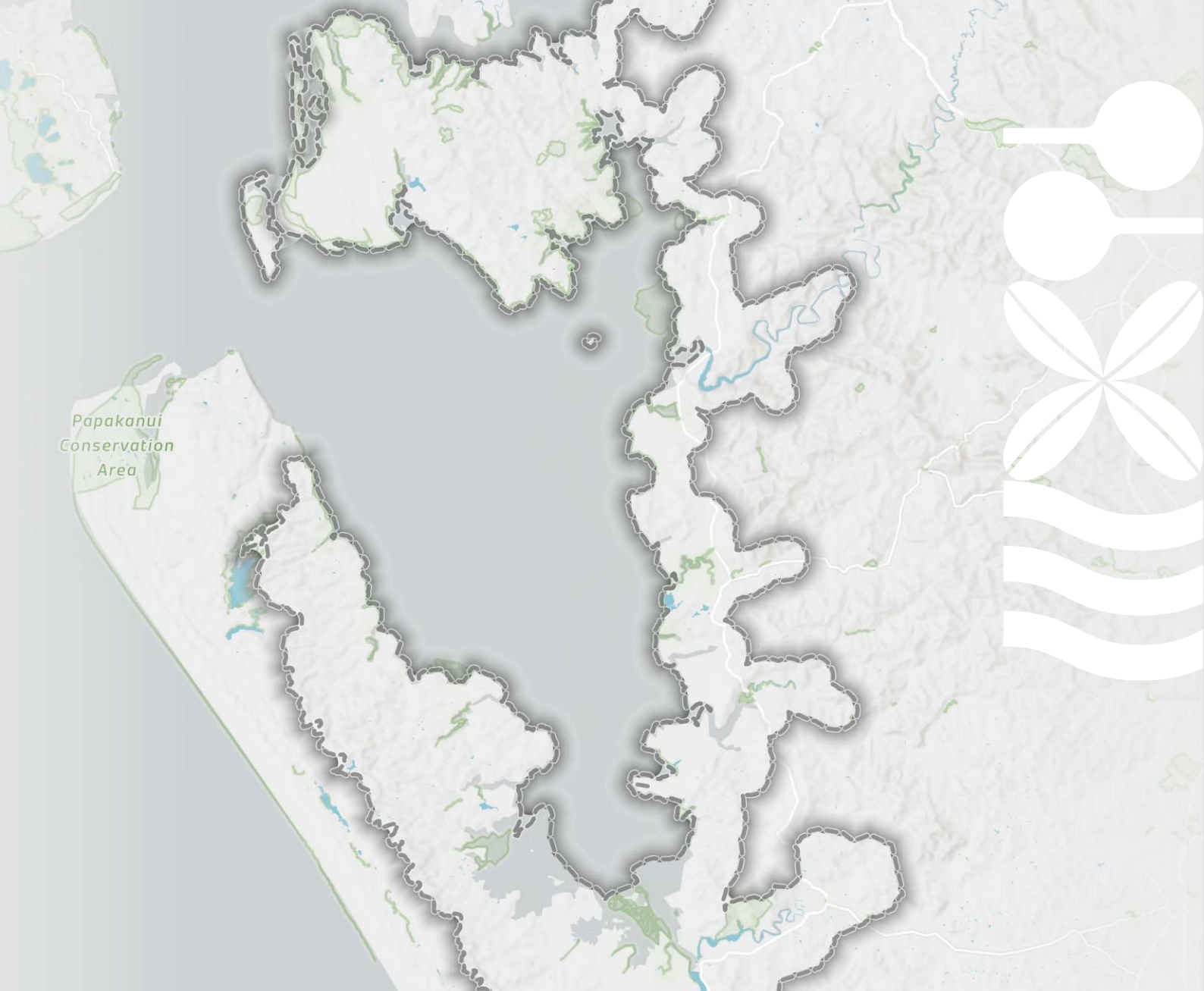




Ngā mahere whakaurutau mō te takutai

Shoreline Adaptation Plan

Kaipara Moana (Harbour)

Volume 3: Adaptation Strategies

July 2025, Version 1.0

aucklandcouncil.govt.nz

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Shoreline Adaptation Plan

Kaipara Moana (Harbour)

Volume 3: Adaptation Strategies

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Front Cover

Shoreline Adaptations Plan area overview map for Kaipara Harbour. Map prepared for Auckland Council by Tonkin + Taylor 2025.

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Quick Reference

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

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



Glossary

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

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

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

Shoreline Adaptation Plan Areas

Tāmaki Makaurau, Auckland, is a coastal city, bounded to the east and west by the South Pacific Ocean and the Tasman Sea. The region has around 3,200 km of dynamic coastline and encompasses three major harbours: the Kaipara, Manukau and Waitematā. Due to its location, much of the city's urban development and supporting infrastructure is concentrated in coastal areas and exposed to coastal processes such as erosion and inundation. These natural processes are considered hazards when they impact on things or locations of value. Climate change related to greenhouse gas emissions is contributing to rising sea levels, which have a range of impacts including increasing the frequency and magnitude of coastal hazard events. Auckland Council began developing a series of Shoreline Adaptation Plans (SAPs) in 2021. These area-based plans form the first step for the SAP programme in achieving a resilient future for Auckland's coasts. A more detailed discussion on the Shoreline Adaptation Plan Program can be found in *Volume 1: Understanding Shoreline Adaptation Plans*. Twenty separate 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
- Ōrākei to Tahuna Torea
- Pahurehure Inlet
- Pākiri to Matheson Bay
- Snells Beach to Ōrewa
- Tāmaki Estuary
- Ti Point to Sandspit
- Waiheke Island and the Hauraki Gulf Islands
- Waimanawa Little Shoal Bay mini SAP
- Waitematā Harbour West
- Weiti Estuary to Devonport Peninsula
- Whangaparāoa
- Whatipu to South Head

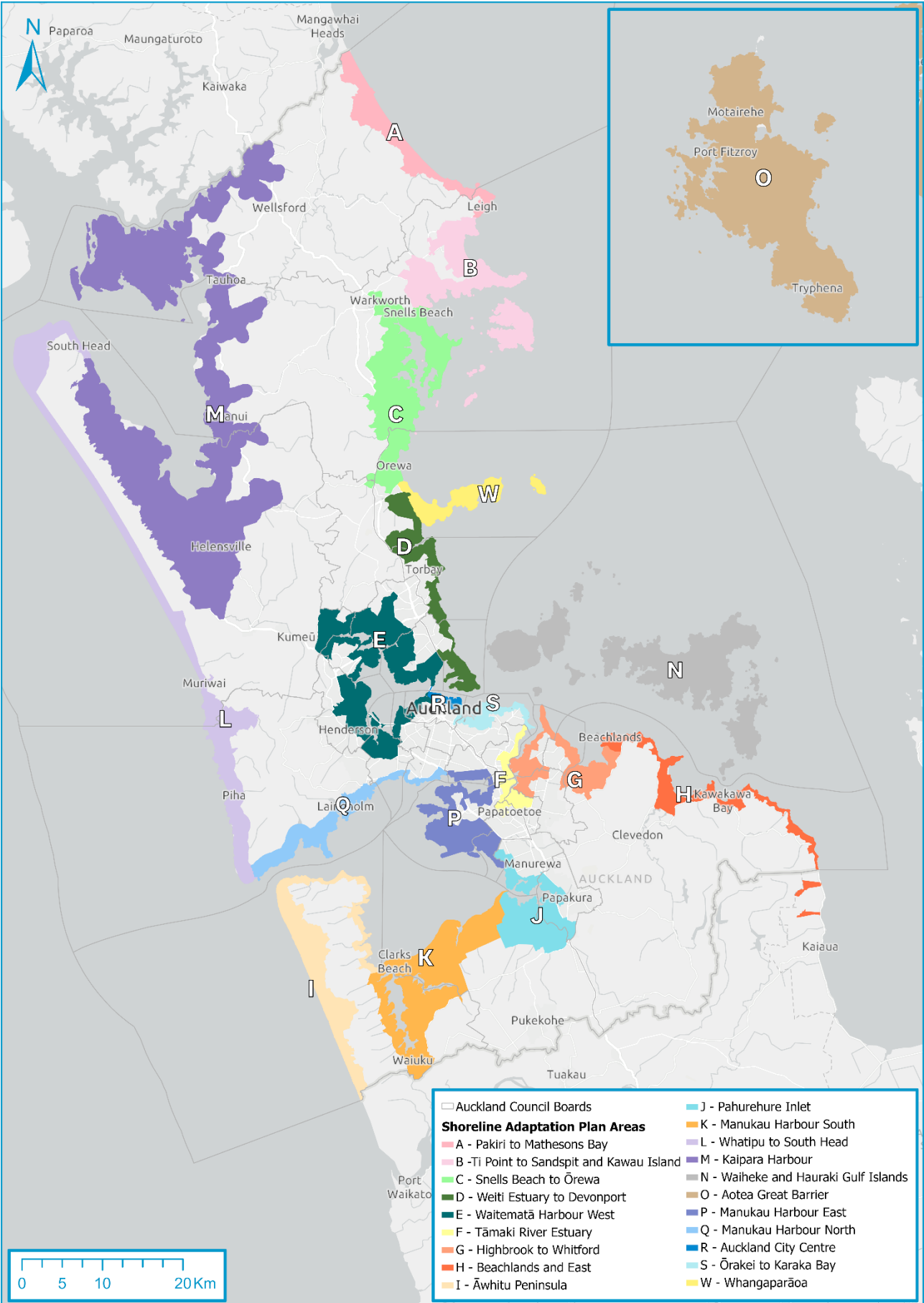
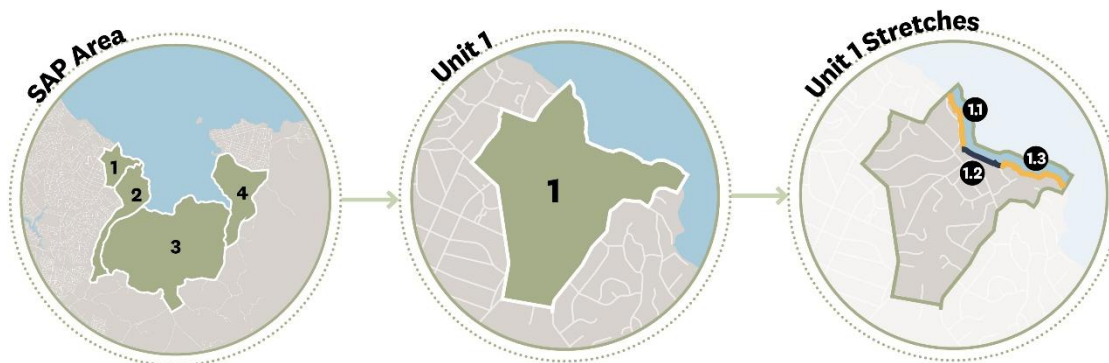


Figure 1: Regional overview of Shoreline Adaptation Plans

SAP areas, units & stretches

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



Climate change scenarios (timeframes for change)

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

Table 1: Shoreline Adaptation Plan climate change scenarios

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

Auckland Council's adaptation strategies

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



No Action

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



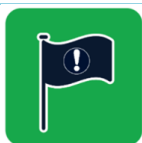
Maintain

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



Protect

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



Adaptation Priority Area

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



Unit 1

Kaipara Harbour



Ōmokoiti Bay



Seagrass (*Zostera* spp.) meadows can be found within the nearshore marine area



Statutory acknowledgement areas Kaipara Moana



Regionally significant geological site; six metre-high coastal terrace formed by the high sea level during the last interglacial period



Wetlands (natural & artificial) regionally critically endangered machaerina sedgeland, and raupō reedland, and regionally critically endangered dune forest

Ōmokoiti Bay Reserve

Department of Conservation marginal strip; boat launching on an informal basis



Highly valued coastal access point



Muriwai Pā, Ridge Pā and wahi tupuna



Dunes and dune forest



Link between Kaipara Moana/Harbour and west coast Te Oneone Rangatira/Muriwai Beach



Trig Rd

South Head Rd

Pataua Creek

Te Rau Pūriri Regional Park



Raupō reedlands & regenerating shrublands



Key partnerships with mana whenua, local ecological restoration groups, schools and community

Lake Rototoa

Biodiversity focus area

South Head Road; access to and from Helensville & South

Haratahi Creek

Te Rau Pūriri Regional Park contains the largest and deepest dune lake and the largest dune forest remnant on the peninsula, the park has numerous cultural landscapes and sites is used for a variety of recreational uses including walking, cycling, horse riding and camping.

Unit boundary

1.1 1.2 Stretch

Regional Park

0 250m 500m

Unit 1: Te Rau Pūriri

Unit 1 encompasses Omokoiti Bay in the north and Te Rau Pūriri Regional Park in the south. This unit is generally bordered by privately-owned and DOC land on either side.

The recently developed Regional Parks Management Plan¹ identifies regionally significant geological features located within the park, including at the mouth of Pataua Creek where there is one of the best examples of a 6 m high coastal terrace formed by the high sea level during the last interglacial period (about 120,000 years ago).



Figure 2: Te Rau Pūriri Regional Park - Looking across the land and over the Kaipara Harbour

What is happening? Coastal context and hazardscape

Te Rau Pūriri Regional Park is exposed to coastal erosion and land instability, including walking tracks and the boat ramp, even in low climate change scenarios. With increasing climate change, greater extents of land and assets are potentially susceptible.

Much of the Te Rau Pūriri unit is sufficiently elevated above the area of coastal inundation exposure in a low climate change scenario, however as extent, severity and frequency of coastal inundation increases with higher climate change scenarios, the impacts to assets such as the walking tracks, prawn ponds and sheds become significant.

Unit 1 (and Unit 2) are in the Waionui stormwater catchment. Flood plains this unit follow three main tributaries which drain to the Kaipara Harbour. In the north, flood plains can be observed encompassing the prawn ponds and connecting with a tributary south of Mcleod's Farm. In the south,

¹ <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plans-strategies/parks-sports-outdoor-plans/regional-parks-management-plans/Documents/regional-parks-management-plan-2022.pdf>

flood plains can be observed across Te Rau Pūriri Regional Park, following the tributary which drains into the Omokoiti Bay Marginal Strip.

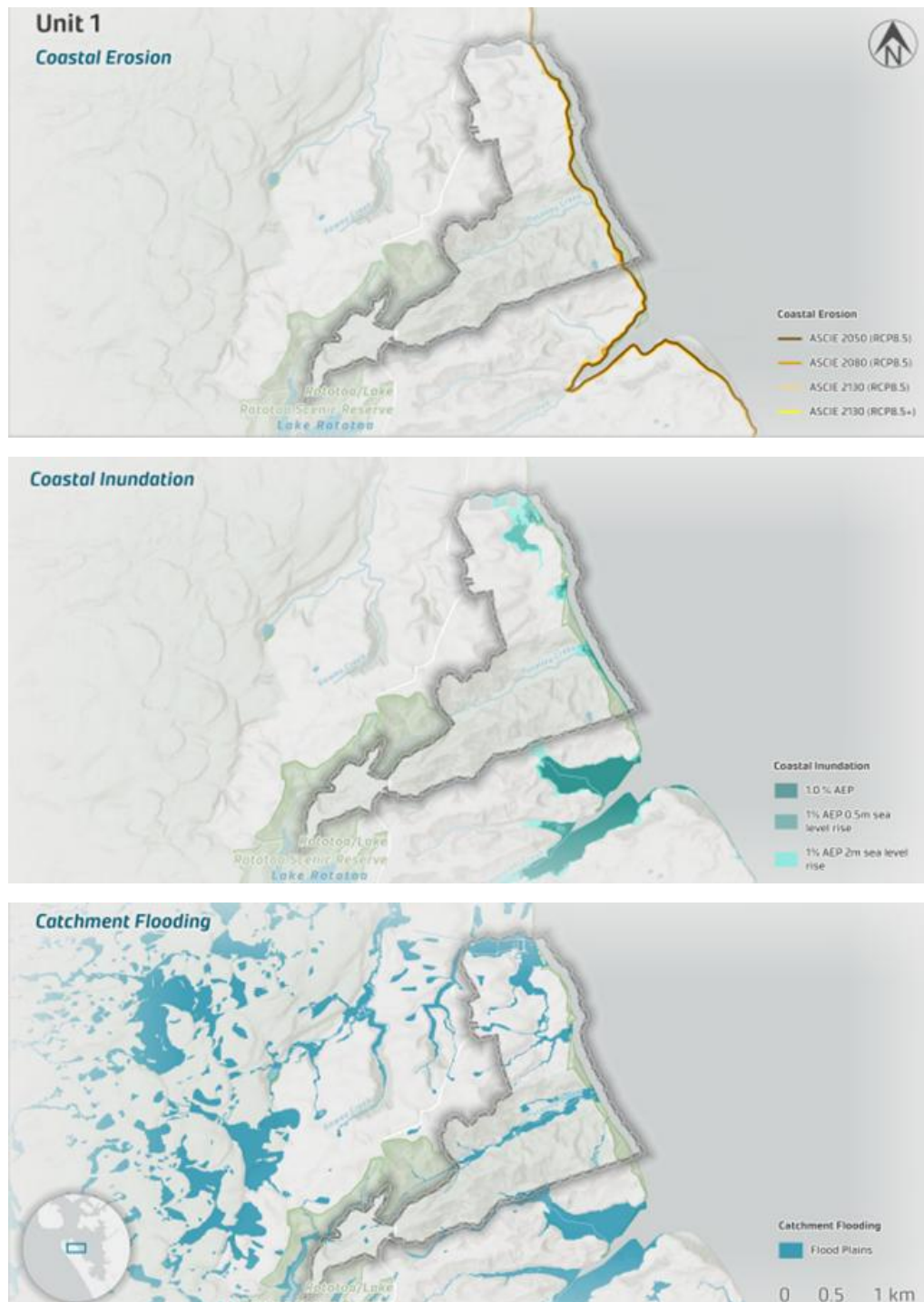


Figure 3: Coastal Hazardscape for the Te Rau Pūriri Unit, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

The table below summarises the risk levels for Council asset types in the short, medium, and long term and which relate to the use of the low, moderate and high climate change scenarios.

Risk from coastal erosion and susceptibility to Auckland Council-owned land (i.e., Te Rau Pūriri Regional Park) is moderate. Transport and water infrastructure groupings have a risk rating of very low for both coastal erosion susceptibility and coastal inundation. This is reflective of the predominant use of the unit as regional park land and limited count/area/length of assets in the transport and water infrastructure groupings.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (356.3 ha) Buildings, wharves (17 No.)			Park amenity structures, carparks, accessways, buildings (3.0 ha)			AT roads (0.2 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											
Moderate	Moderate	Moderate	Low	Low	Low	Very low	Very low	Very low	Very low	Very low	Very low
Coastal inundation											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	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.



- Te Rau Pūriri Regional Park - the largest park in the SAP area.
- Mcleod's Farm.
- Prawn Farm.



- Te Rau Pūriri Regional Park contains toilets and community buildings which include shearing/milking sheds, workshops, pump sheds and farmhouses.



- **Key pathway connections:** Te Rau Pūriri Track, Blue Track Cycleway, Red Track Cycleway, Orange Track Cycleway.
- **Key local and regional roading** connection traverse this unit, with South Head Road providing main access to this unit.



- **Harbour access:** Te Rau Pūriri Omokoiti Bay Marginal Strip boat ramp (DOC-owned).

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 regional park is a popular attraction for day walks, boasting one of the best beaches on the Kaipara Harbour, bird colonies, mountain biking and horse riding tracks and Lake Rototoa.
- Environmental groups such as South Kaipara Landcare and Regional Park Rangers have held native planting days in the park (South Kaipara Landcare, 2023).



