands (DN2 – Regionally Endangered). The forest ecosystems within this unit include:

- Pōhutukawa tree land which is found along the coastal cliffs.
- Taraire, tawa, podocarp forest located further inland as an extension of the Tāwharanui Open Sanctuary.

Community feedback



Who have we heard from?

- Feedback was received in relation to Unit 4 through survey responses and submissions (‘Ak Have Your Say’ and Social Pinpoint).
- Coastal erosion was identified as the hazard of greatest concern by those who provided feedback, noting advocacy for nature-based solutions in coastal management approaches to reflect the highly valued natural environment and biodiversity it supports.
- For the Unit 4 area, key uses and activities include walking and exercising, swimming and passive recreation, noting a strong advocacy in community submissions from more joined up walking connections to and along the coast.

What can we do about it? Adaptation strategy summary for Unit 4.

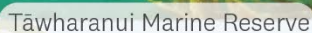


4.1: Ōmaha East

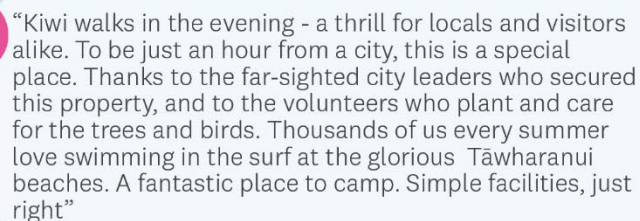
This stretch commences at the southern end of Ōmaha Beach culminating in the east at the boundary with Tawharanui Regional Park.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
No action is reflective of the limited assets located with reserve areas and the natural coastal character of this coastal area.		
Implementation Notes		
• Cultural: Te Kie Point Pā is a location of cultural significance and is exposed to coastal erosion from the short term. Engagement with mana whenua is recommended to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Greenways: Esplanade reserve land in this unit is identified as the 'Dune Walkway Reserve' which connects to southern Ōmaha Beach. Associated management intentions include protection of cultural heritage and the enablement of greenways outcomes including the creation of an Ōmaha to Tāwharanui coastal route.		

Tī Point to Sandspit



Tawharanui contains extensive intertidal and subtidal reefs typical of the moderately exposed coast of the outer Hauraki Gulf. About 50 species of fish have been recorded in the reserve, which also supports a thriving population of lobster. Bottle nosed dolphins and orcas often visit the area



Tāwharanui Regional Park is highly valued for its superb swimming and surfing beaches, campground and extensive walks. The open sanctuary within the park protects numerous indigenous species, with community groups actively involved in caring for the sanctuary. Tāwharanui is highly significant to local iwi, with its strategic location and rich supply of marine and forest resources making it an attractive place to settle

— Unit boundary

5.1 5.2 Stretch

■ Regional Park

0 500m 1km

Kawau
Island

Unit 5: Tāwharanui Regional Park

Unit 5, located within the Rodney Local Board area, includes approximately 11 km of coastline including Tāwharanui Regional Park. It is bordered on the northern coast by Tāwharanui Marine Reserve. Numerous cultural and historic heritage sites are identified along this coastal area.

What is happening? Coastal context and hazardscape

Tāwharanui Peninsula's north-facing coastline is characterised by dynamic sandy beaches contained between rocky intertidal and subtidal outcrops and backed by vegetated sand dunes. Coastal cliffs dominate the peninsula's eastern coastline, backed by rejuvenating coastal forest.

The northern coastline is exposed to a relatively open fetch from the direct north angle. These sandy beaches are therefore frequently exposed to medium to high wave energies, particularly from the northerly angle. This includes longer period swell events generated from some distance away and more localised seas with shorter period storm waves associated with strong onshore winds.

Upper beach and intertidal sand levels fluctuate in response to the wave climate, going through cycles of erosion and accretion. Erosion of the dune toe and upper beach can occur during significant storm events, following which sand levels typically recover. The rocky outcrops along the northern beaches of Tāwharanui help maintain individual beach cells and limit any significant net longshore sediment transport.



A coarse-grained pocket beach is present at the southwestern boundary of the regional park (Jones Bay), with a stream and lagoon feature discharging onto the beaches northern end. Erosion of the coastal edge at Jones Bay is documented in the Regional Parks Management Plan (2022) with investigations of options to manage this and protect access to the parks, identified as a management intention for the park. Jones Bay and the inland wetlands and low-lying pasture is also exposed to coastal flooding inundation,



As with all Auckland Council regional parks, efforts are made to maintain the natural character and minimise the need for hard protection structures and more intrusive management techniques. Dune restoration works have been previously undertaken at Waikōkōwai Anchor Bay which involved removing fill material from the dunes at the main beach access point and reshaping and planting the dune with native dune grasses. Periodic dune planting continues to be undertaken as required. Defined pedestrian accessways extend through the sand dunes and are maintained or modified to adapt to these dynamic dunes.

Unit 5 is located in the Waikarui Bay catchment, with the eastern portion of this unit situated on relatively high land. Catchment flooding on the eastern part of this unit can be seen following the overland flow path that drains to the northern coastline. On the western part of this unit, flood plains can be observed on low-lying areas situated next to tributaries draining into Jones's Bay along with a number of smaller floodplains lining the northern sandy coastline.

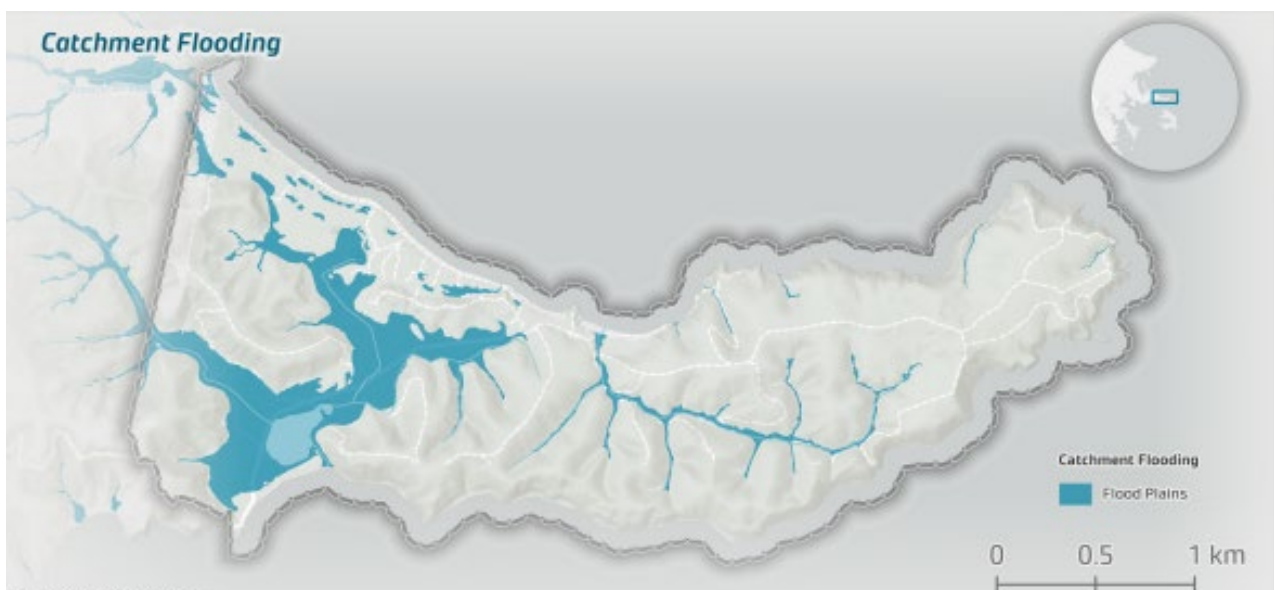


Figure 5-1: Coastal hazardscape for the Tāwharanui Unit reflecting coastal erosion susceptibility for the years 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification 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 the low, moderate and high climate scenarios.

At a unit level, risk from coastal erosion susceptibility is very high to Auckland Council-owned land (i.e. Tāwharanui Regional Park) and high to environmental (i.e. Tāwharanui Marine Reserve and Ecology Trail), culture and heritage assets but moderate risk to Auckland Council community facilities (e.g. Takatu Road and public toilet facilities at Tāwharanui Beach).

Risk from coastal inundation is very high to Auckland Council community facilities and high to culture and heritage assets. Risk to environmental features is moderate in the short term, increasing to high in the medium term.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (580.5 ha) Buildings, wharves (29 No.)			Park amenity structures, carparks, accessways, buildings (2.9 ha)			AT roads (0.1 km) Bridges (0 m ²)			Water pipes (0.01 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Very high	Very high	Very high	Moderate	Moderate	High	Low	Low	Low	Very low	Very low	Very low
Coastal inundation											
High	High	Very high	Very high	Very high	Very high	Very low	Very low	Low	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.



- Assets in this unit are mainly linked to the Tāwharanui Regional Park with campgrounds and ranger facilities.



- Northern coastal area assets: access roads, parking, camping and picnic areas.
- Southern coastal area assets: access road, carparking, picnic areas, Tāwharanui Bach, Jones Homestead, sheds and farm utilities.
- Tāwharanui Predator fence.



- Key walking track:** Tāwharanui Ecology Path, Tāwharanui West End Path.

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.



- There is one cultural feature identified in the AUP:OP (within this unit located in Stretch 5.2: Landing Site (Heritage ID 17678). (Auckland Council, 2016b).
- Approximately 15 middens, 16 pit/terraces, two ovens/garden soil, and graves have been identified in this unit as historic heritage features in the AUP:OP. (Auckland Council, 2016b).
- There are four pā sites identified as ‘Category B’ Heritage in the AUP:OP: Papahi Pā (Stretch 5.1), Elephant Hand Pā (Stretch 5.2), Pahi Pā site (Stretch 5.2/5.3), and Magatāwhiri/Oponui Pā (Stretch 5.3). (Auckland Council, 2016b).
- In addition, the Regional Parks Management Plan states there is a significant amount of cultural heritage located near the coast at Tāwharanui which will be vulnerable to the effects of climate change. Further work is required to prioritise sites for protection and possible relocation if this becomes necessary.



