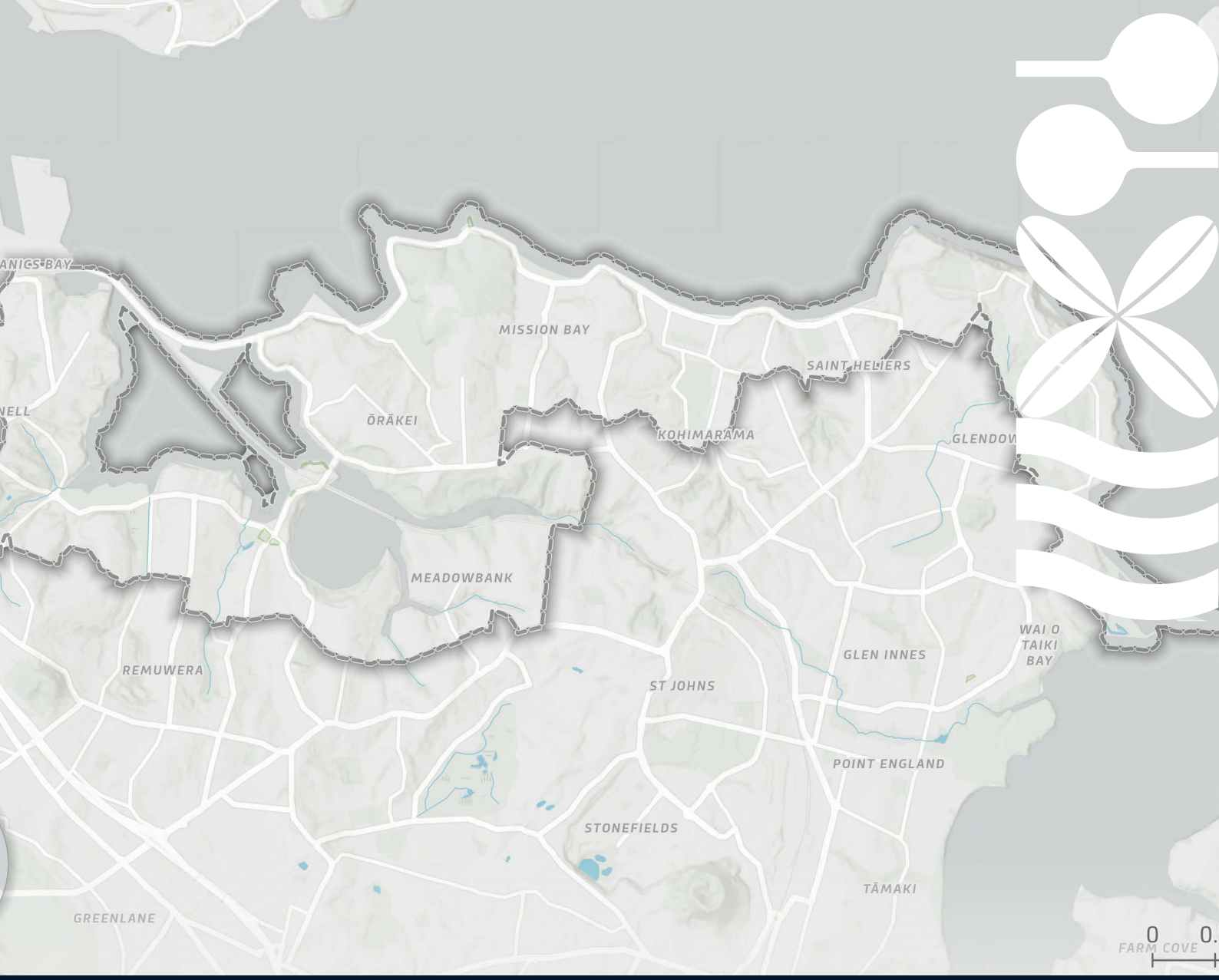

Ngā mahere whakaurutau mō te takutai

Shoreline Adaptation Plan

Ōrākei to Tahuna Torea

Volume 3: Adaptation Stratagies

August 2025, Version 1.0

aucklandcouncil.govt.nz

Shoreline Adaptation Plan

Ōrākei to Tahuna Torea

Volume 3: Adaptation Strategies

August 2025

Auckland Council

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Front Cover

Shoreline Adaptations Plan area overview map for Ōrākei to Tahuna Torea. Prepared for Auckland Council by Tonkin + Taylor 2025.

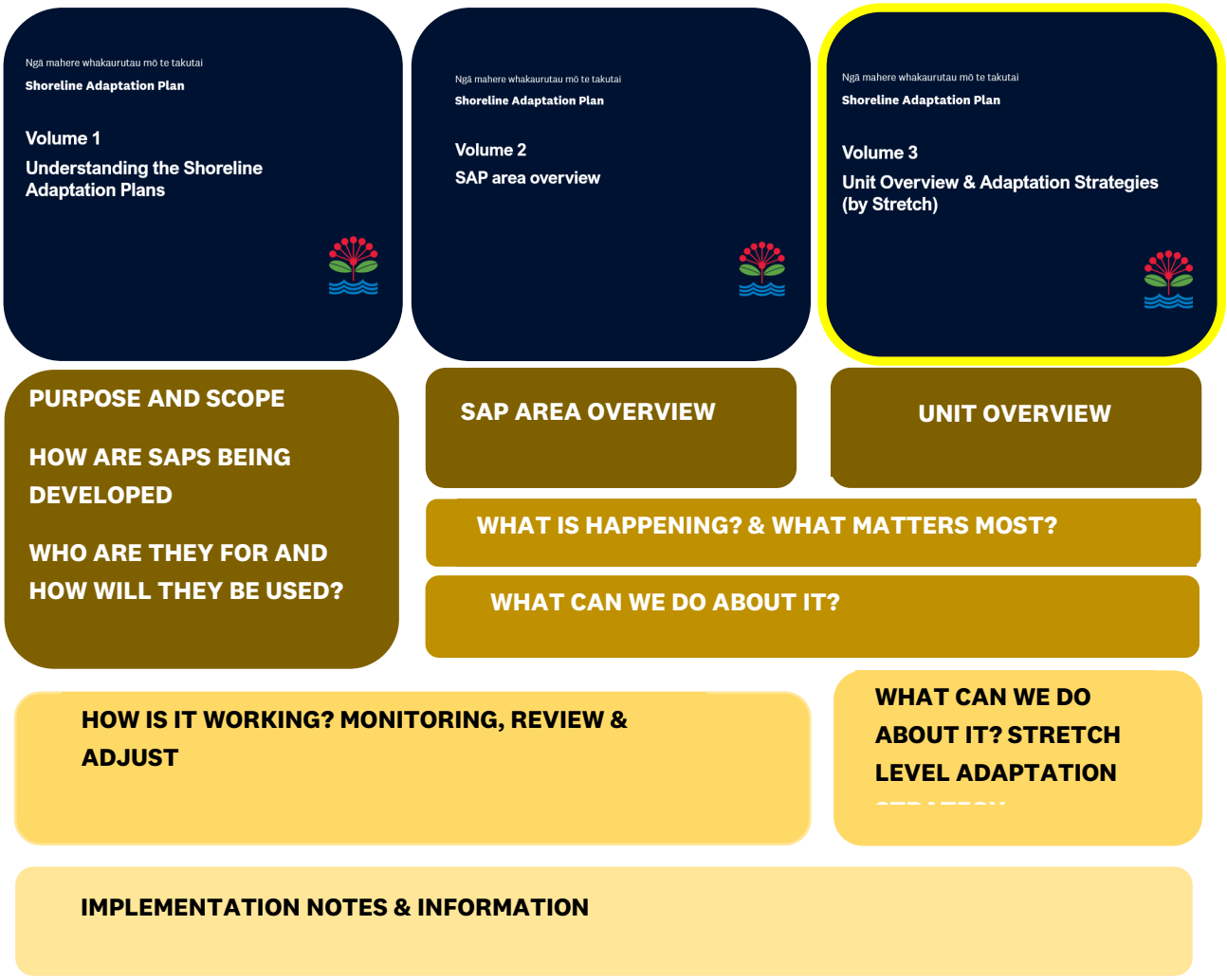
Contents

Figures

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.

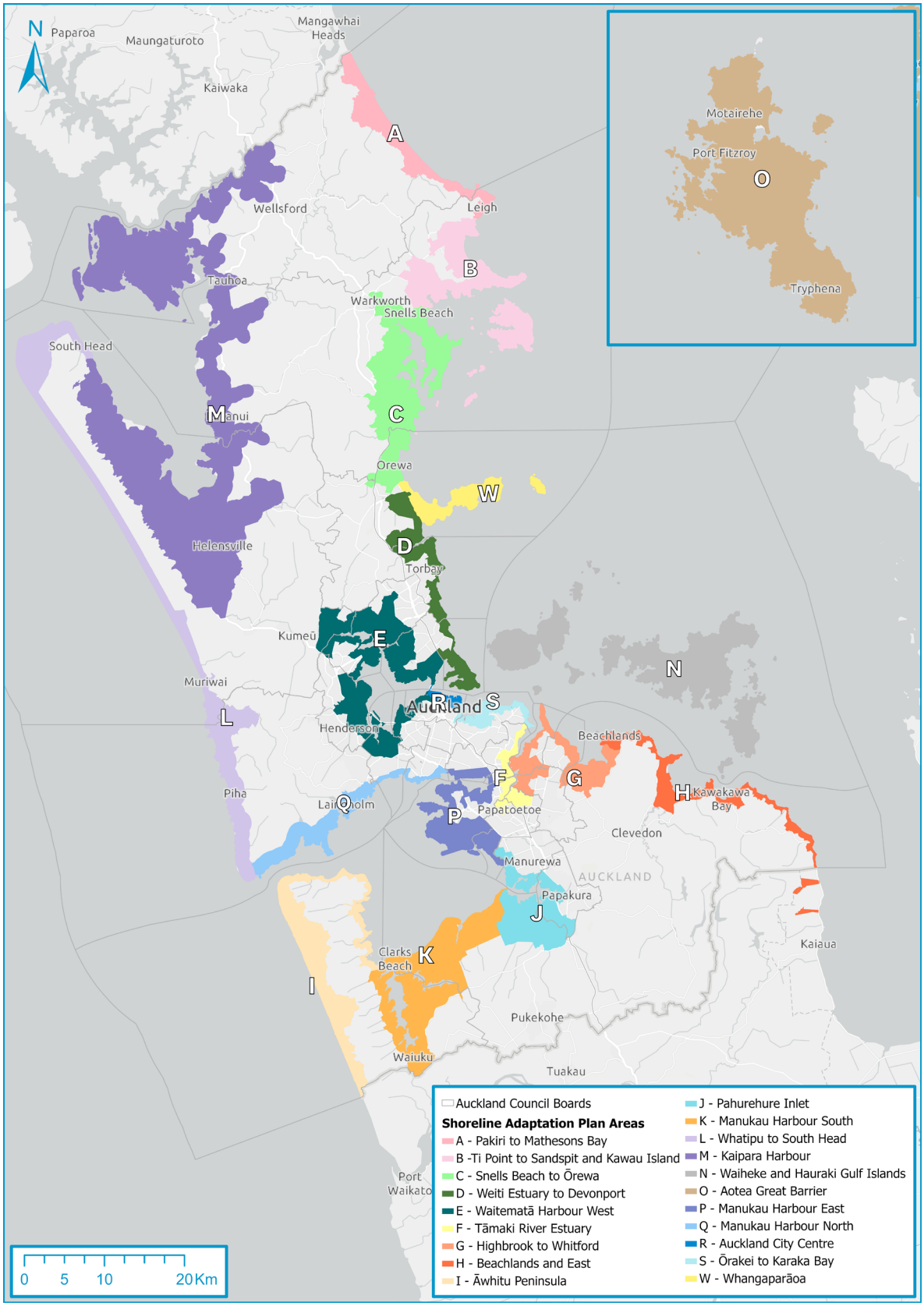
Term	Definition
Adaptive planning	• Adaptive planning encompasses the hazard assessments, the values and objectives and the vulnerability and risk assessments that feed into the dynamic adaptive pathways planning approach, and the measures to implement them through the Resource Management Act 1991, Long-Term 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, pubic-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 SAP Program can be found in *Volume 1: Understanding the Shoreline Adaptation Plans*. Twenty separate SAPs make up Auckland's ~3200 km of coast as per the picture below.

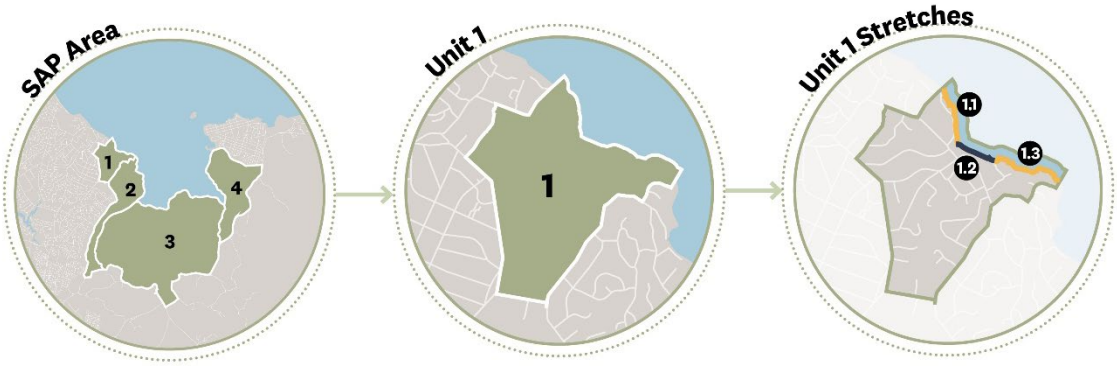
- Aotea Great Barrier and the Hauraki Gulf Islands
- Āwhitu
- Beachlands and East
- Central Auckland
- Highbrook to Whitford
- Kaipara Harbour Moana
- Manukau Harbour East
- Manukau Harbour North
- Manukau Harbour South
- Ōrākei to Tahuna Torea
- Pahurehure Inlet
- Pākiri to Matheson Bay
- Snells Beach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



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.

	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
Ōrākei to Tahuna Torea

N

Dove-Myer Robinson Park (Parnell Rose Gardens)

Point Resolution Park

Quay St

Tāmaki Dr

Parnell Baths

Slips observed around Point Resolution

Judges Bay Reserve

Balfour Rd

Judges Bay Rd

Community commentary on the need to improve vegetation management and drainage in Awatea Reserve, with drainage issues seen as contributing to sediment runoff and a decline in ecosystem health.

Gladstone Rd

St Stephens Ave

Alberon Reserve

Awatea Reserve

St Georges Bay Rd

Hobson Bay West Path

"Awatea Reserve is a wonderful asset for the area and valued by the Remuera & Parnell communities as a walking track. It has amazing bird life, native vegetation, and a lovely view of Hobson Bay. There is a walkway from Bloodworth Park to Awatea Street which is partially covered by the cliff slip caused by run-off from the concrete path in Awatea Reserve".

Pukekawa / Auckland Domain

Brighton Rd

Hobson Bay

Ayr Reserve

Ayr St

Pathways along the coast vulnerable to coastal hazards (prone to slips etc), with Pōhutukawa trees and surrounding planting observed to be slipping into Hobson Bay from cliff edges.

Carlton Gore Rd

Newmarket Park

Bassett Rd

Hobson Bay West Path

Unit boundary

1.1 1.2 Stretch

Walking tracks

Informal recreation park

Auckland Council owned land

0 0.25km 0.5km

Unit 1: Taurarua Judges Bay & Parnell

Unit 1 is located within the Waitematā Local Board area, including the coastline of the western edge of Hobson Bay. It commences in the north at Taurarua Judges Bay and culminates in the south at Shore Road. Auckland Council land and assets are primarily located to the north and south of the unit's area at Taurarua Judges Bay and Newmarket Park in the south. Key coastal pathways (Hobson Bay walkway) provide coastal access along the shoreline within this unit and key roads traverse the unit as do water connections servicing urban areas and central areas across the unit.

What is happening

The Unit 1 coastline is significantly low energy, with short fetch distances and depth-restricted waves, due to sheltering from Tāmaki Drive causeway.

Coastal erosion and instability

This coastline is characterised by coastal cliffs, established mangroves, and muddy intertidal flats reflective of the low energy environment. The coastal cliffs along the Awatea Reserve coastline are well vegetated, but subject to slow, ongoing weathering and at risk to larger episodic slips. Areas of this unit were impacted by landslides in the 2023 storm and other events.