- Two pā sites are located in the north of the regional park.
- The Regional Parks Management Plan outlines the significant cultural heritage near the coast at Te Rau Pūriri, which needs to be considered in planning for coastal protection and adaptation, so as to ensure sites are not adversely affected by revegetation planting or unplanned site disturbance.
- Kaipara Harbour is part of a Statutory Acknowledgement Area of Te Uri o Hau and Ngāti Whātua o Kaipara (Te Arawhiti, 2000). The Deed of Settlement provides for vesting of four Crown-owned sites to Ngāti Whātua o Kaipara as Statutory Acknowledgments. These include the Rototoa Conservation Area and Lake Rototoa Scenic Reserve located within Te Rau Pūriri Regional Park.
- Note: Specific cultural values and outcomes for this unit will/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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

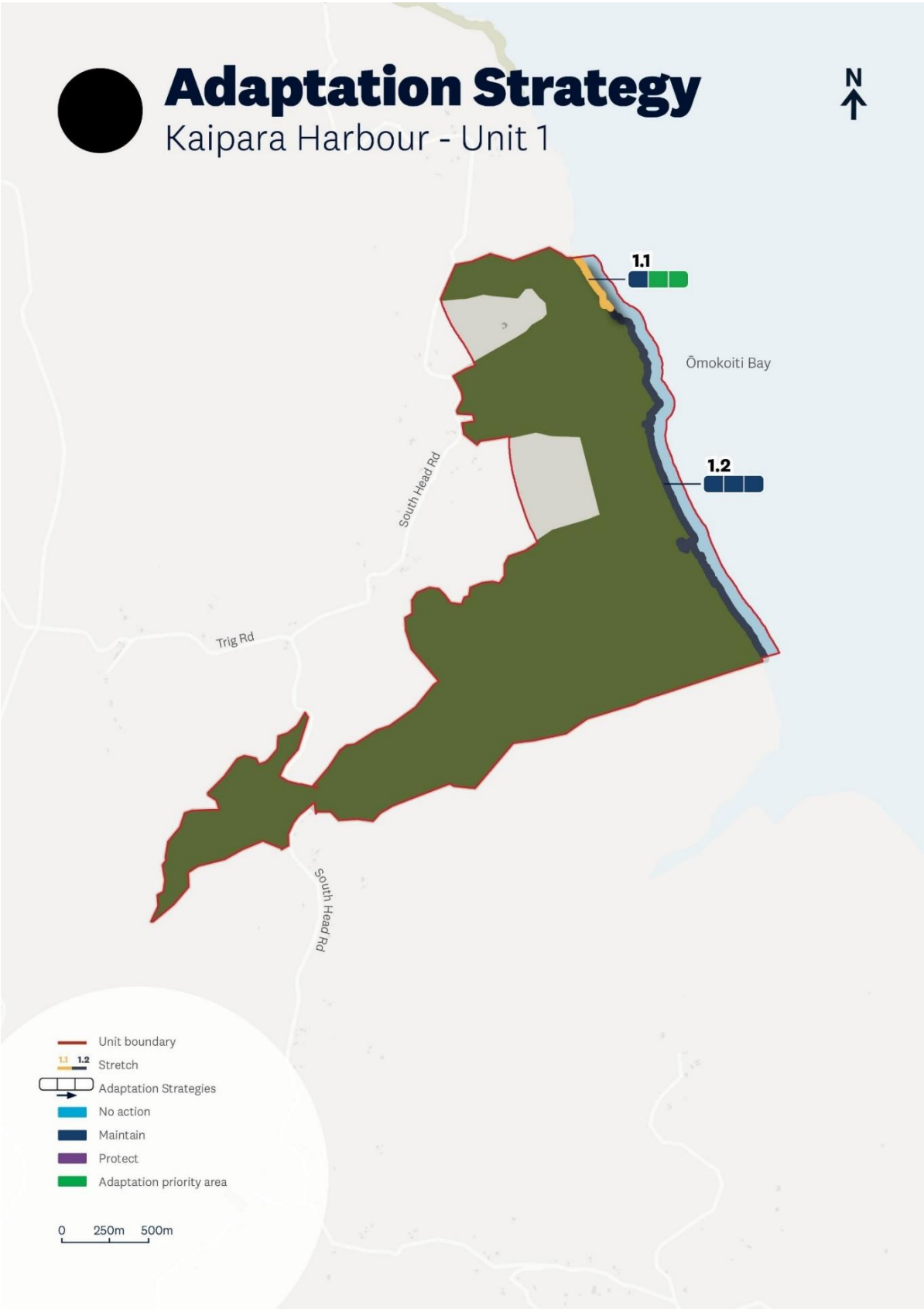
- Te Rau Pūriri Regional Park which contains large remnants of critically endangered dune forest. A regional variant is also found within this park, namely podocarp-broadleaved dune forest. Areas of mānuka, tangle fern, scrub, fernland alongside other freshwater wetland environments are also present.
- The Old Prawn Farm wetlands which contain areas of native wetland, including Machaerina sedgeland and raupō reedland. A large number of threatened shorebird, seabird, and cryptic wetland bird species have been recorded within this area.
- There are small areas of seagrass located within the marine area of this unit.

Community feedback



- Key uses and activities identified through feedback included walking or running on the beach/coastal area and passive recreation.
- Community aspirations were for improved access to and maintenance of existing infrastructure (e.g. boat ramps). Other community aspirations include an offroad cycle trail around South Head.

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



1.1: Te Pūriri (North)

Te Rau Pūriri stretch commences at Omokoiti Bay in the north, culminates at the end of the regional park to the south and includes regional park land, associated fencing, walking tracks and amenities.

Scenarios for change			
Low		Moderate	
High			
Maintain		Adaptation priority	
Adaptation priority			
			
Explanation			
Maintain provides for the management of risk to low-lying areas of the park in the low change scenario. Maintain indicates that the coastline is not fixed and realignment may be required to maintain recreational amenity, dry high-tide beach areas, support ecological outcomes and coastal character. In the moderate to high change scenario, adaptation priority identifies the need for coordinated planning for the future use of land and assets, including ongoing support for dune habitats.			
Implementation notes			
• Ecology: The stretch contains areas of significant ecological value including native wetlands, endangered dunes forests and bird roosting areas. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. • Cultural: The Regional Parks Management Plan outlines significant cultural heritage near the coast that needs to be considered in planning for coastal protection. 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: Te Pūriri (South)

Te Rau Pūriri stretch commences at Omokoiti Bay in the north, culminates at the end of the regional park to the south and includes regional park land, associated fencing, walking tracks and amenities.

Scenarios for change			
Low		Moderate	
High			
Maintain		Maintain	
Maintain			
			
Explanation			
Maintain provides for the management of risk to low-lying areas of the park over time. This may necessitate the need to relocate defined park assets landward. There may also be a need to support ecosystems to manage dune habitats.			
Implementation notes			
• Ecology: The stretch contains areas of significant ecological value including native wetlands, endangered dunes forests and bird roosting areas. The Ecology Team will identify and manage any potential ecological impacts that could arise from the implementation of adaptation strategies. • Cultural: The Regional Parks Management Plan outlines significant cultural heritage near the coast that needs to be considered in planning for coastal protection. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.			



Unit 2

Kaipara Harbour



Indigenous ecosystems types, including numerous wetland habitat and several regionally uncommon ecosystems

Wharf area and boat ramp

Te Rau Pūriri Regional Park

Shelly Beach Rd
Omara Ave
James McLeod Rd

Key harbour access point

Shelly beach most popular beach for Kaipara SAP area

South Head Hall

South Head Rd

Critical road link for communities and access to the north/south

Waioneke School

Monk Rd

Esplanade reserve

Moleod Rd

South Head Golf Club

Shelly Beach Reserve (Te Aukahanga o Aotea)

Access for numerous rural land holdings including Ōtakanini Topū

Te Korowai-o-Te-Tonga Peninsula

Webber Rd
Wilson Rd

Shelly Beach Rd

Kawau Parua Inlet

Aspirations for connections between west coast and south head areas

Esplanade reserve

Historic coastal and flood defenses and modification of waterways and coastal margins

Motukuru Island

Esplanade reserve

Road layby and picnic spot

Puharakeke Island

Ōpāhekeheke Island

Haranui Marae

Waikauri Island

Parkhurst

Unit boundary

2.1 2.2 Stretch

Informal recreation park

0 1km 2km

Unit 2: Waioneke to Parkhurst

Unit 2 includes the coast south of Te Rau Pūriri Regional Park and culminates at the northern side of Haranui Road. It includes the islands in the Kawau Parua Inlet (e.g. Waikauri Island, Motukuru Island, Pūharakeke Island and Opahekeheke Island). Auckland Council-owned land is limited within the unit, located mainly at the coastal settlement of Shelly Beach including Shelly Beach Reserve, recreational assets and wharf area and transport infrastructure (South Head Road, Shelly Beach Road).

Risk from coastal erosion susceptibility and coastal inundation is relatively low for water infrastructure, reflective of the large rural area and limited assets present.

Exposure of significant ecological areas and identified cultural sites (including the Islands in the Kawau Parua Inlet, either side of Parekawa Creek) to coastal inundation and coastal erosion susceptibility is high where the majority of cultural and significant ecological areas are located in coastal areas.

What is happening? Coastal context and hazardscape

This unit is exposed to coastal erosion and land instability in low climate change scenarios. With increasing climate change, greater extents of land and assets (particularly at Shelly Beach) are potentially susceptible. The majority of this unit is predominantly marginal strip with no coastal assets present. As such, risks of coastal hazard exposure are mainly land based.

An exception within this unit is the coastal settlement of Shelly Beach which is exposed to both coastal erosion and inundation hazards. The reserve is protected by a mudcrete seawall with integrated accessways and a series of groynes acting to retain beach sediment.



Figure 4: Shelly Beach Reserve seen from the wharf, with three groynes and seawall

A notable proportion of this unit is exposed to coastal inundation, owing to the extents of low-lying land and number of creeks interspersing the coast. This includes Omokoiti Flats, and Haratahi, Taumata, Karukaruhui, Mairetahi, Parekawa and Tikitū creeks.

With respect to catchment flooding, Unit 2 captures lower areas of the Waionui catchment and majority of West Kaipara Harbour stormwater catchment. Flood plains can be observed on low-lying lands and around major tributaries which drain into Kaipara Harbour.

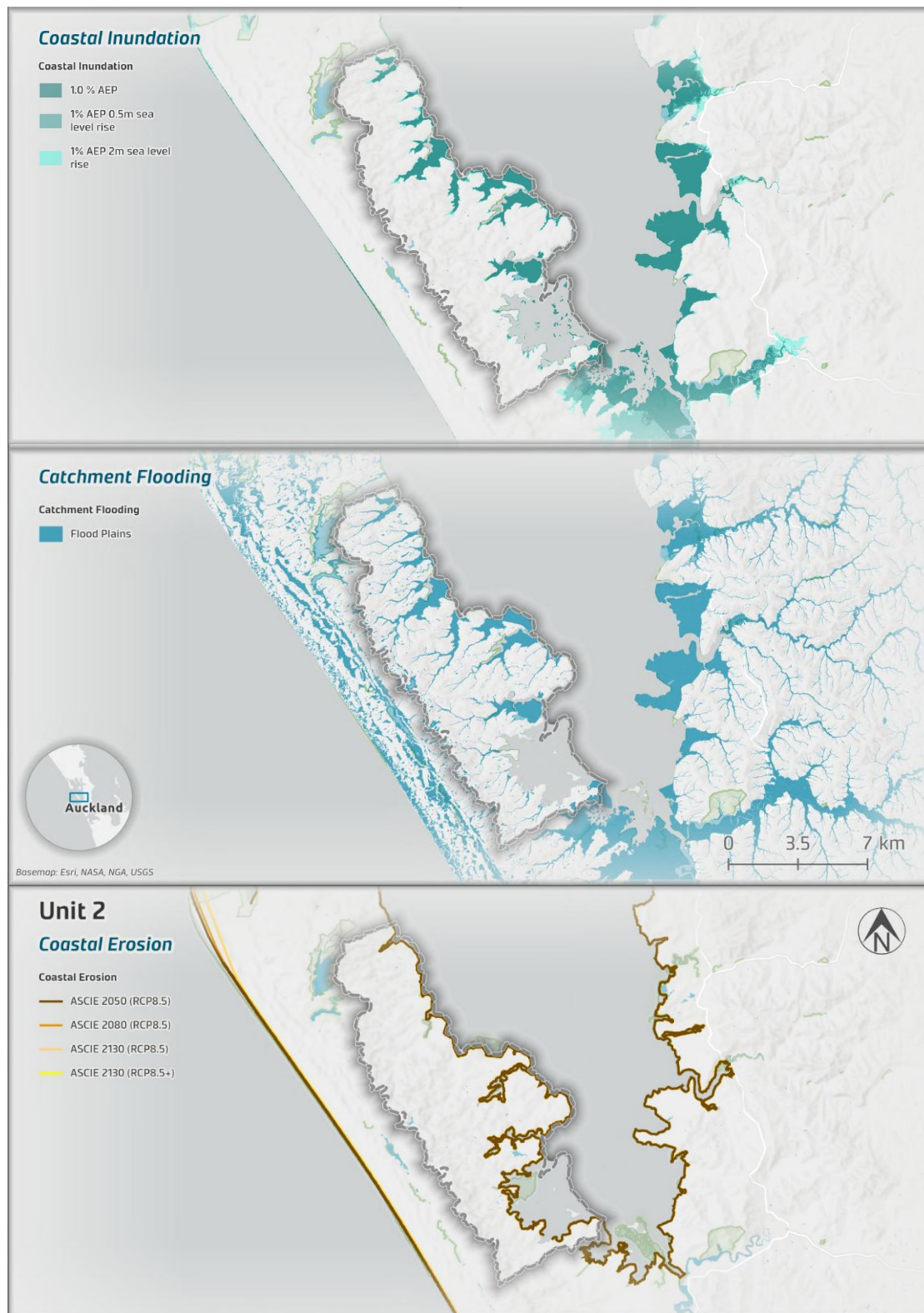


Figure 5: Coastal Hazardscape for the Waioneke to Parkhurst, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of 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 a unit level, environmental features are exposed to the greatest coastal risks. This includes the islands in the Kawau Parua Inlet and either side of Parekawa Creek. Risk is rated very high from coastal inundation and high from coastal erosion susceptibility. Risk from coastal inundation and coastal erosion susceptibility is also high to culture and heritage assets where the majority of cultural heritage assets and cultural heritage land is located on the coast.

In comparison, risk from coastal erosion susceptibility to Auckland Council-owned land (i.e. Aotea/Shelly Beach), community facilities (i.e. Shelly Beach Wharf) and transport infrastructure (e.g. South Head Road, Shelly Beach Road) is moderate. Coastal inundation risk to these groupings in the short term is also moderate except for Auckland Council community facilities (i.e. Shelly Beach Wharf) which are at high risk to coastal inundation in the short term. Risk from coastal erosion susceptibility and coastal inundation is low for water infrastructure. This is reflective of the large rural area in this unit decreasing the count/area/length of assets in the grouping. The table below summarises the risk levels for Auckland Council asset types in the short-, medium-, and long term as set out in the risk assessment carried out by Tonkin + Taylor (2024).

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (26.3 ha) Buildings, wharves (6 No.)			Park amenity structures, carparks, accessways, buildings (0.8 ha)			AT roads (51.7 km) Bridges (100.3 m ²)			Water pipes (5.6 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Low	Low	Low
Coastal inundation											
Moderate	Moderate	Moderate	High	High	High	Moderate	High	High	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.



- Limited Council-owned land within the unit, with a few small reserves lining the coast.
- The main Council reserve is located at Shelly Beach, Shelly Beach Reserve.



- Shelly Beach Reserve contains multiple Council-owned community facilities and assets such as, but not limited to, the café (leasehold), reserve toilets, playground, and basketball court.



- Underground and aboveground stormwater network assets servicing the local community.



- **Key local and regional roading connection traverse this unit** such as Higham Road and South Head Road. South Head Road in particular, provides access to local housing.



- **Harbour access:** Shelly Beach boat ramp and wharf is located on the shorefront of Shelly Beach Reserve and is one of the limited locations that provide recreational water access to Kaipara Harbour.

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.



- Social infrastructure is limited, with the only settlement located in Shelly Beach. This area houses a small community containing only several dozen houses.
- The Shelly Beach Reserve serves as the hub of the community with multiple Council assets including a newly constructed playground and a jetty.



- There are 29 identified 'Category B' Heritage features (all pā sites) listed in the Auckland Unitary Plan (Māori Maps, 2024).
- Ōtakanini (Haranui) marae is located at the southern border of this unit. The wharenui is named Ngā Tai i Turia ki te Maro Whara. Ngāti Whātua Tuturu is the principal hapū of Haranui marae which belongs to the iwi Ngāti Whātua (Māori Maps, 2024).
- Note: Specific cultural values and outcomes for this unit will/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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

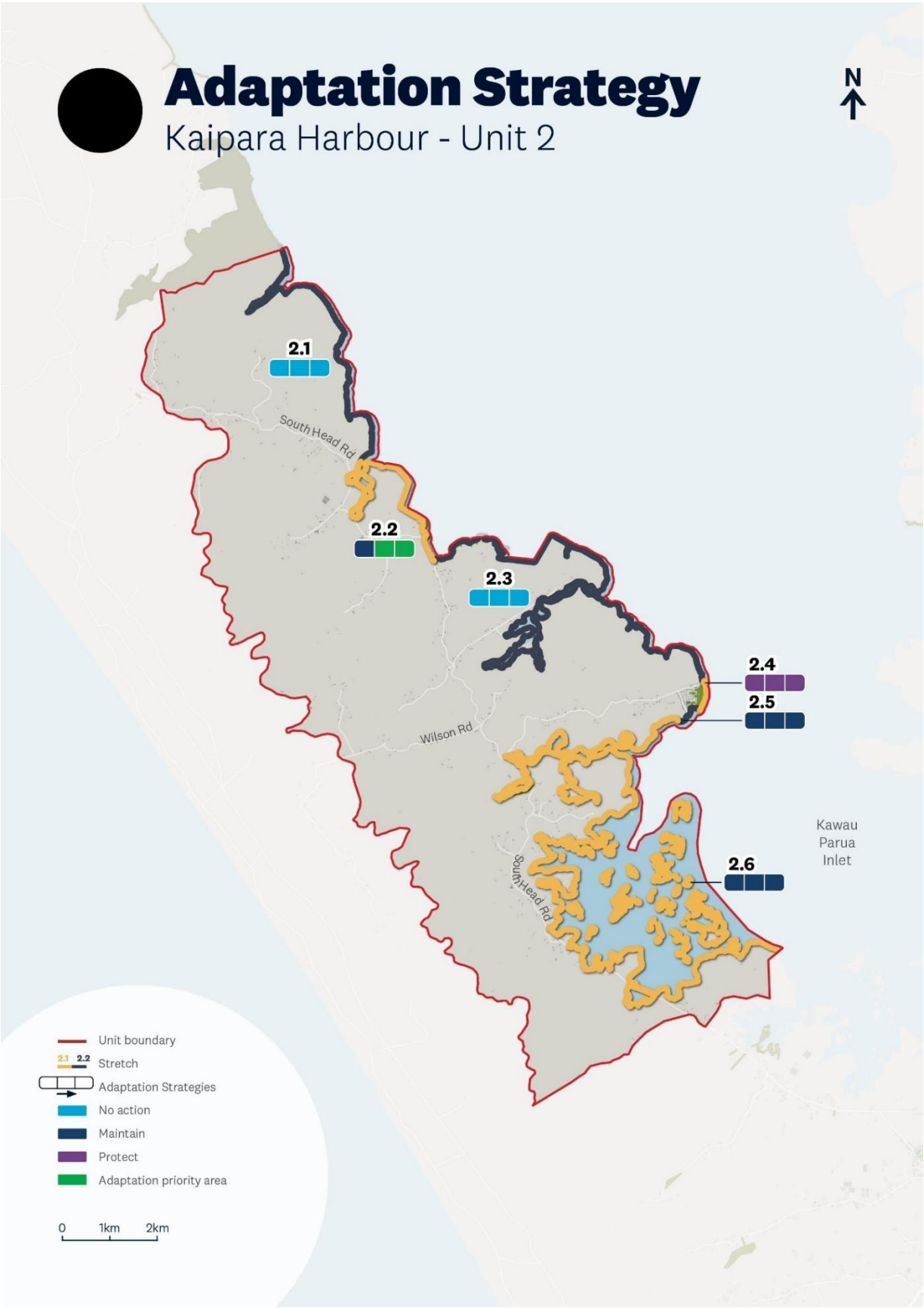
- There are several wetland complexes to the south of Te Rau Pūriri Regional Park. Wetland ecosystems include gumland wetland, raupō reedland, manuka, tangle fern, scrub, fernland and *Machaerina* sedgeland (Stretch 2.1).
- Haratahi Creek is a permanent watercourse located to the south of Te Rau Pūriri Park. Dune forest and kahikatea forest border the upper reaches of the creek (Stretch 2.1).
- There is a large, diverse area of saltmarsh, mangrove forest and seagrass meadows located to the north of Shelly Beach (Stretch 2.1).
- The diverse coastal saline area described above is recognised as an important high-tide bird roost for shorebirds, including black stilt. Approximately 10% of the entire population spend the winter at this site (Stretch 2.1) (Haggitt et al., 2008).
- Mairatahi Creek is bordered by saltmarsh and mangrove forest, which transitions into raupō reedland and mānuka, tangle fern, scrub, and fernland. This area belongs to the Kaipara Harbour Saline BFA.
- The coastal cliffs of Shelly Beach Reserve are lined with pōhutukawa-dominated forest with small areas of raupō reedland and flaxland wetland located within the low-lying areas.
- Rat Island is located offshore of Shelly Beach and is an important high-tide bird roost due to its proximity to significant feeding areas. It is a key nesting site for Caspian tern.
- There is a large *Machaerina* sedgeland wetland to the south of Parekawa Creek which provides known habitat for a variety of threatened, cryptic wetland bird species.
- Areas of kānuka dune forest are located on the northern banks of Parekawa Creek.
- Pūharakeke Stream (adjacent to Pūharakeke Island) is a known feeding area for New Zealand's most threatened bird species: fairy tern (*Sternula nereis*, Threatened – Nationally Critical) (Stretch 2.4).