- Tāwharanui Regional Park is a highly valued community area for the whole of Tāmaki Makaurau. Many visitors travel from across the region to enjoy the pristine sandy beaches.
- The area is popular for a range of outdoor activities. Tāwharanui boasts one of the best East Coast surfing beaches in Auckland. The marine reserve provides great snorkelling and the natural rock formations towards the south of Anchor Bay provide popular ‘mermaid pools’. The walking tracks in the park are well used, with the open sanctuary providing many opportunities for bird spotting. The grassy reserves set back from the beach are well utilised for picnics.
- Many outdoor events have been hosted at the Regional Park including trail running races, snorkel days and tree planting days. Tāwharanui campground is incredibly popular, with a maximum capacity of 290 people, and Auckland Council’s bach accommodation is well-used.
- The Regional Parks Management Plan outlines multiple intentions for Tāwharanui Regional Park. Common themes include planning for coastal protection (specifically coastal erosion), protecting the open sanctuary from pest incursions and to enhance the cultural wayfinding and interpretation of the park’s rich history of mana whenua associations and European activity throughout the park.
- Tāwharanui Open Sanctuary Society (TOSSI) is a community group that was initiated in 2000 following interest from the community and within Auckland Council to establish an intensively managed conservation program within a regional park. The society carries out numerous conservation initiatives in the regional park and has a strong interest in the area.
- Alongside those identified above in the cultural context, there are four other ‘Category B’ heritage features identified in the AUP:OP within this unit: Jones Homestead, Bluebell Point historic settlement including midden and boatyard site R09_235, Bridle path/track (sledge) R09_683, Graves. Auckland Council, 2016b).



- Tāwharanui Regional Park supports a mosaic of ecosystems and a number of native fauna. Tāwharanui Peninsula contains the best examples of open rocky intertidal and subtidal marine habitats on the coast of the outer Hauraki Gulf. The area is recognised as a Significant Ecological Area Marine 1 (SEA_M1_82b). The marine ecosystem on the south of the peninsula

is highly valued (SEA_M1-82a), grading into manuka forest and one of two areas of notable pōhutukawa forest on coastal cliffs.

- The adjacent Tawharanui Open Sanctuary is subject to an extensive restoration programme including pest control and reintroduction of threatened species including pateke (brown teal), takahē and North Island brown kiwi. It contains the best examples in the Rodney Ecological District of manuka, taraire, kauri and pōhutukawa forests on a peninsula landform and also contains freshwater wetlands.
- The Jones Bay swamp and stream that runs into Anchor Bay on the north is a high-quality freshwater fish habitat.
- The open sandy beaches and mobile sand dunes are an important New Zealand dotterel breeding area as well as being a threatened plant habitat.
- Tāwharanui Marine Reserve, administered by DOC, runs along the northern side of the regional park. The Marine Reserve was gazetted in 2011 and includes a diverse coastline with a range of subtidal habitats, such as reefs with overhangs, tunnels and caves. Schools of red moki, blue maomao, spotty, red mullet and koheru are common in the marine reserve.

Community feedback



- For the Unit 5 area, key uses and activities include walking, running and cycling, and water-based activities such as swimming.
- Feedback identified the importance of the coastal walkways and cycle ways. Concerns were identified about the surrounding land uses, and the potential impacts on Council services.
- The natural environment in Tāwharanui Regional Park itself was commented on via community feedback, with an acknowledgement of unique, highly-valued ecosystems within this unit providing habitat for native birds, including kiwi. An acknowledgment of the conservation efforts by community groups (e.g. Tawharanui Open Sanctuary Society) was commented on in feedback, noting the need to support this highly-valued natural environment.
- Coastal erosion and coastal storms were identified as a hazard of concern by most respondents. Several respondents have observed the impacts of erosion and coastal storms along key coastal roads in this unit.
- Concerns regarding access to existing Council facilities was also raised by some respondents.

What can we do about it? Adaptation strategy summary for Unit 5.



5.1: Northern Beaches

This stretch commences at Pukenihihi Point at the western end of Tawharanui Regional Park and extends to the eastern end of Waikōkōwai Anchor Bay.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Assets and facilities are generally set back from the coastal edge. Periodic dune planting is undertaken as required and defined pedestrian accessways extend through the sand dunes; these are maintained or modified to adapt to the dynamic dunes. Maintain reflects the continued management of coastal areas through support for nature-based defences such as dune planting, managing dune areas and the accessways through these areas to the beach. Maintain also provides for consideration of the design and location of assets in proximity to coastal hazard areas where inundation and catchment flood risks may change over time.		
Implementation Notes • Cultural: There are cultural features in this stretch that are exposed to coastal processes including Papahi Pā. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Ecology: A large duneland is located within this stretch. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.		

5.2: North Coast to Jones Bay

This stretch commences east of Waikōkōwai Anchor Bay including the rocky shoreline to Tokatū Point and the southern shoreline west culminating at the eastern end of Jones Bay.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation The north-eastern areas of the park are predominantly cliff coast with a rocky shoreline. Walking access is generally set back and can be managed within park areas. No action does not preclude the further consideration of how risk to cultural heritage may be addressed but responds to the natural coastal character and ecological outcomes within this stretch.		

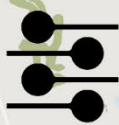
Implementation Notes

- **Cultural:** There are multiple cultural features in this stretch that are exposed to coastal processes including Elephant Head Pā site and Pahi Pā site. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.
- **Ecology:** Translocated birds such as takahē and kiwi are located within this stretch. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.

5.3: Jones Bay and Matatuahu Point

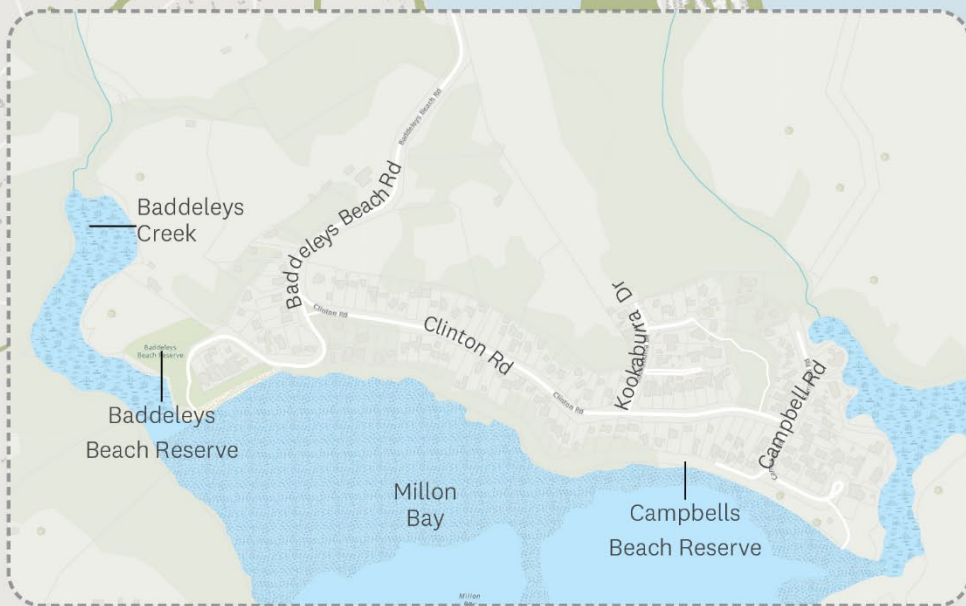
This stretch commences at the eastern extent of the bay culminating in the southwest at Matatuahu Point and the end of the regional park landholdings.

Scenarios for change					
Low		Moderate		High	
Maintain		Adaptation priority		Adaptation priority	
Explanation					
Maintain in the low change scenario indicates the need to consider how current risks from coastal hazards to park assets are managed through location and design. In the moderate to high change scenario with increased sea-level rise, adaptation priority is identified to reflect the complex (historic, cultural and ecological) values and the need to continue to provide for park access and respond to risks to physical assets and sites. Relocation or alignment of some assets may be required. Erosion of the coastal edge at Jones Bay is documented in the Regional Parks Management Plan (2022) with investigations of options to manage this and protect access to the parks identified as a management intention for the park.					
Implementation Notes					
• Management: Maintain in the short term does not preclude asset-specific measures may need to be identified to confirm continued safe roading connections are maintained (Takatu Road). Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of this asset. • Cultural: There are cultural features that are exposed to coastal processes. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Heritage: There are multiple heritage features that are exposed to coastal processes. Engagement with the Heritage Team and/or Heritage New Zealand may be needed to determine management strategies for this feature. • Ecology: Giant kokopu are located within this stretch. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed • Social: Tāwharanui Open Sanctuary Society is active in the management and restoration of Tāwharanui Regional Park and have sheds exposed to coastal inundation. Engagement is recommended to understand how implementation of adaptation strategies may impact their operations.					

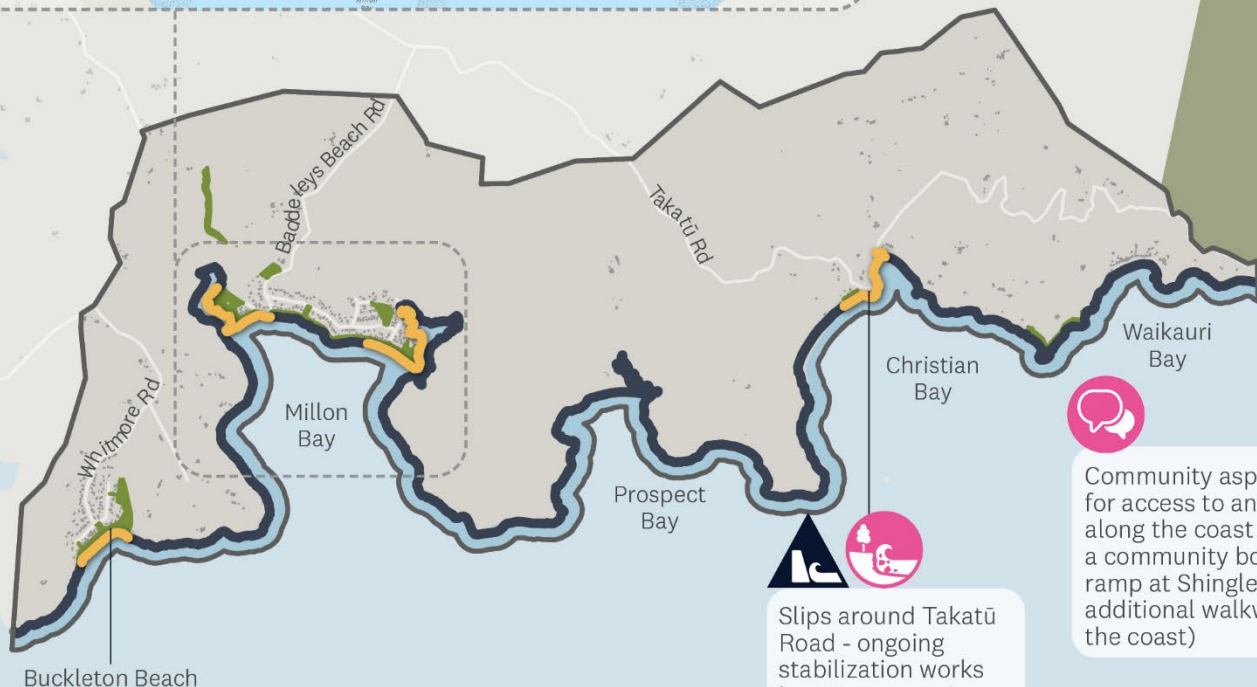


Unit 6

TI Point to Sandspit



Community commentary on the impacts of sedimentation and erosion on Campbells Beach and Baddleys Beach - advocacy for proactive management of trees and catchment management to mitigate coastal hazard impacts, along with the use of nature-based solutions where possible