Figure 1: Coastal Hazardscape for Unit 1, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios.

There are multiple existing coastal protection structures along this section of coastline and modifications as follows:

Seawalls at Dove Myer Robinson Park (background) and Judges Bay Road (foreground) within Judges Bay. The road provides access and carparking for Parnell Baths.

Judges Bay Road (Source: Auckland Council)

Taurarua Judges Bay: In 2010, dredging was undertaken within the Bay in combination with beach replenishment with imported sand.

Judges Bay Beach (Source: Auckland Council)

Auckland Transport own and managed the Tāmaki Drive seawall which runs along the extent of Tamaki Drive.

Tāmaki Drive (Source: Auckland Council)

Masonry seawall armouring wastewater pumping station Hobson Bay (Logan Terrace).

Logan Terrace wastewater pumping station (Source: Auckland Council)

Masonry seawall and rock armouring Hobson Bay walkway section at Tohunga Crescent.

Hobson Bay walkway, Tohunga Cres (Source: Auckland Council)

Coastal inundation

Coastal inundation in this unit is limited due to the predominantly cliffed coast and steeper topography. Areas which are subject to inundation under low climate scenarios are lower-lying areas primarily at Judges Bay and in southern areas of the unit where coastal walking connections are located in close proximity to the coast (refer to Figure 2 below). Over the moderate and high climate scenarios, inundation is identified as impacting Tāmaki Drive and propagating further inland at Newmarket Stream in the southern area of the unit.

Figure 2: Coastal Hazardscape for unit 1 showing coastal inundation for 1%AEP storm surge for present day and with 0.5 m, and 2 m sea-level rise.

Flooding

Unit 1 is situated in the Epsom Newmarket stormwater catchment. At the northern end of the unit, flood plains can be observed on the overland flow path from Alberon Reserve and by Judges Bay Reserve, while flood plains can be observed on Newmarket Gully at the southern portion of this unit, crossing Ayr Reserve and draining into Waitematā Harbour.

Figure 3: Coastal Hazardscape for the Taurarua Judges Bay & Parnell Unit - identification of 1% AEP flood plains.

Risk assessment

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

At a unit level, Auckland Council-owned land is at moderate risk from coastal erosion susceptibility and at low to moderate risk, for coastal inundation over the long-term period. Auckland Council community facilities are at high risk from both coastal erosion and instability susceptibility, and coastal inundation, reflecting the many amenities positioned near the coastline (e.g. Parnell Saltwater Bath and associated buildings). Risk to transport infrastructure is at low risk from both coastal erosion and instability susceptibility and coastal inundation, while water infrastructure is at low-to moderate risk from coastal erosion and susceptibility over the medium-and long-term period and at low risk from coastal inundation over all timeframes.

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

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (33.1 ha) Buildings, wharves (33 No.)			Park amenity structures, carparks, accessways, buildings (1.2 ha)			AT roads (16.6 km) Bridges (611.1 m^2)			Water pipes (106.8 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Moderate	Moderate	Moderate	High	High	High	Low	Low	Low	Low	Moderate	Moderate
Coastal inundation											
Low	Low	Moderate	High	High	High	Low	Low	Low	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.

- Taurarua Dove Myer Robinson Park, Judges Bay Reserve, Point Resolution, Awatea Reserve, Takutai Reserve, Elam Street reserve/walkway.

- Taurarua Judges Bay (public toilets, carparking, jetty).
- Parnell Saltwater Baths and associated buildings.

- Auckland Council-owned closed landfills in this unit include Newmarket Park, and Ayr Reserve as part of Shore Road closed landfill.

- Ōrākei Main Sewer transmission chamber.
- Stormwater, wastewater and potable water piped infrastructure.

- Tāmaki Drive; critical transport connection.
- Local roads: Taurarua Judges Bay Road and Ayr Street.
- Key walking tracks: Mission Bay to Wynyard Quarter Path, Judges Bay Path, West Path and Parnell Path, Tāmaki Drive Pedestrian bridge, Hobson Bay walkway (Freda Kirkwood walkway, Elam Street Walkway), Newmarket Path.
- Rail connections traverse this unit providing a connection to Britomart and the port from eastern areas of the Auckland region and beyond. This rail networks supports regional rail connections (Operated by Auckland Transport) as well as inter-regional freight services.

- Harbour access: Takutai Reserve small ramp access, Judges Bay jetty.

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 over changing climate scenarios.

- Mataharehare, located in Parnell and is a pā site which holds strong ancestral connection to Ngāti Whātua Ōrākei (The New Zealand Hearld , 2021).
- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi, noting high level values and aspirations have been identified in Volume 2.
- Ongoing engagement with local iwi to understand the cultural landscape of the coast and ensure alignment with cultural values in coastal management will take place in the implementation of adaptation strategies.

- Judges Bay is a small tidal inlet popular for swimming in the summer months. At the eastern end of the bay, the historic Parnell Saltwater Baths are located, open in the summer months and popular with the local and wider community.
- Judges Bay Path meanders around Judges Bay towards the Hobson Bay West Path, which is a 3.5 km walkway with access around the coast dependent on the tide. The path follows the coastline of Hobson Bay starting at Thomas Bloodworth Park and heading north.
- Taurarua Dove-Myer Robinson Park, home to the Parnell Rose Gardens. The gardens include open spaces, walking paths, and various plants, making them a popular place for picnics and walks.
- Social infrastructure in Unit 1 is centered around the Parnell town centre and Newmarket.
- A small portion of Unit 1 extends as far south as Newmarket, where it encompasses the Newmarket railway station and the commercial centre. The Newmarket station serves as a key transport hub.
- Point Resolution, includes historic heritage features as a historic point of fortification including gun emplacements.

The following key ecological features have been identified within this unit:

- Judges Bay and Hobson Bay are Significant Ecological Area Marine 2 (51a) characterised by expanding areas of mangrove forest which provide important wading habitat for a variety of avifauna, including white-fronted tern, variable oystercatcher, and Caspian tern. The bay is also recognised as important breeding habitat for a variety of shag species.
- Despite the modification of Hobson Bay being so close to Auckland CBD, it has maintained a degree of natural character and ecological value (Ōrākei Local Board, 2013).
- Coastal broadleaved forest within Dove-Myer Robinson Park is classified as a terrestrial SEA.
- Pōhutukawa line the cliffs along Hobson Bay Esplanade Reserve and Awatea Reserve.

Community feedback

Who have we heard from?

Feedback was received via digital platforms Social Pinpoint and 'AK Have Your Say'. Key themes are discussed below.

- Events located within, or neighbouring this unit included a pop-up at the Parnell Festival of Roses, a pop-up at the Downtown Ferry Terminal and drop-in sessions at Parnell Library, Remuera Library and Auckland Central Library.

Parnell Festival of Roses – Sunday, 10 November 2024

At the Parnell Festival of Roses, a pop-up stall was set-up to raise awareness about the coastal consultation and to encourage online submissions.

- Over 50 individuals engaged with the stall, representing a broad demographic in terms of age, ethnicity, and location across Auckland.
- Community feedback included requests for maintenance of local tracks.
- Mission Bay was noted as a popular destination.
- Concerns were raised about the impact of storm events on coastal wastewater and stormwater systems, as well as the need to protect mangroves.
- Some participants also voiced support for natural or minimal-intervention approaches to coastal management.

What is happening?

- Respondents reflected on the impact of the 2023 storm in relation to the wider Auckland CBD area, Parnell and Newmarket Valley. Flooding and land instability were experienced with lasting impacts still being felt on communities.
- Feedback provided differing views on the management of ongoing cliff instability on the western side of Hobson Bay (predominantly private coastal land) with the desire for further Council intervention or preferring private actions to manage risks.

What matters most? Community values

- Access to the coast, amenity of the reserve areas and amenity and wellbeing associated with being near the coast.
- Rose gardens as a park and public space.
- Walking connections.

What can we do about it? Community feedback and aspirations

- **Concerns about sediment discharging** into Hobson Bay and its potential impact on local shellfish populations, which are vital to the bay's ecological health. Feedback requested opportunities for improved drainage infrastructure within the reserve to help manage runoff more effectively and reduce sediment flow into the marine environment.

- **Protect the pōhutukawa trees** along the coast; commentary that the iconic pōhutukawa trees are an integral part of the area's natural landscape and cultural heritage. Feedback advocated for supporting the long-term health of trees, with selective pruning of lower branches and reducing the canopy load over cliff edges.
- **Walking connections:**
    - Strong support for repairing sections of the walkway near Unit 1 that have been closed due to slips, maintaining existing boardwalks, and avoiding unnecessary tree removal to retain the natural environment and support bird life.
    - Support for extending public walkways, such as a new link to Parnell Baths.
    - Preserve walkways, cycle paths, and shared spaces, especially the Hobson Coastal Walkway and links between parks, Parnell Baths, and Tāmaki Drive.
- **Maintain and protect key community and recreational facilities and services:**
    - Reinstatement of the pontoons in Judges Bay to facilitate swimming activities, enhancing recreational opportunities around Unit 1.
    - Protect railway Infrastructure over Hobson Bay.
    - Improve drainage in Awatea Reserve: Commentary that Awatea Reserve has drainage challenges which require investment and design.
- **Varied views on mangroves** including respondents seeking to protect and restore the Waitaramoa Creek and Hobson Bay mangrove ecosystems through ecologically sensitive reserve development. It was felt that Hobson Bay is underutilised due to the mangroves and improvements could be made.
- **Supporting natural solutions:** Emphasising the protection of mangroves as part of a broader approach to balancing community use of the coast, alongside a general preference for natural or low-intervention coastal management strategies.

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

1.1: Tāmaki Drive & Taurarua Judges Bay North

Commencing east of Teal Park on the northern side of Tāmaki Drive, this stretch includes the western portion of Tāmaki Drive (including the elevated pedestrian bridge) culminating at the northern boundary of Taurarua Dove Myer Robinson Park. The Mission Bay to Wynyard Quarter Path runs parallel to Tāmaki Drive and is a very popular, 15 km long walking and cycling route which extends through many other stretches in this SAP area.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Tāmaki Drive is constructed on reclaimed land, armoured by a rock revetment along its entirety. Additional seawall structures are located in proximity to bridge abutments and on the northern facing side of the road causeway. **Protect** over all timeframes reflects ongoing management of the reclaimed and armoured coastal edge, noting the importance of Tāmaki Drive in providing critical transport connections. Under the moderate and high climate scenarios, inundation and catchment flooding hazards may require further consideration to manage impacts and risk to activities.		
Implementation Notes		
• **Management**: Auckland Transport, the asset manager, will monitor how coastal hazards may impact on operation of these assets and future implementation options • **Collaboration:** The North Island Main Trunk railway line is located within this stretch, engaging with KiwiRail and other parties will be required to support implementation of adaptation strategies. • **Cultural and heritage:** This stretch includes cultural landscapes and historic heritage features. Implementation of strategies and management of risk from increasing inundation risk will require consideration of these values and engagement with iwi and relevant heritage authorities.		

1.2: Taurarua | Judges Bay & Point Resolution

Commencing at the north-western edge of Taurarua Dove Myer Robinson Park including the coastline east, the embayment and Point Resolution Reserve, culminating to the easternmost side of the reserve area.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Adaptation priority** 
Explanation		
Maintain in the low to moderate change scenario provides for the management of risk to Auckland Council land and assets through the maintenance of existing coastal defences associated with park, roads and pool infrastructure. **Maintain** also supports maintenance and use of soft engineering options such as beach renourishment. Judges Bay Road providing access to Parnell Baths is exposed to coastal hazards; maintain supports continued management of risk to roading connections, land uses and important stormwater and wastewater infrastructure located (underground) throughout this stretch forming a critical part of the wastewater network.		

Adaptation priority under the high change scenario reflects increasing risk from inundation and signals a need to consider the ongoing location of uses and management of the coastal edge, park access roads and management of risk to the cultural and historic values and sites within the stretch.

Implementation Notes

- **Community:** Feedback identified highly valued coastal connections and recreational uses.
- **Cultural and heritage:** Cultural landscapes and historic heritage features include St Stephens Chapel, Parnell Baths and Point Resolution. Implementation of strategies will require consideration of these values and engagement with iwi and relevant heritage authorities.

1.3: Hobson Bay West

Stretch 1.3 commences to the south of Point Resolution. It encompasses the cliffed shoreline and residential areas of Parnell, culminating adjacent to Awatea Reserve. It includes large sections of privately-owned land with limited Council land and assets.

The stretch encompasses Hobson Bay Esplanade Reserve and Awatea Reserve, both of which are narrow cliffed vegetated strips of reserve land, separating private properties and the coast. A section of the Hobson Bay Pathway, located within the coastal marine area, is located within southern areas of the stretch and is only accessible at low tide and is not a 'formed' accessway. Northern sections of this walkway were closed due to damage from landslides. The 2023 and other storm events have resulted in landslides in several sections of the stretch.

Scenarios for change		
Low	**Moderate**	**High**
No action 	**No action** 	**No action** 

Explanation

Hobson Bay walkway commences within the southern section of this stetch and extending south from Awatea Reserve. **No action** reflects that the existing informal track in proximity to the toe of the cliff has no formalised connection to the north and access is only available at low tide. No action supports maintenance of risk to Council-managed access along the coast, noting future aspirations to provide further access linkages to stretches to the north. **No action** supports retention of a natural coastal edge, managing risk through design and management of use.

Implementation Notes

- **No action** does not preclude the management of risk to Auckland Council land or assets as may be required.
- **Community:** Community aspirations to re-establish a walking connection (boardwalk) to the north. No action does not preclude further exploration of options to achieve coastal connections, noting strategies can be updated to reflect the development of future assets and infrastructure.
- **Community hazard impacts:** Community feedback identified concern for ongoing geotechnical and land instability challenges associated with this cliffed coast. Community feedback sought ongoing support and collaboration with Council to manage risk to private land, noting this is beyond the scope of this SAP.

1.4: Hobson Bay South and Newmarket Valley

Stretch 1.4 commences adjacent to Awatea Reserve extending along the coastal edge of Hobson Bay before culminating adjacent to Brighton Road. It encompasses a section of Awatea Reserve, Takutai Reserve Frida Kirkwood Walkway Path, Tohunga Crescent and Elam Street access points. These reserves are predominantly vegetated strips of land, separating private properties from the coast. A walkway traverses this stretch, comprising a combination of boardwalk and low tidal access.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Maintain** 

Explanation

Much of this coastal stretch is identified as susceptible to instability and erosion with inundation impacting the coastal edge where most of the land is generally more elevated above the coast. **Maintain** provides for the management of risk to Council land, including highly valued walking connections and assets, preferring the use of resilient design and appropriate location over use of hard protection structures.

Maintain supports the continued maintenance of existing coastal modifications to manage risk and enable access. This includes areas of Takutai Reserve where infrastructure has modified the coastline and access to the coast is supported and highly valued in this urban location (including Takutai, Tohunga and Logan Terrace road ends). Auckland Council-managed access along the coast is also provided through a combination of boardwalk and access paths. **Maintain** supports managing risk through design and location of accessways, including those located within the coastal marine area (via boardwalks). Under the high change scenario, structures may require additional design considerations to maintain safe and serviceable access (e.g. appropriate levels).

This stretch includes wastewater assets, roads and closed landfills. Maintaining assets in place is supported for key roading and water services, and closed landfills.

Implementation Notes

- **Management**: Important wastewater infrastructure is located underground throughout the stretch forming a critical part of the wastewater network.
- **Closed landfill:** Newmarket Park and Ayr Reserve closed landfill is located within this stretch and managed under the Closed Landfill Asset Management Plan.
- **Nature-based opportunity:** Maintain supports the opportunity to keep a natural coastal edge and utilise nature-based solutions to manage risks. In this low energy environment this may also include support for natural coastal vegetation to manage wave energy at the coast.
- **Community and Local Board:** It is noted that the local community and Ōrākei Local Board have expressed aspirations for Newmarket Park (located to the south and inland of this stretch).

Unit 2
Ōrākei to Tahuna Torea

N

Tinana Wilsons Beach

Te Pourewa

Te Pourewa is owned by Ngāti Whātua Ōrākei and co - governed by the Ngāti Whātua Ōrākei Reserves Board. An area of high cultural and historical significance to Ngāti Whātua Ōrākei, multiple Taiao initiatives are undertaken on site, with walking tracks trails management by kaimahi.

"Extend the Hobson Bay walkway to connect with Shore Road Reserve, enhancing recreational access and connectivity while also helping to protect the foreshore".