Community feedback



- Key uses and activities include passive recreation and water-based activities such as swimming, boating and shore-based fishing.
- Coastal erosion was identified as the hazard of greatest concern by respondents. Additional concerns regarding sediment accretion and pollution in the Harbour were also raised.
- Most respondents expressed support for the 'Hold the Line' (Protect) approach for Shelly Bay.

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



2.1: Waioneke

This stretch commences at the start of Unit 2 (south of the regional park) and covers the coastline to the northern headland at Shelly Beach. The coastline is largely inaccessible to the public and is connected through a limited network of roads - predominantly South Head Road which provides the sole access to housing and Waioneke School. It is likely that there are private coastal protection structures in the stretch which are not owned or maintained by Auckland Council.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action reflects the predominately private ownership and the location of small unconnected, unmaintained areas of esplanade reserve. Coastal inundation presents a risk to Auckland Transport roading infrastructure in low-lying areas. Roads in the area include Higham Road, McLeod Road, Mairatahi Road, South Head Road.		
Implementation notes • Roading: The strategy does not preclude asset-specific measures may be required over time to ensure safe roading connections are maintained. • Ecology: The stretch contains regionally significant ecological ecosystems including multiple Regionally Critically Endangered wetlands, multiple Regionally Critically Endangered forests and diverse saltmarsh which is recognised as an important high tide bird roost for shorebirds, including black stilt. • Cultural: The stretch contains three pā sites exposed to coastal inundation and erosion. Engagement with mana whenua is required to further understand the cultural values associated with these sites and the impacts of coastal hazards over time.		

2.2: Omokoiti Flats

This stretch commences at South Head Road/Taumata Creek Conservation Area and extends to just north of Mairatahi. This natural coastline includes several reserves, strips and conservation areas including Taumata Creek conservation area and marginal strip, Karukaruhui Creek conservation area, South Head Road Waioneke, and Awakohukohu Creek conservation area.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Maintain provides for the management of risk to low-lying sections of the South Head Road in the low change scenario. Adaptation priority in the moderate to high change scenario identified the need for coordinated planning and engagement with the community reflective of risk to low-lying road and community interest in this area.		

Scenarios for change		
Low	Moderate	High
Implementation notes		
• Ecology: The stretch contains areas of significant ecological value. Engagement with the Ecology Team to seek advice on specific implementation actions to support ecological values. • Roading: Coastal inundation presents a risk to Auckland Transport roading infrastructure in low-lying areas. Roads in the area include South Head Road, of which forms a critical part of the transport network. • Community values: This approach reflects community feedback received for this stretch of coast.		

2.3: Marietahi

This stretch is predominantly rural in character. The limited Council-owned land is attributed to a network of undeveloped esplanade reserves and strips including the Marietahi marginal strip and Landing Reserve and Shines Road conservation area. Marietahi Creek provides important ecological habitat including saltmarsh and mangrove forest, which transitions to raupō reedland and mānuka, tangle fern, scrub, and fernland. This area belongs to the Kaipara Harbour Saline BFA.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
A no action approach reflects the highly natural character of this coastal stretch, including a number of localised esplanade strips and reserves with no Council assets.		
Implementation notes		
• Ecology: The coastline of is part of the Kaipara Harbour Saline BFA. A no action approach supports the natural functioning of this stretch.		

2.4: Aotea Shelley Beach

This stretch commences at the headland to the north of Shelly Beach Road, includes the Shelly Beach shoreline and culminates at the headland adjacent to James McLeod Place. It includes key community and harbour access facilities; Shelly Beach Road, Shelly Beach recreational reserve and associated assets including a playground, parking, boat trailer parking, wharf and boat ramp.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Protect confirms the need to maintain the coastal edge in response to coastal erosion. This includes the ongoing maintenance of existing coastal management structures including the seawall and groyne structures (constructed in 2019) that mitigate shoreline and beach erosion within the stretch. With sea-level rise, inundation from the coast will be an increasing issue over time. Pragmatic management of risks from inundation to trailer parking and the roading connections may be required to protect these uses in the long term.		
Implementation notes • Management: Rodney Local Park Management Plan outlines multiple management intentions for Shelly Beach Reserve which will be considered in implementing adaptation strategies. • Cultural: The Rodney Local Park Management Plan notes that Shelly Beach Reserve is an area of cultural significance. It has significant historical and cultural importance to Ngāti Whātua o Kaipara with long and enduring occupation by Ngāti Whātua o Kaipara hapū. There is a pā site and shell middens in the park and urupā on land adjoining Shelly Beach Reserve. Ongoing engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.		

2.5: Omana (South of Aotea Shelly Beach)

This stretch commences adjacent to the end of James McLeod Place culminating at the end of the Auckland Council esplanade reserve south of the Shelley Beach settlement. This coastal stretch includes Omana Avenue Esplanade Reserve, the southern area of Shelley Beach Reserve and includes assets such as access stairs and a path network to coastal areas.

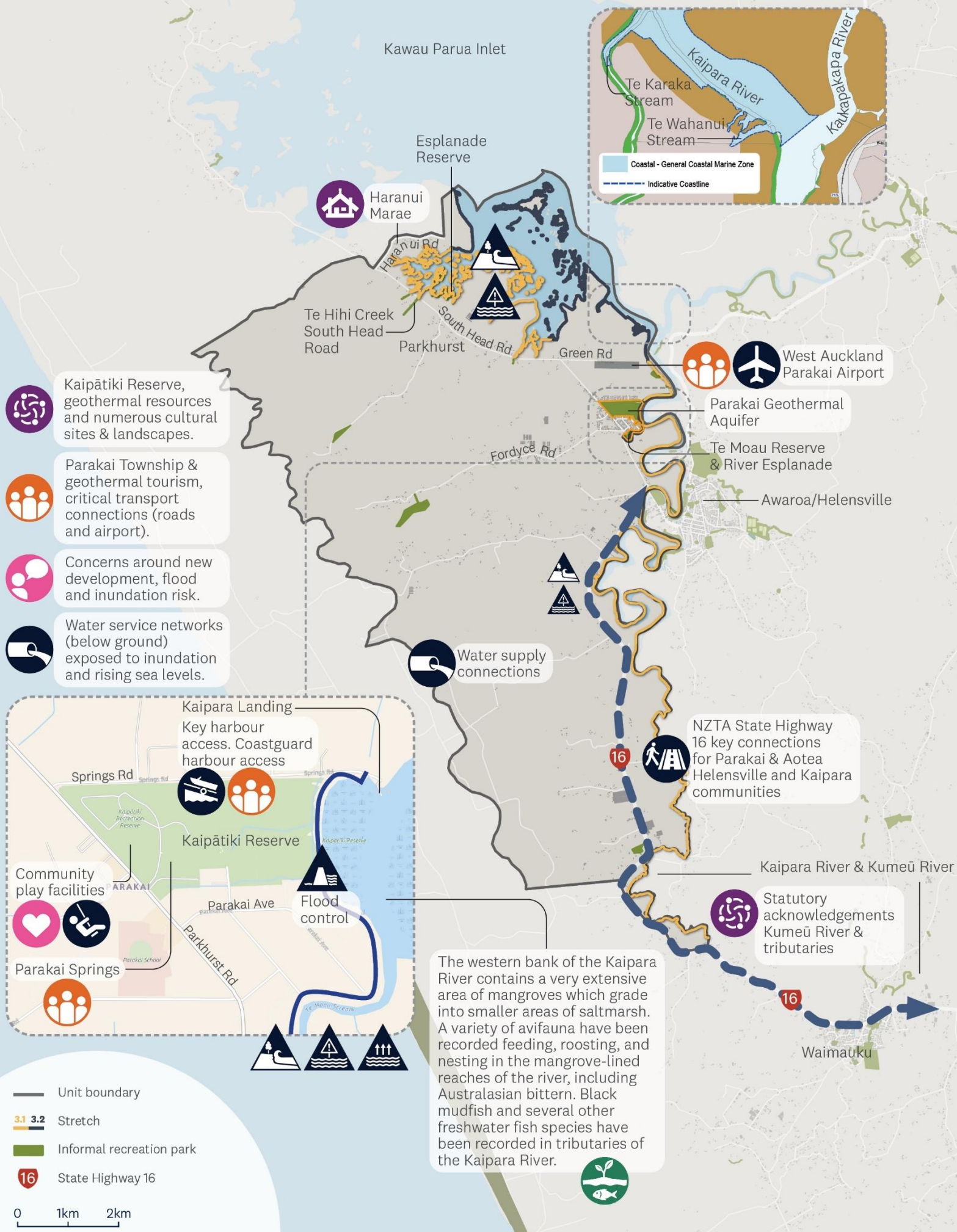
Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain reflects the ongoing need to preserve and keep safe the walkways and coastal access, responding to risks associated with eroding cliffs.		
Implementation notes • Management: No coastal defences are proposed, actions to manage risk are focused on the ongoing management and targeted, localised realignment of assets as required. • Management: Management intentions for the Omana Avenue Esplanades Reserve include protecting and enhancing the natural values within the reserve and encouraging people to take care of the area as stated in the Rodney Local Park Management Plan.		

2.6: South Omana to Parkhurst

This stretch includes the extensive shoreline south of Omana including the estuary and privately-owned coastal areas. Auckland Council-owned assets located within this stretch are isolated, including unmaintained areas of esplanade reserve (represented as green in the figure above) and Tuparakura Road.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation While there is limited Council-owned land in this stretch, maintain reflects the ongoing management of risk to roading infrastructure. Areas of South Head Road which are in low-lying areas and utilise causeway connections may require management of risk associated with catchment and coastal flooding. Management of risk through location and design of assets is preferred to the use of protection structures.		
Implementation notes • Management: South Head Road is exposed to coastal inundation. Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options. • Cultural: This stretch includes numerous cultural heritage sites. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Ecology: The stretch contains regionally significant ecological features which are known habitats for a variety of threatened, cryptic bird species (i.e. Puharaheke Stream is a known feeding habitat for fairy tern). The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.		

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Unit 3: Parakai

Unit 3 is bordered by the intersection of Tarawera and Haranui roads in the north and follows the western side of the Kaipara River south to Helensville. Large areas of the unit's coastline and river inlet are in private ownership with limited Auckland Council-owned land and assets located within rural areas.

The Parakai area includes unique geothermal resources which are highly valued by iwi, the local community and visitors alike. This area will be exposed to increasing inundation risk and changing groundwater levels over time. This presents challenges for the management of risk from both coastal inundation and catchment flooding.

Auckland Council land and assets include transport infrastructure, Council-owned (and co-owned) land and water infrastructure servicing the settlements of Awaroa and Parakai. Existing transport infrastructure including Auckland Transport roads, and third-party transport assets such as the State Highway, the north Auckland rail line and Parakai Airport, provide important community and infrastructure connections, and experience impacts from flooding. In some areas where roads and rail lines are elevated, they can act as stop banks, impounding or holding water. It is important to note that this infrastructure is often not designed for this purpose.

Reserve areas include the Kaipātiki Reserve (located within Parakai township) and areas of low-lying esplanade reserve. Harbour access is provided and marine rescue facilities are in proximity to these facilities.

The strategy of *no action* identified in areas of this unit relates to the presence of limited Auckland Council assets and infrastructure. This does not mean there is no risk to be managed to the transport network including Parakai Airport or to other land and assets. The low-lying nature of Kaipara River catchment and the need to traverse (cross) this area to reach key settlements and infrastructure presents challenges for risk management and will require innovation which may be explored further through implementation.

What is happening? Coastal context and hazardscape

The Parkhurst and Parakai areas are part of a complex, low-lying coastal and catchment floodplain. As such, these areas are significantly exposed to flooding, coastal inundation and longer-term impacts of sea-level rise (including vertical land movement) and rising groundwater levels. This includes exposure of key infrastructure including SH16 and Parkhurst Road. Exposure of transport infrastructure is high, even in the short term, which includes South Head Road, Parkhurst Road and Evans Road. From a catchment management perspective, the unit captures the southern segment of the West Kaipara Harbour stormwater catchment and the northern segment of the Kaipara West stormwater catchment.

The areas of Parakai and Helensville are experiencing an increasing number of resource consents for subdivision development, particularly in the Fordyce and Parkhurst Road areas. Noting the high exposure to coastal inundation, application of robust finished floor levels and use of significant earthworks are commonly proposed as a means to mitigate the ongoing risks presented by flooding, coastal inundation and sea-level rise.

As the majority of this unit sits upstream of the statutorily identified MHWS boundary, current management regimes are identified as having a primary function for flood protection as opposed to coastal management. Numerous such flood protection measures are in place, including legacy stopbanks, drainage ditches, culverts and tidal flaps.

Susceptibility to coastal erosion is generally low within the Parakai unit, noting that exposure to these driving coastal processes is limited. Subsequently, mapped areas susceptible to coastal erosion are only identified seaward of the MHWS boundary. However, it is noted that stream bank erosion, particularly on the outer meanders will continue to occur.

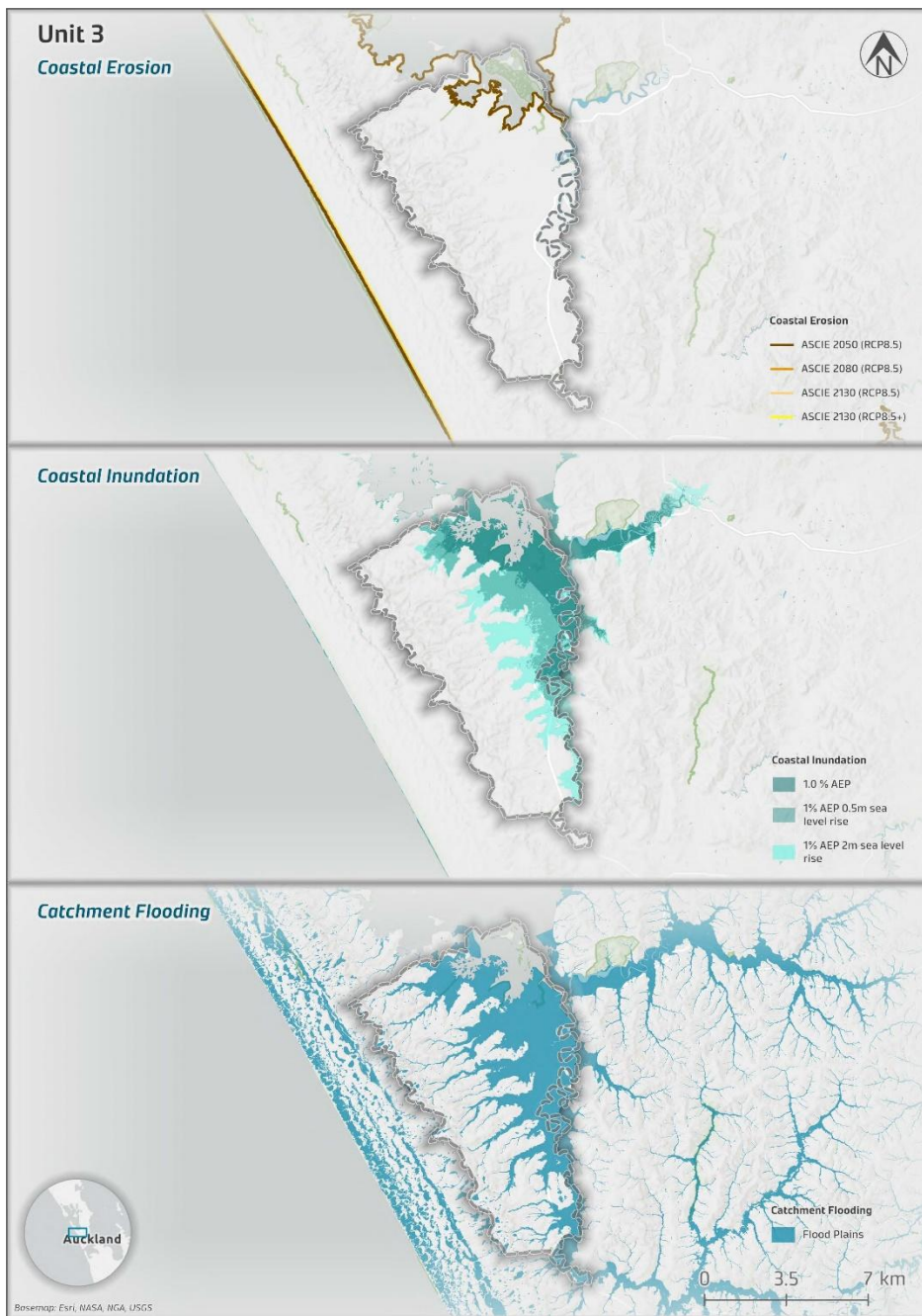


Figure 6: Coastal Hazardscape for the Parakai Unit, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

The table below summarises the risk levels for Council asset types in the short, medium, and long term and which relate to the use of the low, moderate and high climate change scenarios.

Of all the units in the Kaipara Harbour SAP area, the overall risk from coastal inundation is highest in Unit 3. The grouping with the highest risk rating is transport infrastructure (e.g. South Head Road, Parkhurst Road, Evans Road), which is rated very high in the short term. The remaining groupings have a high risk rating across all time frames reflective of the low-lying topography in this unit.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (40.5 ha) Buildings, wharves (11 No.)			Park amenity structures, carparks, accessways, buildings (0.6 ha)			AT roads (36.4 km) Bridges (278.9 m ²)			Water pipes (33.6 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	Low	Low	Low	Very low	Very low	Low	Very low	Very low	Very low
Coastal inundation											
High	High	High	High	High	High	Very High	Very high	Very high	High	High	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.



- The unit contains multiple Auckland Council parks and reserves located near the coastline, including areas of inaccessible and unmanaged esplanade reserve.
- Kaipātiki Recreation Reserve (formerly the Parakai Recreation Reserve) is co-managed by Te Poari o Kaipātiki ki Kaipara (formerly the Parakai Recreation Reserve Board).



- Reserve and park amenities include community buildings, playgrounds and a carpark.
- Recreational and sport facilities are located in proximity to the coast.
- In particular, the Kaipātiki Recreation Reserve contains accommodation, wāhi tākaro, and a play space next to the Parakai Springs hot pools.



- There are underground and aboveground stormwater and wastewater infrastructure service settlements within this unit.
- Sandhill water pump station, Springs Road pump station, and Parakai pump station are key assets.



- Key local and regional roading:** South Head Road and SH16 (NZTA)
- Riverside walkways** and connections through the Kaipātiki recreation reserve.

- Paper roads are numerous, either perpendicular and immediately adjacent to the coast. These landholdings are largely located within/identified on private land.



- **Harbour access:** Springs Road Wharf and boat ramp.

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.



- Parakai town centre includes business/commercial and residential areas with peri-urban development and expanding areas of urban residential development to the west of the established township.
- The Parakai area also includes unique geothermal resources which are highly valued by iwi, local community, and visitors.
- The North Island Main Trunk Rail Line is adjacent to SH16.
- SH16 traverses this unit in a north-south alignment (generally adjacent to the river inlet). This highway connection provides for local and regional travel and provides the main northern route to Awaroa Helensville including public transport links to Parakai and Awaroa Helensville.
- Parakai Airport is situated to the north of the township providing for air transport connections, recreational flight services, tourist flights and skydiving.
- 'Category B' heritage features identified in the AUP:OP within this unit include: Craigwell House, Ambury House, Nestle Brae, Ambury House, Kaipara Guest House (former), Fordyce Home, Paeroa Homestead/Wharepapa, Parakai Domain War Memorial, Presbyterian Church.
- **Policy:** Te Rautaki Whakarato a Awaroa me Parakai; Helensville and Parakai Servicing Strategy (Watercare, 2025) is relevant to future management of risk to water networks for this wider area.
- Rodney West Local Paths (Greenways) Plan June 2019 provides for aspirations for future greenway connections relevant to this unit.