Community aspirations for access to and along the coast (i.e. a community boat ramp at Shingle Bay, additional walkways to the coast)



Slips around Takatū Road - ongoing stabilization works by AT, community advocacy for additional measures to mitigate flooding during storm events



Community feedback on Buckleton Beach emphasizes its popularity as a swimming destination, with residents frequently using the boat ramp and enjoying coastal walks. However, there have been concerns raised about the condition of the Pōhutukawa trees along the shoreline and the need for improved management of tree planting



— Unit boundary

6.1 6.2 Stretch

Informal recreation park

Auckland Council owned land

0 500m 1km

Unit 6: Waikauri to Buckleton

Unit 6 includes approximately 13 km of highly indented coastline, characterised by small pocket beaches with wide, shallow intertidal areas, contained within headlands and coastal cliffs. The unit extends from Tawharanui Regional Park in the east to Buckleton Beach in the west. The small rural coastal settlements of Waikauri Bay, Campbells Beach, Baddeleys Beach, and Buckleton Beach, are located along this coastline.

What is happening? Coastal context and hazardscape

This south-facing coastline is sheltered from higher wave energies by Kawau Island. The coastline is typically only exposed to low, short period, depth-restricted wind waves generated across the immediately adjacent short fetch distances. During extreme conditions from the south to southeast when there are elevated water levels, moderate wave energies can propagate through the gap south of Kawau Island and impact Campbells Beach, Baddeleys Beach, and Buckleton Beach.

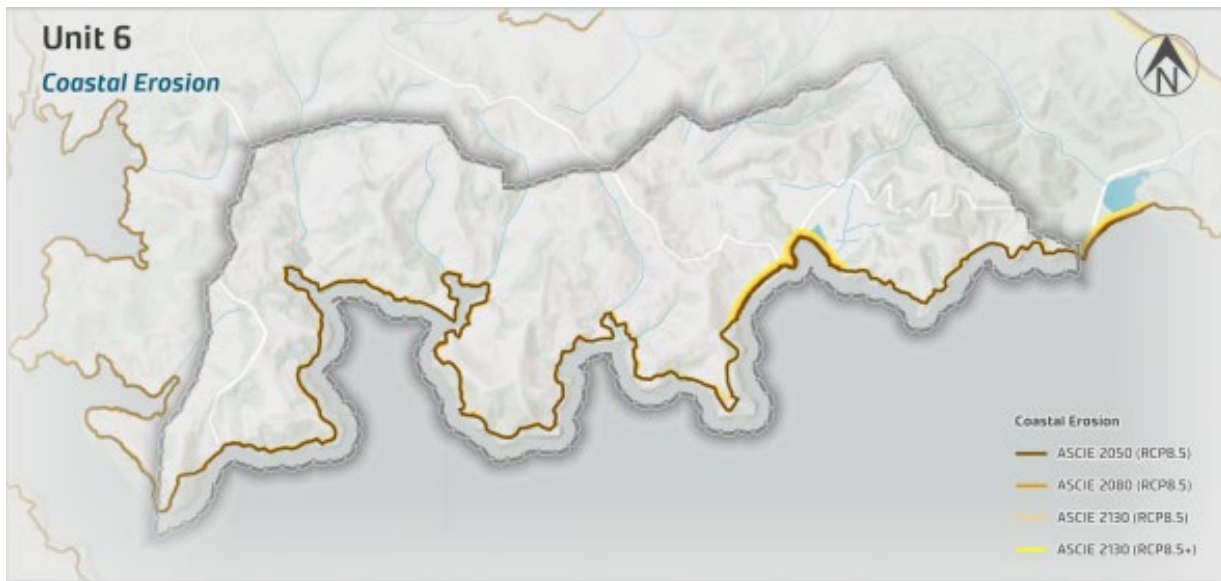
Rock and timber seawalls are present at Baddeleys and Buckleton beaches. Periodic maintenance of these seawalls is undertaken to repair damage resulting from storm events. Cyclone Gabrielle resulted in significant damage to the Buckleton Beach timber seawall. Management of this section of the coastal edge is challenging, noting the number of trees near the coastal edge which constrain management options for the site.

There are several existing coastal protection structures along this section of coastline. There has been community pressure to construct a seawall at Campbells Beach, with previous unconsented works involving placement of rock along the reserve edge. Some of the key features are as follows:

Rock, timber, and concrete seawalls are present at Baddeleys and Buckleton beaches.



Timber and rock seawalls, Buckleton Beach (Source: Matthew McNeil)



Within this unit, coastal inundation flooding will impact the low-lying land at the head of embayments at Christian Bay, Prospect Bay and Millon Bay, with the greatest extent at Christian Bay into the inland wetlands also impacting low-lying sections of road. Campbells Beach Reserve at the eastern side of Millon Bay is predicted to be flooded by coastal inundation over all climate change scenarios with sea-level rise. Baddeleys Beach Reserve at the western side of the embayment is also predicted to be significantly impacted by coastal inundation. The reserve at Buckleton's Beach will be most impacted in the high change scenario.



Unit 6 captures the lower portions of several stormwater catchments: the western edge of Waikauri Bay catchment, Christian Bay catchment, Baddeleys Beach catchment, and Buckletons Bay catchment. Flood plains in this unit follow the tributaries which drain out to the coast and the many beaches of this unit, with notable flood plains in Christian Bay, Prospect Bay, Campbell's Beach, and Buckletons Bay.



Figure 6-1: Coastal hazardscape for the Waikauri to Buckleton 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 1% AEP flood plains



Risk assessment

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

At a unit level, risk from coastal erosion susceptibility to Auckland Council community facilities (i.e. boat ramp at Millons Bay), environmental and culture and heritage is moderate in the short term increasing to high risk for the environmental grouping in the long term. Risk from coastal inundation to Auckland Council community facilities, transport infrastructure, environmental and culture and heritage is moderate.

Risk to Auckland Council-owned land and water infrastructure from coastal erosion susceptibility and coastal inundation is low as there are limited assets in these groupings.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (10.6 ha) Buildings, wharves (6 No.)			Park amenity structures, carparks, accessways, buildings (0.1 ha)			AT roads (10.6 km) Bridges (0 m²)			Water pipes (2.2 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Low	Low	Low	Moderate	Moderate	Moderate	Low	Low	Moderate	Low	Low	Low
Coastal inundation											
Low	Low	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Low	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.



- **Council reserves:** Campbells Beach Reserve, Clinton Road-Baddeleys Beach Walkway, Baddeleys Beach Reserve, Buckleton Beach Reserve.



- **Council park amenities and facilities:** Campbells Beach (playground, picnic facilities, toilets, parking, boat ramp); Baddeleys Beach (toilets, playground, picnic facilities, tennis club (community lease), parking, access ramp); Buckleton Beach (picnic facilities, parking, boat ramp).



- **Local roading:** Takatu Road, Campbells Road.
- **Walking tracks:** No formalised tracks.



- **Harbour access:** Boat launching ramps: Campbells Bay, Buckleton Beach. Beach access ramp (small craft) Baddeleys Beach.

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.



- There is one cultural feature identified in the AUP:OP (within this unit located in Stretch 6.2: Te Ngaere. (Auckland Council, 2016b)
- There is one pā (Tāwharanui Pa) within Unit 6 that has been identified as ‘Category B’ Heritage (Auckland Council, 2016b).
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in the report.



- Unit 6 consists of predominantly rural coastal areas. Small coastal communities in the unit include Buckletons Bay, Baddeleys Beach and Campbells Beach. There are reserve areas and small sandy beaches bordered by coastal cliffs in these community areas. There is a small settlement of a dozen houses located at Waikauri Bay that is only accessible via a private road. Many of the houses in the unit are holiday homes.
- The unit is a popular area for launching boats with Kawau Island, a short boat ride to the east.
- There is limited road access to communities in this unit, with all beaches only accessible through a single road. The entire unit is connected to Matakana through Takatu Road.
- Aspirations for further access and connections throughout this unit are identified in the Rodney Greenways Paths and Trails Plan (Pūhoi to Pākiri) (Rodney Local Board, 2017). There is a proposal to create a bridle and walking route that connects Baddeleys Beach to Matakana. The route passes through Baddeleys Beach Reserve, Clinton Road-Baddeleys Beach Walkway and Campbells Beach Reserve.



This unit is characterised by several small, sheltered bays with large expanses of agricultural land and small areas of indigenous vegetation concentrated along the coastline. Regionally important and/or vulnerable ecosystems and species within this unit include:

- At Motutara Point (SEA_M1_81) an area of foreshore and seabed that is part of an uninterrupted ecotone sequence extends into one of the best areas of coastal pōhutukawa forest in the ecological district. An ecological sequence from saltmarsh to raupō reedland and oioi rushland located adjacent to the Tāwharanui Lodge
- Millons Bay, Baddeleys Beach and Campbells Beach have high value (SEA_M2_167) ecological gradients from foreshore and seabed into coastal broadleaved forest, including coastal pōhutukawa. A small patch of pūriri forest and taraire, tawa, podocarp forest is to the northeast of Buckleton Beach.
- On the northern coast of the Matakana River mouth, the marine ecosystem grades into an important area of coastal forest on cliffs with kauri and kanuka grading into puriri forest on coastal headlands. This area is recognised as a Significant Ecological Area M1 (SEA_M1_80) and is highly representative of coastal forest on the east coast which is now much reduced from its former extent.