Community advocacy for improving stormwater management and sewage maintenance along Shore Road.

Ōkahu Bay

Ngapipi Rd

Ōrākei Railway Station

Hobson Bay East Path

Shore Road Reserve

Shore Rd

Seaview Rd

Victoria Ave

Orakei Rd

Ōrākei Basin

Dell Ave

Luceme Rd

Pourewa Creek

Kepa Bush Reserve

Meadowbank Railway Station

Community feedback on the ongoing accumulation of sediment into the Pourewa Creek

Thomas Bloodworth Park

Waitaramoa Reserve

Martyn Wilson field

Ngāhue Reserve - is regarded as an area that is momentous in terms of Ngāti Pāoa ancestral interests and former occupation prior to the sale of the Kohimarama Block to the Crown in May 1841. The area still holds particular significance to Ngāti Pāoa as an area of cultural and spiritual connection.

- Unit boundary
- 2.1 2.2 Stretch
- Walking tracks
- Informal recreation park
- Co-managed or co-governed park
- Auckland Council owned land

0 0.5km 1km

Unit 2: Ōrākei

Unit 2, located within the Ōrākei Local Board area, commences in the west at the Newmarket Stream and Thomas Bloodworth Park in Hobson Bay and follows Shore Road, crossing Ōrākei Road to the north. It continues along Ngapipi Road to its intersection with Tāmaki Drive, then extends eastward through Ōrākei and Ōrākei Basin towards Meadowbank, finally moving northwest around Pourewa Creek Recreation Reserve. The unit includes the large water bodies of Hobson Bay, Pourewa Creek, and Ōrākei Basin. The land area is predominantly suburban, although the coastline is typically lined with esplanade reserve and bush areas with housing set slightly further back. Business mixed-use areas and local town centres are situated away from the coastal edge along Kepa and Ōrākei roads.

What is happening? Coastal context and hazardscape

The coastline is significantly low energy, with short fetch distances and depth-restricted waves. It is characterised by low reserve-edge banks, coastal cliffs, established mangroves, and muddy intertidal flats. Key coastal features and management approaches are discussed below.

Hobson Bay

Areas located within the southwest of the unit (Hobson Bay coastline) have been historically reclaimed and is identified as an Auckland Council-managed closed landfill (Stretch 2.1). Auckland Council assets include Thomas Bloodworth Park, Shore Road Reserve East, Wilson Beach, Martyn Wilson Fields and Sonia Reserve and further sections of the Hobson Bay Walkway. This unit is traversed by key roading connections and water infrastructure such as Shore Road.

Ōrākei Basin

Ōrākei Basin is a volcanic crater; its water level is controlled (impounded) and regularly flushed via sluice gates located to the north-east of the railway revetment. The revetment is part of the national rail network and a key rail link providing for Auckland passenger rail services with Ōrākei station.

Figure 4: View north west toward the central business district along the shared path and rail corridor. Source: Auckland Council 2025

The Ōrākei Basin walk is a popular walkway around the perimeter of the crater which includes over 500 m of shared boardwalk running parallel to the railway line. Due to the basin's use for waterskiing

activities, its coastline is exposed to waves created by water vessels (wake). Rock revetment armouring is present along sections of the Ōrākei Basin to provide protection from these processes.

Access to the basin is via several reserves including Ōrākei Basin Reserve, Lucerne, Kelvin, Bonnie Brae and Macpherson and from Upland Road. The reserve includes numerous assets and coastal access structures.

Pourewa Valley

Pourewa Valley runs through this unit and is a significant area of green space which includes Kepa Bush. There are extensive walking tracks through the bush as well as a large area of land co-governed by Ngāti Whātua Ōrākei, which include a plant nursery, community garden and areas of regenerating native bush.

Coastal erosion and instability

Much of the Unit 2 shoreline is unarmoured, with established mangroves providing a buffer to the low wave climate. There are multiple existing coastal protection structures along this section of coastline. As identified below in Figure 6, the western shoreline is more sheltered while areas immediately around Ōrākei basin are identified as having an increased spatial extent of erosion (Stretches 2.5, 2.6 and 2.7) and instability susceptibility.

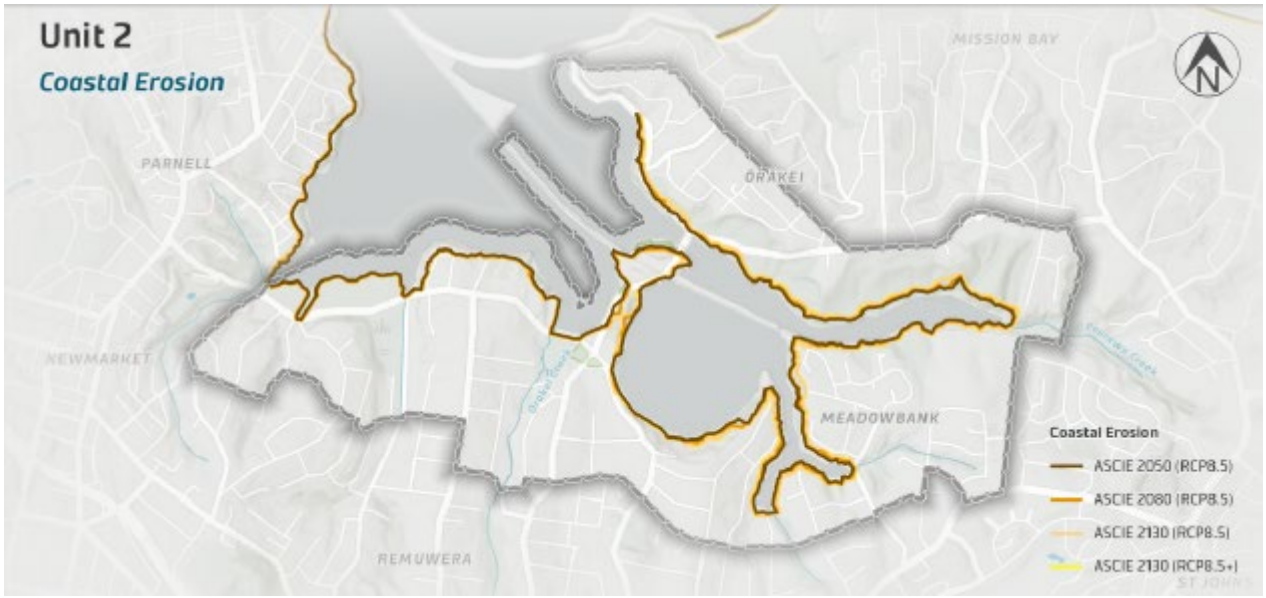


Figure 5: Coastal Hazardscape for Unit 2, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios.

Some of the key features and modifications of the coast within unit 2 are as follows:

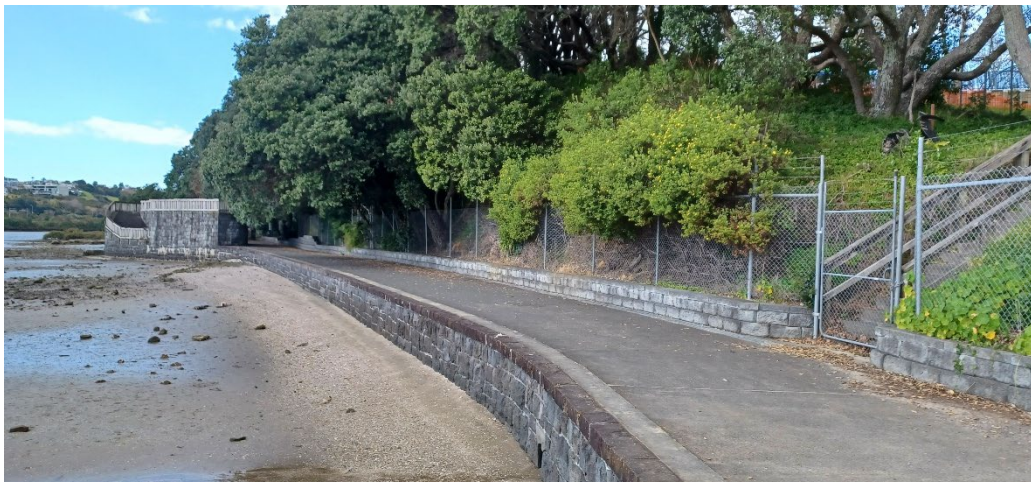
Thomas Bloodworth Park, reclaimed land and closed landfill.

Shore Road to Thomas Bloodworth pedestrian bridge (Source: Auckland Council)

Shore Road Reserve established mangroves provide a buffer to the low wave climate and habitat for a variety of wading birds.

Shore Road Reserve (Source: Auckland Council)

A section of rock masonry seawall is present along the Hobson Bay coastline (Wilson Beach Reserve and Hobson Bay Walkway Reserve), associated with wastewater infrastructure and a pedestrian path.



Masonry seawall armouring Hobson walkway section adjacent to St Kentigerns school, and wastewater infrastructure (Source: Auckland Council)

A small beach replenishment project at Wilson Beach Reserve was undertaken for recreational amenity reasons and provides some protection to the adjacent seawall. This involved placement of imported sand and construction of rock revetment control/groyne structures.

Wilsons Beach (Source: Auckland Council)

Ōrākei Basin railway embankment and boardwalk.

Armoured railway embankment and boardwalk, Ōrākei Basin (Source: Auckland Council)

Ōrākei Basin is a popular location for waterskiing and recreational boating activities. Rock revetment armouring is present along sections of the basin to provide protection from vessel wakes.

Rock armouring of carparking area, Ōrākei Basin (Source: Auckland Council)

Coastal inundation

Coastal inundation is identified as impacting low-lying areas of this unit (see Figure 7 below) around Thomas Bloodworth Park, Shore Road and associated with the Waitaramoa Inlet and Ōrākei Creek catchment areas. Coastal inundation under a moderate and high change scenario can also impact northern areas of Ngapipi Road at the northern extent of the unit where this area is low lying and adjacent to the coast. Areas of inundation within Ōrākei Basin are more limited, noting water levels are managed in part by the sluice gates.

Figure 6: Coastal Hazardscape for unit 2 showing coastal inundation for 1%AEP storm surge for present day and with 0.5 m, and 2 m sea-level rise.

Low-lying areas adjacent to the coast identified as being impacted by coastal inundation under all climate scenarios. Examples include:

King tide 28 November 2022 at Wilson's Beach where the water level covered the beach area, with park amenities and walking path behind.

Wilson's Beach (Source: King Tides)

King tide showing the later level at the Ngapipi Road boatsheds (Ōkahu Bay) adjacent to Stretch 2.12 (privately owned). (Source: David White, Stuff).

Flooding

This unit includes areas of flood plain, primarily following stream corridors, discharging into the Hobson Bay area. 1% AEP floodplains identified in Figure 8 below are identified in proximity to Thomas Bloodworth Park, Waitaramoa Reserve, Martyn Wilsons Fields and Sonia Reserve, with their tributaries draining into the Ōrākei Basin. In low lying and reclaimed areas, the ability for flood flows to discharge into the coast may be impacted by coastal water levels.

Figure 7 Catchment flooding, showing the one per cent AEP floodplains for the unit 2 area.

This unit includes properties impacted by the 2023 storm events. Decisions on the future use and management of land acquired by Council are being dealt with separately under the Council's storm-affected land-use policy[1, 2]. SAPs, as living documents, will be updated as decisions are made on the land.

Risk assessment

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

At a unit level, risk from coastal inundation to Auckland Council-owned land, community facilities, and transport infrastructure is high over all timeframes, reflective of the large areas of reclaimed coastline in this unit. Coastal erosion and instability susceptibility risk ranges from high to very high in the long term for Auckland Council-owned land, moderate for Auckland Council community facilities, and very high for transport infrastructure. Risk from coastal erosion and instability susceptibility and coastal inundation to water infrastructure is moderate over all time periods.

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

Council-owned land			**Council community facilities**			**Transport infrastructure**			**Water infrastructure**		
Park and reserve land (116.3 ha) Buildings, wharves (21 No.)			Park amenity structures, carparks, accessways, buildings (1.2 ha)			AT roads (32.1 km) Bridges (2,895.1 m^2)			Water pipes (201.2 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
High	High	Very high	Moderate	Moderate	Moderate	Very high	Very high	Very high	Moderate	Moderate	Moderate
Coastal inundation											
High	High	High	High	High	High	High	High	High	Moderate	Moderate	Moderate
Key											
Very Low			**Low**			**Moderate**			**High**		**Very High**

What matters most

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

[1]https://ourauckland.aucklandcouncil.govt.nz/media-centre/2025/april/storm-affected-land-use-policy-approved/

[2] https://ourauckland.aucklandcouncil.govt.nz/news/2025/03/storm-recovery-update-20-march-2025/

- In total there are 28 Auckland Council-owned land parcels in this unit including Thomas Bloodworth Park, Ōrākei Basin, Pourewa Creek and Kepa Bush Reserve.

- This area includes ten Auckland Council-owned buildings that serve both the community and visitors such as public restrooms at Thomas Bloodworth Park and Shore Road Reserve, along with the Ōrākei Sea Scouts Group and Auckland Water Ski Club.

- Closed landfill: Thomas Bloodworth Park, Shore Road, Wharau and Waitaramoa Reserves as part of Shore Road closed landfill, Martyn Wilsons Field and Sonia Reserve, and Tahapa Reserve.

- Underground and aboveground stormwater network assets servicing the local community.
- Wastewater pump station: PS7 Shore Road, Portland Road, Victoria Avenue, Tonks Street, Meadowbank Road, and Pourewa Road.

- Key walking tracks: Newmarket to Thomas Bloodworth Path, Hobson Bay East Path, Ōrākei Basin Path and Kepa Bush Path.
- Te Ara ki Uta ki Tai / Glen Innes to Tāmaki Shared Path (Stage 4 under construction and pile deterioration at Stage 3 (Ōrākei Basin boardwalk) underway).
- Key roads: Kepa Road, Ōrākei Road, Ngapipi Road and Shore Road.

- Harbour access: Ōrākei Basin 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 over changing climate scenarios.

- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi, noting high-level values and aspirations have been identified in Volume 2.
- Ongoing engagement with local iwi to understand the cultural landscape of the coast and ensure alignment with cultural values in coastal management will take place in the implementation of adaptation strategies.
- Ngahue Reserve is a statutory acknowledgement area recognised for Ngāti Paoa, as outlined in the Ngāti Paoa Deed of Settlement[3] and reflected on the unit map.
- There are five identified cultural features in this unit: Mataharehare, Waitaramo, and Onepū Whakatakataka, with Mataharehare and Waitaramoa identified as Māori Heritage Areas and sites of significance to mana whenua.
- Co-governed land/reserves (Ngāti Whātua Ōrākei Reserves Board) within this unit include Pourewa Reserve[4]. Management plans for this reserve focus on ecological restoration, including native tree planting, pest control, and creating spaces for community engagement and education. Pourewa is a

[3] https://www.whakatau.govt.nz/assets/Treaty-Settlements/FIND_Treaty_Settlements/Ngati-Paoa/DOS_documents/2021-03-20-N-Paoa-Deed-of-Settlement-Summary.pdf

[4] https://ngatiwhatuaorakei.com/toi-taiao/pourewa/

community vegetable garden, a māra kai, and a significant urban revegetation nursery for the whānau of Ngāti Whātua Ōrākei[5].