- There are 14 pā sites that have been identified as 'Category B' Heritage.
- Ōtakanini (Haranui) marae is located at the northern border of this unit, in the area of Ōtakanini.
- Te Pua a Te Marama (including its karaka trees) is a 'Category A' heritage site. It is located near Pureroa Hill at the end of Fordyce Road, just east of Woodhill Forest.
- **Note:** Specific cultural values and outcomes for this unit will/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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

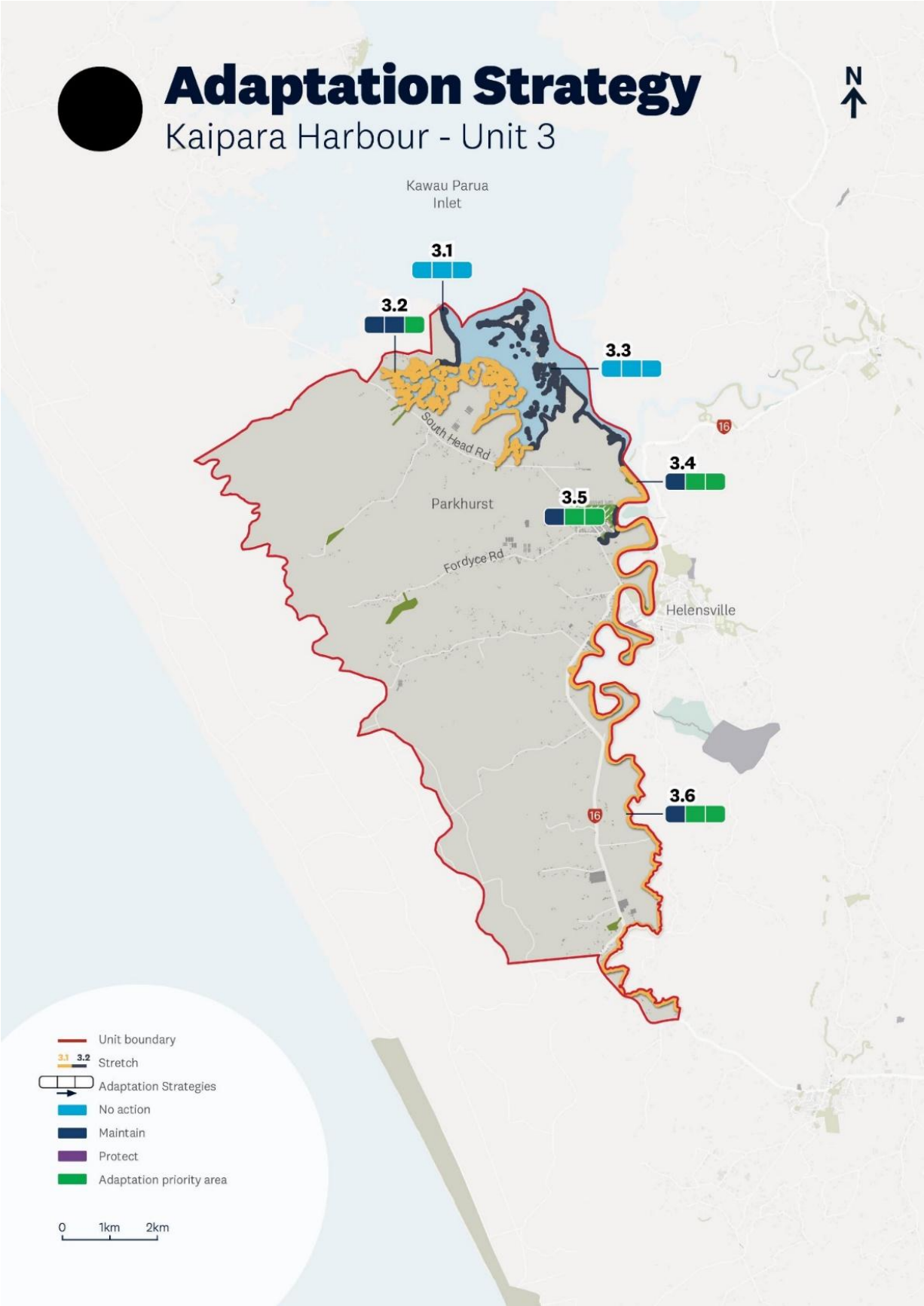
- Kaipara River contains an unnamed tributary housing black mudfish (Threatened – Regionally Critical), as well as several other native freshwater fish species. Extensive mangrove forests are also found along the river, housing a variety of avifauna, and grade into saltmarsh.
- The western side of the Kaipara River contains small, scattered remnants of dune forest, kauri, podocarp, broadleaved forest, and kahikatea, pukatea forest.

Community feedback



- Key uses and activities included walking or running along coastal access walkways and connections provided by these networks.
- Access to the harbour from the Springs Road boat launching and wharf facilities was identified as highly valued, noting the recent development of Coast Guard infrastructure at Springs Road end providing critical emergency response for the wider southern harbour.
- Catchment flooding and coastal inundation are the most frequently experienced hazards for this unit area, with respondents noting impacts on road access.
- Respondents identified the need for increased maintenance of existing flood/ stormwater management devices and future investment in the renewal of defences, while some respondents identified the need to work with natural processes and seek innovation to manage flood hazards.
- Community members and visitors identified a strong desire to continue to enjoy and access the geothermal resources with the aspiration that this remains a key feature of the Parakai area.

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



3.1: Haranui North

This stretch commences at the start of the unit area and includes the coast south to the north of Haranui Road end.

Scenarios for change					
Low		Moderate		High	
No action		No action		No action	
Explanation					
No action is selected as there are no Council-owned land or assets are identified as being located within this coastal stretch.					
Implementation notes					
No action does not preclude the management of risk if required and does not preclude advocacy for ecological outcomes.					

3.2: Haranui Road to Parkhurst Road (and Coast)

This stretch commences to the north of Haranui Road end and includes the coast south and east, culminating where the coast turns north away from South Head Road adjacent to the Parkhurst Road intersection.

Scenarios for change					
Low		Moderate		High	
Maintain		Maintain		Adaptation priority	
Explanation					
Maintain under a low to moderate climate change scenario recognises risk to low-lying coastal roads in this stretch, along with inundation risk to the existing roading connections enabling maintenance of existing infrastructure and assets in alignment with coastal hazard risks whilst recognising environmental values. Adaptation priority area under a high climate change scenario signals a need to undertake further adaptation planning to support the continued use of road networks.					
Implementation notes					
- South Head Road Esplanades Road Reserve is located within this stretch and has been identified as a site of significant biodiversity value in the North-West Wildlink Prioritisation Report 2017. Cultural: Haranui Marae is located in this stretch, utilising South Head Road as a key roading connection. Engagement with mana whenua to further understand the impacts of coastal hazards over time.					

3.3: Te Karaka Stream (Green Road North) and Island

This stretch runs from the intersection between South Head and Parkhurst Road, around the coast to where Green Road meets the coast. The majority of this stretch is part of the Parakai conservation area and the marginal esplanade strip of the Kaipara River.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action reflects the highly rural character of this stretch and the importance of enabling natural processes to continue to function. There is limited Council-owned land and assets within this stretch with a primary function for ecological conservation.		
Implementation notes No action is with respect to coastal hazard management and does not preclude advocacy for ecological outcomes.		

3.4: Green Road (Airport and South)

This stretch commences north of and adjacent to the Parkhurst Road end and includes the coast north and east, culminating at the northern boundary of Springs Road. It includes Parakai Airport, Green Road, rurally zoned private landholdings and areas of esplanade reserve with varied ownership and legacy modification of the edge of the coastal inlet.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation Priority 	Adaptation Priority 
Explanation Maintain is identified to provide for the continued management of risk to Council assets located within this stretch. Principally, the Green Road connection (which provides key transport link for Parakai Airport) is identified by airport operators as an important component of regional lifeline (air transport) infrastructure. Adaptation priority is identified in the moderate to high change scenario to signal the need for further adaptation planning. This is relevant for the northern area of the Parakai settlement including roading connections which service rural communities and air transport landuse. Adaptation priority reflects the need to ensure that plans are in place to respond to future sea-level rise and how this will impact coastal and catchment hazards in this low-lying catchment.		
Implementation notes Note: Maintain does not apply to private and third-party land identified within this stretch. West Auckland Airport is not Auckland Council-owned or managed. - There are no identified Council-owned coastal management or flood protection structures located within this stretch; legacy protection structures and modifications have been identified through community feedback.		

3.5: Parakai (Kaipara River landing, Kaipātiki & Parakai Town)

This stretch commences north of Springs Road end, including the coastal access (wharf & boat ramp) at the road end, and encompasses the coastline of the Te Moau Reserve and River Esplanade. It includes Kaipātiki Reserve which is governed by the Te Poari o Kaipātiki ki Kaipara Recreation Reserve Board. The stretch culminates at the western side of Parakai Road. It includes piped wastewater networks, roading and stormwater management assets.

Scenarios for change					
Low		Moderate		High	
Maintain 		Adaptation Priority 		Adaptation Priority 	
Explanation					
Maintain is identified for the low climate scenario to reflect the continued management of risk to Auckland Council piped assess, roads, parks and transport connections. This includes the continued maintenance of protection structures, such as those currently in place within this stretch. Maintain also supports the aspirations identified in the Kaipātiki Reserve Management Plan which sets out the vision for the area over the short, 5-10 and medium term, 50 years. It is noted that between present day levels and 200 mm of further sea-level rise, further specific adaptation actions will be required to be considered for water infrastructure and associated water treatment facilities. Adaptation priority is identified from the moderate climate scenario (assuming 0.5 to 1 m of sea-level rise) to signal a need to undertake further adaptation planning to support the continued use of and access to public areas, unique features and opportunities presented in relation to geothermal resources, roading connections to adjoining settlements and access to the harbour (at Springs Road). Adaptation priority signals a need to respond to inundation risk, specifically in relation to the function of piped wastewater infrastructure, the land uses this supports and to maintain environmental health associated with the management of wastewater services.					
Implementation notes					
• Signals and triggers for adaptation action may be realised under a lower climate scenario due to asset-specific design considerations (including water networks and roads). • Kaipātiki Reserve is governed by Te Poari o Kaipātiki ki Kaipara Recreation Reserve Board and holds significant cultural values as outlined in the Kaipātiki Reserve Management Plan. • This stretch includes several historic heritage sites, cultural landscapes, geothermal resources, residential land uses, commercial and business land uses and provides services and support to more remote rural communities. Adaptation planning will need to consider diverse and non-spatially located community and stakeholders. • This stretch includes the Kaipara Coastguard providing for emergency response to Kaipara Harbour access; the function of this facility will require supporting roading access.					

3.6: Kaipara River Inlet West

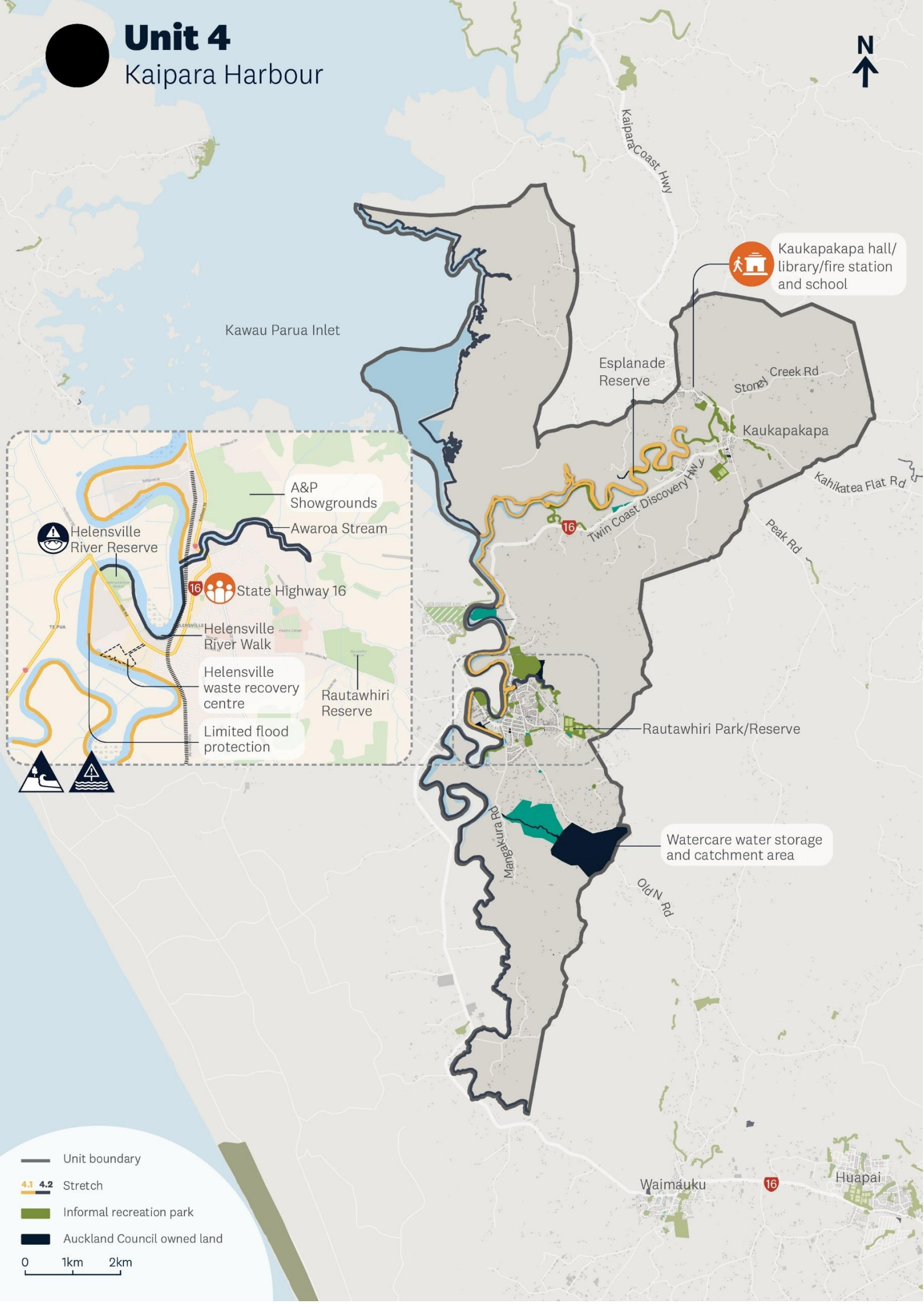
This stretch extends south of the Parakai Road area and includes the western banks of the Kaipara River inlet which are located within the unit area, and culminates north of Waimauku.

Scenarios for change			
Low		Moderate	
High			
Maintain		Adaptation Priority	
		Adaptation Priority	
Explanation			
Maintain reflects the presence of Council assets and Council interest in third-party assets (State Highway). Under the low climate scenario, the exposure of local roads which provide access to and from the State Highway are exposed to catchment flooding. The impacts of this have been experienced following recent storm events. Maintain reflects the need for ongoing consideration of risk through design and location of assets and uses. Adaptation priority is identified under the moderate and high change scenarios due to anticipated increased exposure to coastal inundation and catchment flooding. Sea-level rise and other climate impacts for this low-lying catchment, in particular in relation to the local roads (e.g. Mill and Kiwitahi roads) which provide critical local and inter-regional connections to Helensville and the northern areas of Kaipara Harbour. Sandhill pump station is one of two sources of water supply for the Helensville/Parakai area. Impacts on water supply and groundwater and surface flows remain uncertain. Adaptation priority provides for continued exploration of management options for municipal water supplies.			
Implementation notes			
- Te Rautaki Whakarato a Awaroa me Parakai; Helensville and Parakai Servicing Strategy (Watercare, 2025) is relevant to future management of risk to water networks for this wider area. - The strategy does not preclude asset-specific protection measures as needed to ensure continued safe transport connections are maintained. Note: Maintain does not apply to private and third-party land identified within this stretch. SH16 and the North Island Main Trunk Line are not Auckland Council-owned. Storm-affected land: This area includes properties, which following the 2023 storm events, are now categorised as high-risk. Decisions on the future use and management of this land are being dealt with separately under the Council's storm-affected land use policy. SAPs, as living documents, may be updated as decisions are made on the land.			



Unit 4

Kaipara Harbour



- Unit boundary
 - 4.1 4.2 Stretch
 - Informal recreation park
 - Auckland Council owned land
- 0 1km 2km

Unit 4: Awaroa / Helensville

Unit 4 includes the eastern end of Kawau Parua Inlet and follows the eastern side of Kaipara River upstream to Reweti. The unit extends east in alignment with the SAP boundary to Kaukapakapa and Makarau River.

The unit includes the rural centre of Awaroa Helensville and the populated settlements of Parakai, Awaroa Helensville and Kaukapakapa. These areas support social, cultural and economic activities within the wider unit and SAP area including schools, medical facilities, emergency services, retail and commercial areas and other important community and social facilities and services. The Awaroa River also supports marine uses and harbour access.

Most assets tend to be located in the south-west of the unit, around Awaroa Helensville, including several highly utilised parks (Helensville A&P showgrounds, Rautawhiri Park), key transport connections and critical wastewater infrastructure (Helensville wastewater treatment facility). Within the northern areas of the stretch, land uses are generally rural and Auckland Council land is limited. Environmental and culture and heritage features and values are more dominant in the northern areas of the unit towards Kaukapakapa.

What is happening? Coastal context and hazardscape

As with the adjacent units within this SAP area, the risk from coastal inundation is higher than risk from coastal erosion susceptibility.

The southern reaches of this unit are low-lying and notably exposed to flooding, coastal inundation and longer-term impacts of sea-level rise (including vertical land movement) and rising groundwater. Most significantly, this unit includes the wastewater treatment plant at Helensville. Helensville River Reserve is a closed landfill in the Mill Road area managed by Auckland Council and exposed to coastal inundation, particularly beyond the 1% AEP plus 1 m sea-level rise scenario. Parks and reserve areas in and around Awaroa and supporting road networks are increasingly exposed to inundation hazards.

Most of this unit sits upstream of the MHWS boundary, with no coastal management approaches of note here. However, there are numerous flood protection measures in place including legacy stopbanks, culverts and tidal flaps.

Exposure to coastal erosion is generally low within this unit, noting that exposure to these driving coastal processes is limited beyond the MHWS boundary in the Kaipara River. However, it is noted that stream bank erosion, particularly on the outer meanders will continue to occur.

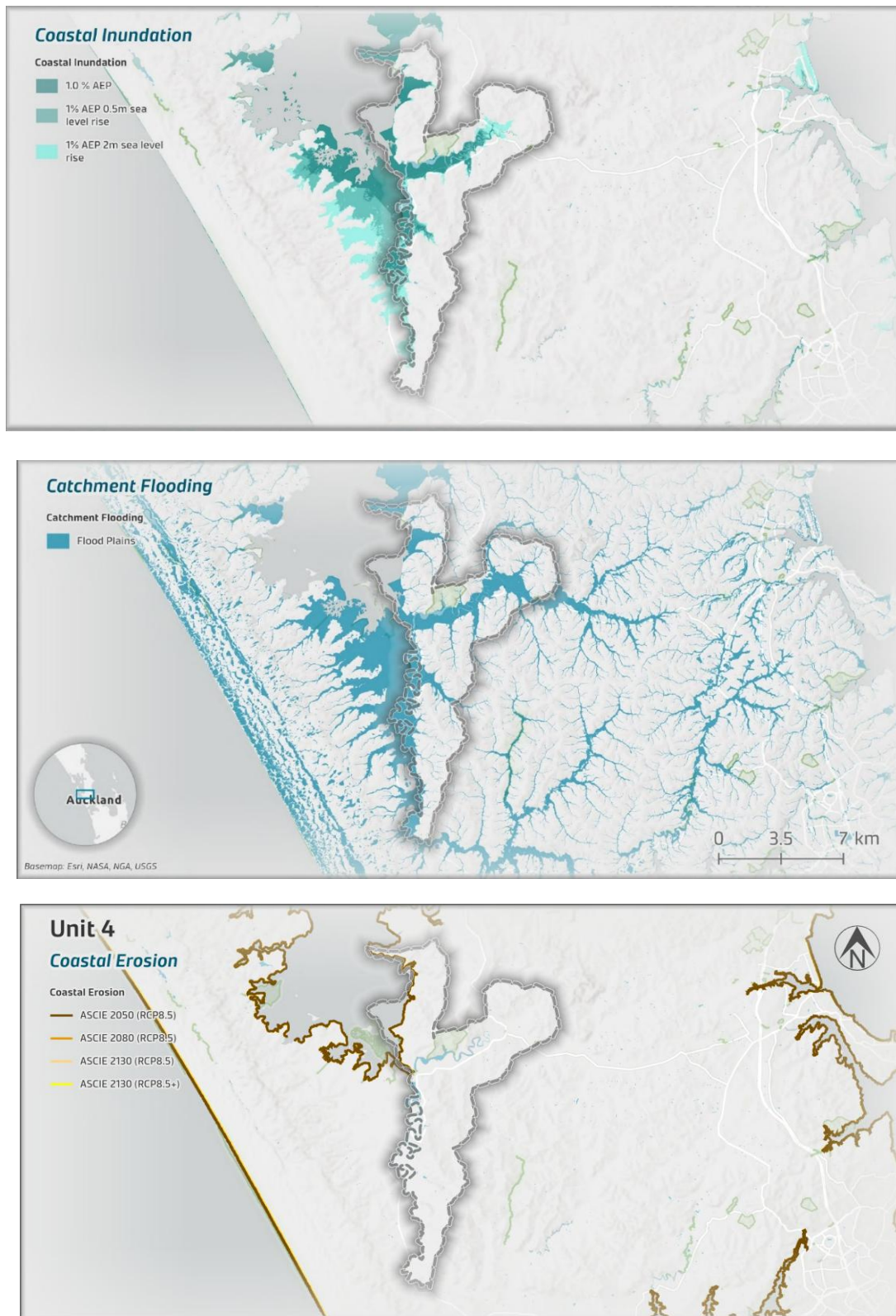


Figure 7: Coastal Hazardscape for the Awaroa Helensville unit, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

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

At a unit level, the overall risk from coastal inundation is higher than the risk from coastal erosion susceptibility. Risk from coastal inundation is high for Auckland Council-owned assets including Auckland Council-owned land and water infrastructure in the short term. The risk for coastal inundation is also high for environmental, cultural and heritage features in the short term. In the medium-term, risk to Auckland Council community facilities increases from moderate to high, and in the long term, risk to transport infrastructure increases from moderate to high.