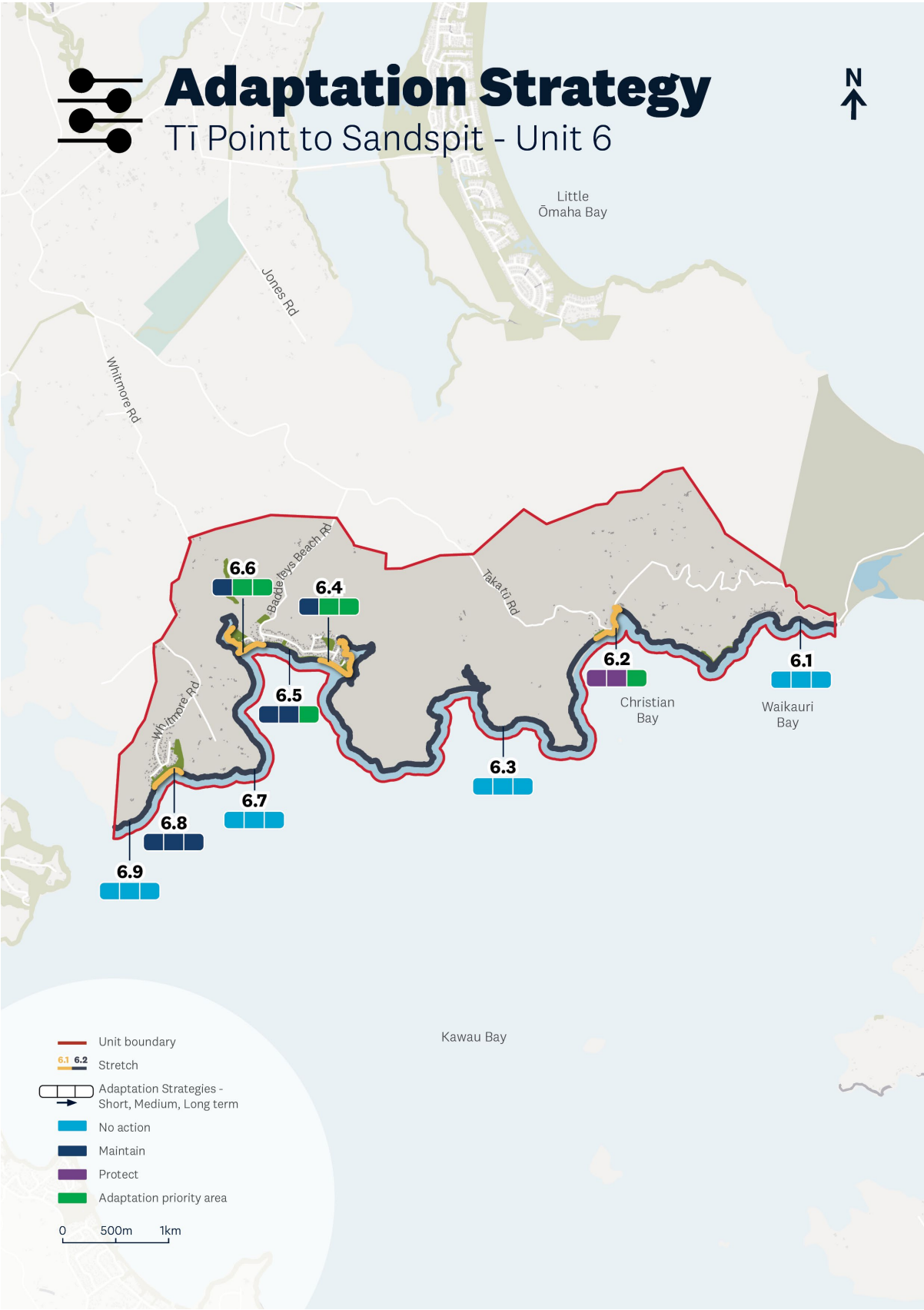
Community feedback



Who have we heard from?

- Feedback was received via Social Pinpoint, Community Submissions and 'AK Have Your Say' survey. Events local to this area are listed in Volume 2. A high amount of feedback was received for this unit, including but not limited to community submissions from the Baddeley's and Campbells Residents and Ratepayers' Association. Key themes in community submissions included but were not limited to:
 - Supporting the beach at Campbells Beach to return to a natural state (noting mixed views), with planting of trees along the shoreline.
 - Work to maximise the recreational value of the land, ocean and creek at Cambells Beach via appreciate coastal management approaches.
- In addition to the above, other key uses and activities include walking and running near the coast and passive water-based activities such as swimming. Several respondents noted the beaches within this unit are family friendly, safe swimming beaches.
- Coastal erosion was identified as the hazard of greatest concern by those who provided feedback. Additional concerns regarding sedimentation, and the impacts on the environment, were raised by some respondents.
- Feedback mentioned the need for adequate planting and protection of the existing vegetation specifically pōhutukawa trees. Other community members noted the need for long-term fixes to existing protection structures.

What can we do about it? Adaptation strategy summary for Unit 6.



6.1: Tāwharanui West (Waikauri)

This stretch covers the shoreline between Tawharanui Regional Park and the eastern side of Christian Bay. Takatu Road connects Tāwharanui Peninsula and Matakana with this rural coastal stretch.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation Waikauri Bay is privately owned and no Auckland Council assets are identified within this area. The short length of Takatu Road esplanade reserve is densely vegetated, unconnected and inaccessible with no developed Council assets.		
Implementation Notes No action is reflective of the limited land and assets located in proximity to the coast. No action in this stretch does not preclude the need to manage risk to roading assets, if required over time.		

6.2: Christian Bay (Takatu Road)

This stretch commences where Takatu Road traverses the low-lying area at the head of Christian Bay and continues west after the road bridge and south around the headland until the point where the road turns inland (west) from the coast.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Adaptation priority 
Explanation Considerable investment in roading maintenance (slip remediation) has been undertaken by Auckland Transport along this narrow coastal area. Protect recognises these works and relates to the management of risk to road access, providing access to coastal settlements to the east and the regional park. Adaptation priority in the high change scenario signals the increasing exposure to both coastal and catchment hazards.		
Implementation Notes Management: The main asset in this stretch is Takatu Road managed by Auckland Transport. Cultural: Te Ngaere Settlement and Tāwharanui Pā are located in this stretch. Engagement with mana whenua is required to further understand the cultural values associated with these sites and how this may impact adaptation strategies.		

6.3: Karangatuoro Peninsula and Prospect Bay

This stretch covers the largely rural shoreline between Christian Bay and Campbells Beach, culminating to the north of Campbells Beach Reserve and Campbell Road.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
There are private landholdings along this shoreline and no Auckland Council assets are identified within this area.		
Implementation Notes		
No action is reflective of the limited land and assets located in proximity to the coast.		

6.4: Campbells Beach

This stretch commences at the northern extent of Campbells Beach Reserve including the area west, culminating at the end of the beachfront area where the coast steepens to the west.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation		
Campbells Beach Reserve and associated facilities is a well-used community asset, with the high value reflected in the strategies. Maintain provides for the ongoing management of lawfully established Auckland Council-owned structures and assets to support uses within coastal reserve areas. Maintain for this stretch supports nature-based responses and confirms the continued provision of a boat ramp within this stretch. Adaptation priority in the moderate and high change scenario reflects the increasing coastal hazard risk, in particular, inundation and sea-level rise, to the low-lying reserve areas and roading connections landward of these areas. Adaptation priority signals proactive engagement with community stakeholders to understand how implementation of adaptation strategies may impact on the operation of these facilities, and how impacts could be managed.		
Implementation Notes		
Management: Campbells Road is exposed to coastal inundation in the high change scenario. Auckland Transport, manager of this asset, will be engaged to understand how adaptation strategies may impact on their operation.		

6.5: Campbells to Baddeleys

This stretch commences to the west of the Campbells Beach area including a portion of Campbells Beach Reserve and Clinton Road-Baddeleys Beach walkway, culminating where the road meets the coast.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Adaptation priority 
Explanation Maintain in the low to moderate change scenario reflects the maintenance of walking connections at the Clinton Road Baddeleys Beach Walkway. Adaptation priority under the high change scenario signals the need for further discussion regarding the appropriate approach to maintain values and manage risk.		
Implementation Notes • Community: Community engagement identified highly valued access ways and ecological features located within coastal reserve areas, maintain supports community-led initiatives to support connections and outcomes for this stretch.		

6.6: Baddeleys Beach

Stretch 6.6 begins at Baddeleys Beach and extends west to the Baddeleys Beach Estuary, culminating to the north west of the reserve area (within the inlet).

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Baddeleys Beach Reserve extends along the beach front and the small inlet. The reserve and associated facilities are well-used and highly valued community assets. Maintain in the low change scenario supports the continued management of assets and uses, and ongoing maintenance of lawfully established coastal management structures including along the coastal reserve edge and boat ramp. Planting and nature-based solutions to coastal hazard impacts may also be promoted. Management of risks to park use, included community ground lease areas and maintenance of onsite services (wastewater) supporting park amenities may need to be managed through location and design. In the moderate to high change scenario, increased inundation risk and catchment flooding lead to the identification of adaptation priority to signal further planning and stakeholder engagement regarding the future use of reserve areas, values of iwi, community and coastal aspirations.		
Implementation Notes • Management: Baddeleys Beach Road is exposed to coastal erosion adjacent to the reserve. 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.		

6.7: Baddeleys to Buckleton

This stretch commences to the north of Baddeleys Beach Reserve and extends around the narrow Baddeleys Creek inlet continuing south around the headland to Buckletons Beach Reserve edge.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
There are private landholdings along this shoreline and no Auckland Council assets are identified within this area.		
Implementation Notes		
No action is reflective of the limited land and assets located in proximity to the coast.		

6.8: Buckleton Beach

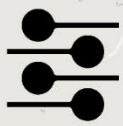
This stretch covers Buckleton Beach, a length of approximately 300 m, backed by Buckleton Beach Reserve. Buckleton Beach is a small community with approximately 30 houses.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		
Maintain confirms the maintenance of existing coastal protection structures and boat ramp access. Erosional trends may require further monitoring. Buckleton Beach Reserve has a higher elevation than the neighbouring reserves at Baddeley's and Campbells Reserves and a reduced likely coastal flooding inundation risk.		
Implementation Notes		
Management: Established trees along the coastal edge may require engagement with Council arborists to seek advice on specific implementation actions.		

6.9: Buckleton West

This stretch includes the shoreline to the west of Buckleton Beach Reserve extending southwest to the end of the peninsula at the end of the unit boundary, at Matakana River's northern entrance.

Scenarios for change					
Low		Moderate		High	
No action		No action		No action	
Explanation					
This landholding is privately owned and no Auckland Council assets are identified within this area.					
Implementation Notes					
No action is reflective of the limited land and assets located in proximity to the coast.					