- Unit 2 encompasses the land surrounding Remuera, Meadowbank and Ōrākei. These are well-established residential communities, each with small local centers. The Eastern train line runs through this unit, with stations at Ōrākei and Meadowbank facilitating travel throughout the unit and into the city centre.
- Shore Road Reserve is a popular public park located offshore road in Remuera for recreational activities, providing open green spaces, sports fields (cricket/rugby), and walking paths. It also has a playground, indoor training facilities and club rooms (Auckland Council, 2024k).
- Ōrākei Basin is another popular open space known for water sports. This is a large basin surrounded by bush, with access for kayaking and stand-up paddleboarding via the boat ramp on the western side.
- The basin is home to the Ōrākei Sea Scouts Group and the Auckland Water Ski Club (Auckland Council, 2024l). The land around the basin is comprised of multiple land parcels mostly owned by Auckland Council, with one owned by Ngāti Whātua Ōrākei Māori Trust Board. The Ōrākei Basin Path circles the basin using boardwalks and a bridge across the Pourewa arm (Auckland Council, 2024f), which is highly valued for recreational, community, landscape, geological, ecological, cultural, and archaeological significance (Auckland Council, 2010).
- Pourewa Valley runs through this unit and is a significant area of green space which includes Kepa Bush. There are numerous volunteer groups carrying out conservation work in the valley (Ōrākei Local Board , 2020).
- A significant shared path, Te Ara ki Uta ki Tai / Glen Innes to Tāmaki Shared Path, runs along the valley connecting Ōrākei Basin to Glen Innes, popular with walkers and cyclists. Construction is underway to complete the shared path with a boardwalk connection through to Tāmaki Drive (Auckland Transport, 2024b).
- Social infrastructure is centred around Ōrākei. The local centre at Kepa Road / Eastridge includes social infrastructure such as a medical centre, sports facilities, a playground, an RSA and a community centre. Ōrākei Bay Village also hosts a small centre including a supermarket, eateries and a cinema, adjacent to the train station (Equinox Group , n.d).
- Unit 2 includes 8 educational facilities including Victoria Avenue School, Baradene College, Saint Kentigern Boy's School, Mt Carmel School (Meadowbank), Meadowbank School, St Joseph's School, and Ōrākei School (Educaton Counts, 2024).
- Unit 2 has 6 heritage sites listed as category B heritage features under the Auckland Unitary Plan. These are: Settlement site (R11_1177, R11_1178, R11_1179, R11_1180, R11_1181, R11_1182, R11_1183, R11_1184, R11_1185, R11_11861573), Shera House, Mitchelson House, Stables and Duchesne Building, Hobson Bay boat sheds, including ramps and jetties, Headland pā site R11_871586, Roselle House and grounds.

[5] Ngāti Whātua Ōrākei Reserves Board. (2022). *Combined reserve management plan.* https://ngatiwhatuaorakei.com/media/dezkgj2v/0002_nwo_combined-reserve-management-plan_digital-final_-74775.pdf

- Ngāti Whātua Ōrākei owns and manages an extensive bush and grassland area to the east of Ōrākei Basin called Pourewa Creek Recreation Reserve. This Statutory Authority was established under the Ngāti Whātua Ōrākei Settlement Act 2012 (formerly the Ōrākei Act 1991) to co-govern Whenua Rangatira and Pourewa Creek Recreation Reserve.
- Hobson Bay Action Plan (2013) is a key document of relevance for the Hobson Bay area
- Pourewa and the wider cultural landscape are of high cultural significance to Ngāti Whātua Ōrākei, once dense with pā sites, particularly around Ōrākei Basin and out towards the Waitematā Harbour. Pourewa now functions as a native nursery and community vegetable garden.
- The Combined Reserves Management Plan Pourewa Creek (Pūrewa) and Whenua Rangatira (Takaparawhau and Ōkahu Bay) was published by the Ngāti Whātua Ōrākei Reserves Board (2021) and includes aspirations for reserve development and restoration.

Figure 8: Combined Reserve Management Plan Pourewa Creek (Pūrewa) and Whenua Rangatira (Takaparawhau & Ōkahu Bay)

The following key ecological features have been identified within Unit 2:

- Mangrove forest from Hobson Bay, which grade into raupō reedland that then grade into a small area of broadleaved scrub (Auckland Council, 2024; Singers et al., 2017).
- Ōrākei Basin is a tidal basin that was created by a now-extinct volcano, part of Auckland's volcanic field. It is surrounded by planted mixed native-exotic vegetation and recognised as an important breeding area for several shag species including pied shag, little pied shag and little black shag (Sullivan et al., 2009).
- Coastal broadleaved forest is found in several of the reserves surrounding Pourewa Creek, including Kepa Bush Reserve and Tahapa Reserve East (Auckland Council, 2024; Singers et al., 2017). This coastal forest transitions into some of the largest mangroves in the Tāmaki ecologicall district.
- A variety of native freshwater fish have been recorded within Pourewa Creek and its upper tributaries (Sotffels, 2022), and there are areas of seagrass found along the tidal flats near the stream (Department of Conservation, 2011).
- Ngāpipi Cliff Reserve and Paratai South Reserve also comprise coastal broadleaved forest with ancient pōhutukawa along the cliff line.

- Various local board restoration projects are ongoing to enhance riparian restoration linking the Tāmaki Estuary with Ōrākei Basin and Waitematā Harbour.

Community feedback

Who have we heard from?

Feedback was received via digital platforms Social Pinpoint and 'AK Have Your Say'. Key themes are discussed below. Events located within, or neighbouring this unit, included a pop-up at the Parnell Festival of Roses, the Pacific Climate Warriors Event, and a drop-in sessions at the Parnell, Remuera and Auckland Central libraries. Representatives from the Auckland East Community Network attended the Pacific Climate Warriors Event.

- **Pacific Climate Warriors Event, Remuera - 9 November 2024:** This event was located at the St Luke Church, Remuera, with the support of the Bridgebuilders Trust. The event featured a special screening of the newly released documentary "The Forgotten Pacific". Representatives from the Auckland East Community Network attended. Feedback from the event is reflected below.

What is happening?

- **Waiatarua Tunnel and Catchment Flood Risk:** Concerns about the need for stormwater flow structures, such as the tunnel between Waiatarua Wetland and Ōrākei Basin. Feedback highlighted concerns that the tunnel, managed by Healthy Waters, may be at risk of reverse pressure effects due to rising sea levels and storm surges in the Ōrākei Basin.
- **Roading connections:** Commentary that coastal storm inundation and flooding events in Te Waitaramoa/Hobson Bay have caused Shore Road and Portland Road to become impassable in the past; this cuts off access to homes on Lower Portland Road and in the Waitaramoa Creek valley, disrupts recreational use of the Waitaramoa Creek and Shore Road reserves, and severs the connection between Remuera and Parnell.
- **The Shore Road playing fields** frequently become waterlogged following rainfall. Additionally, sewage contamination is perceived to be present in the creek that runs from Hapua Street across the reserve, and this issue worsens during heavy rain.
- **Ōrākei Basin is heavily sedimented**, which reduces its appeal and discourages people from recreating there.

What matters most? Community values and uses

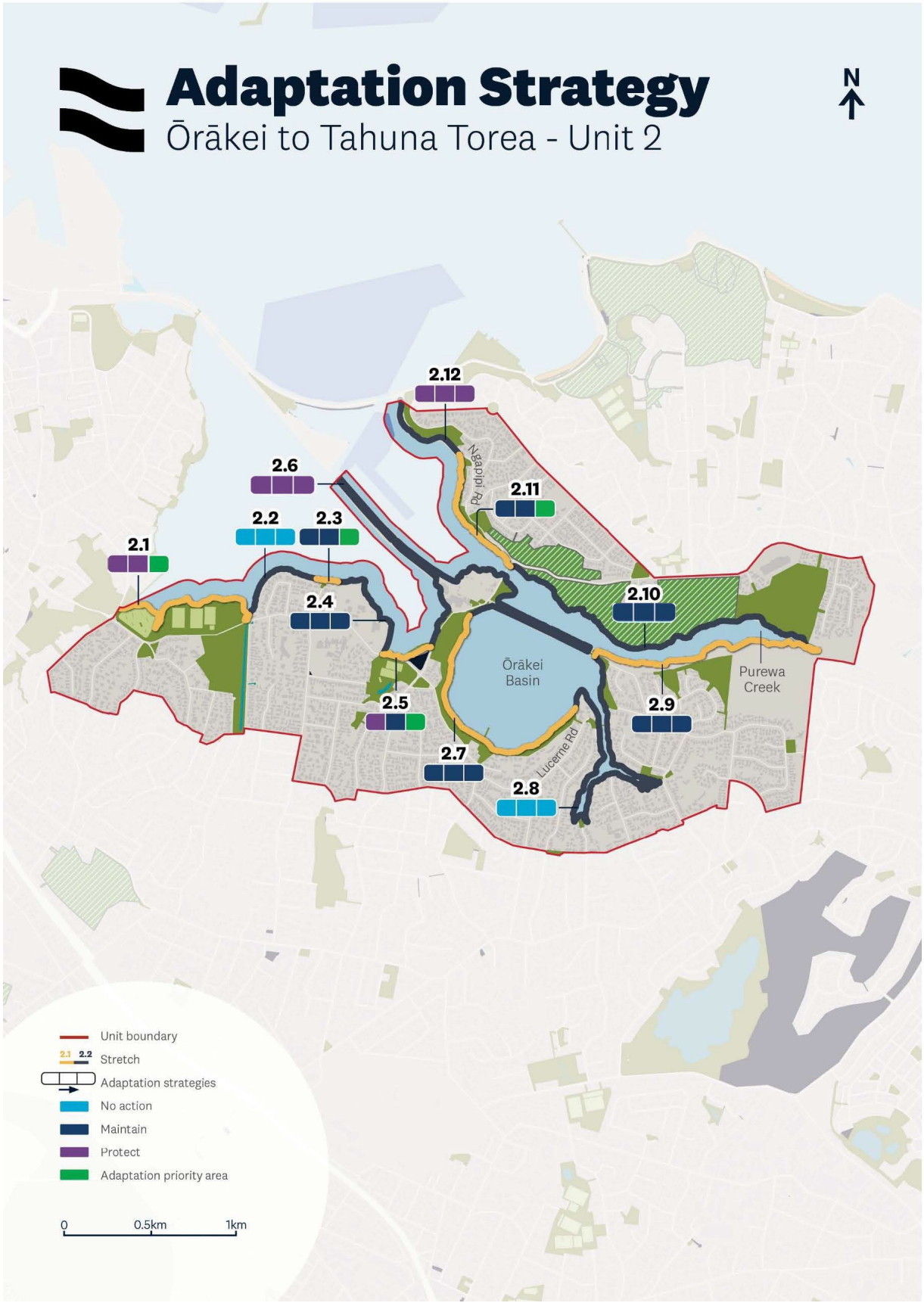
Community feedback for this area highlighted the importance of maintaining and enhancing access to safe, well-maintained walkways, beaches, and open spaces to support ongoing community enjoyment and wellbeing. Key activities and values included, but were not limited to:

- **Cycling:** Many residents and visitors use the coastal shared paths and adjacent roads for cycling, appreciating the scenic routes and connectivity they provide.
- **Walking and running:** Walking, running and dog walking on the beach, along shared paths, and on nearby roads is a popular form of exercise and recreation.
- **Passive recreation:** People often engage in passive activities such as sitting, relaxing, picnicking, and sunbathing.
- **Nature watching and natural values:** Commentary that the area supports a rich diversity of wildlife, attracting nature enthusiasts who participate in birdwatching and observing marine mammals (this was also connected to aspirations for supporting water quality).

What can we do about it? Community feedback and aspirations

- Advocacy for the continued operation of the railway line across Hobson Bay, with feedback highlighting the need for coastal management measures such as elevating the track or implementing effective coastal defences to protect it from inundation and ensure long-term service reliability.
- Protect key transport connections (i.e. Shore Road West).
- Protect Tāmaki Drive and all its connecting roads and pathways, whether public or private, remain open and accessible for everyone now and in the future.
- Need for more permanent walkways to improve accessibility and enjoyment (with a focus on flood resilience).
- **Community and Local Board:** Aspirations for increased use and value associated with sport fields and facilities at Thomas Bloodworth Park. The local community and Ōrākei Local Board have expressed aspirations for Newmarket Park (located to the south of this stretch). Engagement with the Local Board(s)will need to occur to understand how implementation of these adaptation strategies may impact these aspirations and how any potential impacts can be managed.

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



2.1: Shore Road West

Commencing at the Bassett/Shore Road intersection and including the coast east including Shore Road Reserve, Thomas Bloodworth Park (reclaimed/ closed fill), Waitaramoa Reserve and catchments to the south associated with Newmarket Gully and Portland Road stream. This stretch also includes the road bridge to the east.

Stretch 2.1 includes numerous community facilities and uses located within park areas. Thomas Bloodworth Park is a key sporting and recreational facility for the wider area with roading connections which traverse the stretch providing key transport links to eastern areas.

The coastal areas adjacent to the shoreline are lower in energy with mangrove forests providing for the dissipation of wave energy along the coastal edge. Shore Road Reserve (part of wider Marine SEA) and Waitaramoa Reserve (Terrestrial SEA) are ecological features, being home to banded rail and mangrove forests.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Adaptation priority** 

Explanation

Protect is identified in the low and moderate change scenario, reflecting the area's high social and community values indicating the need to manage the coastal and catchment hazards through design and location of uses and the defence of the coastal edge in areas, noting the low energy environment on the coastal edge. **Protect** acknowledges the need to manage risk to key road connections, the reclaimed nature of the reserve areas, importance of the coastal walkway and the need to manage environmental outcomes associated with the catchments and water services.

In the high change scenario, the area is exposed to increasing coastal inundation with sea-level rise, with increased catchment flood flows discharging to the coast. This low-lying area is therefore identified as requiring further adaptation planning (**adaptation priority**) to identify key values, asset requirements and options to manage risk to both assets which traverse this area and service neighbouring areas and the highly valued recreational facilities within Auckland Council reserve areas such as Thomas Bloodworth Park and Shore Road Reserve.

Implementation Notes

- **Closed landfill:** Thomas Bloodworth Park, Shore Road, Wharau Reserve and Waitaramoa Reserve are part of the Shore Road closed landfill, subject to the Closed Landfill Asset Management Plan.
- **Collaboration:** Key community facilities are located within reserve areas that are exposed to coastal hazards and catchment flooding. The area is also traversed by key transport connections, wastewater and key stormwater infrastructure. Engagement with asset owners, third party organisations, communities and iwi will be required when implementing adaptation strategies.
- **Cultural:** This stretch includes Mataharehare, a site/ place of significance to local iwi, Ngati Whatua Ōrākei. Engagement with Ngati Whatua Ōrākei will be required when implementing adaptation strategies.
- **Community and Local Board:** The local community and Ōrākei Local Board have expressed aspirations for the future development potential of Thomas Bloodworth park as a key recreational and sports facility for the wider community.

2.2: Burwood Crescent

Stretch 2.2 commences at the eastern boundary of Shore Road Reserve, encompassing private residential housing at the coast, culminating at the western boundary of Wilson Beach Reserve.

Scenarios for change		
Low	**Moderate**	**High**
No action 	**No action** 	**No action** 
Explanation		
No action is reflective of limited Auckland Council land and assets at the coastal edge within this stretch.		
Implementation Notes		
• **No action** under the high change scenario this does not preclude the management of risk to wastewater connections where they may be exposed to erosion susceptibility. Strategies can be reviewed based on monitoring of coastal change within this area.		

2.3: Tinana Wilson's Beach

Stretch 2.3 commences at the western boundary of Wilson Beach Reserve and ends at the eastern boundary of the reserve. The stretch includes the beginning of Hobson Bay East Path, which commences at the end of Victoria Avenue, before extending along the coast.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Adaptation priority** 
Explanation		
Maintain provides for the continued defence of a modified and locally popular coastal area in response to erosional hazards. Where existing hard protection is located, maintain confirms the continued use of these structures while supporting soft engineering interventions, noting the value of this artificially nourished beach to the local community. Under the moderate climate scenario **maintain** provides for continued management of risk through location and design of assets and uses noting that the artificial beach and low-lying land will be increasingly exposed to inundation. This may include consideration of path design, management of overtopping and location of assets set back from the coastal edge. **Adaptation priority** in the high change scenario reflects the need to proactively manage the risk to high social (including historic heritage) and cultural values of the area and prioritise access both to and along the coast in this location.		
Implementation Notes		
• **Ecology:** The mangrove environment contained in this stretch forms part of a wider SEA marine area. • **Management:** Important wastewater infrastructure is located underground throughout the stretch which forms a critical part of the wastewater network.		

2.4: Hobsons Bay Walkway (Tinana Wilson's Beach to Shore Road)

Stretch 2.4 commences at the eastern boundary of Wilson Beach Reserve and ends adjacent to Shore Road. Hobson Bay Walkway 1 is a thin strip of reserve land at the coast, which includes the boardwalk section adjacent to Saint Kentigern School that provides connection to Shore Road.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Maintain** 
Explanation		
Maintain over all climate scenarios recognises the high value of the coastal walkway and confirms the continued management of risk, through ongoing consideration of resilient design and location of boardwalk structures as part of the Hobson Bay East Path. **Maintain** recognises that the coastal edge is not fixed. It also provides for continued management of risk to wastewater connections and assets located within and traversing this stretch.		
Implementation Notes		
• **Ecology:** The mangrove environment contained in this stretch forms part of a wider SEA marine. • **Management**: Important wastewater infrastructure is located (underground) throughout the stretch which forms a critical part of the wastewater network. Watercare, who manage this asset, will be engaged to understand how adaptation strategies may impact its operation.		