Coastal erosion susceptibility is generally low to very low risk across all groupings. The exception to this is the environmental grouping which has a moderate risk rating in the short term. The table below summarises the risk levels for Auckland Council asset types in the short, medium, and long term as set out in the risk assessment carried out by Tonkin + Taylor (2024).

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (210.5 ha) Buildings, wharves (28 No.)			Park amenity structures, carparks, accessways, buildings (1.8 ha)			AT roads (56.9 km) Bridges (446.7 m ²)			Water pipes (114.9 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Very low	Very Low	Very Low	Low	Low	Low	Very Low	Very Low	Very Low	Very Low	Very Low	Very Low
Coastal inundation											
High	High	High	Moderate	Moderate	High	Moderate	Moderate	High	High	High	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.



- 16 Auckland Council-owned parks and reserves are located near the coastline.
- Notable locations include (but are not limited to), Helensville Showgrounds, Sinclair Park Rautawhiri Park/Reserve and many more.



- Reserve and park amenities include community buildings, playgrounds and carpark.
- Recreational and sport facilities are in proximity to the coast.
- Helensville A&P Showgrounds contains a large number of Auckland Council assets. This includes toilets, the pavilion, green stable and Half Round Barn.



- **Closed landfills:** Helensville River Reserve, Makiri Street- Mcleod Street Landfill, Anderson Road.



- Watercare Wastewater Treatment Plant - a critical piece of infrastructure providing the treatment of wastewater for the Kaipara area.
- Other wastewater infrastructure which can be found in this unit include Kowhai pump station, Mill Road pump station, Miro Street pump station, and Outfall pump station.



- **Key local and regional roading:** Waka Kotahi's SH16.

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.



- Unit 4 contains a significant portion of Kaipara's social infrastructure, with Helensville being the main centre of the Kaipara Harbour SAP area.
- Most housing and services are located in Helensville or nearby Parakai. Helensville also contains the only medical centre in the SAP area.
- An area in the south of Helensville is zoned Future Urban and is staged for development in the 2030s.
- Organised events, such as the Helensville A&P show, draw attendees from across Auckland.
- While not holding heritage status, Helensville is appreciated for its heritage features, with 44 'Category B' heritage features identified in the AUP:OP including St Andrew's Presbyterian Church (1883 part only); Helensville Post Office; Methodist Church (former); Malolo House, Helensville Railway Station; Regent Theatre, Captain Rawson's House; Kaukapakapa World War I Memorial; St Cuthbert's Presbyterian Church; Te Makiri, Grand Hotel; St Clement's Anglican Church (former); Lochnorrie Estate Homestead; Kaukapakapa hall, library, and war memorial; Kaukapakapa Church, including graveyard and hall. (Auckland Council, 2016c).
- Rodney West Local Paths (Greenways) Plan June 2019 provides for aspirations for future greenway connections relevant to this unit.



- Tauwhare Pā is located in Stretch 4.3 near Woodhill. This location has been identified on the Cultural Heritage Inventory List and sites and places of significance to mana whenua overlay.
- Additionally there are four pā sites identified as historic heritage in the AUP:OP: (Auckland Council, 2016c).
- Note: Specific cultural values and outcomes for this unit will/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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

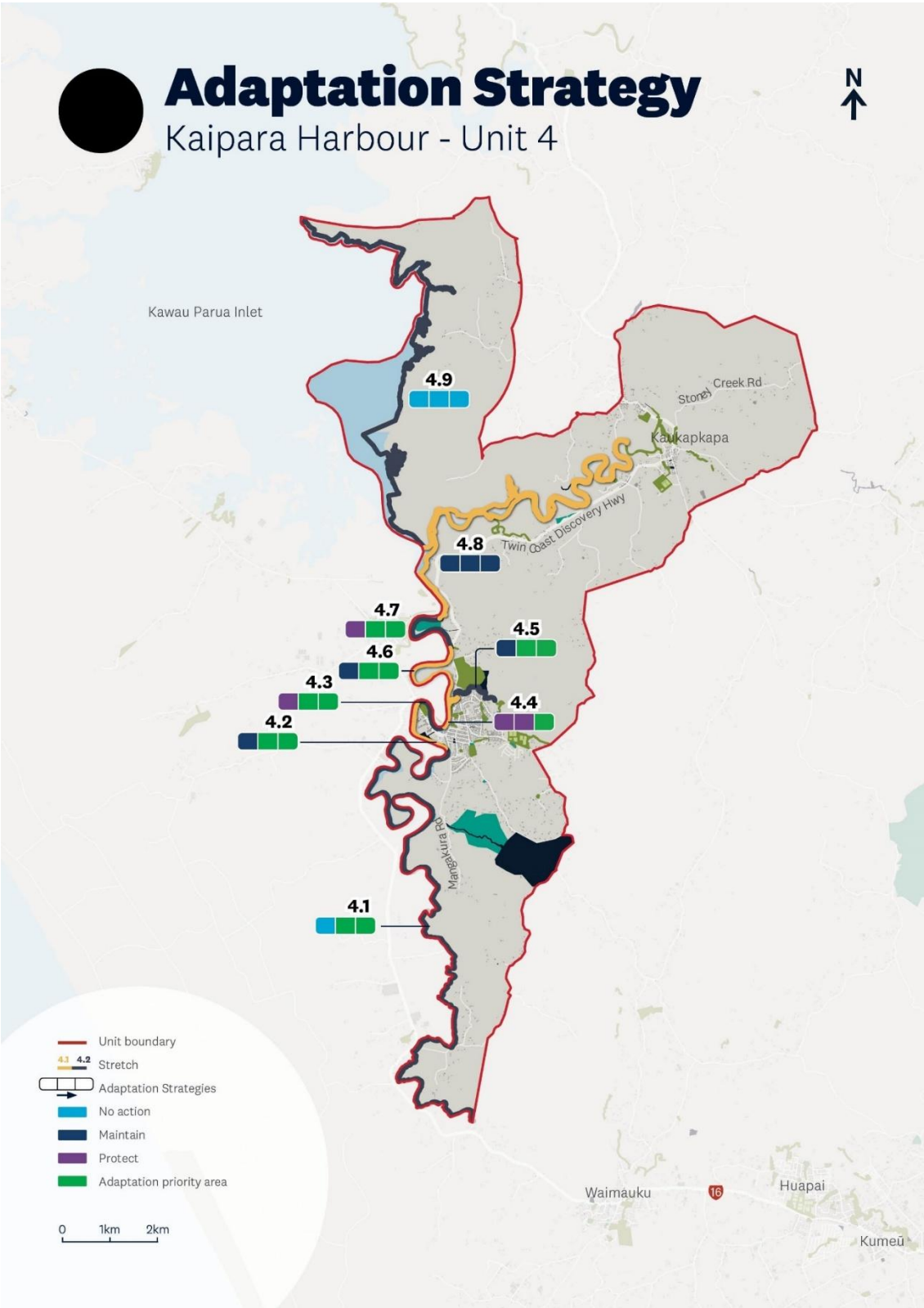
- Kauri, podocarp, broadleaved forest (Stretches 4.1, 4.5, 4.6), including a significant area within the Kaukapakapa Estuary Scientific Reserve. Fernbird and several other threatened avifauna species have been recorded within this forest (Stretch 4.5).
- There are small areas of kahikatea, pukatea forest located by the confluence of the Kaipara River and Waipatukahu Stream (Stretch 4.1), and pōhutukawa-dominated coastal forest (Stretch 4.1, 4.6).
- Kaukapakapa Estuary is bordered by oioi restiad rushland wetland margins and dune forest (Stretch 4.5).
- Kauri forest, taraire, tawa, podocarp forest (Stretch 4.6).
- Several areas of freshwater wetland, including raupō reedland, oioi restiad rushland, mānuka, tangle fern, scrub, fernland, and flaxland wetland.
- There are several shellbanks located at the edge of Oyster Point which are known to host a large number of nesting Caspian tern.

Community feedback



- Feedback identified nature watching and fishing/ kai moana gathering as key activities and uses within this unit and emphasised the importance of access to the coast.
- Coastal storm inundation and flooding were identified as key concerns by those providing feedback.
- Other respondents noted coastal accretion as a concern, with a respondent noting the impact of tipping of soil and clay on the floodplain.

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



4.1: Kaipara River Inlet Eastern Banks

This stretch commences from the southern and eastern banks of the unit culminating at the southern side of Mill Road.

Scenarios for change		
Low	Moderate	High
No action 	Adaptation priority 	Adaptation priority 
Explanation No action under the low climate change scenario is reflective of the predominantly privately-owned land while Auckland Council-owned land is generally limited to isolated and few portions of esplanade reserve. Adaptation priority is identified in the moderate to high change scenario to signal the need to respond to sea-level rise and how this will impact coastal and catchment hazards in this low-lying catchment, including the piped infrastructure and roading connections which support this area. There are no Auckland Council-owned coastal defence structures (seawalls) located within this stretch.		
Implementation notes • Management: SH16 and several local (Auckland Transport) roads are located landward of the coast and traverse the river inlet in several places. No active intervention in the low change scenario does not preclude asset-specific measures that may be needed to ensure continued safe roading and rail connections are maintained. • Noting that SH16 is not Auckland Council-owned, ongoing collaboration and engagement between Waka Kotahi NZTA and Auckland Transport will be required to understand how future climate change may impact on operation of these assets. • Management: Mangakura Dam is one of two sources of water supply for the Helensville/Parakai area. Watercare has released Te Rautaki Whakarato a Awaroa me Parakai; Helensville and Parakai Servicing Strategy (Watercare, 2025) outlining strategies for assets in the area.		

4.2: Mill Road South

This stretch follows the eastern meanders of the Kaipara River on the southern side of Mill Road, terminating before Helensville River Reserve.

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 assets. 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 manage risk within this stretch.		

Scenarios for change		
Low	Moderate	High
Implementation notes		
Helensville waste transfer station is exposed to coastal inundation from the medium-term. Engagement with the Council Waste Team as well as Watercare will be required to manage co-ordination across adaptation strategies. Closed landfill: Makiri Street 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.		

4.3: Mill Road North

This stretch commences at the Helensville River Reserve (an Auckland Council-owned and managed closed landfill), including the Mill Road bridge, and follows the northern side of the road to where the Kaipara River makes an abrupt meander north.

Scenarios for change		
Low	Moderate	High
Protect 	Adaptation priority 	Adaptation priority 
Explanation		
Protect reflects the nature of land use and the need for management of the valued recreational asset of Helensville River Reserve (closed landfill). Adaptation priority is identified under the moderate to high climate change scenario, reflecting increasing risks from coastal hazards and the need to manage risk to the reserve land and Mill Road.		
Implementation notes		
Closed landfill: Helensville River Reserve 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. Coastal connections: Helensville Riverside Walkway. See also the Rodney West Local Paths (Greenways) Plan June 2019 that provides for aspirations for future greenway connections that are relevant to this stretch.		

4.4: Awaroa Helensville

This stretch follows Commercial Road north, including the Helensville River walkway network, culminating at Green Road Reserve at Bridge Street north of the main village area.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Adaptation priority 
Explanation Protect is applicable to the existing assets and any associated existing protection structures, e.g. the Helensville River walkway. Catchment flooding risk, particularly in low-lying areas, and inundation risk to the southern areas of this stretch (Mill Road area) results in the identification of adaptation priority in the long term to signal the need to consider risk to Auckland Council land and assets, in particular transport networks and water services.		
Implementation notes Note: Protect does not extend to the protection of the coastal edge where this is in private ownership. Management: SH16, Cabeleigh Drive and Awaroa Road are exposed to coastal inundation. Noting that SH16 is not Auckland Council-owned, Waka Kotahi NZTA, and Auckland Transport will be engaged to understand how adaptation strategies may impact on operation of these assets.		

4.5: Rautawhiri and Helensville North

This stretch applies to Rautawhiri Stream, a tributary of Kaipara River which extends upstream in an easterly direction.

Scenarios for change		
Low	Moderate	High
Maintain 	Adaptation priority 	Adaptation priority 
Explanation Maintain under the low change scenario enables the ongoing management of existing land and assets. Adaptation priority from the moderate change scenario is reflective of the increasing risk presented by catchment flooding, coastal inundation and sea-level rise and ensures a consistent approach to adaptation planning with adjacent stretches.		
Implementation notes Storm-affected land: This area includes properties, which following the 2023 storm events, are now categorised as high-risk. Decisions on the future use and management of this land is being dealt with separately under Council's storm-affected land use policy. SAPs, as living documents, may be updated as decisions are made on the land.		

4.6: Awaroa North & Showgrounds

This stretch commences at Bridge Road including the area north, Railway Street (and the former station area), Helensville A&P showground reserve area and the areas east along the catchment (to Rautawhiri Park) culminating at Pipitiwai Creek. This stretch includes piped networks and roads (including Stewart, West and Saleyard, Awaroa, Rautawhiri).

Scenarios for change			
Low	Moderate		High
Maintain 	Adaptation priority 	Adaptation priority 	
Explanation			
This predominantly low-lying area north of Awaroa Helensville centre includes areas exposed to catchment and coastal flood hazards. Maintain in the short term confirms the management of risk to assets and landholdings through design and location. Anticipated increasing inundation risk in the mid to long term presents the need to proactively consider how to manage this. Adaptation priority is identified to signal the need to consider the design and the location of assets and uses within the wider area to maintain the values of the area and support the needs of the community.			
Implementation notes			
Social: Engagement with users of the Helensville A&P Showgrounds is recommended to understand how implementation of adaptation strategies may impact on the operation of these facilities, and how impacts could be managed. Management: This strategy does not preclude asset-specific measures as needed to maintain safe roading and rail connections. Noting that SH16 and the North Island Main Trunk Line are not Auckland Council-owned, Waka Kotahi NZTA, KiwiRail and Auckland Transport will be engaged to understand how adaptation strategies may impact on operation of these assets.			

4.7: Watercare Treatment & Helensville North

This stretch commences north of the Pipitiwai Creek (including the pumping station) culminating to the north of Watercare landholdings.

Scenarios for change			
Low	Moderate	High	
Protect 	Adaptation priority 	Adaptation priority 	
Explanation			
Protect in the short term confirms the continued operation of the plant at this location. Adaptation priority in the mid to long term acknowledges the low-lying nature of the facility and the adaptive planning being led by Watercare Services for these assets.			

Scenarios for change		
Low	Moderate	High
Implementation notes • Management: Watercare strategy (Watercare, 2024a) is yet to outline management intention for the medium to long term and indicates the need for further community involvement. Ongoing engagement and collaboration between Auckland Council and Watercare will ensure alignment when implementing adaptation options. • Management: Note that the North Island Main Trunk Line is not Auckland Council-owned but is exposed to coastal inundation from the medium-term. KiwiRail will be engaged to understand how adaptation strategies may impact on operation of this asset.		

4.8: Kaukapakapa

This stretch commences north of Helensville wastewater treatment plant including the coast north and the Kaukapakapa River inlet to the east. It also includes the main village area of Kaukapakapa.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain over all timeframes identifies the need to support the management of risk to reserve areas and road connections in relation to both catchment flooding and coastal inundation.		
Implementation notes • Management: Anderson Road closed landfill is located within this stretch and is managed in accordance with the Closed Landfill Asset Management Plan. This area is known to flood and the Closed Landfill Team will advise on any specific considerations that may impact implementation of adaptation strategies. • Management: Note that SH16 and the North Island Main Trunk Line are not Auckland Council-owned. Ongoing engagement with Waka Kotahi NZTA and KiwiRail will be required. • Storm-affected land: This area includes properties, which following the 2023 storm events, are now categorised as high-risk. 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, may be updated as decisions are made on the land. • Note: Rodney West Local Paths (Greenways) Plan June 2019 provides for aspirations for future greenway connections that are relevant to this stretch.		

4.9: Kaipara Harbour River Inlet North

This stretch commences north of Kauakapakapa River inlet culminating at the unit boundary in the north at Oyster Point.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
No action is reflective of the minimal Auckland Council assets located within this stretch.		
Implementation notes		
Cultural sites and values may be located within this coastal stretch. No action does not preclude advocacy for management of risk to cultural sites and values.		



Unit 5

Kaipara Harbour



Wellsford



The Hōteio River drains nearly 8% of the Auckland region. It is the biggest river in the Auckland region, by both flow and catchment area. It's headwaters are around Wellsford and it drains into the Kaipara Harbour.

Hōteio Sediment Reduction Project - This project group includes representatives from the community as well as program partners; Ngāti Mahuhiri, the Integrated Kaipara Harbour Management Group, Ngā Maunga Whakahii o Kaipara, Te Uri O Hau (Kaipara Uri), Manaaki Whenua, Beef + Lamb and the Sustainable Business Network. Ngā Awa river restoration work is contributing to the restoration of the Hōteio catchment as well as the Kaipara Harbour.

Wharehine

Stables Landing Reserve - Mangrove impacts on harbour access



Tauhoa Hall



Tauhoa River

Mataia Homestead



Hōteio River



Cue Haven



Puatahi Marae

Glorit

Kawau Parua Inlet

Gibbs Farm - private sculpture park



East west roading connection

Unit 5: Makarau to Wharehine

Unit 5 commences at Oyster Point (north of Kaukapakapa), extending north including multiple rural coastal settlements (Kanohe, Araparera, Makarau, Glorit, Mangakura, Tauhoa). The unit culminates at Wharehine to the north.

The topography of much of this unit is low-lying and subsequently exposed to coastal inundation and catchment flooding. While coastal erosion is also a hazard this unit is exposed to, this has a lesser impact on Council-owned land or assets, due to the predominantly private ownership of the immediate coastal edge.

This eastern shore of Kaipara Moana is predominantly rural in land use. There are several marginal strips and scientific reserves (Omaumau Scientific Reserve), many managed/owned by DOC and limited physical coastal assets. Auckland Council-owned reserves which include boat launching facilities are located at Makarau and Mangakura providing valuable harbour access. Mangakura Reserve also includes a wharf, building lease to the Mangakura Boating Club, toilets, carpark, reserve access road.

Unit 5 also includes several sites of cultural and historic heritage and social importance including marae, rural fire station and NZTA Waka Kotahi roading connections. Ecological areas, both marine and terrestrial are numerous and prolific within this unit area, located within privately-owned coastal areas.

Glorit, to the south of the unit, is part of the legacy Rodney District Drainage District. Under this arrangement, Auckland Council has a role in supporting the maintenance and management of private waterways and stormwater infrastructure in this area.



Figure 8: Map of Glorit Drainage District

What is happening? Coastal context and hazardscape

The rural character of Kaipara Harbour continues along much of this unit, with several marginal strips, scientific reserves (Omaumau Scientific Reserve) and limited physical coastal assets. No coastal protection structures are currently present

The topography of much of this unit is low-lying and subsequently exposed to coastal inundation in the moderate to high change scenario at the coastal margins. Exposure to coastal erosion is typically confined to coastal margins in the moderate to high change scenario.

Flood plains can be observed following the tributaries which drain into the coastal margins. These include the flood plains located near Makarau River, Arapārera River in the south of the unit, and flood plains located near Hōteo Stream in the north.