Unit 7

Ti Point to Sandspit



"We value the Matakana wharf and the river leading to Sandpit Estuary. It is important for the wharf and associated reserve to be maintained. It provides access from Matakana to its river for boating, kayaking, fishing etc. It is important that the river be navigable not blocked with sediment and detritus. The Matakana landscape is also of high cultural and historical significance"



"I live at Rainbows End and value its unspoilt nature and looking at the estuarine birds. We see spoonbills, dotterel, oystercatchers and godwits in the summer. I would like to see this environment maintained and enhanced by waterside planting and up river measures to prevent silt spill from the rivers emptying into it. Any further development needs to be closely monitored in terms of any environmental damage in the special place"

Matakana Wharf Reserve



Matakana Cycle Trail connecting the Point wells and Omaha coastline begins in this unit.

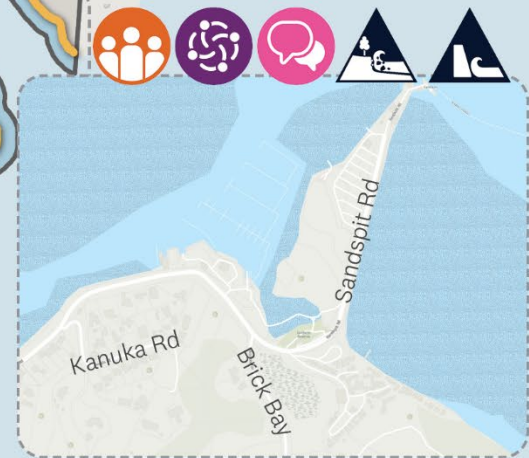


Community feedback has highlighted the risk of sea level rise and coastal erosion to the Sandspit area, with the eastern edge particularly vulnerable to the impacts of storm surges, impacting existing road connections and infrastructure. Submissions provided by the Sandspit Resident and Ratepayers Association and Friends of Awa Matakana has set out a range of possible actions to mitigate the impact of coastal hazards on the spit

Intertidal flats provide important feeding grounds for wading birds

Waste transfer facilities for Kawau Island

Critical roading connection for sandpit



A heavily modified and developed section of coastline, incorporating reclaimed land and various coastal protection measures. Sandspit is highly valued by both local residents and visitors for its wide range of facilities and amenities, including access to the harbour that enables water transport (an important connection for Kawau Island residents). The Sandspit Marina, located within the Matakana Estuary, features a dredged basin protected by rock revetment breakwaters. Sandspit campground and Sandspit yacht club also operate here

- Unit boundary
- 7.1 7.2 Stretch
- Informal recreation park
- Auckland Council owned land

0 500m 1km

Unit 7: Matakana to Sandspit

The unit covers the Matakana River inlet shoreline from the end of the Buckleton Beach headland on the northern side of the river entrance, continuing north to Matakana township and around the estuary including Sandspit and the southern headland to end at Brick Bay. The main communities in this unit are in Matakana and Sandspit, with Auckland Council assets predominantly located in these locations.

What is happening? Coastal context and hazardscape

The Matakana Estuary/River and Sandspit coastline is an estuarine environment, characterised by extensive intertidal flats ranging from sandy to muddy sediments. The large sandspit feature at Sandspit, extending from the southern shoreline, shelters the inner estuary basin from any significant wave energy entering the inlet from Kawau Bay. The estuarine shoreline is only exposed to low short period depth-restricted wind waves, generated across short fetch distances within the inlet.

To the north of Sandspit, the main channel branches into three channels, with the Matakana River extending approximately 4 km to the north. Smaller channels branch to the south then northwest (Glen Eden River) and to a small side inlet to the northeast. Large areas of established mangroves are present within the upper estuary areas with saltmarsh species/habitat along the coastal edge in places.

Established mangroves in the Matakana Estuary/River provide a buffer along the shoreline from low wave energies generated within the inlet. Areas with coastal armouring are limited, most notably including areas of reclamation that require protection against ongoing weathering and exposure of fill material over the tidal cycle.

There is some transport of sediment within the estuary as suspended by wind waves and peak tidal currents, particularly around the sandspit where more mobile sandy sediments are present. The low energy small sandy pocket beach of Brick Bay is located in Kawau Bay to the south of the Matakana River entrance.



There limited coastal protection structures along this section of shoreline, noting it is predominantly a low energy environment. Some of the key features are as follows:

Sandspit has been significantly modified and developed, including reclamation, seawalls, and the marina development.



Rock masonry seawall armouring the low grass area adjacent to the boat ramp and jetty at Rainbows End Reserve (Source: Auckland Council).



Coastal inundation flooding within this unit is predicted to have the most significant impact at Sandspit across all climate change scenarios, and at Matakana Wharf Reserve and Rainbows End Reserve in the moderate to high change scenario.



Unit 7 captures the lower area of Matakana River catchment and flood plains following overland flow paths crossing low-lying areas to drain into the Matakana Estuary and Sandspit coastline.



Figure 7-1: Coastal hazardscape for the Matakana to Sandspit 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 the moderate and high climate scenarios.

At the unit level, risk from coastal erosion susceptibility and coastal inundation is very high for Auckland Council community facilities (i.e. Sandspit carpark). Risk from coastal erosion susceptibility is moderate to Auckland Council-owned land (e.g. land in and around Sandspit Marina and Sandspit Holiday Park), water infrastructure (e.g. pipes on coastal edge at Milon Bay and on the peninsula

opposite Sandspit), environmental and transport infrastructure (i.e. Sandspit Road) which increases to high risk from the medium term. Risk from coastal inundation is moderate for Auckland Council-owned land and transport infrastructure but low to water infrastructure and environmental features. Risk from coastal erosion susceptibility and coastal inundation to culture and heritage is high.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (57.5 ha) Buildings, wharves (18 No.)			Park amenity structures, carpark, accessways, buildings (1.3 ha)			AT roads (29.6 km) Bridges (1,872.5 m ²)			Water pipes (35.3 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	Very high	Very high	Very high	Moderate	High	High	Moderate	Moderate	Moderate
Coastal inundation											
Moderate	Moderate	Moderate	Very high	Very high	Very high	Moderate	Moderate	Moderate	Low	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.



- Auckland Council-owned land and reserves with assets largely clustered into community areas in the unit: Matakana Wharf, Rainbows End, Sandspit and Brick Bay.



- **Parks amenities:** Matakana Wharf Reserve (playground, path, ramp, picnic facilities, toilets); Rainbows End (parking, picnic facilities, boat ramp, jetty); Green Point Reserve Sandspit (picnic facilities, accessway, small ramp); Sandspit Reserve (playground, toilets, walking paths, parking, picnic facilities), Brick Bay (toilets).
- **Community leases:** Sandspit Reserve community lease to Sandspit Yacht Club for marine and boating uses and tenant owned buildings; Sandspit Reserve commercial lease to Sandspit Holiday Park, including historic school house.



- **Walking/cycling tracks:** Matakana cycle trail and rural coastal roading connections to coastal settlements to the east; Horseshoe Bay to Brick Bay Puriri Reserve track.
- **Key transport connections:** Leigh Road, Sandspit Road; Sandspit wharf Kawau ferry service.



- **Harbour access:** Sandspit wharf, Matakana wharf and Sandspit Yacht Club marina (private).
- Boat ramps (Rainbows End, Sandspit Green Point Reserve, Matakana Wharf Reserve) and jetties (Rainbows End, Sandspit campground).

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.



- There are no sites or places of significance to mana whenua or features from the Cultural Heritage Inventory database in this unit. There is one pā (pā site R09_540) within Unit 7 that has been identified as ‘Category B’ Heritage (Auckland Council, 2016b).
- Note: Specific cultural values and outcomes for this unit may be developed through ongoing involvement with local iwi identified above. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in the report.



- Most key social infrastructure within this SAP area is located in Matakana, which contains the only primary school and medical centre of the SAP area. Many residents will likely rely on the larger centre of Warkworth (outside this SAP area) for other social services. Matakana is a popular destination for visitors, and serves as the gateway to the rest of the SAP area.
- Friends of Awa Matakana (FOAM) are a community group with a principal aim to participate in the restoration and maintenance of a healthy Sandspit Estuary and the two rivers that feed into it, Matakana (14.2 km long) and Glen Eden (13.8 km long).
- The small settlement of Rainbows End is located in the stretch, containing a handful of houses. The area includes Rainbows End Reserve which contains a boat ramp and dinghy storage facilities.
- Sandspit is a popular destination for boating activities, with the wharf offering the only ferry service to the popular Kawau Island Reserve. Sandspit Yacht Club marina has 131 berths for members and contains restaurants and clubhouses. The marina basin is dredged and sheltered by rock revetment breakwater structures .
- The unit includes multiple ‘Category A and B’ Heritage sites identified under the AUP:OP (Auckland Council, 2016b): Matakana shark factory site (Stretch 7.1, Category A), Matakana Dairy Company (Stretch 7.2 Category B), St Leonard’s Church (stretch 7.2 Category B), Matakana War Memorial (Stretch 7.3 Category B), Matakana House (Stretch 7.3 Category B).



- Sandspit Harbour and Matakana River have important, intact ecological sequences from mangroves, saltmarsh and intertidal flats to regenerating kānuka and broadleaved shrubland/forest (SEA_M2_3262). The intertidal flats of this unit provide important feeding grounds for wading birds. There are intact sequences from mangroves to coastal forest at Tongue Point.
- Other indigenous ecosystems and species within this unit include:
 - A large fragment of kauri, podocarp, broadleaved forest located on the eastern banks of the harbour, and a small area of pūriri forest within Kanuka Reserve.
 - Seabirds, including Cook’s petrel and white-fronted tern, which are often found utilising the sandspit and ferry terminal. Large numbers of shorebirds are also found within this area.
 - Native lizard records are scattered along the coastline, including forest gecko which have been recorded in Kanuka Reserve.