2.5: Ōrākei Creek

This stretch begins at Shore Road/Ōrākei Creek, including the coast east, backed by the Martyn Wilson Park area (cricket grounds), ending where Ōrākei Road meets the coast in the north. It includes a section of the Hobson Bay walkway.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Maintain** 	**Adaptation priority** 
Explanation		
Protect in the low change scenario reflects the modified nature of this stretch with identified closed landfill areas, key recreational uses (sports fields) and the location of key roading connections (Shore Road) and walkways (Hobson Bay East Path). **Maintain** in the moderate change scenario reflects the maintenance of the coastal edge, while providing for the continued management of risk to activities and uses through further design of activities and location of some uses. Noting that the low energy environment and presence of mangroves to the north of the coastline which provide a degree of coastal protection. **Adaptation priority** in the high change scenario reflects the increasing inundation risk from both catchment (Ōrākei Creek) and the coast, and the need to consider the management of risk to activities in this area and the need for engagement to consider options for the management of uses in this area.		
Implementation Notes		
• **Closed landfill:** Sonia Reserve closed landfill is to be managed under the Closed Landfill Asset Management Plan.		

2.6: Ōrākei Road & Railway Station

This stretch commences where Ōrākei Road joins the coast on the western side of the promontory, includes the rail connections to the east and west and ends within the basin to the east where Ōrākei Basin Reserve widens and the park entry is located. It includes a section of modified coastline involving the North Island Main Trunk rail tracks, Ōrākei Train Station and Te Ara ki Uta ki Tai (Glen Innes to Tāmaki shared path and boardwalk).

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Protect over all climate scenarios is identified to reflect the importance of roading and rail transport connections which traverse this stretch, the presence of the Hobson Bay walkway, Te Ara ki Uta ki Tai (Glen Innes to Tāmaki shared path and boardwalk) and the reserve landholding to the east. **Protect** is identified due to the critical alignment of linear infrastructure within this location to serve the current network and uses. **Protect** reflects the need to maintain uses within a limited land area and the subsequent requirement to manage risks from coastal hazards to these uses.		
Implementation Notes		
• **Cultural and historic heritage:** sites of significance may be located within this coastal stretch engagement with mana whenua and other parties will be required to support implementation of strategies. • **Cultural aspirations:** acknowledging the cultural significance of the wider Ōrākei to Tahuna Torea coastline, ongoing engagement with local iwi (i.e. Ngāti Whatua Ōrākei) will be required to understand cultural values and aspirations for the coast and the wider CMA (i.e. management of infrastructure within the CMA). • **Management:** Auckland Council landholdings within this stretch are limited. Protect in this case refers to the need to manage Council land and interest and is not applicable to private landholdings, noting that collaboration with those owners and asset managers will be required in implementation of the strategies.		

2.7: Ōrākei Reserve West and Central

Stretch 2.7 commences at the northwestern end of Ōrākei Basin Park. It continues around the basin, culminating in the east at the end of the reserve, adjacent to the Auckland Water Ski Club (tenant-owned facilities with Auckland Council community ground lease).

Recreational use (particularly for boating and water skiing) and coastal access and use within this stretch is of significant value to the local and wider community. This includes water skiing, coastal walking opportunities and coastal access within a urbanised area.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Maintain** 
Explanation		
Maintain is reflective of the modified nature of the shoreline of the reserve area of the Ōrākei Basin and supports the continued maintenance of structures which provide protection and maintain the shoreline from erosion, noting the		

frequent use of this area for water skiing and the associated generation of wake waves from boating activities. Under the moderate to high change scenario, **maintain** continues to provide for the need to manage risk to activities and assets located in low-lying areas responding to inundation risks, while maintaining modified coastal areas and coastal structures.

Implementation Notes

- **Community and collaboration:** Recreational use and coastal access is of significant value to both the local and wider community. When considering options to manage risk, engagement with the local community and community organisations (including and not limited to Ōrākei Sea Scouts Group, Young Mariners of NZ group and Auckland Water Ski Club) will be required to support the implementation of adaptation strategies.
- **Ecology:** There is a terrestrial SEA around the perimeter of Ōrākei Basin, ecological values and outcomes will require further consideration through implementation of strategies.

2.8: Ōrākei /Meadowbank

Stretch 2.8 covers Ōrākei Creek, commencing in the Basin to the northeast of the Auckland Water Ski Club and encompassing the small headland at the entrance to Ōrākei Creek, culminating in the east to the south of the rail bridge (Macpherson Reserve). It includes the pedestrian bridge connection across the creek. Inland from the coastal edge is the Waiatarua Reserve Wetlands which, via permanent piped stream network, discharge to the coast within this stretch.

Scenarios for change		
Low	**Moderate**	**High**
No action 	**No action** 	**No action** 

Explanation

No action is reflective of the low energy environment and the predominantly unmodified coastal edge with assets set back from the coastal edge (landward of areas identified as exposed to coastal erosion susceptibility and inundation). No action does not preclude the continued management of highly valued walkway connections, reserves (Bonnie Brae, Macpherson) and road ends (Kelvin and Purewa). Management of walking connections through location and design provides for the retention of a natural coastal edge within this lower energy inlet area.

Implementation Notes

- **No action** does not preclude the management of risk to key wastewater and stormwater infrastructure (including the management of stormwater flows from the Waiatarua Reserve Wetlands, located within the stretch.
- **No action** does not preclude the continued maintenance of highly valued walking connections which traverse the coastal inlet.
- **Ecology:** This stretch encompasses the estuarine and freshwater stream and tributary systems that flow into the Ōrākei Basin. The channel is mapped as a marine SEA and the stream bank vegetation is mapped as a terrestrial SEA.
- **Community and environment:** Significant community interest was expressed in relation to management of stormwater and catchment flows from the Waiatarua Reserve Wetlands which, via permanent piped stream networks, discharge to the coast. The community identified a need for holistic catchment and coastal adaptation responses seeking positive ecological outcomes alongside management of risk to property and assets. The strategies of this SAP do not apply to private land and assets.

2.9: Pourewa (Pūrewa) Creek South

Stretch 2.9 begins north of Macpherson Reserve, extends along the coast parallel to the Main Trunk Railway and ends at the inland culmination of Pourewa Creek. It includes Meadowbank Railway Station, the North Island Main Trunk Railway, Pourewa Cemetery, 'Tahapa Reserve' closed landfill and Te Ara ki Uta ki Tai shared path.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Maintain** 
Explanation		
Maintain reflects the importance of regional rail transport connections, Meadowbank train station and walkway connections (Te Ara ki Uta ki Tai) located within this stretch. Reserve land is limited and includes an area of closed landfill (Tahapa Reserve). Due to the low energy environment of this area of the inlet, nature-based options are promoted which support ecological outcomes and are reflected by the strategy of **maintain**. Localised protection may be required to support the location and alignment of linear infrastructure and this is not precluded by the identification of a maintain strategy.		
Implementation Notes		
• **Collaboration:** Meadowbank train station and the North Island Main Trunk Line and associated infrastructure are not Auckland Council-owned, although Auckland Transport operates a rail network utilising this infrastructure. Collaboration with other land and asset owners KiwiRail, NZTA and the cemetery will be required to implement strategies. • **Closed landfill:** Tahapa Reserve closed landfill will be managed under the Closed Landfill Asset Management Plan. • **Ecology:** The southern arm of the estuarine section of Pourewa Creek drains into Hobson Bay and is mapped as a marine and terrestrial SEA and transitions from coastal broadleaved forest into mangroves forest.		

2.10: Pourewa (Pūrewa) Creek North

Stretch 2.10 commences at the inland end of Pourewa Creek, includes the northern bank of the inlet (Kepa Bush) and culminating to the west of Te Pourewa (Creek Reserve) ending adjacent to Ōrākei Road bridge.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Maintain** 
Explanation		
Maintain acknowledges management of the reserve owned by Ngāti Whātua Ōrākei and co-governance with Te Kaunihera o Tāmaki Makaurau. **Maintain** provides for asset risk management and collaboration in implementation of the Combined Management Plan for the landholdings, noting the aspirations for the maintenance of a natural coastal edge, increased harbour connection (waka launching) and support for ecological values. **Maintain** also provides for the management of risk, as required for assets located within Kepa Bush and Selwyn Bush to the east of Pourewa Reserve.		

Implementation Notes

- **Cultural:** Pourewa Reserve, a 34 ha area stretching from Kepa Bush to the Ngāpipi Bridge, was formerly part of the Meadowbank Pony Club and was returned to Ngāti Whātua Ōrākei through the Ngāti Whātua Ōrākei Claims Settlement Act (2012). It is now co-managed by the Ngāti Whātua Ōrākei Reserves Board, comprising representatives from Auckland Council and Ngāti Whātua Ōrākei. Acknowledging the significance of this stretch, ongoing, early engagement and collaboration with Ngāti Whātua Ōrākei for any works in this stretch will be essential.
- **Management:** The Pourewa Valley Integrated Plan and Kepa Bush Reserve Plan notes an intention to create more walking tracks, including new connections from the street network (such as Colenso Place) and the establishment of new connection across and to the water within Pourewa Creek. Management of risk to new walking connections, assets and infrastructure should be considered through the design of new assets and areas of high hazard avoided where practicable.
- **Social:** Volunteer groups have interests in the Pourewa Valley, including Friends of Kepa Bush and the Eastern Bays Songbird Project. There is intention to create a Pourewa Valley Integrated Plan Community Advocacy Group as stated in the Pourewa Valley Integrated Management Plan. Engagement with this group (once established) as well as existing volunteer groups will be required to support the implementation of adaptation strategies
- **Heritage:** Multiple settlement sites that are heritage features are exposed in this stretch.

2.11: Ngapipi Cliff Reserve

Stretch 2.12 commences northwest of Ōrākei Road bridge, adjacent to Ōrākei Road Corner. It includes Ngapipi/ Ōrākei / Kepa Road bridge and the coast north to the end of the Ngapipi Cliff Reserve, adjacent to Ngapipi Road.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Adaptation priority** 

Explanation

Maintain is reflective of the largely vegetated coastal reserve providing for management of risk in the short to mid-term through design and location of assets. **Maintain** supports maintenance of existing protection structures where these are associated with walking and transport connections. Under the moderate climate scenario, further interventions may be required dependent on the monitoring of hazard risk with sea-level rise. **Adaptation priority** is proactively identified for the long-term to signal the need to consider priorities for access and maintenance of values within this area of the coast, noting Ngapipi Road is a key road connecting Ōrākei and Tāmaki Drive.

Implementation Notes

- **Maintain** does not anticipate any council actions/interventions to manage risk from coastal hazards to private land holdings or within undeveloped vegetated sections of reserve areas.
- **Cultural:** Ngapipi Cliff Reserve is a site of significance to mana whenua, Onepū Whakatakataka. Engagement with mana whenua will be required to support implementation of strategies.
- **Ecology:** Most of the reserve land is also classified SEAs. This stretch includes the coastal environment of Whakatakataka Bay, a tidal bay, is mapped as a marine SEA and is largely void of mangrove habitat and likely provides foraging habitat for coastal birds.
- **Management:** Further development of the Te Ara ki Uta ki Tai / Glen Innes to Tāmaki Shared Path to Tāmaki Drive is located within this stretch.

2.12: Ngapipi Road North

Commencing to the north of the Ngapipi Cliff Reserve and including the coast north to the end of the unit where Ngapipi Road meets Tāmaki Drive. Ngapipi Road runs along this stretch at the coastline and is a key access route between Ōrākei and Tāmaki Drive. The Ngapipi Road cycle path currently runs along the road.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Protect under all climate scenarios reflects the existing defence of the coastal sections of the stretch (southern portions). This stretch includes a regional arterial road (Ngapipi Road), important shared mode connections, both current (Ngapipi cycle path) and developing (Te Ara ki Uta ki Tai) connections, and is bordered by areas with identified historic, cultural and ecological significance - deemed essential to maintain access. Under the high climate scenario, further management of risk to important transport connections may be required where increasingly exposed to inundation.		
Implementation Notes		
• **Cultural:** A long strip of land along Ngapipi Road is classified as a site of significance to mana whenua, Onepū Whakatakataka. Engagement with mana whenua is required to further understand the cultural values associated with this site and how this may impact adaptation strategies. • **Historic heritage:** Hobson Bay boat sheds, including slipways and jetties are heritage features exposed in this stretch. • **Management:** further development of the Te Ara ki Uta ki Tai / Glen Innes to Tāmaki Shared Path to Tāmaki Drive is located within this stretch.		

Unit 3
Ōrākei to Tahuna Torea

N

Ōkahu Bay Wharf

Whenua Rangatira

Waitematā Harbour

Community advocacy for the use of nature-based solutions / interventions to enhance natural landscapes and support cultural and community values.

Frequent flooding and inadequate drainage around Tāmaki Drive and Ōkahu Bay.

Whenua Rangatira is co-governed by the Ngāti Whātua Ōrākei Reserves Board. With ongoing restoration efforts led by Ngāti Whātua Ōrākei to restore the whenua, this cultural landscape is of high importance to Ngāti Whātua Ōrākei.

Waterfront walking and cycling

Mission Bay to Wynyard Quarter Path

The Landing Ōkahu Bay

Ōkahu Bay

Ōrākei Marae

Tāmaki Dr

Parital Dr

Ōrākei Domain

Pāora St

Kupe St

Reihana St

Outboard Boating Club

Whakatakataka Bay

Hobson Bay

Ōrākei Bay

Unit boundary

3.1 3.2 Stretch

Walking tracks

Informal recreation park

Co-managed or co-governed p ark

Mooring management area

Auckland Council owned land

0 0.5km 1km

Unit 3: Ōkahu Bay

Unit 3, located within the Ōrākei Local Board area, is located southeast of Auckland, adjacent to the Waitematā Harbour and includes the community of Ōrākei. The Unit begins at Tāmaki Drive, where it follows the road continuing past Paritai North Reserve, around Ōkahu Bay, and Whenua Rangatira (Takaparawhau & Ōkahu Bay), culminating at Mission Bay. Tāmaki Drive and the Mission Bay to Wynyard Quarter shared path run through this stretch at the coast and are significant transport assets. A marina and associated facilities at Ōkahu Bay facilitate access to Waitematā Harbour.

Within western areas of the unit is the Hakumau Reserve. A portion of this reserve is leased to the Outboard Boating Club and other users. Paratai Reserve is located within this stretch, located south of the armoured Tāmaki Drive. The Landing Reserve is located north of Tāmaki Drive which includes boat launching facilities and is subject to leased areas/buildings. The marina to the west of The Landing is privately owned. Further east, the unit includes Watene Reserve and Ōrākei Domain. Both include areas leased to community uses. The unit also includes numerous roading connections and is traversed by and includes wastewater infrastructure including a pump station.

This unit includes substantial areas that are of significance to mana whenua (namely Ngāti Whātua Ōrākei) including Whenua Rangatira and the Ōrākei Marae.

What is happening? Coastal context and hazardscape

Unit 3's coastline has been significantly modified, with extensive reclamation and revetment armouring associated with Tāmaki Drive that extends along the majority of this unit, and by the modified and reclaimed Ōrākei Marina, Outboard Boating Club Marina and The Landing sites. A relatively sheltered pocket beach is present at Ōkahu Bay; which is exposed to wave energy during extreme events from the north to northeast angles.

Coastal erosion and instability

Due to modification of Unit 3's coastline and the presence of armoured structures, ASCIE lines are not applied to coastal areas, except for at Ōkahu Bay. This is reflected in the figure below. Land stability applicable to cliffed areas landward of the coastal edge is not identified in this report. Management of risk from inland land instability and landslides is not precluded by this plan.

Ōkahu Bay beach is relatively stable as reflective of its sheltered location, with only relatively minor changes to upper beach contours occurring in response to coastal processes.