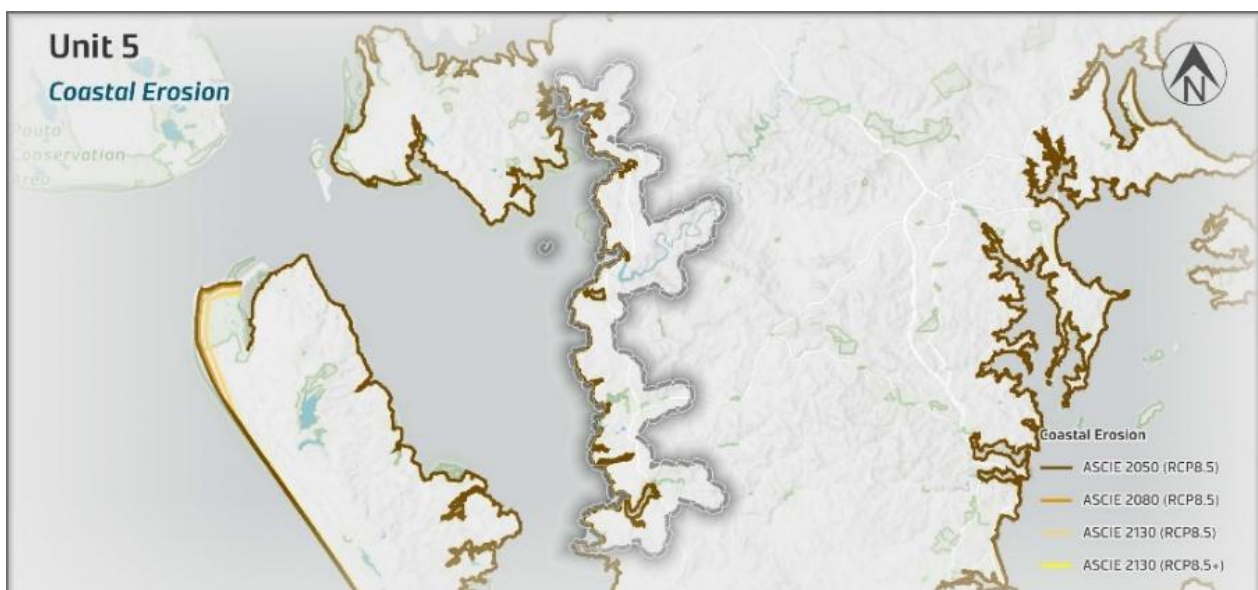




Figure 9: Coastal Hazardscape for the Makarau to Wharehine Unit, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

Error! Reference source not found. table below summarises the risk levels for Auckland Council asset types in the short, medium, and long term responding to the use of the low, moderate and high climate scenarios.

The overall risk from coastal inundation and coastal erosion susceptibility is very high to high in the short term for environmental, transport, culture and heritage assets. This is reflective of the low-lying topography of the unit and close proximity of culture and heritage assets (i.e. on the banks of the Papakanui River) and environmental assets (i.e. south of Mangakura) to the coastal edge. Auckland Council-owned land and community facilities are rated moderate risk (e.g. Mangakura Wharf and boat ramp) across both coastal hazards.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (53.9 ha) Buildings, wharves (14 No.)			Park amenity structures, carparks, accessways, buildings (0.2 ha)			AT roads (36.0 km) Bridges (1,266.5 m ²)			Water pipes (1.6 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	High	High	Very Low	Low	Low
Coastal inundation											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	Very High	Very High	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 assets are limited within this unit except for at Mangakura.
- Mangakura Reserve includes a boat ramp, wharf, building lease to Mangakura Boating Club, toilets, carpark, and reserve access road.



- Reserve and park amenities include community buildings, playgrounds and a carpark.
- Recreational and sport facilities in proximity to the coast including non-Auckland Council-owned asset located on Auckland Council-owned land.



- Glorit is part of the legacy Rodney District Drainage District under which Auckland Council has a role in supporting the maintenance and management of private waterways and stormwater infrastructure in this area.



- **Key local and regional roading:** Waka Kotahi's SH16.



- **Coastal infrastructure:** Mangakura Wharf (adjacent to bridge on SH16 Hōteo), Mangakura boat ramp, Stables Landing Reserve boat ramp.

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



- This unit is one of the more isolated within this SAP area, with minimal social infrastructure and is connected through SH16 which runs the length of the unit with limited local road connections.
- Hōteo River is located in this unit and is the largest river in Tāmaki Makaurau Auckland. Significant river restoration through Ngā Awa and DOC is currently being undertaken and involves collaboration with other agencies and groups including mana whenua, local government, private landowners and community groups. Examples of projects include Hōteo gorge planting, Hōteo fish passage assessment and Hōteo catchment restoration work.
- Council has been undertaking further consultation with the local community and Rodney Local Board to include greater community involvement with stormwater maintenance works as part of the Rodney Drainage District works. A community-led management agreement with Glorit landowners is being considered. Further discussions are anticipated with the local community on the future service level needs, the impacts of climate change, future costs and meeting obligations to mana whenua (Auckland Council, 2024a).
- There are 3 'Category B' heritage features identified in the AUP:OP within this unit: Undefended settlement site Q09_323; Mataia Homestead, including Gardner brickworks site; Bow-string arch bridge (Auckland Council, 2016c).



- Two Cultural Heritage features are located in Stretch 5.3: Te Tauhia Hemara Grave and Pits.
- Te Kia Ora (Kakanui) Marae, Te Aroha (Araparera) Marae, and Puatahi Marae.
- The Hōteio River just north of Puatahi Marae in Stretch 5.3 is subject to Ngāti Whātua o Kaipara Statutory Acknowledgment (Te Arawhiti, 2011).
- There are 17 pā sites identified as historic heritage in the AUP:OP (Auckland Council, 2016c).
- 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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

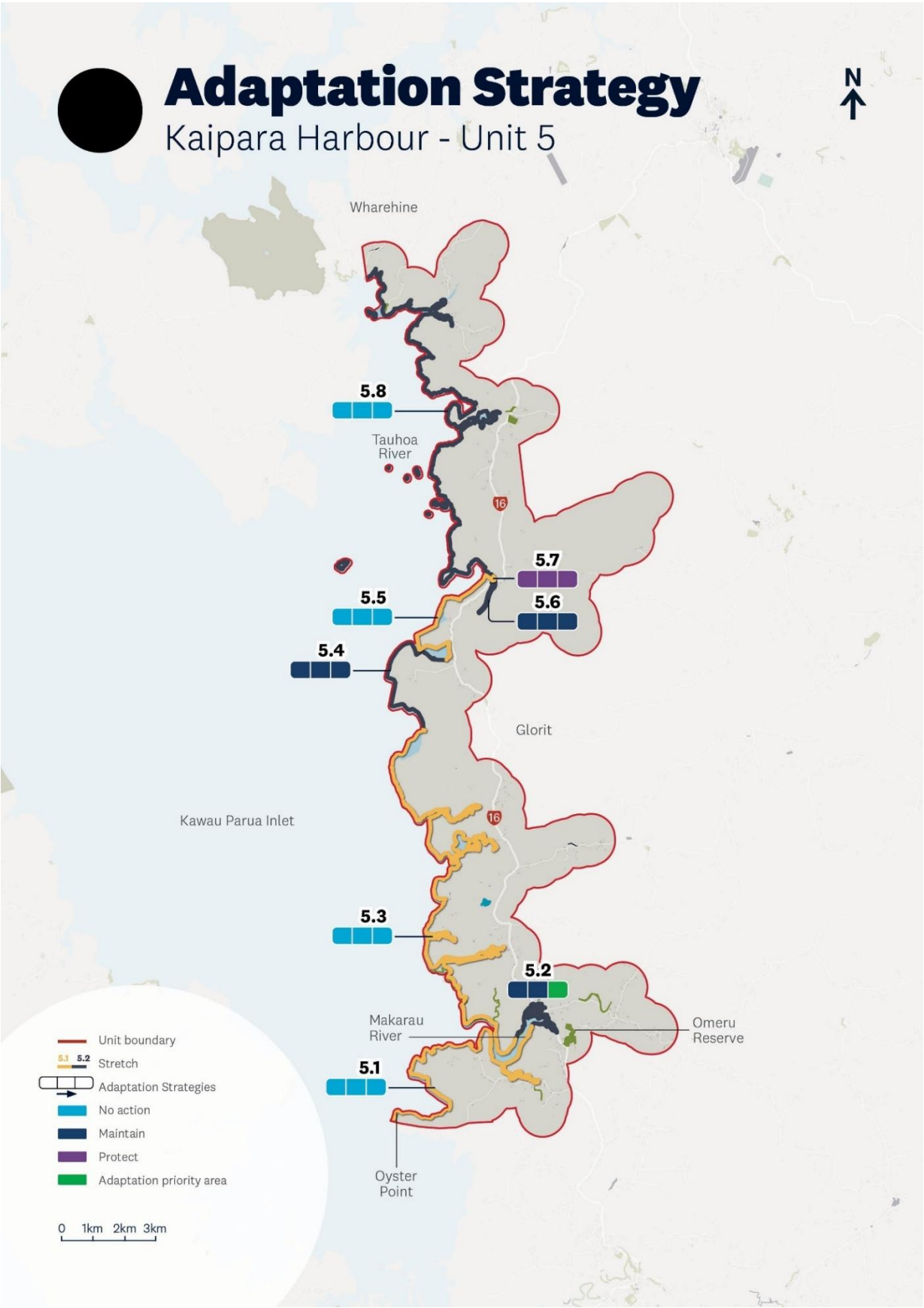
- A large patch of kauri, podocarp, broadleaved forest and kauri forest on the northern banks of the Makarau River (Stretch 5.2).
- Atanui Forest (Stretch 5.3) – a large remnant of kauri, podocarp, broadleaved forest. A number of regionally threatened and/or rare vascular plants are found within this remnant forest.
- Important saline vegetation borders the entire unit, including mangrove forest, saltmarsh, and a small area of seagrass (Stretch 5.3 [Department of Conservation, 2011]).
- Hōteio River (Stretches 5.3-5.5) – the largest river within Auckland region by both flow and catchment area (LAWA, 2024). A number of threatened species have been recorded within the wider catchment, including Hochstetter's frog, threatened lizard and freshwater fish species, banded rail.
- The Tauhoa Scientific Reserve (Stretch 5.5) is one of two significant mangrove reserves in New Zealand and is recognised as an important high-tide bird roost. Fairy tern have been recorded here.

Community feedback



- Key uses and activities identified through feedback included active adventure sports such as biking, and water-based activities including paddle boarding and boating.
- Coastal storm events and rainfall flooding events were identified as the hazard of greatest concern by those providing feedback in this unit.
- Respondents have not indicated any concerns regarding the strategies identified in the consultation material.

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



5.1: Kanohi

This stretch commences north of Kauakapakapa (at Oyster Point) culminating adjacent to Basil Orr Road end in the north.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
No action is reflective of the limited Auckland Council land and assets located within this stretch of the coast. Roading assets are generally located away from coastal areas.		
Implementation notes		
Management: Jordan Road and Ngapuke Road provide the sole access to private homes. This strategy does not preclude specific, localised interventions for roading connections to respond to catchment and coastal flooding, as required. Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of these assets.		

5.2: Makarau

This stretch commences adjacent to Basil Orr Road end and culminates in the north at the western end of Makarau Bridge Reserve. It includes Omeru Reserve, Makarau Esplanade Reserves and Makarau Bridge Reserve.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Adaptation priority 
Explanation		
Maintain signals the need to manage risk and maintain key harbour connections at Makarau jetty and boat ramp located within Makarau Bridge Reserve. The wider stretch also includes Makarau Road and esplanade reserves and Omeru Reserve. Adaptation priority in the high change scenario recognises the increasing risk from catchment flooding and coastal inundation over time and the need to ensure enduring access to the coast.		
Implementation notes		
Cultural: Rodney Local Park Management Plan notes that Omeru Reserve is an area 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.		

5.3: Kakanui, Araparera & Glorit

This stretch commences on the northern side of Makarau River and extends north to just south of Glorit. It includes the areas of Kakanui and Araparera, and is highly rural in character with very limited Council land.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action for this stretch is reflective of the limited land and assets in this section of the coast. Note: This stretch includes numerous cultural and social facilities, sites and values. No active intervention is identified exclusively in relation to Auckland Council landholdings; the strategy selection does not preclude support and advocacy to manage risk to other values, sites and features.		
Implementation notes • Cultural: Multiple cultural features are exposed to inundation and erosion in this stretch. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • Heritage: Mataia Homestead (including the Gardner brickwork site) is located within this stretch and is exposed to coastal inundation from the short term. Engagement with Heritage New Zealand may be needed to determine management strategies for this feature.		

5.4: Glorit Drainage District

This stretch encompasses the area of the Glorit Drainage District.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Maintain over all change scenarios reflects the current arrangements for Glorit Drainage District which is one of the limited remaining areas of rural Auckland where Auckland Council provides ongoing stormwater management services to private landowners.		
Implementation notes • Management: Currently, Auckland Council provides ongoing stormwater management services to private landowners. Glorit Drainage District is a community-led management agreement with Glorit landowners.		

5.5: Mangakura

This stretch extends from the northern boundary of the Glorit drainage district to the southern boundary of Mangakura. Puatahi Marae is included within this stretch.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of the limited Council-owned land and assets within this stretch.		

5.6: Hoteo River

This stretch covers the outer reaches of Hotea River to where it discharges into the Kaipara Moana.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation A maintain approach acknowledges the importance of the SH16 bridge that crosses the Hoteo River which is exposed to coastal inundation.		
Implementation notes • Management: Gibbs Farm, a popular sculpture park, is located in this stretch as well as CUE Haven, an ecological retreat/ native nature reserve that hosts community events. Engagement with key community groups may be required for this stretch. • Management: Recognising the significance of the SH16 bridging connection, localised measures are likely required, reflected in the approach above. Noting that as this is a Waka Kotahi NZTA asset, ongoing engagement with Waka Kotahi NZTA across all climate change scenarios will be required; noting initial engagement has taken place.		

5.7: Maungakura Boat Launching

This stretch commences to the south of the road bridge culminating to the northwest of the reserve landholdings. It includes Mangakura Reserve which has a number of Council assets including the boat ramp, wharf, building lease to the Mangakura Boating Club, toilets, carpark, reserve access road.

Scenarios for change		
Low	Moderate	High
Protect 	Protect 	Protect 
Explanation Protect is the preferred pathway as Mangakura boating club is located on an Auckland Council reserve area and includes the highly-valued boat launching facility and jetty; this has been supported in the past by a coastal edge armoured with stabilised sediment. Protect over all scenarios signals the ongoing management of the facilities here.		
Implementation notes • Social: Mangakura Boating Club is a well-used community club facility that is exposed from the short term. Engagement with these organisations is recommended to understand long term options to implement the recommended strategy over time.		

5.8: Tauhoa and Wharehine

This stretch commences west of Mangakura Reserve culminating where Run Road turns south to meet the coast, to the east of Run Road Esplanade Reserve. The stretch includes Moturemu Island.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of the limited Auckland Council land and assets located within this stretch. Landholdings and asset interests include Tauhoa Reserve north to the end of the unit, Witheford Road end, the Stables Landing Esplanade Reserve and boat access. The strategy of no active intervention relates primarily to management of the coastal edge and does not impact the continued maintenance and support of these facilities or collaboration with third-party land owners, (DOC) in relation to coastal reserve areas.		
Implementation notes • Management: The strategy does not preclude localised interventions as required for roading connections (Wharehine Road and SH16) to respond to coastal inundation and erosion. Auckland Transport and Waka Kotahi NZTA, the asset manager, will be engaged to understand how adaptation strategies may impact on the future of these assets, what it means for maintenance, and how to determine the best way to respond to these risks. • Cultural: Te Kohuroa Pā is exposed to coastal erosion in this stretch. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.		



Unit 6

Kaipara Harbour



Birds Beach



Popular beach and coastal access point for local community



Coastal settlement



Harbour access for boats

Birds Beach Rd

Journeys End

Kaipara Harbour

Journeys End

Okahukura Rd

Tāpora

Tāpora Reserve

School and rural settlement



Run Rd

Ātiu Creek Regional Park



Ātiu Creek Regional Park

Esplanade Reserve

Manakapua Island



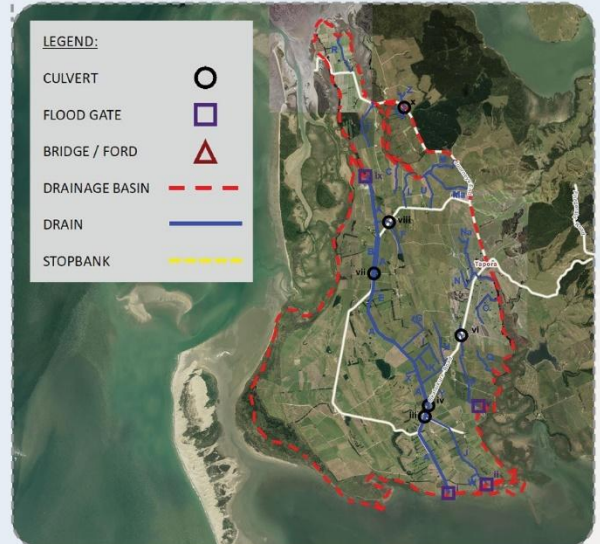
Manakapua Island and Okahukura Sequence biodiversity focus area is situated on the west coast of the Tāpora Peninsula. It contains a diverse range of ecosystems including sand dunes, sand banks and bars, sand islands, saltmarsh and mangroves, coastal shrubland on dunes and freshwater wetlands, providing a habitat for a range of native bird species in the area.

Manakapua Island and this wider coastal area is of high cultural significance to local iwi, with local iwi, the Tāpora Landcare Group and the Integrated Kaipara Harbour Management Group (IKHMG) actively involved in restoration initiatives.



Okahukura Drainage District Map

LEGEND:	
CULVERT	○
FLOOD GATE	□
BRIDGE / FORD	△
DRAINAGE BASIN	---
DRAIN	—
STOPBANK	---



Unit boundary

6.1 6.2 Stretch

Informal recreation park

Regional park

0 1km 2km

Unit 6: Ōkahukura Peninsula

Unit 6 covers Okahukura Peninsula, commencing at Wharehine and culminating on the northern coast just to the east of Ātiu Creek Regional Park landholding. It includes Manakapua Island.

Ōkahukura (Stretch 6.1) is part of the legacy Rodney District Drainage District under which Auckland Council has a role in supporting the maintenance and management of private waterways and stormwater infrastructure in this area.