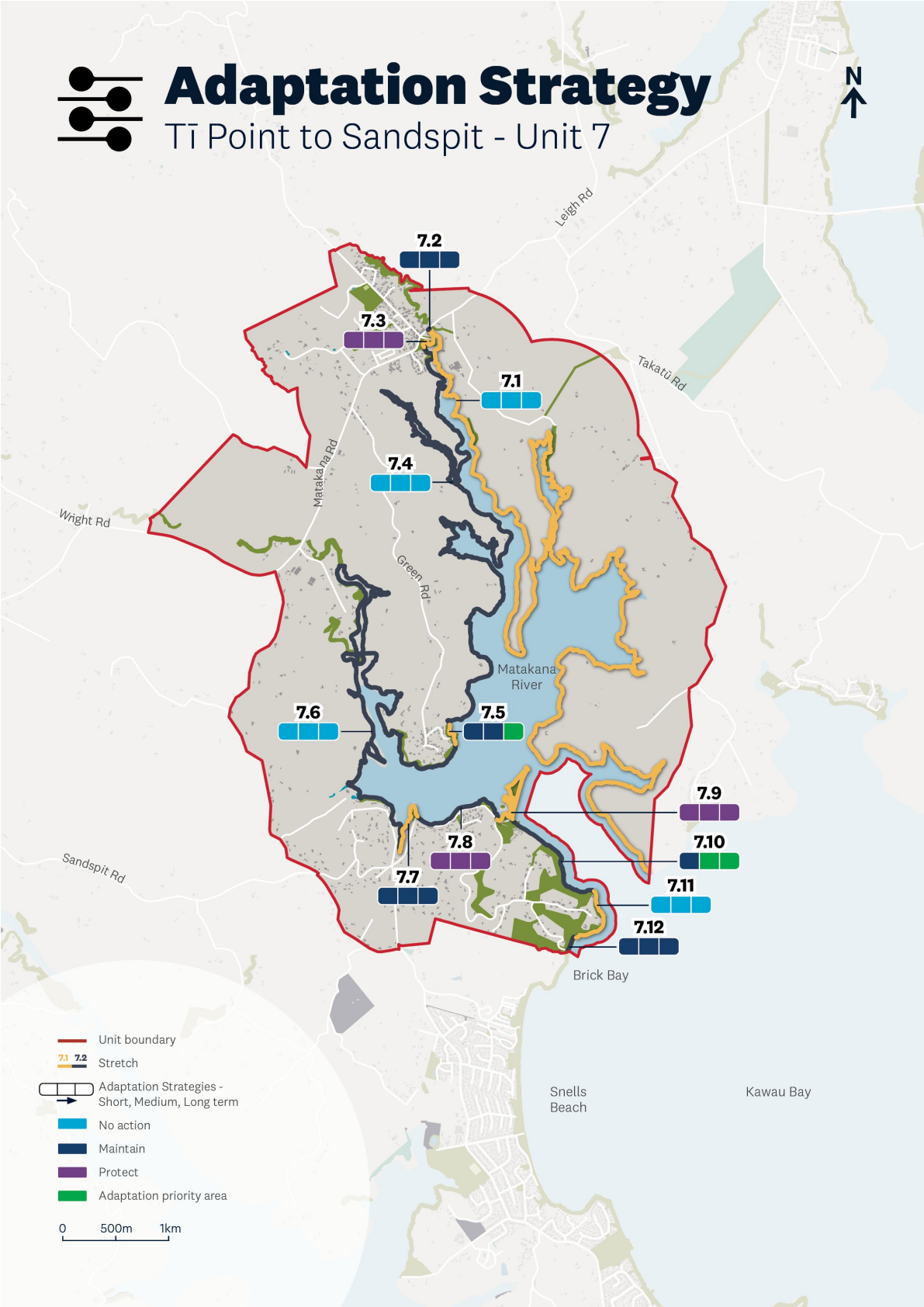
Community feedback



Who have we heard from?

- Feedback was received via Social Pinpoint, Community Submissions and ‘AK Have Your Say’ survey. Events local to this area are listed in Volume 2. A high amount of feedback was received for this unit, including but not limited to community submissions from the Sandspit Residents and Ratepayers’ Association. Key themes in community submissions included but were not limited to:
 - Sandspit: the need to think about proactively planning to manage future sea-level rise and coastal erosion, noting the low-lying nature of the Spit at Sandspit.
 - Sandspit Estuary and need to support the natural environment through managing invasive species.
 - Brick Bay Drive Scenic Reserve and concern around noxious weeds leading to a degradation of the natural environment (requiring management).
 - Brick Bay Beach: Advocacy for pedestrian access, noting the lowering of sand post-storm events.
- For the Unit 7 area, key uses and activities include walking and running near the coast and passive water-based activities such as swimming. A number of respondents noted the scenery and the walkways as their main reason for visiting the area.
- Coastal erosion and coastal storms were identified as the hazards of greatest concern.
- Concerns regarding the impact of erosion and storms on access to the coast were raised by some respondents noting the impact of Cyclone Gabrielle on Sandspit Road.
- Of the feedback received, some submissions supported the ‘Limited Intervention’ approach for the Rainbows End stretch. Other respondents noted the need for further planting and reinforcement of existing protection structures. There was also a desire to see the river channel maintained.

What can we do about it? Adaptation strategy summary for Unit 7.



7.1: Takatu to Matakana

This long stretch covers the eastern shoreline of Matakana River, including the small side embayment and Tongue Point, including the coast to Matakana Centre (the northern side of the Leigh Road bridge).

Scenarios for change			
Low		Moderate	High
No action		No action	
Explanation No action is reflective of the limited land and assets located in proximity to the coast. No action in this stretch does not preclude the need to manage risk to roading assets if required including Matakana Cycle Trail and Tongue Farm Road. Note that there are numerous sites of cultural significance in this coastal stretch which may be exposed to coastal hazard risks and no action does not preclude engagement and advocacy for management of risk.			
Implementation Notes • Management: No action in this stretch does not preclude the need to manage risk to roading assets if required including Matakana Cycle Trail and Tongue Farm Road. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Heritage: Matakana shark factory site and a pā site are noted as heritage features. Engagement with the Heritage Team and/or Heritage New Zealand may be needed to determine management strategies for this feature. • Cultural: There are numerous sites of cultural significance in this coastal stretch including a pā site which may be exposed to coastal hazard risks. Engagement with mana whenua is required to further understand the cultural values associated with this site and the impacts of coastal hazards over time. • Ecology: An important podocarp forest is located within this stretch.			

7.2: Matakana River

The extent of this stretch is the Leigh Road bridge that crosses the Matakana Road. This short stretch is designed to capture the upper reaches of the Matakana River northwest of the road crossing.

Scenarios for change			
Low		Moderate	High
Maintain		Maintain	
Explanation Leigh Road is an important connection to the east (Ōmaha, Tawharanui and eastern beaches). Maintain reflects the management of risk to assets from catchment flood hazards noting the historic, cultural and ecological values associated with this catchment.			
Implementation Notes • Management: Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Heritage: The Matakana Dairy Company and St Leonard's Church are located in this stretch. Engagement with Heritage New Zealand may be required for any specific actions undertaken in this area			

7.3: Matakana Wharf

This stretch commences south of Leigh Road bridge including the shoreline of Matakana River south to the end of Matakana Wharf Reserve. It includes numerous Council assets and the Matakana Wharf Reserve provides an important connection between the river and village.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Protect is applicable to Auckland Council landholdings and the areas of reclamation and coastal access (boat ramp access) at Matakana Wharf Reserve. Protect confirms the uses within this area including play spaces and reserve areas, with a preference for nature-based options and design and location of assets in place of hard protection.		
Implementation Notes Note: Adaptation strategies do not apply to private landholdings identified within this stretch. Cultural: The Rodney Local Park Management Plan notes that Matakana River is an area of cultural significance. Engagement with mana whenua to further understand the cultural values associated with the pā site and the impacts of coastal hazards over time.		

7.4: Matakana River Inlet West

This stretch covers most of the eastern shoreline of the upper Matakana River, from south of Matakana Wharf Reserve, culminating to the north of the Rainbows End Reserve.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation This stretch is largely rural land and much of the shoreline is in private ownership, with the exception of Riverglade Lane Esplanade Reserve (a densely vegetated and undeveloped reserve south of Matakana Wharf Reserve).		
Implementation Notes No action is reflective of the limited Auckland Council land and assets located within coastal hazard areas within this stretch.		

7.5: Rainbows End

This stretch covers the northern part of Rainbows End Reserve that has been developed with coastal access and park amenity facilities.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Adaptation priority 
Explanation Maintain in the low to moderate change scenario is reflective of the management of risk through design and location of assets, including existing ramp, jetty and seawall and ongoing maintenance/upgrades required from exposure to coastal hazards. In the high change scenario, adaptation priority signals the increased inundation risk to park assets such as dingy storage, parking and recreational areas. Proactive stakeholder engagement to consider possible future management options is required. Relocation and landward alignment of assets may be feasible but increasing risk may impact on the viability of all current uses to remain within this locally important coastal park area.		
Implementation Notes Social: Rainbows End and Rivers Environmental Group and other groups are involved in the management and restoration of Rainbows End Reserve.		

7.6: Matakana South (Sharp Road)

This stretch begins at Rainbows End Reserve and continues around the western Matakana inlet along the Glen Eden River inlet shoreline, culminating in the south near the start of Sandspit Road. Land use in this stretch is predominantly rural private land, with some isolated sections of undeveloped/unmaintained esplanade reserve that are not accessible to the public.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation There are private landholdings along this shoreline and no Auckland Council assets are identified within this area. No action does not preclude the management of the southern areas of the Rainbows End Reserve, noting no coastal protection structures are envisaged for these areas and any assets located within these areas should be suitably located to avoid hazard risks.		
Implementation Notes No action is reflective that there are no Council assets located within existing reserve areas. Strategies can be revised should future investment be made in establishing greenways connections.		

7.7: Green Point Reserve & South

This stretch covers a relatively short section of shoreline along the narrow inlet adjacent to Sandspit Road (from the intersection with Beach Street) and extends north to include all of the promontory that is Green Point Reserve ending adjacent to the small boat launching ramp.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain is selected to provide for a range of approaches (with a preference for nature-based and soft options) to recognise the local value of public access and use of the reserve, noting the inundation risk over time may impact use of the reserve and design and location of assets may need to be considered accordingly.		
Implementation Notes • Cultural: The Rodney Local Park Management Plan notes that Green Point Reserve is an area of cultural significance with a pā site. Engagement with mana whenua to further understand the cultural values associated with the pā site and the impacts of coastal hazards over time. • Heritage: The Rodney Local Park Management Plan notes that heritage features in Green Point Reserve are guided by the Heritage New Zealand Pouhere Taonga Act 2014. Engagement with Heritage New Zealand may be required for any specific actions undertaken in this area.		