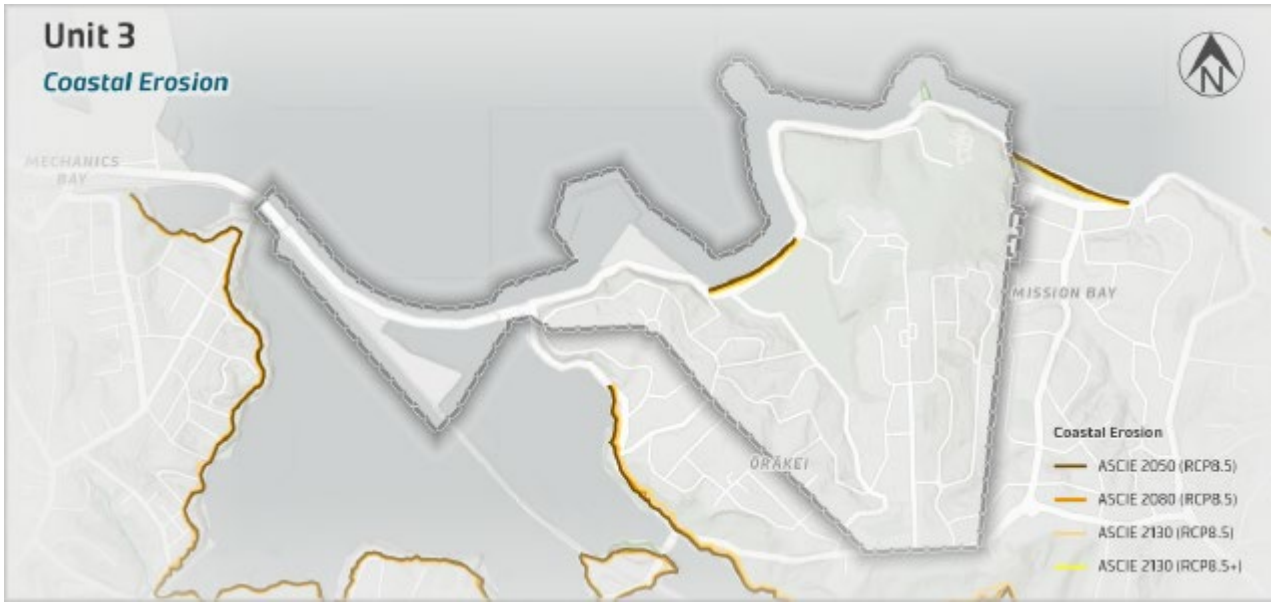


Figure 9: Coastal Hazardscape for Unit 3, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios. Note: ASCIE lines are not mapped for areas of reclamation and significant hard defences

Modification and coastal protection structures along this section of coastline are numerous and are described below as follows:

Ōkahu Bay boat ramp and haul out located within The Landing.

Ōkahu Bay ramp (Source: Auckland Council)

Tāmaki Drive provides a critical transport link with established coastal vegetation landward and community uses. (Tāmaki Drive Walkway), is protected by a sloped masonry rock wall and revetment toe protection

Tāmaki Drive looking east toward Ōkahu Bay (Source: Auckland Council)

The beach at Ōkahu Bay is relatively stable, reflective of its sheltered location with wide backshore grass reserve area. Offshore, the Ōkahu Bay wave screen (originally constructed in the 1940's) can be seen consisting of a series of hardwood piles along an approximately 900m extent. Recent studies have indicated the wave barrier provides limited (10-20%) protection from incoming wave energy

Ōkahu Bay Beach (Source: Auckland Council)

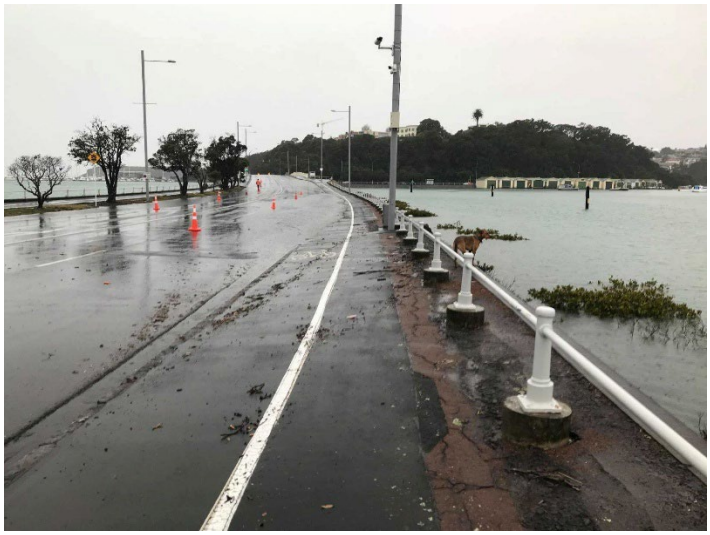
Coastal inundation

The Unit 3 coastline is exposed to localised shorter period storm waves generated by strong northwest to northeast winds. During extreme events maximum wave heights in the order of 0.5 m – 1 m can be expected. This wave height can impact the seawalls and beaches along this coastline with wave overtopping along sections of Tāmaki Drive well documented within this coastal unit. Under the moderate and high change climate scenario with 1 m of sea-level rise inundation in a 1% AEP event is identified as impacting larger areas of Tāmaki Drive.

Figure 10: Coastal Hazardscape for unit 3 showing coastal inundation for 1%AEP storm surge for present day and with 0.5 m, and 2 m sea-level rise.

Inundation (catchment and influenced by coastal water levels) at Ōkahu Bay has been identified as a challenge for uses located landward of the road where land levels are very low. This impacts areas within the Ōkahu Domain which contains highly significant cultural sites along with recreational uses, assets and is traversed by roading and water infrastructure. Under the moderate and high change scenarios, mapping of mean high-water springs and of inundation events identified increased inundation for landward areas at Ōkahu Bay, including low-lying areas of the Domain.

King tides 2018 Tāmaki Drive (Source King tides website) prior to recent works along completed by Auckland Transport to rais the footpath by and upgrading drainage channels and the seawall to provide a higher level of protection from storm surge.



Flooding

This unit is within the Hobson catchment with a flood plain at Ōkahu Bay. There remainder of the unit is less exposed to catchment flooding with limited streams connected to the coast and on relatively higher land elevation.

Figure 11: identification of floodplain areas (1% AEP) within the Ōkahu Bay unit

Risk assessment

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

At a unit level, risk from coastal erosion and instability susceptibility is low for all key asset groups over all timeframes, with the exception of transport infrastructure where risk is very low in the short and medium term and low in the long term. This is reflective of the extent of hard protection structures along this frontage.

This contrasts with risk levels from coastal inundation where levels for key asset group increases over the time period due to ongoing sea-level rise. Auckland Council-owned land is assessed at moderate to high risk from coastal inundation, Auckland Council community facilities is at high to very-high risk from coastal inundation, and water infrastructure is at low to moderate risk from coastal inundation. Transport infrastructure is an exception as risk from coastal inundation is identified to be very high for all time periods.

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

Council-owned land			**Council community facilities**			**Transport infrastructure**			**Water infrastructure**		
Park and reserve land (77.8 ha) Buildings, wharves (36 No.)			Park amenity structures, carparks, accessways, buildings (4.0 ha)			AT roads (16.4 km) Bridges (2,844.8 m^2)			Water pipes (88.0 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
Low	Low	Low	Low	Low	Low	Very low	Very low	Low	Low	Low	Low
Coastal inundation											
Moderate	Moderate	High	High	High	Very high	Very high	Very high	Very high	Low	Low	Moderate
Key											
Very Low			**Low**			**Moderate**			**High**		**Very High**

What matters most

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

- In total, there are 11 Auckland Council-owned land parcels in this unit including Whenua Rangatira (co-managed by NWō Reserves Board), Ōrākei Domain and Ōkahu Bay Reserve.

- Ōkahu Bay Reserve is located within this coastal unit, located on the northern side of Tāmaki Drive, opposite Ōrākei Domain. Ōkahu Bay reserve land is owned by local iwi, Ngāti Whātua Ōrākei and co-governed by Auckland Council.
- Takaparawhau / Bastion Point is also situated within this wider coastal unit; a site of historical sensitivity to Ngāti Whātua Ōrākei. Acknowledging the highly significant cultural landscape of Ōkahu Bay and neighbouring areas to Ngāti Whātua, ongoing engagement with Ngāti Whātua Ōrākei will be required through the implementation of the coastal adaptation strategies outlined in this unit (noting the Ngāti Whātua Ōrākei Combined Management Plan and Masterplan and associated activations/ aspirations for the surrounding landscape).

Figure 12: Combined Reserve Management Plan Pourewa Creek (Pūrewa) and Whenua Rangatira (Takaparawhau & Ōkahu Bay)

- This area includes 21 Auckland Council-owned buildings that serve both the community and visitors. Key Council-owned amenities include the Outboard Boating Club (leasehold), public restrooms at Ōkahu Bay and the Landing, along with the Auckland Sailing Club, Akarana Marine Sports Charitable Trust and a number of bunkers in Whenua Rangatira.

- Underground and aboveground stormwater network assets servicing the local community, including two Stormwater pump stations in this unit.
- Wastewater pump station: Tāmaki Yacht Club Pump Station.

- Key walking tracks: Mission Bay to Wynyard Quarter Path, and Tāmaki Drive Coastal Path.
- Key roads: Tāmaki Drive and Kupe Street.

- Harbour access: Outboard Boating Club ramp (tenant-owned on Community lease area) and Marina (private), 3 x Tāmaki Drive Landing boat ramps, and Ōkahu Bay 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 over changing climate scenarios.

- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi, noting high level values and aspirations have been identified in Volume 2.
- Ongoing engagement with local iwi to understand the cultural landscape of the coast and ensure alignment with cultural values in coastal management will take place in the implementation of adaptation strategies.
- There are four identified cultural features in this unit: Te Pokanoa a Tarahape, Onepū Whakatakataka, and Kohimaramara / Bastion Rock Takaparawha Point identified as both a Cultural Heritage feature and a site of significance to mana whenua.
- In addition to this, there are numerous co-governed or co-managed areas in Unit 3 extending across Stretches 3.3 and 3.4. These co-manged areas are the Ōkahu Bay reserve[6], a coastal area of importance to Ngāti Whātua Ōrākei as it includes wāhi tapu (sacred sites) and traditional fishing grounds. The second area is Takaparawhau (Bastion Point), a historically significant site tied to Ngāti Whātua Ōrākei's land rights and mana whenua status. Both areas are managed under co-governance arrangements.

Ko Te Pūkaki – Ecological Restoration Project[7]

- *Ko Te Pūkaki* is the name given to the ecological restoration project established in 2001, with a focus on eco-sourcing native plants from within the Tāmaki Ecological District. The project supports the restoration and protection of *Whenua Rangatira* (Takaparawhau), co-managed by Ngāti Whātua Ōrākei and the Ngāti Whātua Ōrākei Reserves Board, which was established in 1991.
- The name *Ko Te Pūkaki* is drawn from a whakataukī shared by kaumātua at the time the location for the Ngāti Whātua Ōrākei wharenui, *Tīmtimuwhenua*, was chosen. It refers to the symbolic first turning of the soil, accompanied by karakia to enhance and acknowledge the *mauri* of Ōrākei Marae.
- The Ōrākei Marae is located above Ōkahu Bay on the shores of the Waitematā Harbour. The marae is affiliated with Ngati Whātua Ōrākei (Ngāti Whātua Ōrākei, n.d)
- Working with Ngāti Whātua Ōrākei to develop a multi-use sports facility in the Ōrākei Domain and improve connectivity between Ōkahu Bay, Tāmaki Drive, and Pourewa Reserve[8].

6 https://www.aucklandcouncil.govt.nz/parks-recreation/Pages/park-details.aspx?Location=2087

7 https://ngatiwhatuaorakei.com/toi-taiao/whenua-rangatira/

8 Ngāti Whātua Ōrākei Reserves Board. (2022). *Combined reserve management plan.* https://ngatiwhatuaorakei.com/media/dezkgj2v/0002_nwo_combined-reserve-management-plan_digital-final_-74775.pdf

- Unit 3 is situated between Hobson Bay and Mission Bay. The unit encompasses the community of Ōrākei, which is a suburban area with a shopping centre at Eastridge on Kepa Road. The unit also includes notable open space areas such as Whenua Rangatira, Ōkahu Park and Ōrākei Domain.
- Whenua Rangatira is a significant area of reserve land, which is an approximately 50 ha recreational reserve in Unit 3 comprising of Takaparawhau / Bastion Point and Ōkahu Bay. This reserve is managed by the Ngāti Whātua Ōrākei Reserves Board (Ngāti Whātua Ōrākei , 2018). The Ōrākei Masterplan (Ngāti Whātua Ōrākei, 2022) and the Combined Reserve Management Plan for Whenua Rangatira and Pourewa Valley (Ōrākei Local Board, 2020) outline the aspirations for the future of Whenua Rangatira. The plans reflect aspirations to enhance the cultural, environmental, and community value of the reserve while honouring its significance as a taonga (treasure) of Ngāti Whātua Ōrākei. Proposed improvements include providing additional housing, carrying out conservation work, investigating recreational activities and improving connectivity to and through the area. Located within Unit 3 there is also a large Māori Purpose Zone located within the unit around Ōrākei Marae.
- The name Ōkahu Bay is of Te Arawa origin, and is in full Te Whangao- Kahumatamomoe, the; whanga: bay; o: of; Kahumatamomoe. Over time this has been abbreviated to o: place of; Kahu. Kahumatamomoe, having quarrelled with his relatives at Maketu, came to live with other relations who had already settled here.' Source: Reed, A.W. & Peter Dowling, Place Names of New Zealand, 2010 as identified in New Zealand Gazetteer
- Ōkahu Bay Reserve has toilets and changing rooms, barbecues, picnic tables and seating. Visitors can cross the road at traffic lights to get to the playground at Ōrākei Domain (Auckland Council, 2024l). The bay is also home to the Auckland Sailing Club and Ōrākei Marina. Ōrākei Marina has mooring space for around 200 boats at a time, including yachts and powerboats (Orakei Marina , 2024).
- Ōrākei Domain is a popular open space area used for sports and informal recreation. It has fields for rugby, cricket, a bowling club and other sports, along with spaces for picnics, a playground, carparking, clubs' rooms and toilet facilities (Auckland Council, 2024p).
- Most other social infrastructure in this unit is located off Coates Avenue and Kepa Road. Facilities such as an RSA, community hall, medical centre, church and gym are located along these roads as well as other shops and restaurants at the Eastridge Shopping Centre.
- Tāmaki Drive also hosts several other key facilities including function spaces (Mantells Tāmaki Drive, Five Knots, Ōkahu Functions and Events) and Kelly Tarltons Aquarium which is a very popular visitor attraction.
- There is a very popular shared path which runs from Auckland CBD to St Heliers along the coastline, very well used by walkers, joggers and cyclists, both for commuting and for informal recreation. In addition to this pathway, Unit 3 has an efficient public transit system with regular bus services. The unit is serviced by several bus stops along key routes, primarily on Kepa Road and Tāmaki Drive. These provide convenient access to nearby areas and the Auckland city centre.
- The Royal Akarana Yacht Club and Outboard Boating club are also located within the unit which facilitate boat access to the Waitematā Harbour.
- Unit 3 contains six heritage sites listed as category A, A* and B heritage features under the Auckland Unitary Plan. These are: Savage Memorial and Fort Bastion R11_1719, including gun emplacements, artillery battery, observation posts, searchlight emplacements, tunnels, underground rooms, and earthwork defences (A, Takaparawha Pā R11_92 (B), Te Umuponga Pā site R11_91 (B), Pumping Station (former) (B), Ōkahu Bay Changing Rooms (B), Ōrākei World War II heavy anti-aircraft gun battery R11_1720 (A*).

Key ecological features identified with Unit 3 include:

- Several reserves including Tāmaki Drive Reserve, Paratai North Reserve, Ōkahu Park, Ōrākei Domain and Takaparahwau / Bastion Point. These reserves are surrounded with scattered areas of coastal broadleaved forest.
- A number of coastal avifauna are often found roosting at Takaparahwau / Bastion Point, including New Zealand dotterel, Caspian tern, white-fronted tern, South Island pied oystercatcher and variable oystercatcher.
- Seagrass is recorded within Ōkahu Bay Beach (Department of Conservation, 2011).
- Shellfish monitoring is occurring at Ōkahu Bay, delivered by iwi and school groups and supported by the Hauraki Gulf Forum and NIWA.

Community feedback

Who have we heard from?

- Feedback was received via digital platforms Social Pinpoint and 'AK Have Your Say'. Key themes are discussed below.
- Events located within, or neighbouring this unit, included an event at the Tagalad Reserve (former Mission Bay Bowls Club), St Heliers Church and Community Centre, a pop-up at Selwyn Reserve and drop-in sessions at St Heliers Library.
- Representatives from the Tāmaki Drive Protection Society and the Auckland East Community Network attended both the Tagalad Reserve (former Mission Bay Bowls Club), the St Heliers Church and Community Centre and the pop-up at Selwyn Reserve.

What is happening?