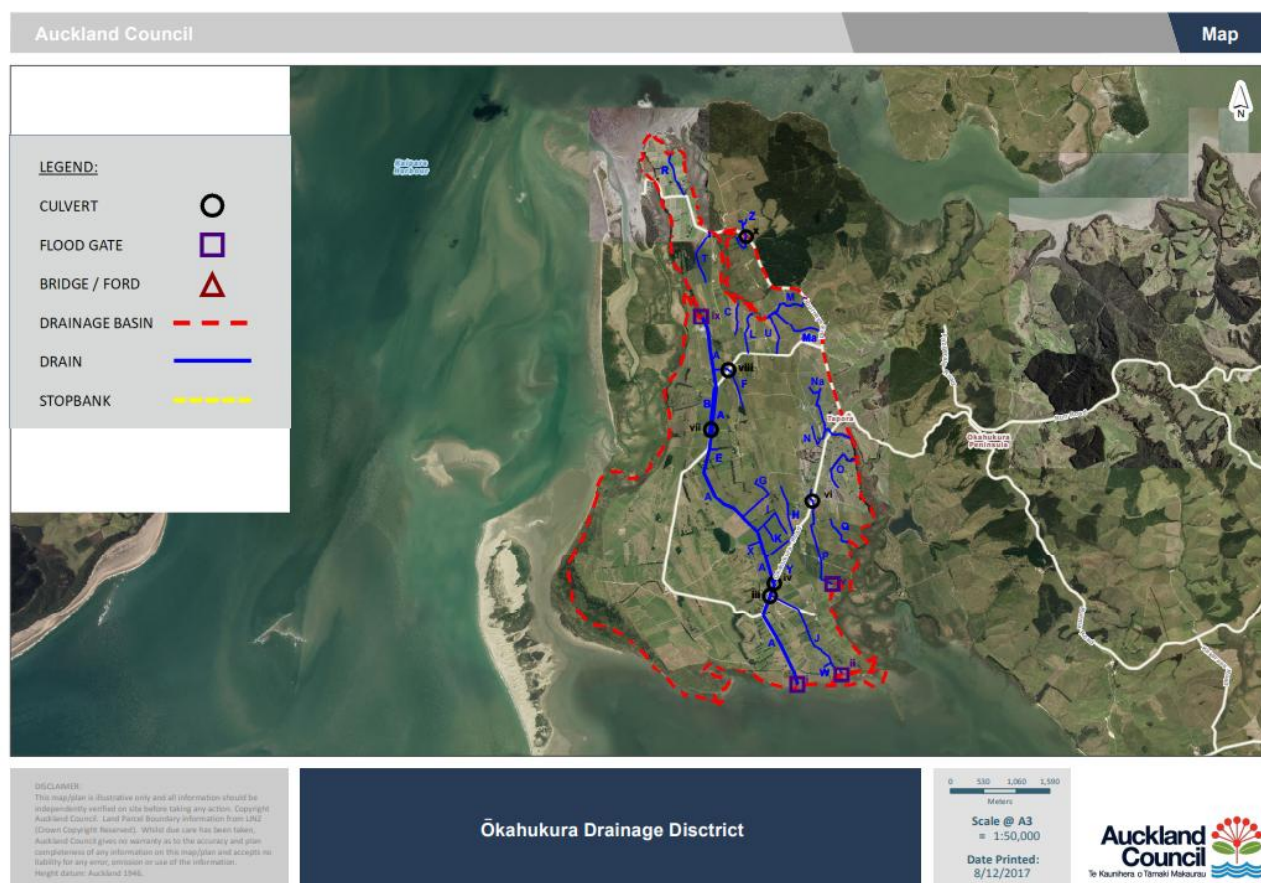


Figure 10: Ōkahukura Drainage District map

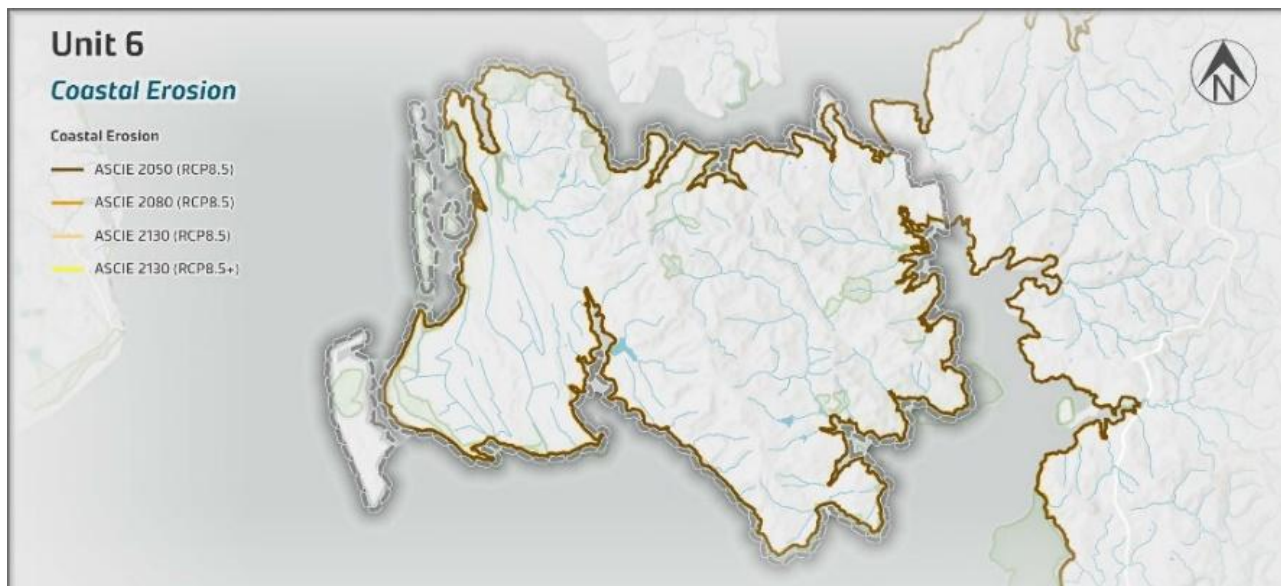
Birds Beach (located within Stretch 6.2) is a small coastal settlement located to the north-western end of the peninsula. Reserve areas support a boat ramp for harbour access. Auckland Council landholdings are limited reserves and facilities within the western areas of this unit. The settlement of Taporā is located inland from the coast.

Ātiu Creek Farm is an Auckland Council Regional Park (Stretch 6.4) located on the Okahukura (Taporā) Peninsula. Ātiu Creek was officially opened in 2009 and at 843 ha is one of Auckland's largest regional parks. While the regional park land of Ātiu Regional Park is exposed to coastal processes, infrastructure and assets are typically set back from the coastal edge.

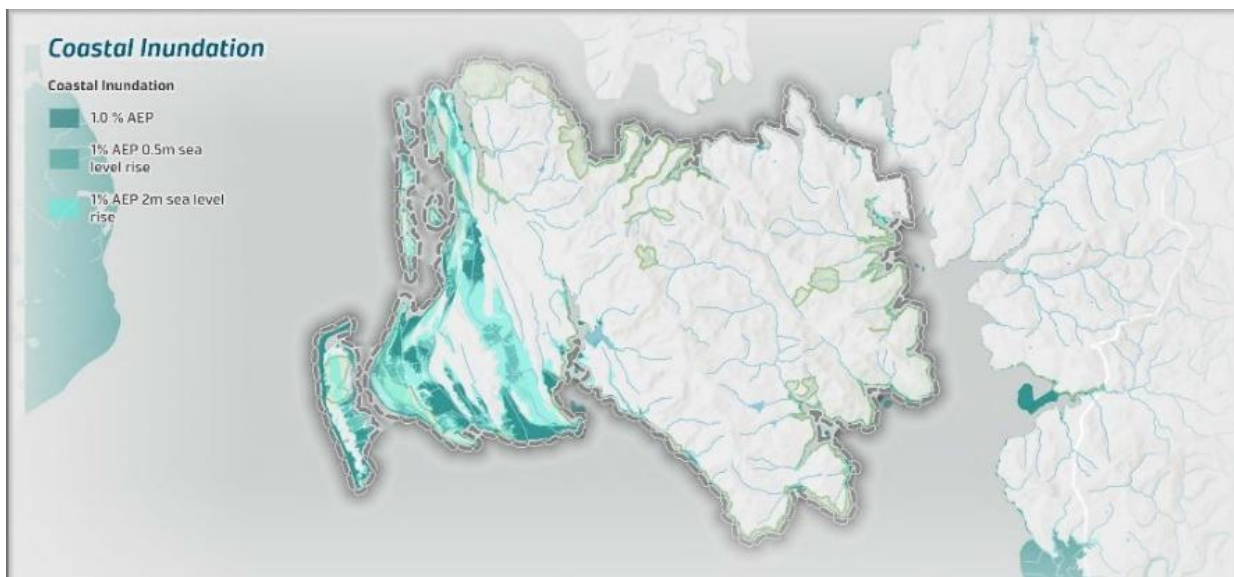
This unit includes Manakapua Island and Okahukura Sequence biodiversity focus area, including critically endangered ecosystems.

What is happening? Coastal context and hazardscape

Coastal erosion is more apparent on the northern extents of this unit, where the topography steepens relative to the south of the unit.



The low-lying extents, particularly to the west of Taporā are exposed to coastal inundation including Manukapua Island and Okahukura stewardship area. Ātiu Creek Farm is located on the Okahukura (Taporapora) Peninsula. While the regional park land of Ātiu Regional Park is exposed to coastal processes, infrastructure and assets are typically set back from the coastal edge. In keeping with the natural character of Auckland's Regional Parks, no coastal protection structures are present (Auckland Council, 2024a).



Flood plains in a 1% AEP storm event follow the tributaries which drain into the coast, particularly west of Taporā where land is at a lower elevation relative to the Okahukura Peninsula.

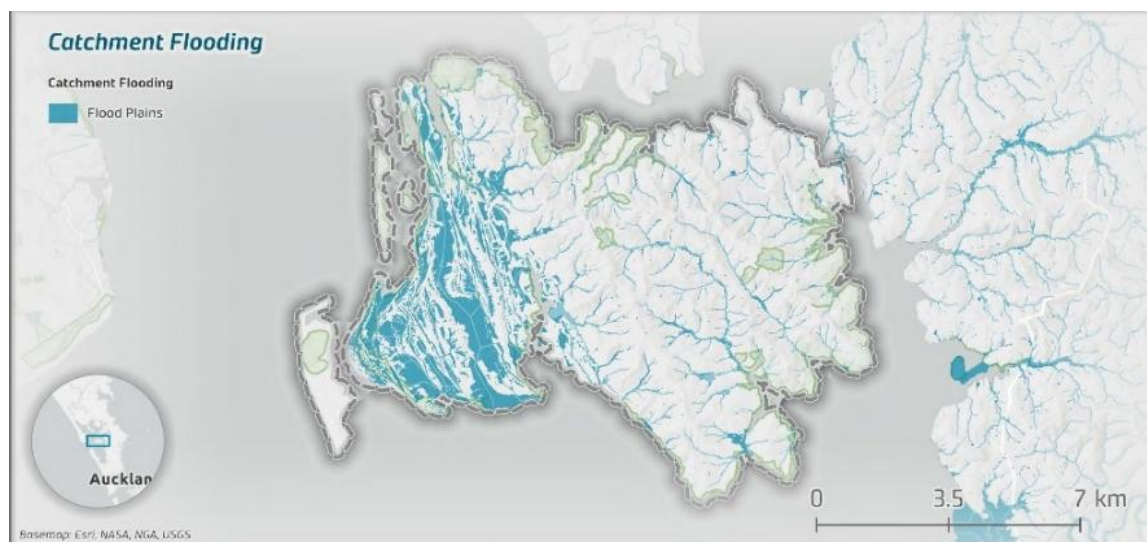


Figure 11: Coastal Hazardscape for the Ōkahukura Peninsula, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1% AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification of flood plains.



Risk assessment

The table below summarises 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 and coastal inundation is very high for environmental assets (e.g. Manakapua Island and sand bar to the west of Wairoa River). Risk from coastal erosion susceptibility is high to Auckland Council-owned land (e.g. Ātiu Creek Regional Park, Birds Beach) and culture and heritage assets (e.g. Okahukura Conservation area, Solomon's Pā). Risk to transport infrastructure (e.g. Okahukura Road, Run Road) is moderate and risk to Auckland Council community facilities (i.e. Park House) is low, increasing to moderate in the long term.

While risk from coastal erosion susceptibility is low to Auckland Council community facilities, risk from coastal inundation is moderate (e.g. Ātiu Creek campground, Park House). Risk is also moderate for Auckland Council-owned land and transport infrastructure, increasing to high in the medium-term. Risk to water infrastructure is low to very low. Of interest is the high risk from coastal erosion susceptibility and coastal inundation to culture and heritage assets in the short term.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (862.5 ha) Buildings, wharves (27 No.)			Park amenity structures, carparks, accessways, buildings (5.2 ha)			AT roads (48.9 km) Bridges (145.6 m ²)			Water pipes (1.0 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
High	High	High	Low	Low	Moderate	Moderate	Moderate	Moderate	Very low	Very low	Very low
Coastal inundation											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	High	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.



- The unit contains six Auckland Council-owned parks and reserves in proximity to the coastline with Ātiu Creek Regional Park Campground and Birds Beach Recreation Reserve being notable locations.



- Ātiu Creek Regional park amenities including Courtyard House, overnight horse paddocks, woolshed, and toilets.



- Ātiu Creek Regional Park pump shed is located within this unit.
- Ōkahukura is part of the legacy Rodney District Drainage District under which Auckland Council has a role in supporting the maintenance and management of private waterways and stormwater infrastructure in this area (Auckland Council, 2024a).



Harbour access: Birds Beach Recreation Reserve boat ramp.



- **Tracks:** Ātiu Regional Park includes a network of walking and mountain bike tracks.

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 unit predominately consists of rural coastal land with limited social infrastructure.
- Birds Beach contains a small settlement of a dozen beach houses.
- Tāpora Community Hall is located adjacent to the school.
- The Earth Beat Festival, an annual arts and wellness festival, is held to the south of Ātiu Creek Regional Park. This has included involvement with restoration projects in Ātiu Creek and the Kaipara (particularly through providing a platform and supporting environmental groups in the region).
- There is one other 'Category B' heritage feature identified in the AUP:OP within this unit; Undefended settlement (Auckland Council, 2016c).



- Three Cultural Heritage features are in this unit: Onemangu Pā, Whangaparaoa Pā (Stretch 6.1), and Oporo-iti Oporo-nui Pā (Stretch 6.3).
- Additionally there are six pā sites identified as historic heritage in the AUP:OP (Auckland Council, 2016c).
- 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 this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded within this unit:

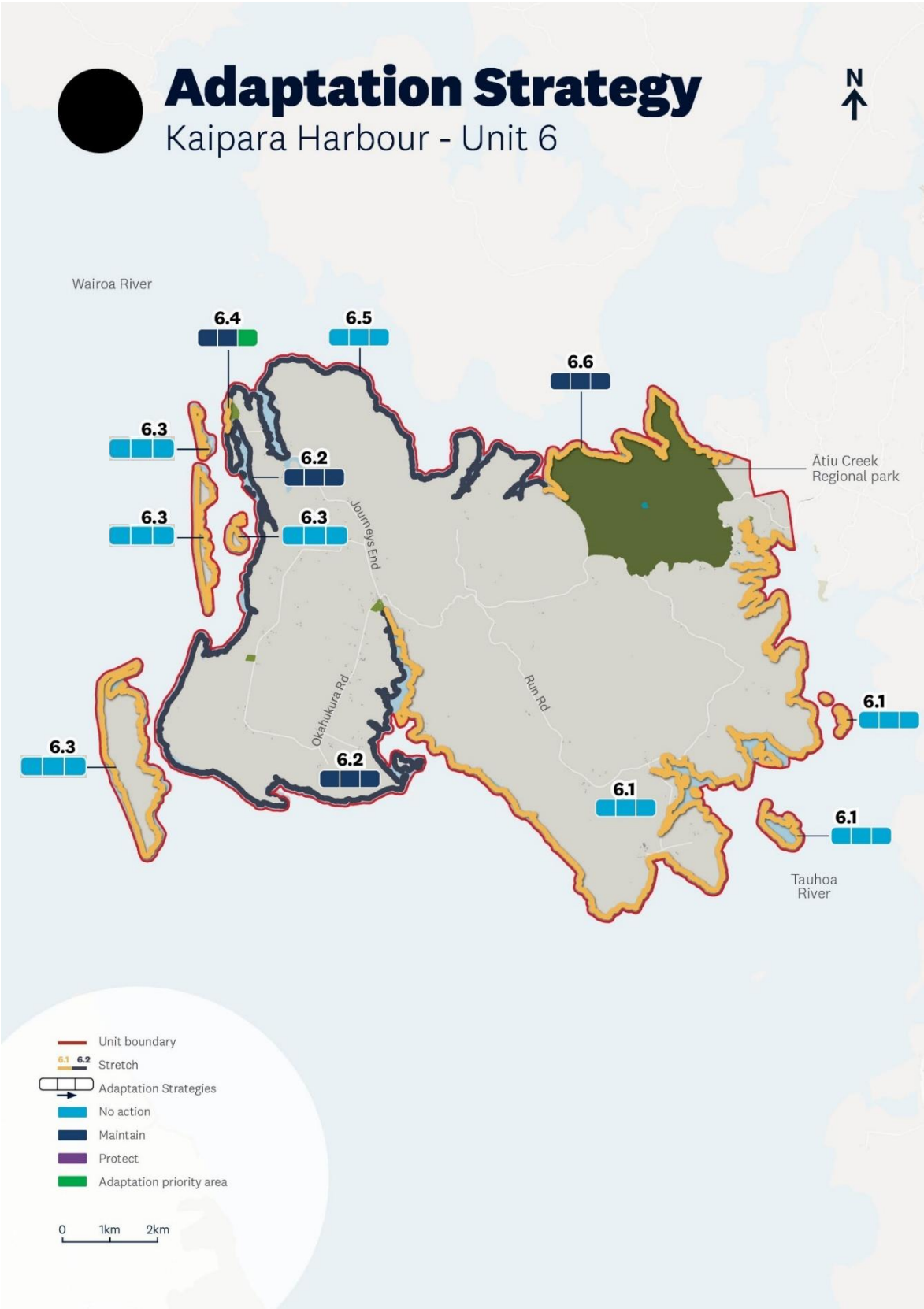
- Manakapua Island and the Ōkahukura Sequence (Stretch 6.1) are located on the west coast of Tāpura Peninsula. These areas have been identified as a BFA and are also recognised as a regionally and nationally important bird area. There is a mosaic of saltmarsh, spinifex, pīngao dunelands, mangrove scrub and forest, raupō reedland and *Machaerina* sedgeland.
- The islands within the BFA described above are recognised as critical high-tide bird roosts for a variety of species, including the Northern New Zealand dotterel.
- Fairy tern have also been recorded at Manukapua Island and Okahukura Sequence BFA.
- Small remnants of kauri, podocarp, broadleaved forest and coastal broadleaved forest can be found within Ātiu Creek Regional Park (Stretch 6.4).

Community feedback



- Feedback identified water-based activities such as swimming and paddle boarding, and passive recreation as key activities and uses.
- Coastal storm events and rainfall flooding events were identified as the hazard of greatest concern by those providing feedback. Other respondents were concerned about coastal erosion.
- Respondents have not indicated any concerns regarding the strategies identified in the consultation material.

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



6.1: Wharehine and Ōkahukura Peninsula

This stretch commences at Run Road Reserve in the east including most of the peninsular west, culminating at the south of Birds Beach Reserve.

Scenarios for change					
Low		Moderate		High	
No action		No action		No action	
Explanation					
No action relates to management of coastal areas where Auckland Council-owned land and assets are limited. Roding infrastructure provides access to rural coastal communities and industries. Note: No active intervention is identified exclusively in relation to Auckland Council landholdings; the strategy selection does not preclude support and advocacy to manage risk to other values, sites and features.					
Implementation notes					
• Management: Roding infrastructure provides access to rural coastal communities and rural industries. This strategy does not preclude localised interventions as required for roading connections (Burma Road) to respond to coastal flooding and erosion. Auckland Transport, as asset manager for these roads, will be engaged to understand the potential impact of adaptation strategies, and any trigger/thresholds relating to their management. • Ecology: Manakapua Island and the Ōkahukura Sequence are located within this stretch and are regionally and nationally important ecological features. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed. • Cultural: Manakapua Island is an area of cultural significance and is exposed to coastal erosion from the short term. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.					

6.2: Tapora and Ōkahukura Drainage District

This stretch covers the extent of Ōkahukura Drainage District and Tapora settlement.

Scenarios for change					
Low		Moderate		High	
Maintain		Maintain		Maintain	
Explanation					
Maintain over all change scenarios reflects the ongoing management of Ōkahukura Drainage District. This is one of the limited remaining areas of rural Auckland where Auckland Council provides ongoing stormwater management services to private landowners. Auckland Council's responsibilities in relation to this scheme are not impacted by the identification of no active intervention for this stretch.					

Scenarios for change		
Low	Moderate	High
Implementation notes Management: Roading infrastructure provides access to rural coastal communities, Tapora Golf Club and Tapora settlement. This strategy allows for the ongoing maintenance and management of roading connections (Te Ngaio Point Road, Gum Store Road and Okahukura Road) to respond to coastal flooding and erosion. Auckland Transport, as asset manager for these roads, will be engaged to understand the potential impact of adaptation strategies, and any trigger/thresholds relating to their management.		

6.3: Manukapua Island

This stretch covers the periphery of Manukapua Island, a biodiversity focus area with a range of diverse ecosystems.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action owing to the limited Auckland Council-owned land and assets (DOC-owned and managed).		
Implementation notes Note: The strategy selection does not preclude support and advocacy to manage risk to other values, sites and features. - Ongoing engagement with DOC and local community groups to support ecological outcomes.		

6.4: Birds Beach

This stretch commences at the southern end of Birds Beach Reserve and encompasses the whole reserve.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Adaptation priority 
Explanation Maintain provides for the management of risk to Auckland Council land (reserve and road connections) and continued provision of important coastal connections, such as boat launching facilities. Inundation risk will increase over time and localised management of activities within Auckland Council landholdings (in proximity to the coast) may be required over time, reflected by adaptation priority in the high change scenario.		

Scenarios for change		
Low	Moderate	High
Implementation notes • Management: Adaptation priority supports localised interventions for roading connections in the long term (Journeys End Road and Birds Beach Road) to respond to coastal flooding and erosion. Auckland Transport, as asset manager for this road, will be engaged to understand the potential impact of adaptation strategies, and any trigger/thresholds relating to the management of this road. • Ecology: Northern areas of this stretch present highly valuable ecological areas with fairy tern and other notable species breeding within this area. Collaboration with other agencies, iwi and private landowners to support ecological values is also anticipated.		

6.5: Tapora

This stretch commences north of Birds Beach recreational reserve, including the coast north and east culminating to the west of the Regional Park.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of the limited Auckland Council-owned land and assets within this stretch.		
Implementation notes • Management: The strategy does not preclude localised interventions to respond coastal flooding and erosion as required for roading connections. Journeys End Road is exposed to erosion and coastal inundation from the short term. Auckland Transport, as asset manager for this road, will be engaged to understand any trigger/thresholds relating to its management.		

6.6: Ātiu Creek Regional Park

This stretch commences at the western boundary of the park and culminates at the unit boundary to the east of the park landholdings. It includes a small area of coast (privately owned) located to the east of the Regional Park.