7.8: Sandspit Reserve (Marina) and Green Road Connection

This stretch covers the shoreline west of Green Road Reserve including the Sandspit Road shoreline and Sandspit Reserve, ending at the road bridge to the Sandspit (near the intersection with Brick Bay Drive). The stretch contains the privately managed yacht club adjacent to Sandspit Reserve, and reclamation owned by Sandspit Yacht Club including DOC reserve around the perimeter.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Protect for the modified reserve area adjacent to Sandspit Yacht Club reflects the importance of this area as a local centre for marine activity and supporting uses (subject to community leases). Protect recognises the importance of Sandspit Road for access to Sandspit wharf, and connection to Brick Bay Drive.		
Implementation Notes • Management: Strategies do not apply to privately-owned land noting engagement with third parties where coastal structures are involved, will be required. Sandspit Yacht Club own several assets in this stretch and are responsible for the continued maintenance and future planning. • Ecology: A number of ecological features (bird habitats) are included in the stretch. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. • Social: Sandspit Environmental Group and Sandspit Residents and Ratepayers Association and other groups are involved in the management of the area around Sandspit Reserve.		

7.9: Sandspit (Wharf and Access)

This stretch consists of Sandspit Wharf and Spit, including Sandspit Road. This stretch has been highly modified with engineered structures (reclamation, multiple seawalls and rock revetments) that have fixed the position of the coastline. The wharf is a popular boat launching facility and offers a regular ferry service to Kawau, with a large carparking area. This is the only ferry access to Kawau and is a critical connection for the local community and wider Auckland region.

Scenarios for change					
Low		Moderate		High	
Protect		Protect		Protect	
Explanation					
Protect recognises the existing level of modification and coastal armouring in and around the Sandspit. This strategy supports the maintenance of access to key coastal infrastructure (wharf areas) which support the island communities of the Hauraki Gulf, in particular Kawau Island. Management of uses within the sandspit area, including supporting ecological outcomes and managing risk to a range of Auckland Council assets and uses (boat trailer, vehicle parking, refuse transfer) will require further adaptive planning.					
Implementation Notes					
• Protect for this stretch is applied at a wider scale, acknowledging areas within this stretch will require different treatments including nature-based measures to ensure that ecological outcomes are also supported alongside ongoing access. • Social: Sandspit Wharf is a well-used facility that is critical to the community. Engagement with the community is recommended to understand how implementation of adaptation strategies may impact on the operation of these facilities, and how impacts could be managed. • Ecology: A number of ecological features (bird habitats) are included in the stretch. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. • Heritage: A historic schoolhouse is located within this stretch. Engagement with Heritage New Zealand may be required for any specific actions undertaken in this area.					

7.10: Sandspit to Horseshoe Bay (Holiday Park)

This stretch commences east of Sandspit Road at the south eastern side of the sandspit including Sandspit Reserve (leased to Sandspit Holiday Park) and includes Horseshoe Bay Reserve until the point where the existing walking tracks turn inland (south) to connect with Brick Bay Drive - Puriri Place Reserve. The historic Sandspit Schoolhouse buildings are located on Sandspit Reserve.

Scenarios for change					
Low		Moderate		High	
Maintain		Adaptation priority		Adaptation priority	
Explanation					
Maintain in the short term supports the management of uses through design and location within reserve areas. This is applicable to leases (including holiday park uses) and uses within low-lying areas and to the alignment of walking tracks within areas east of the sandspit area. Adaptation priority in the moderate to high change scenario acknowledges the highly dynamic and in places, low-lying nature of this coastal area and the increased risk presented by catchment flooding and coastal hazards with sea-level rise. Adaptation planning which supports iwi, community, park user and asset owners' values and requirements will be needed.					
Implementation Notes					
• Cultural: Rodney Local Park Management Plan notes that Horseshoe Bay Reserve is an area of cultural significance. Engagement with mana whenua is required to further understand the cultural values associated with adjacent sites and how this may impact adaptation strategies. • Heritage: Rodney Local Park Management Plan notes that Horseshoe Bay Reserve is an area of historical significance. Engagement with the Heritage Team and/or Heritage New Zealand may be needed to determine management strategies for this feature. • Management: Limited intervention in the short term does not preclude localised interventions as required for roading connections with Brick Bay Drive. Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of this asset. • Social: Local volunteers maintain walking tracks within Horseshoe Bay Reserve. Engagement is recommended to understand how implementation of adaptation strategies may impact on their operations.					

7.11: Sandspit South (Puriri Place)

This stretch covers the tip of the eastern headland. It commences within the Horseshoe Bay Reserves culminating at the northern end of Brick Bay.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of the limited Auckland Council assets located within the eastern reserve area around the headland, noting that walking tracks within the wider reserve area provide connectivity in an inland route between Horseshoe Reserve and Brick Bay Drive - Puriri Place Reserve avoiding the more exposed headland area. Historic heritage values are identified within this wider stretch. No action does not preclude advocacy and support of management of risk to other coastal values if required.		
Implementation Notes Social: Local volunteers maintain walking tracks within Horseshoe Bay Reserve. Engagement is recommended to understand how implementation of adaptation strategies may impact on their operations.		

7.12: Brick Bay

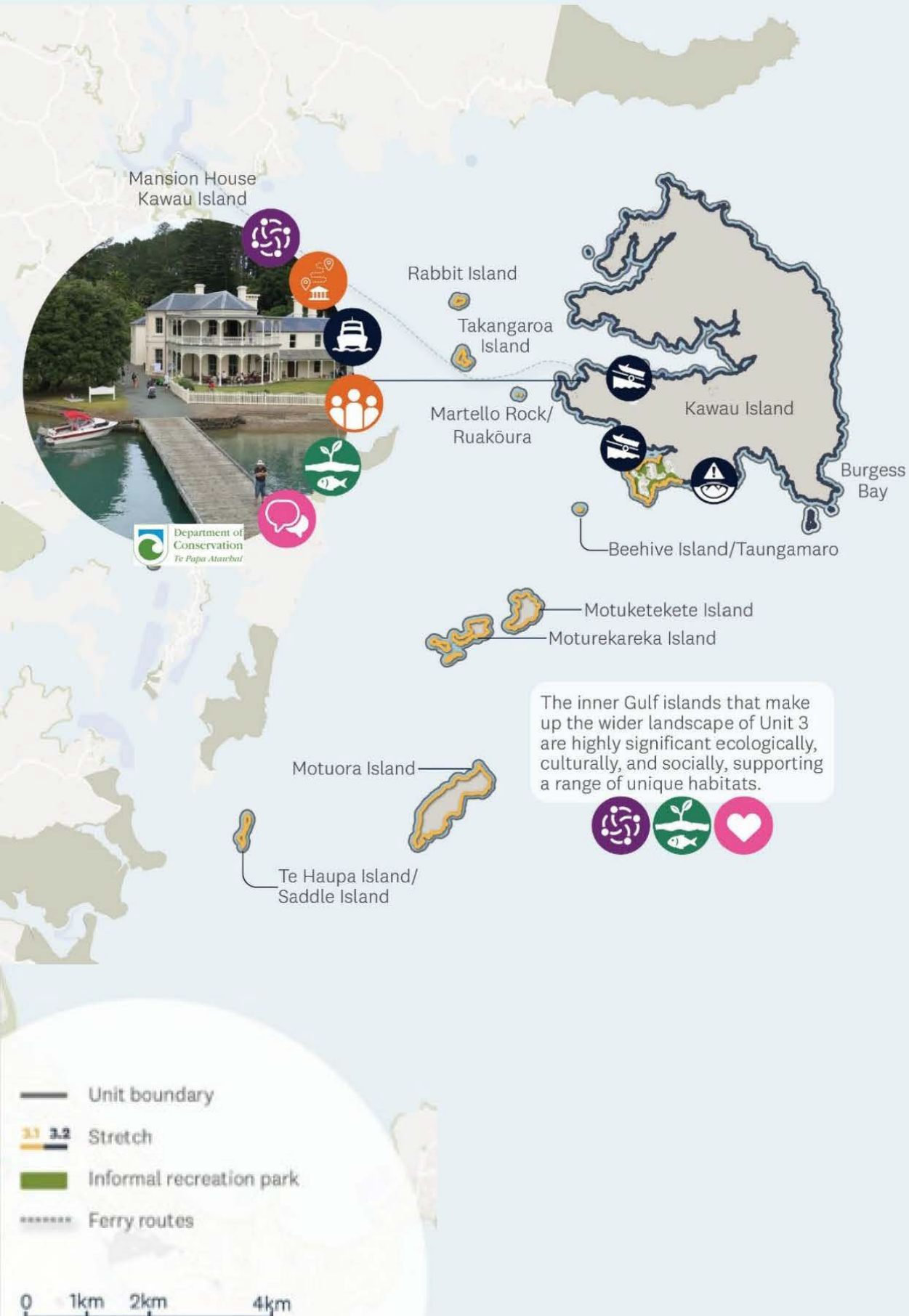
This stretch encompasses Brick Bay. The stretch includes a small community of low-density housing that is accessible through Brick Bay Drive.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation This is a small isolated tidal beach, popular for family-friendly swimming and picnicking. The reserve edge is exposed to coastal processes within Kawau Bay, and the existing toilet facility is within the predicted coastal inundation extent in the high change scenario with sea-level rise.		
Implementation Notes Maintain provides for the management of risk to assets within reserve areas through design and location of assets. No coastal protection structures are envisaged and a natural coastal edge is preferred.		



Unit 8

Ti Point to Sandspit



Unit 8: Kawau island (and surrounding islands)

This unit covers the Islands in the Rodney Local Board area. It includes Kawau Island, and several other islands located in proximity to the Mahurangi Peninsula: Rabbit Island, Takangaroa Island, Beehive Island / Taungamaro Island, Motuketekete Island, Moturekareka Island, Motutara Island, Motuora Island, Te Haupa Island (Saddle Island), and Grants Island.

What is happening? Coastal context and hazardscape

Kawau Island is the largest (and only island with a resident population) within this unit. It is located approximately 8 km offshore from Snells Beach on the Mahurangi Peninsula. The western coastline of the island, including its harbours, is relatively sheltered and only exposed to low short period fetch-restricted wind waves. The open coast facing, eastern coastline of Kawau Island is exposed to larger, longer period wave energies.