- Flooding of the reserve across the road at Ōkahu Bay was seen as contributing to sediment runoff and a noticeable decline in water quality. Existing drainage infrastructure was perceived to be contributing to this issue (insufficient drainage infrastructure).
- Observations of coastal accretion (the natural build-up of sediment).
- Concern about high levels of sediment in the water following rainfall and storm events. These comments were linked to concerns over water quality and unsafe swimming warnings (black ratings), discouraging activities such as swimming and paddleboarding.
- The closure of Tāmaki Drive due to rockfalls has highlighted the vulnerability of key coastal access routes and the need for improved safety and resilience measures.
- Concerns regarding wave overtopping seawalls during storms.

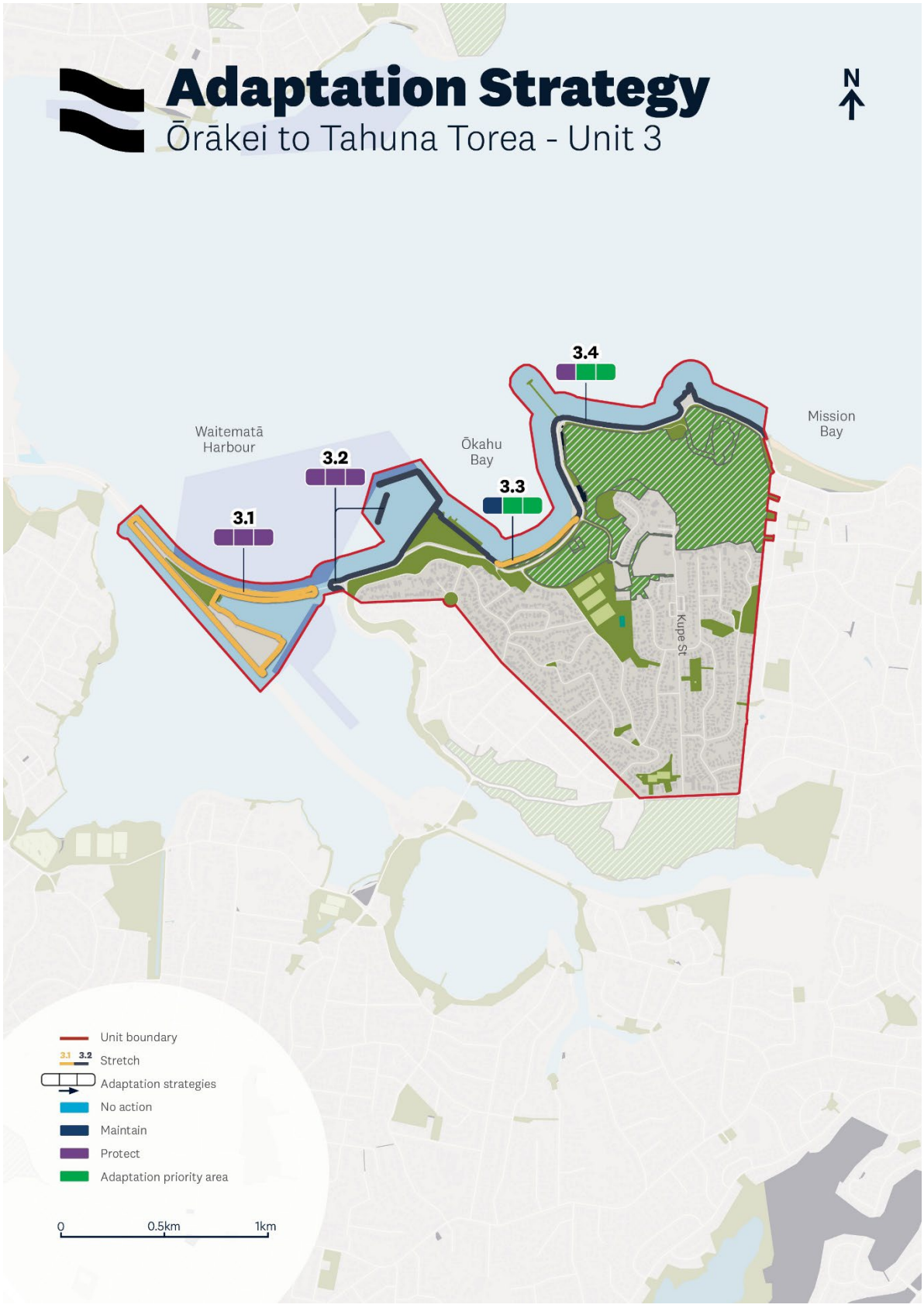
What matters most? Community values and uses

- Community feedback highlighted the popularity of this coastal unit for walking, running, and dog walking along the beach and nearby paths; swimming and playing in the water; boating and sailing; paddle boarding and observing wildlife (i.e. birds).
- **Cultural landscapes:** Community feedback highlighted the role of local iwi, Ngāti Whātua Ōrākei, with support expressed for their involvement in planting and conservation initiatives, acknowledging co-governed owned whenua and restoration initiatives around Whenua Rangatira and Pourewa Creek Recreation Reserve.

What can we do about it? Community feedback and aspirations

- **Boat launching at Tāmaki Drive:** Commentary that the all-tide beach has receded and the existing boat ramps and coastal infrastructure needs to be repaired (advocacy for sand transfers/ restoration at Tāmaki Beach to enhance public access and secure a valuable park/reserve asset in a high-demand area).
- **Tāmaki Drive:** Strong support for maintaining/ protecting Tāmaki Drive as a key waterfront arterial route/ roading connection for Eastern Bay communities, while balancing this with traffic management and alternate routing (e.g. via Kepa Road) during peak periods.
- **Support restoration initiatives to** improve water quality at Ōkahu Bay.
- **The Landing:** Commentary that "Tāmaki Drive - The Landing" would benefit from more active management, with a focus on adaptation, prioritising natural interventions to enhance ecological processes and ensure long-term coastal stability in the area.
- **Nature-based solutions for flood management:** Some community members suggested re-establishing wetlands to the west of the cemetery grounds and reopening the drain beneath the road to support the reformation of the historical river estuary. This approach is seen as a way to improve stormwater runoff quality and reduce flooding in the surrounding area through natural water management processes.

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



3.1: Hakumau Reserve

Stretch 3.1 encompasses sections of the North Island Main Trunk Railway and Tāmaki Drive, which pass through Ōrākei Bay and Hobson Bay on a narrow causeway.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Protect reflects the reclaimed nature of land within this stretch. The reclaimed area is armoured in all areas and management of risk through design of infrastructure including road drainage to manage inundation risks. Under a high change scenario, protect reflects the aspirations of communities and land uses within this coastal stretch to maintain connection along the coast. Under the high change scenario, connections and uses will become exposed to increasing inundation risk and the need for further engagement on the design while maintaining complex values (cultural, historic heritage, ecological and social) associated with this stretch will likely be required to support an understanding of how continued protection of uses can be achieved.		
Implementation Notes		
• **Collaboration:** Associated infrastructure and leased uses located within this stretch are not Auckland Council-owned; collaboration with other stakeholders (including the Outboard Boating Club) will be required to understand how implementation of adaptation strategies may impact the uses located within this area. • **Cultural:** This stretch and wider cultural landscape is of high cultural significance to local iwi, Ngāti Whātua Ōrākei, with aspirations to restore and support the landscape and the wider marine environment. Ongoing engagement with Ngāti Whātua Ōrākei will be required in the implementation of adaptation strategies.		

3.2: Tāmaki Drive (The Landing)

Stretch 3.2 commences adjacent to Tāmaki Drive. It includes the coastal edge east of the private marina (not Council owned) at Tāmaki Drive (The Landing). The Landing is a large, concrete area (identified as a park) containing multiple Auckland Council-owned buildings and extensive marine / boating related facilities. The stretch ends at the southeast of The Landing, including the connecting road end of Ōkahu Street. Paritai Reserve is located south of Tāmaki Drive, with Paritai North Reserve, with areas of coastal broadleaved forest mapped as a terrestrial SEA.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Protect is identified to confirm the continued management of the modified coastal edge providing for access along Tāmaki Drive and for marine activities and connections to the harbour. Protect does not apply to non-Council owned land and assets, including the private marina located to the west of The Landing, noting access to these areas is subject to Council land holdings. Inundation risks for central sections of Tāmaki Drive are in part mitigated by the reclaimed area of The Landing. Exposed sections east and west of the landing are identified as being impacted by inundation and exposure is identified as increasing under the moderate to high climate scenario.		

Implementation Notes

- **Cultural:** Paritai Reserve is a site of significance to local iwi, Ngāti Whātua Ōrākei (Te Pokanoa a Tarahape. Te Pokanoa a Tarahape, also known as Pokanoa Pā, is a historical pā site). Engagement with Ngāti Whātua Ōrākei is to further understand the cultural values associated with this site and how this may impact adaptation strategies.
- **Collaboration:** Associated infrastructure and leased uses located within this stretch will require collaboration with other stakeholders (including the Akarana Marine Sports Charitable Trust, Auckland Sailing Club and Ferguson/ Multi-Hull Club) to understand how implementation of adaptation strategies may impact the uses located within The Landing and other areas located within this stretch.
- **Nature-based opportunity:** Protect as a strategy can included management options that enhance natural processes and natural interventions.

3.3: Ōkahu Bay

Stretch 3.3 begins east of Ōkahu Road end, includes the embayment of Ōkahu Bay culminating at the western side of Kitemoa Street. It includes reserve areas, local parks, key transport connections and water infrastructure. The "Ōkahu Bay wave screen" is visible offshore from Ōkahu Bay.

Scenarios for change		
Low	Moderate	High
Maintain 	**Adaptation priority** 	**Adaptation priority** 

Explanation

Ōkahu Bay beach is identified as currently stable in relation to erosional processes, indicated by coastal monitoring and observation of the backshore area (which is well grassed). No coastal erosion protection structures are currently located within the embayment for this area of the coast. **Maintain** relates primarily to the management of risk from inundation, both from coastal and catchment sources. Maintain provides for the management of risks to assets and supports collaboration in the implementation of the Combined Management Plan for the landholdings. **Maintain** reflects ongoing management of roads, piped networks and other assets and supports the outcomes identified in the management plans for landholdings.

Adaptation priority is identified under the moderate to high climate scenario to reflect the increasing inundation risk and responds to the identification of the aspirations in the Combined Management Plan. Adaptation priority signals a need for proactive engagement, identification of outcomes and options to manage risk to a highly valued area of the coast. Strategies do not apply to land or assets which are not Auckland Council-owned or managed.

Implementation Notes

- **Management:** Ōkahu Bay Reserve is co-managed / co-governed by Ngati Whatua Ōrākei and makes up part of the larger Whenua Rangatira Recreation Reserve. Engagement with Ngati Whatua Ōrākei is required to further understand the cultural values associated with this site, future aspirations and how these may impact adaptation strategies. The Combined Reserve Management Plan for the area should be referred to understand how the implementation of adaptation strategies can contribute to the objectives of the plan, and/or avoid adverse impacts on the plan's aspirations, along with the Ōkahu Bay Catchment Restoration Plan[9].
- **Collaboration:** Key assets and infrastructure are located within areas which are exposed to coastal hazards and catchment flooding. The area is also traversed by key transport connections, wastewater and key stormwater infrastructure. Engagement with iwi, asset owners, third party organisations, communities will be required when implementing adaptation strategies across all climate scenarios.
- **Historical:** The stretch includes Ōkahu Bay Changing Rooms which are heritage features under the Auckland Unitary Plan (AUP:OP).
- **Cultural and ecology:** In partnership with Ngāti Whātua Ōrākei, the Revive Our Gulf project is focused on re-establishing kūtai (mussel) beds to restore and enhance the mauri (life force) of Ōkahu Bay. For Ngāti Whātua Ōrākei, this mahi is part of a multigenerational commitment to the health of the moana and reflects a long-term vision outlined nearly a decade ago in their Ecological Restoration Plan for Ōkahu, which continues to guide restoration efforts today.

[9] Ngāti Whātua Ōrākei. (2012). *The Ōkahu Catchment Ecological Restoration Plan*. Compiled by R. Kahui-McConnell. Ngāti Whātua Ōrākei. https://ref.coastalrestorationtrust.org.nz/site/assets/files/8851/the-okahu-catchment-ecological-restoration-plan5.pdf

3.4: Tāmaki Drive Takaparawha Point (Whenua Rangatira)

Includes Kitemoa Road end east to the western side of the stream at the west side of Mission Bay. It also includes the coastal edge of Tāmaki Drive and is backed by Whenua Rangatira, the Tāmaki Drive Reserve (which includes the Kelly Tarlton's aquarium), Ōrākei wharf, key wastewater infrastructure, Tāmaki Yacht Club (not Auckland Council-owned) and includes numerous cultural and historic heritage sites.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Adaptation priority** 	**Adaptation priority** 

Explanation

Protect under the low climate scenario reflects the importance of the Tāmaki Drive roading connection and the uses located in proximity to the coastline. The strategy reflects the armoured and modified nature of the coastline, noting strategies are not reflective of inland land instability.

Impacts of coastal inundation through wave overtopping are already experienced along this stretch and will increase with sea-level rise identified in the moderate and high climate scenarios. **Adaptation priority** for this coastal stretch from the moderate change scenario is reflective of the numerous land uses and high cultural significance of this coastal stretch. Adaptation priority will require close collaboration with Ngāti Whātua Ōrākei, asset owners and communities, to consider the outcomes sought and the options available to manage risk to diverse assets, uses and cultural, ecological and social values located within this coastal stretch.

Implementation Notes

- **Cultural:** Whenua Rangatira is a large reserve landholding managed by Ngati Whatua Ōrākei. Ōrākei Marae is located inland and significant cultural landscapes are included within this stretch (site of significance to mana whenua located at Kohimaramara/Bastion Rock Takaparawha Point). Most of Whenua Rangatira is elevated above coastal inundation extents, however northern access from, and connections between the takutai and the whenua will be impacted by coastal processes and responses to those. Further engagement with Ngati Whatua Ōrākei is required to implement adaptation strategies.
- **Management:** The Combined Reserve Management Plan for the area should be referred to understand how the implementation of adaptation strategies can contribute to the objectives of the plan, and/or avoid adverse impacts on the plan's aspirations.
- **Local Board views:** The Ōrākei Local Board have aspirations in re-establishing Tāmaki Beach, east of the yacht club (there are historic photographs of this beach). The strategy of protect does not preclude exploration of beach nourishment in this area noting this will likely require consideration of available sediment sources, sand retention structures and ongoing maintenance should it be further pursued.

Unit 4
Ōrākei to Tahuna Torea

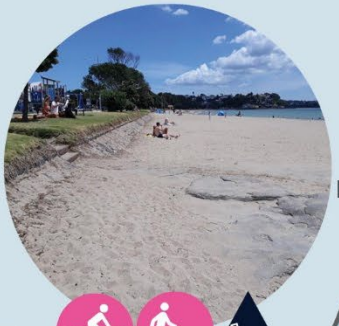
N

Mission Bay

"Beautiful spot for lunch and a walk. Advocacy for more car parking, picnic facilities and improving water quality".

Kohimarama Beach

St Heliers Bay Beach Reserve



Ladies Bay

Glover Park

Popular paragliding spot.

Melanesian Mission House

Kohimarama Yacht Club

Highly valued bowling club, tennis club and yacht club at Kohimarama.

St Heliers to Mission Bay Path

Community experience of flooding - enlarged drainage network has been really beneficial and a difference has been noticed. Community advocacy for ongoing consideration of stormwater management in planning for hazards.

Patteson Ave

Selwyn Ave

Kohimarama Rd

Long Dr

Waimarie St

Unit boundary

4.1 4.2 Stretch

Walking tracks

Informal recreation park

Auckland Council owned land

0 0.5km 1km

Unit 4: Mission Bay, Kohimarama and St Heliers

This unit is located within the Ōrākei Local Board area. Unit 4 is located southeast of the Waitematā Harbour, starting at Tāmaki Drive on the western end of Mission Bay. It extends east along Tāmaki Drive, passing Kohimarama Beach and St Heliers Bay, reaching Cliff Road and continuing past Ladies Bay Beach to Karaka Bay. Inland, the unit stretches as far south as Hopkins Crescent in Kohimarama. This unit includes the communities of Mission Bay, Kohimarama, and St Heliers. The area is primarily residential, featuring suburban and urban housing. Town centres are located off Tāmaki Drive in Mission Bay and St Heliers. The coastline is characterised by the reclaimed Tāmaki Drive, the relatively large, replenished beaches of Mission Bay, Kohimarama and St Heliers, and coastal cliffs backing smaller pocket beaches such as Ladies Bay.