Scenarios for change		
Low	Moderate	High
Maintain 	Maintain 	Maintain 
Explanation Coastal amenity along this portion of the coast is highly valued. Maintain provides for the ongoing maintenance and management of risk to assets and uses located within the Ātiu Creek Regional Park. Note: no Auckland Council-initiated interventions to manage coastal hazard risk are anticipated in relation to the privately-owned landholdings to the east of the park.		
Implementation notes • Ecology: Ātiu Creek Regional Park contains several indigenous ecosystem types which support threatened wetland birds and lizards. Council's Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed. • Cultural: Heretoka Pā is exposed from the short term to inundation and erosion, and pā site Q09-297 is exposed to coastal erosion from the short term. Engagement with mana whenua is required to further understand the cultural values associated with these sites and how this may impact adaptation strategies.		



Unit 7

Kaipara Harbour



Port Albert Wharf Reserve



Port Albert Wharf Reserve

Shorebird and seabirds recorded, recognised as important wading bird habitat

Parks facilities and play facilities

Highly valued and used coastal access



Critical harbour access to support growing demand and coastal access for rural settlements



Mangrove management for harbour access

Ōruawhoro

Ōruawhoro River

Concerns with mangroves reducing access and impacts on the harbour



Ātiu Creek Regional Park

Esplanade Reserve

Port Albert

Port Albert Rd

Port Albert Hall



Port Albert Recreational Reserve



Important community and sport & recreational facilities

Esplanade Reserve

Wellsford

Wharehine

Unit boundary

7.1 7.2 Stretch

Informal recreation park

0 1km 2km

Unit 7: Port Albert & Te Hana

This unit commences to the east of Ātiu Creek Regional Park and includes the southern shore of the Ōruawharo inlet east. This includes the rural coastal settlement of Port Albert and Te Hana township.

Auckland Council-owned land and assets within this unit include Wharf Road at Port Albert and the Port Albert camping and sports ground, wharf and boat ramps (noting the functional need for such assets to be located at the coast), playground, toilets, reserve access road and carparking. A rock seawall is located between the wharf and northern boat ramp at Port Albert.

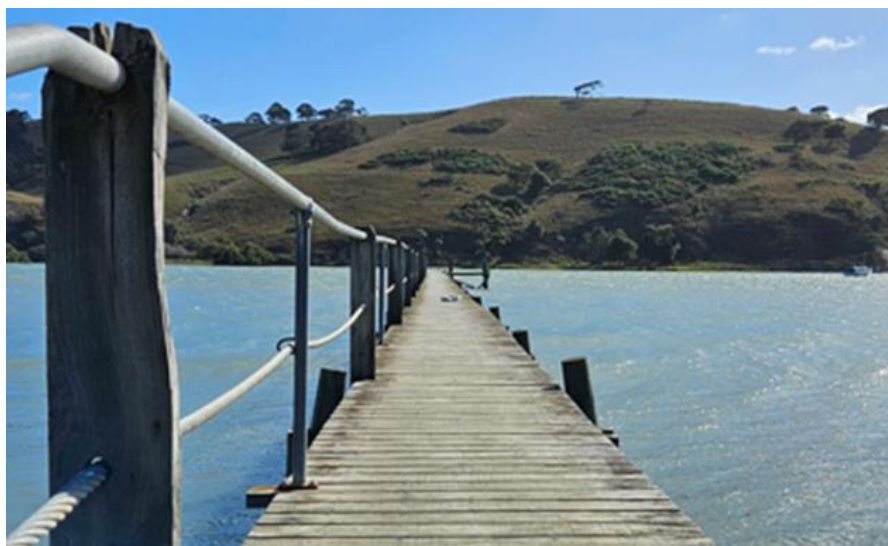
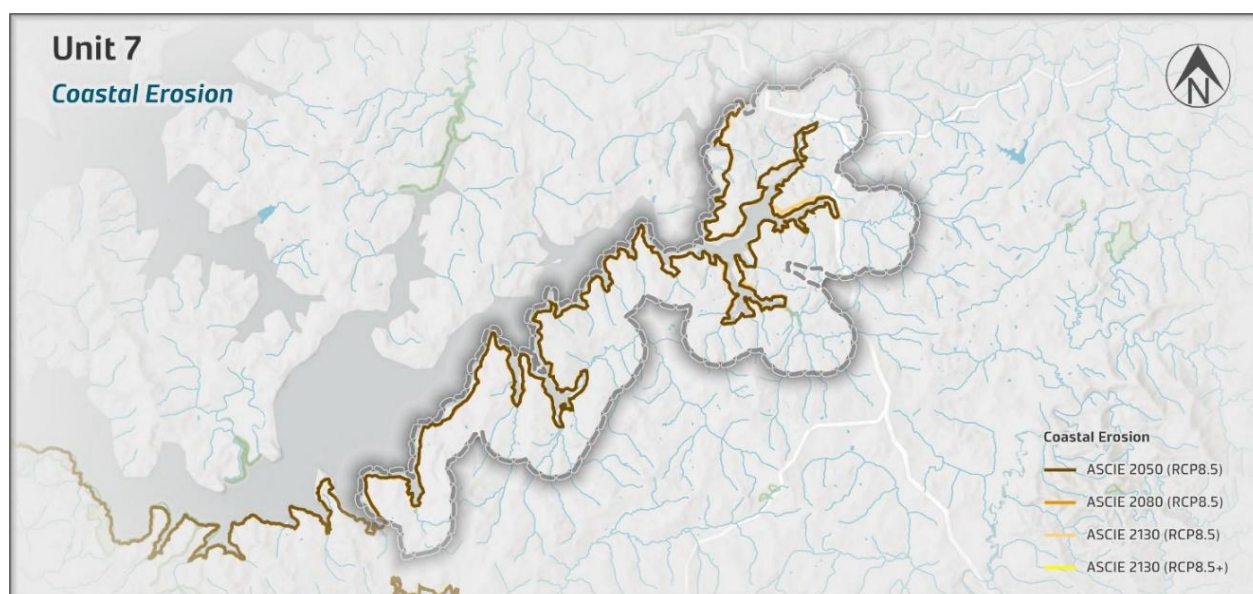


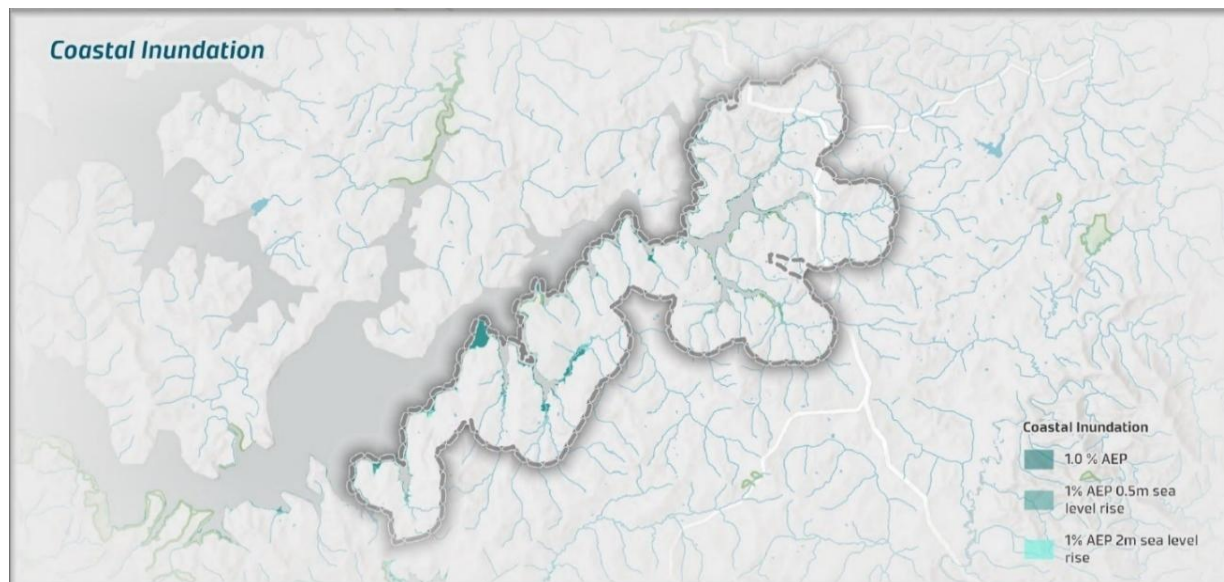
Figure 12: Port Albert Wharf (Source: Auckland Council)

What is happening? Coastal context and hazardscape

With steeper land elevations than the other units within the Kaipara Harbour SAP, this unit is more exposed to coastal erosion and instability, including for Wharf Road in Port Albert.



Auckland Council assets exposed to coastal inundation include Port Albert Wharf and boat ramp (although noting the functional need for such assets to be located at the coast), playground, toilets Wharf Road and carparking. A rock seawall is located between the wharf and northern boat ramp at Port Albert. The wharf at Port Albert is currently included on Auckland Council's Coastal Asset Renewals Work Programme.



Flood plains in a 1% AEP storm event can be seen closely following the tributaries which travel through the catchment and drain out to the coast such as Māeneene Creek, Te Hana Creek, Wharehine River and Wharehau Creek.

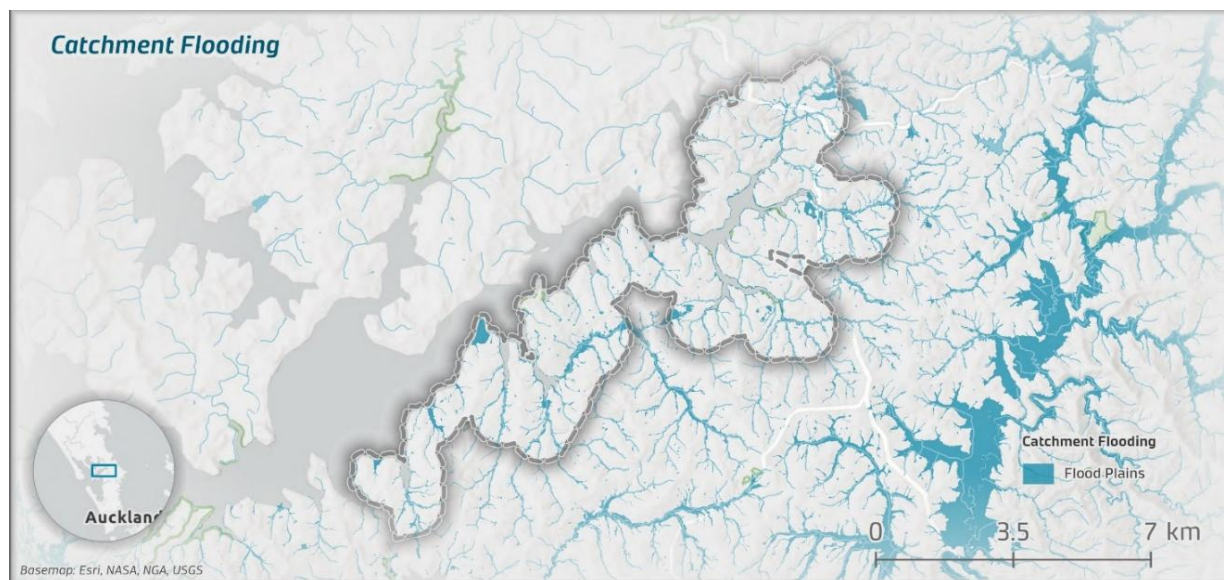


Figure 13: Coastal Hazardscape for the Port Albert and Te Hana Unit, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios, coastal inundation for 1%AEP storm surge for present day and with 0.5 m, 1 m and 2 m sea-level rise and the identification 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 a unit level, overall risk from coastal erosion susceptibility is generally higher than risk from coastal inundation in the short term. This is particularly relevant for transport (i.e. Wharf Road in Port Albert), environmental (i.e. between Oruawharo and Topuni Rivers) and culture and heritage assets along the coastal edge which have a high risk rating. In the long term, risk from coastal erosion susceptibility increases from high to very high to environmental assets at the confluence of the Topuni and Oruawharo Rivers while the remaining groupings do not change risk rating.

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (33.8 ha) Buildings, wharves (11 No.)			Park amenity structures, carparks, accessways, buildings (0.8 ha)			AT roads (38.8 km) Bridges (982.6 m ²)			Water pipes (10.0 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	High	High	Low	Low	Low
Coastal inundation											
Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	High	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.



- Many of the Auckland Council assets in the areas are located at Te Hana Reserve, including multiple sports facilities, a community hall, playgrounds and toilets.
- Several assets valued by the community at Port Albert including the Wharf, a playground and the freedom camping area.



- Recreational and sport facilities in proximity to the coast, include non-Auckland Council-owned assets located on Auckland Council-owned land.



- Te Hana pump station and Cemetery pump station are located within this unit.
- Underground and aboveground stormwater and wastewater infrastructure services settlements within this unit.



- Port Albert boat ramp.
- Port Albert 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.



- The main social infrastructure for this unit is located in Te Hana; this small settlement contains a petrol station, a café and multiple shops. The settlement is a popular rest break for those travelling between Auckland and Northland, as SH1 runs straight through the middle of it.
- The second stage of Ara Tūhono will include an extension of the SH1 motorway from Wellsford to north of Te Hana. This has been identified as a Road of National Significance (NZ Transport Agency Waka Kotahi, 2024). The northern end of this road will land in Unit 7 of this SAP area, and the bypass of Te Hana and Wellsford (which is just outside of this SAP area) will likely have some effect on the community here.
- Port Albert is a smaller coastal settlement with a dozen houses located in it. The settlement includes a football club, a community hall, and a general store. The wharf in Port Albert is considered a well-used focal point of the community and provides important access to the Kaipara Moana.
- There are seven 'Category B' heritage features identified in the AUP:OP within this unit: The Retreat/Underwood House; Minniesdale House; Port Albert School (former); Wesleyan Methodist Church, including cottage; Minniesdale Chapel and graveyard; Port Albert Reserve historic landscape, including grandstand, World War I obelisk and World War II memorial; Port Albert Hall (Auckland Council, 2016c).



- Three Cultural Heritage features can be found in Stretch 7.1: Terraces, Terraces and Opou Pā.
- Additionally, there is one pā site identified as historic heritage in the AUP:OP (Auckland Council, 2016c).
- Stretch 7.3 includes Te Hana Te Ao Mārama Marae Māori Cultural Centre, Auckland's leading Māori Cultural Centre offering a variety of Māori cultural experiences.
- Note: Specific cultural values and outcomes for this unit will/may be developed through ongoing involvement with local iwi identified. Guiding objectives and outcomes which have informed the development of adaptation strategies have been identified earlier in this report.



The following regionally important and/or vulnerable ecosystems and species have been recorded:

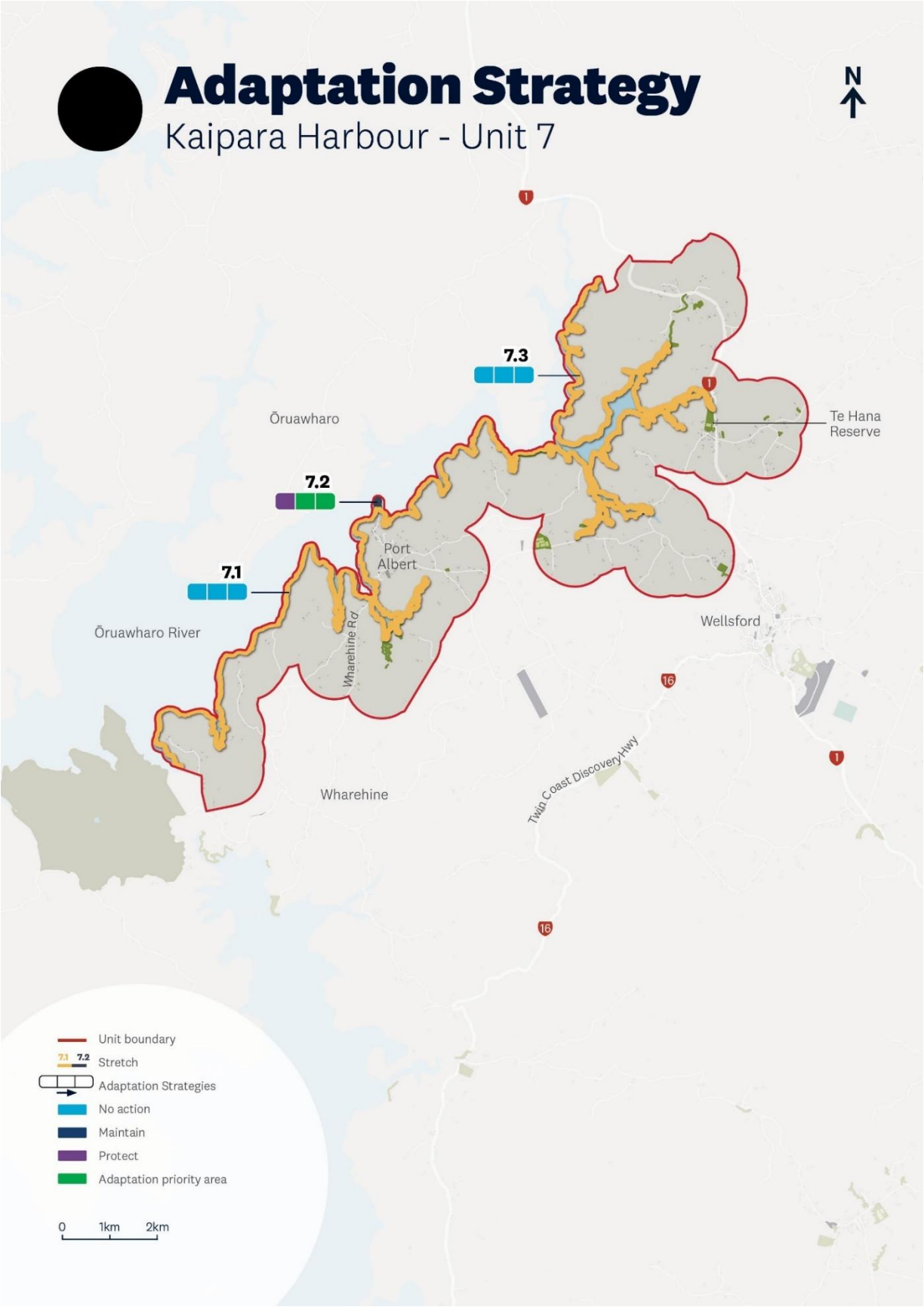
- There are many shorebird and seabird records at the Point Albert Wharf (Stretch 7.2), which is recognised as important wading bird habitat.
- Raupō reedland to the east of Harataua Road (Stretch 7.3).
- Small fragments of indigenous forest ecosystems, including kahikatea forest, kahikatea, pukatea forest, and kauri, podocarp, broadleaved forest

Community feedback



- Feedback identified water-based activities such as boating and fishing/ kai moana gathering as key activities and uses, with some respondents noting their use of the wharf for fishing.
- Coastal accretion was seen as of greatest concern followed by coastal erosion and flooding.
- Support for the 'Hold the Line' (Protect) approach for Port Albert in the short term was expressed by some.

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



7.1: Oruawharo Inlet West

This stretch commences to the east of Ātiu Creek Regional Park culminating to the west of Port Albert reserve area.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation No action is reflective of predominately private ownership and the location of small unconnected, unmaintained areas of esplanade reserve. Coastal inundation and catchment flooding present a risk to Auckland Transport roading infrastructure in low-lying areas. No action does not preclude that asset-specific measures may need to be identified to confirm continued safe roading connections are maintained.		
Implementation notes • Cultural: The stretch contains terraces and Opou Pā which are exposed to coastal erosion from the short and long term (respectively). Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies.		

7.2: Port Albert

This stretch commences at the western side of Port Albert reserve area, culminating to the west of the reserve area.

Scenarios for change		
Low	Moderate	High
Protect 	Adaptation priority 	Adaptation priority 
Explanation Protect in the low change scenario supports the management of risk to existing facilities through location and design within Auckland Council landholdings, including the current renewal of the Port Albert Wharf. Adaptation priority in the moderate to high change scenario is reflective of increased inundation risk and the need to consider how key values are managed, including access to the coast and park uses.		
Implementation notes • Ecology: Fairy tern, New Zealand's most endangered bird species has been recorded within the intertidal area surrounding Port Albert Wharf, along with a large range of other threatened coastal bird species. The Ecology Team will advise on any potential impacts of adaptation strategies on ecological values, and how these may need to be managed.		

7.3: Te Hana

This stretch commences at Port Albert to the east of the recreational reserve culminating at Te Hana.

Scenarios for change		
Low	Moderate	High
No action 	No action 	No action 
Explanation		
No action is reflective of predominately private ownership and the location of small unconnected, unmaintained areas of esplanade reserve. Coastal inundation and catchment flooding presents a risk to Auckland Transport roading infrastructure in low-lying areas.		
Implementation notes		
• Management: No active intervention does not preclude asset-specific measures may need to be identified to confirm continued safe roading connections are maintained. Ongoing engagement with Auckland Transport required.		

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