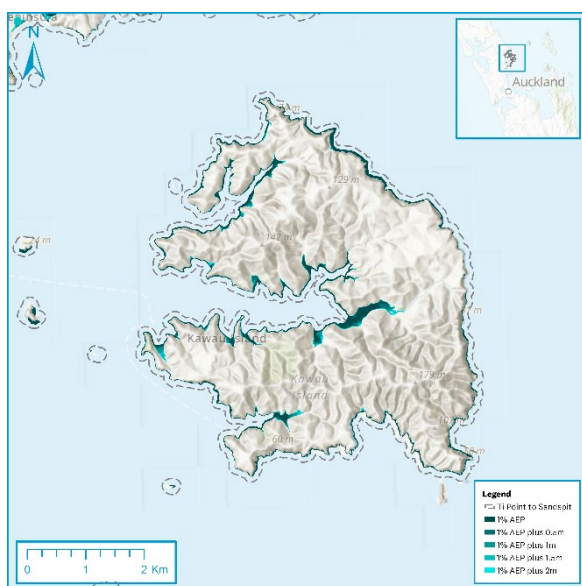
Kawau Island's coastline is predominantly characterised by vegetated coastal cliffs and rocky foreshores interspersed with sandy pocket beaches. These beaches are dynamic in response to coastal processes. The largest beach on the island is Vivian Bay on the northwestern coastline.



Figure 8-1: Vivian Bay, Kawau Island.

Coastal inundation and flood hazards

The predominantly steep terrain of Kawau Island has limited exposure to coastal inundation and sea-level rise. The lower-lying inlets and embayments exposed to coastal inundation in the moderate to high climate change scenario include sections of Vivian Bay and DOC reserve land.



Coastal hazardscape for the Kawau Unit reflecting coastal inundation for 1% AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise



Coastal hazardscape for the Kawau Unit reflecting identification of 1% AEP flood plains

Coastal erosion

The cliffed coast of Kawau Island is susceptible to greater rates of coastal erosion and instability on its eastern face, which is exposed to greater wave energy. However, this side of the island is densely vegetated with limited assets. The more developed western face of the island is also susceptible to coastal erosion and instability. These natural processes may influence the long-term evolution of the coast, including the Island's coastal reserves including South Cove Wharf and DOC land.

This unit includes properties which were impacted by the 2023 storm events. Decisions on the future use and management of this land is being dealt with separately under the Council's storm-affected land use policy. SAPs, as living documents, will be updated as decisions are made on the land.



Figure 8-2: Coastal hazardscape for the Kawau Unit reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios



Risk assessment

Risk is represented in response to 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). Auckland Council asset types identified as exposed and at risk in the short, medium, and long-term (which map to the use of the low, moderate and high climate scenarios) include Council-owned land, transport infrastructure and assets (wharves and boat ramps) due to the exposure of these assets to coastal hazard areas.

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.



- North Cove Kawau Island (Park)
- South Cove Wharf (Reserve)
- Vivian Bay (Reserve)



- Local Roads



- South Cove (Kawau) Landfill



- Boat ramps at South Cove and Schoolhouse Cove
- Wharves and boat ramps at Schoolhouse Bay and South Cove (Auckland Transport)

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 Te Kawerau ā Maki, Ngāti Manuhiri, Ngāi Tai ki Tāmaki, Te Ākitai Waiohū, Ngāti Paoa, and Ngāti Tamaoho.
 - Ngāti Paoa hold a statutory acknowledgment on Te Haupa Island, located by the entrance to the Mahurangi Harbour.
 - Ngāti Manuhiri hold a statutory acknowledgment encompassing the Kawau Island Historic Reserve with their Deed of Settlement also including an exclusive right of first refusal over northern Kawau.
- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in this report.



- Kawau is the only island in this unit with a permanent resident population.
- Near to Auckland mainland and being the only island in this unit with a connection to the electrical grid, Kawau holds social and economic links to the wider SAP area in Auckland's Rodney Ward, where the Kawau ferry departs.
- Mansion House and Grounds (on DOC land) is the main gateway to Kawau island and a key focal point.
- The remaining islands in this unit are either privately held or uninhabited, including some cultural and historic sites of significance.
- Within this unit are eight "Category A" or "A*" heritage features identified in the Auckland Unitary Plan.
- The island has multiple identified mooring zones (AUP) with land use zoning and development (subdivision patterns) which are zones as Residential - Rural and Coastal Settlement Zone and rural and open space conservation zonings also.



- **Kawau Island:** Supports regenerating kānuka scrub/forest, mānuka and saltmarsh ecosystems. A variety of threatened and/or rare avifauna species, including little penguin, brown teal, North Island brown kiwi, and kākā are known to inhabit Kawau island, with banded rail observed around the upper reaches of the South Cove wetland (Stretch 8.3).
- **Beehive Island:** Important breeding and roosting area for threatened coastal avifauna, including shore plover, pied shag, Buller's shearwater, Caspian tern and Northern New Zealand dotterel.
- **Motuketekete Islands:** Pōhutukawa tree land
- **Motuora Island:** Pōhutukawa tree land and coastal broadleaved forest. A large number of native species have been translocated here and/or naturally occur on the island including Duvaucel's gecko and shore skink.

Community feedback



- Through community engagement, respondents identified that Kawau Island is valued for water-based activities including boating, sailing and fishing.
- Preservation of the beaches to allow continued enjoyment of these activities was expressed as a strong aspiration of the community.
- Respondents reflected on recent experiences of storm events including landslips and reduces access, along with concern for sediment accretion and algal blooms.
- There was general support for the proposed adaptation strategies, with commentary noting the need for adaptation to allow for the reestablishment of natural features. Other feedback suggested the need for greater recognition of the popularity of public land and assets and the management and maintenance of infrastructure.

What can we do about it? Adaptation strategy summary for Unit 8.



8.1: Kawau Island north and east coast

This stretch extends around most of Kawau, from School House Bay in the Bon Accord Harbour, around the north and east coast, to near South Cove. Most of the stretch, including the eastern coast, is remote, undeveloped, and forested.

At the southern end of the island is the South Cove closed landfill (managed by Auckland Council). It is located inland, beyond identified coastal hazard areas. Isolated areas of esplanade reserve are located along coastal areas of this stretch, these areas are primarily vegetated. There is a significant wetland mosaic comprising regionally endangered wetland ecosystems located near the landfill. Banded rail utilise the upper reaches of this wetland.

This stretch contains one scheduled heritage site: the Coppermine smelting house site (including ruin of smelting house, site of smelting works complex, and slag reclamation), located centrally on the coast of the Bon Accord Harbour.

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation A no action approach recognises the limited Council-owned land and assets along this stretch, with the landfill located inland beyond identified coastal hazard areas.		
Implementation Notes • Closed Landfill: The south cove closed landfill is located inland within this stretch and is managed under the Closed Landfill Asset Management Plan. • Historic heritage: No action does not preclude the management of risk to historic heritage sites and values. Collaboration with Auckland Council's heritage team may be necessary to ensure appropriate management approaches via implementation of adaptation strategies.		

8.2: South Cove

This stretch extends around the southwest peninsula on Kawau Island to South Cove. This area contains public roads with private dwellings, making it one of the more densely populated areas of Kawau. It is connected to the Historic Reserve and Schoolhouse Bay area with an unsealed track.

An Auckland Transport owned pier (South Cove Wharf) and adjacent, Council-owned boat ramp located within this stretch provide the main public point of access to the water for this community.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation		

Scenarios for change		
Low	Moderate	High
A maintain approach is recommended for the ongoing management and maintenance of existing Council-owned land and assets, including coastal amenity structures, within this stretch.		
Implementation Notes		
• Maintain provides for the continued use of coastal structures while enabling flexibility in future design when structures are renewed. • Management of risk to uses and assets should also consider the design and location of assets in response to coastal hazards.		

8.3: Kawau West Coast

This stretch extends from South Cove to School House Bay on Kawau Island. The Kawau Island Historic Reserve is managed by DOC and comprises most of this area. It is largely forested but also contains tracks, oxidation ponds, a cemetery, toilets, and several buildings. Most notably, this area contains Mansion House, a historic homestead and the pier where the ferries from Sandspit dock. This makes it the entry point for most visitors to the island. School House Bay is located at the eastern end of the stretch. It contains two streets with private dwellings and the Kawau Island Fire Station.

Several scheduled historic sites are located within this stretch, all within the Historic Reserve. They include the previously noted Mansion House jetty and abutments, the Mansion House historic landscape (including gardens and plantings, archaeological sites of European and Māori settlements, and pā site), the Two House Bay Cottage (including former manager's cottage, row of olive trees, and archaeological site of former dwelling), and the Coppermine engine house (including chimney, pump house, and associated wharf site).

Scenarios for change		
Low	Moderate	High
No Action 	No Action 	No Action 
Explanation		
A no action approach recognises the limited Council-owned land and assets along this stretch.		
Implementation Notes		
• Heritage: Historic Reserve heritage sites including Mansion House, House Bay Cottage and Coppermine Engine House.		

8.4: School House Bay

This short stretch covers School House Bay on Kawau Island. A boat ramp with a small area for parking is located at the end of Schoolhouse Bay Road, next to the public wharf. This is the primary public boat ramp and wharf for the residents and visitors of Bon Accord Harbour, including properties within Schoolhouse Bay without coastal frontages.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation A maintain approach reflects the ongoing management and maintenance of coastal access and transport structures providing key connections for residents of the island, including those with no coastal frontage, to water transport connections.		
Implementation Notes Maintain provides for the continued maintenance of existing assets and services while enabling flexibility in future design over climate change scenarios, as required.		

8.5: Islands

This stretch includes the remaining islands on the periphery of Kawau Island, located in proximity to the Mahurangi Peninsula (including Rabbit; Takangaroa; Beehive / Taungamaro; Motuketekete; Moturekareka; Motutara; Motuora; Te Haupa (Saddle); and Grants islands.

Motuora Island is a small, pest-free island that is managed by DOC and the Motuora Restoration Society. A variety of native species have been translocated and/or naturally occur on the island, including several native lizard, seabirds, and North Island brown kiwi.

The remaining islands of this stretch are uninhabited and/or privately owned. Ngāti Paoa holds a statutory acknowledgment on Te Haupa Island. Several contain private buildings; however, only Rabbit Island has a pier. There are no Auckland Council assets within this stretch.

Scheduled heritage sites in this stretch include the shipwreck of the Hulks of barque Rewa and schooner Otimai by Moturekareka, Whitaker's copper smelter site and pā site on Motuketekete. Grants Island in the Mahurangi Harbour is also heritage scheduled as Browne's spar station site (including associated settlements, accessway and burials).

Scenarios for change					
Low		Moderate		High	
No Action		No Action		No Action	
					
Explanation					
A no action approach recognises the limited Council-owned land and assets along this stretch/islands					
Implementation Notes					
This stretch includes coastal areas with culturally and ecological significant values and features; this strategy does not preclude advocacy for management of risks to cultural or ecological values. Engagement with mana whenua is required to further understand the cultural values associated with the impact of coastal hazards over time.					

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