What is happening? Coastal context and hazardscape

Unit 4 is the section of the Ōrākei coastline most exposed to coastal processes. While sheltered from longer period swell events and more open fetch distances by the inner Hauraki Gulf Islands, this coastline is exposed to localised shorter period storm-waves generated by strong onshore winds.

Coastal erosion and instability

During extreme events from the north and northeast angles, and elevated water levels, maximum wave heights in the order of 0.5 m – 1 m in height can impact the seawalls and beaches along the Unit 4 coastline. This can mobilise beach sediments, trigger erosion and impact coastal assets including seawalls. Regional ASCIE areas mapped across Unit 4 exclude the modified armoured sections of the coast where protection structures are located (Stretches 4.2 and 4.4). While ASCIE are mapped for embayment areas it is noted that modification of the shoreline is present (discussed below for this area of the coast). Erosion susceptibility is therefore reflective of areas which may be susceptible in the absence of control structures.

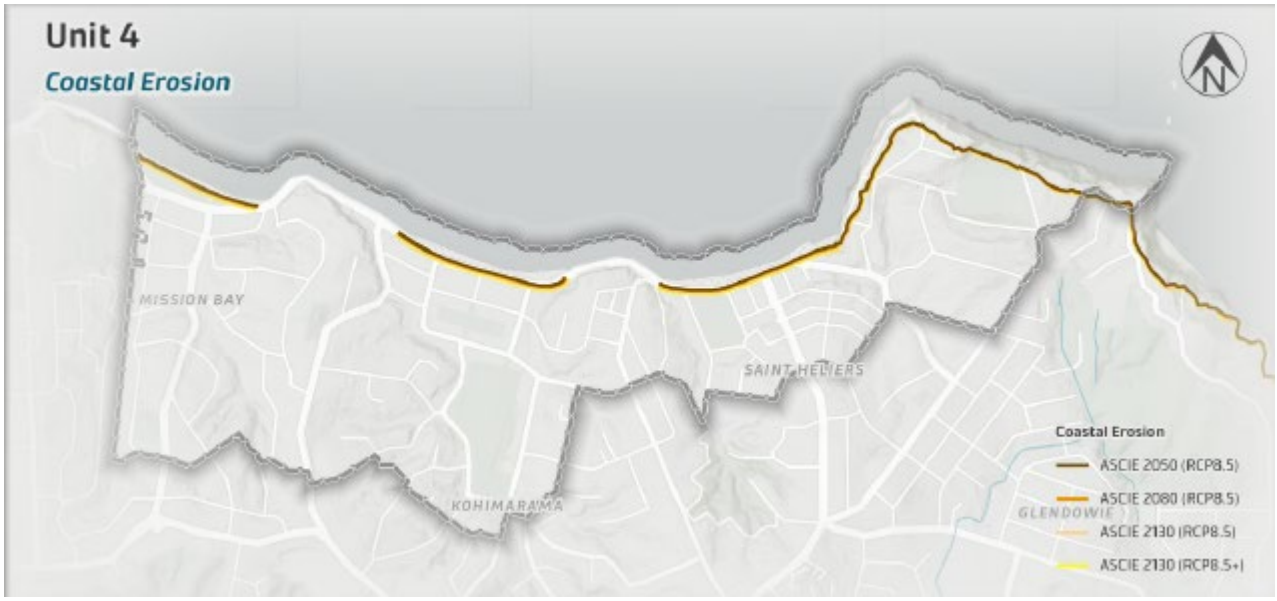


Figure 13 Coastal Hazardscape for Unit 4, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios.

Further east, the coastal cliffs along Cliff Road Reserve are subject to slow, ongoing weathering and erosion, and are at risk to larger episodic slips which present a risk to landward assets and infrastructure. This has resulted in the loss of access to coastal areas (Gentleman's Bay and Ladies Bay) and threats to road and water infrastructure which has resulted in cliff pinning and other risk management actions.

Figure 14: view looking west toward and St Helier bay along Cliff Road. Source: Auckland Council

Further east the coastal cliffs are primarily privately owned with limited council assets.

Figure 15: Photo looking east along the coastal cliffs toward Karaka Bay

Beach erosion

Mission Bay, Kohimarama and St Heliers are all engineered beaches, with backstop seawall armouring and replenished beaches involving the placement of imported sand between engineered control structures at either end of each beach (groynes). These control structures incorporate stormwater outfalls that direct the stormwater discharge points off the upper beach areas.

Sand replenishment works have been carried out to provide a buffer from coastal processes to the existing seawalls and adjacent reserves. With these replenished beaches contained within engineered control structures, dry high-tide beach space is maintained along their length (with the exception of the western end of Kohimarama Beach where sediment migrates from). Periodic operational lowering and redistribution of sand levels is undertaken where it builds up against and blows over the seawalls at Mission Bay, Kohimarama and St Heliers beaches.

Some of the key features are as follows:

Mission Bay: Groyne (control structure) at the western end of Mission Bay adjacent to the stream which discharges to the coast.

Mission Bay (Source: Auckland Council)

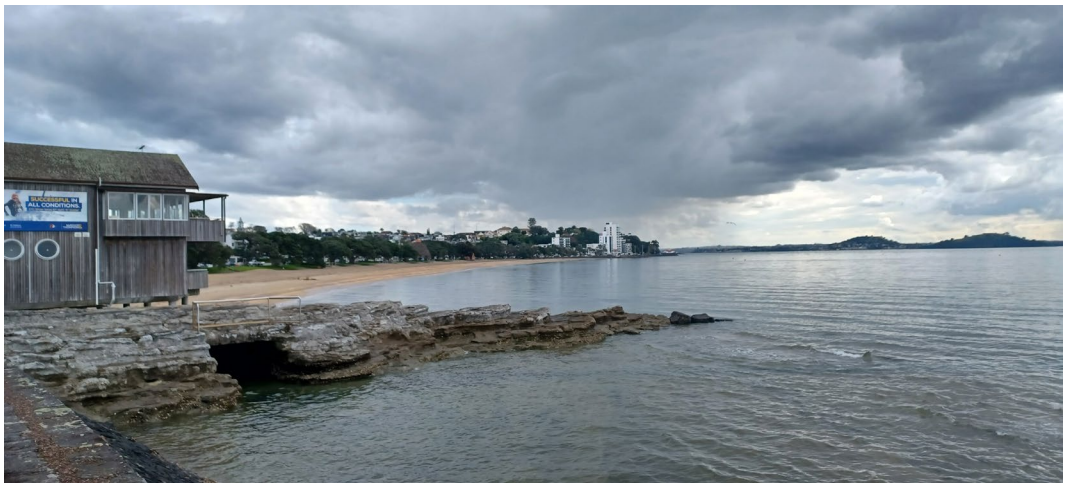
Mission Bay view west toward play facilities, paved areas shown adjacent to the replenished beach area.

Mission Bay (Source: Auckland Council)

Kohimarama Beach: Park facilities and backstop armoured coastal edge with replenished beach buffer.

Kohimarama Beach (Source: Auckland Council)

Kohimarama Beach: Showing the engineer control structure that incorporates stormwater outfall adjacent to Kohimarama Yacht Club building.



Kohimarama Beach (Source: Auckland Council)

Sand transfer works at **St Heliers Beach**. The beach replenishment control structure in the foreground is sculpted shotcrete to resemble a natural rock outcrop.

St Heliers Beach (Source: Auckland Council)

St Heliers Beach Replenished sandy beach at St Heliers with backstop masonry armouring.

St Heliers Beach (Source: Auckland Council)

St Heliers Beach looking east to Cliff Road.

St Heliers Beach (Source: Auckland Council)

Coastal inundation

Coastal inundation across the Unit 4 coastal area is experienced across the coastal area. Inundation extent and the impacts of overtopping to Tāmaki Drive is addressed in Volume 2.

While inundation within the embayments under present day/ low climate change scenarios impacts stormwater drainage and low-lying coastal areas in closer proximity to the coast, under the moderate to high change scenario, inundation frequency and extent is likely to increase. This is represented across the unit area in Figure 16 below.

Figure 16: Unit 4 extent of coastal inundation hazard under a 1 per cent AEP storm event including 0.5 and 2 m of sea-level rise.

During coastal storms combined with elevated tide levels, seawall overtopping at the western end of Kohimarama Beach can result in flooding and coastal inundation along Tāmaki Drive. The lack of dry high-tide beach space and more pronounced location at the western end of Kohimarama Beach can increase exposure to this wave overtopping. Wave barrier gates structures have been installed as an operational response to mitigate this overtopping at coastal access points (steps, ramps) along the wall.

Coastal and catchment inundation has occurred in extreme weather events within low-lying beach areas. Projections of inundation with sea-level rise identify a greater area, depth and frequency of flooding could be anticipated in the future. Examples of coastal storm flooding and flood control measures are included below:

Kohimarama: Image shows the armoured protection structure including a wave barrier gate (currently open) which can be closed to respond to coastal inundation events.

Kohimarama Beach (Source: Auckland Council)

Floods at Tāmaki Road, Kohimarama. (source NZ Herald)

For each of the low-lying embayment areas, Mean High Water Spring Tide (MHWS) sea levels have been mapped with sea-level rise (as available on Auckland Councils public map viewer). The MHWS sea levels are the elevation of the high tide that is equalled or exceeded by only the highest 10% of all high tides. The levels have been updated based on the mean sea level averaged over the period 2001–2019. This accounts for sea-level rise that has occurred up until the effective base date of 2010, but does not include sea-level rise that has occurred since that period. This is set out in the report: *Coastal Inundation from Sea-Level rise in the Auckland Region* (NIWA, 2023). 0.5 m sea-level rise increments are added on top of this to assess the increasing coastal inundation hazard into the future. This is represented in the figure below for the images on the left, and with a 1% coastal storm event extent (including 1 m and 1.5 m sea-level increments) identified in the images on the right.

Mission Bay

Left: Tidal inundation and sea-level rise hazard 1 m sea-level rise.

Right: Coastal storm inundation hazard 1% AEP plus 1.0 m sea-level rise.

Kohimarama

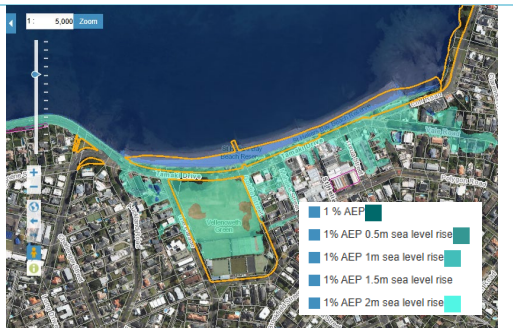
Left: Tidal inundation and sea-level rise hazard 1 m sea-level rise

Right: Coastal storm inundation hazard 1% AEP plus 1.0 m sea-level rise.

St Heliers

Left: Tidal inundation & sea-level rise hazard 1 m sea-level rise

Image right: Coastal storm inundation hazard 1% AEP plus 1.5 m sea-level rise.



Flooding

Across Unit 4, flood plains are identified within the low-lying land connected to tributaries draining to the beaches at Mission Bay, Kohimarama and St Heliers. This is identified below the figure 17. The Eastern Bays catchment encompasses a total area of 6.03 km^2 and is drained primarily by Mission Bay Stream, Kohimarama Stream and the Dingle Dell Stream.

The Eastern Bays catchments are situated within Tāmaki Ecological District. Located on the heavily urbanised isthmus between the Manukau and Waitematā Harbours, they have high imperviousness and lie within one of the most modified ecological districts in New Zealand. Few areas of indigenous vegetation remain, covering just 11% of the area. The two catchments have fragmented watercourses which are interspersed with old stormwater infrastructure, with the pipe network in Eastern Bays dating back to the 1960s (Davis, 2020). Exploration of integrated catchment management options to

support water quality, stream health and stormwater management have been undertaken and support opportunities for retention of stormwater and flood flows within upper catchment areas of highly modified streams, utilising limited reserve landholdings and water courses. Catchment flooding in a 1% storm event, including the impacts of climate change will continue to be a matter requiring further consideration of options, particularly in relation to managing discharges to the coast within a modified coastal environment with anticpated higher coastal water levels (with sea-level rise).

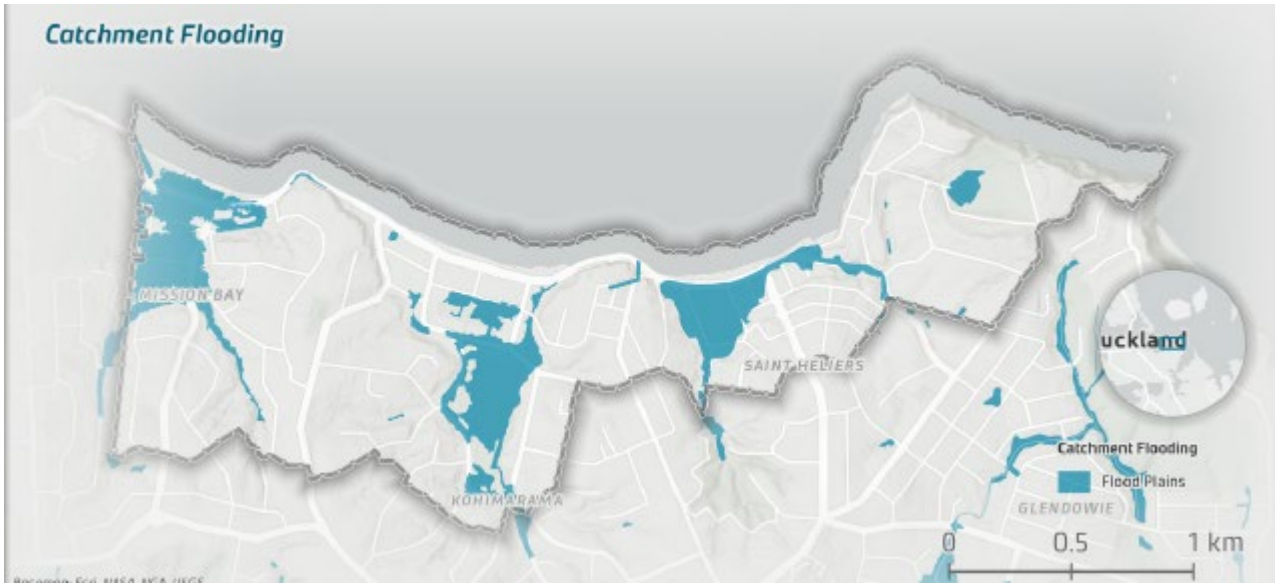


Figure 17 Catchment flooding identified across the unit 4 area showing the one per cent AEP floodplains

During storm events, catchment flooding in combination with coastal water levels has resulted in flooding within low-lying areas of Mission Bay, Kohimarama and St Heliers. Some examples of flooding impacts and surface flooding are identified below:

St Heliers: Surface flooding in Auckland's St Heliers. (Source: One News Matthew Davison)

Stormwater outfall integrated with sculpted shotcrete control structure at the eastern end of St Heliers Beach (Source: Auckland Council)

Risk assessment

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

At a unit level, risk to coastal erosion and instability susceptibility is moderate to high for all key asset groups, consistent due to the reclaimed nature of this shoreline and exposure to localised shorter-period storm waves generated by strong onshore winds. For risk to coastal erosion and instability susceptibility, Auckland Council-owned land is at high-risk overall time frame, Auckland Council community facilities and transport infrastructure is at moderate risk in the short- and medium- term increasing to high risk in the long-term, and water infrastructure is at moderate risk over all time periods.

Risk from coastal inundation for Auckland Council-owned land is moderate in the short-term and high in the medium- and long-term. Auckland Council community facilities is at high risk from coastal inundation in the short-term and at very-high risk in the medium- and long-term. Transport and water infrastructure is at low risk in the short-term, moderate in the medium-term, and high in the long-term from coastal inundation.

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

Council-owned land			Council community facilities			Transport infrastructure			Water infrastructure		
Park and reserve land (44.6 ha) Buildings, wharves (32 No.)			Park amenity structures, carparks, accessways, buildings (1.8 ha)			AT roads (31.8 km) Bridges (223.9 m^2)			Water pipes (166.5 km)		
Short	Medium	Long	Short	Medium	Long	Short	Medium	Long	Short	Medium	Long
Coastal erosion and instability susceptibility											
High	High	High	Moderate	Moderate	High	Moderate	Moderate	High	Moderate	Moderate	Moderate
Coastal inundation											
Moderate	High	High	High	Very high	Very high	Low	Moderate	High	Low	Moderate	High
Key											
Very Low			**Low**			**Moderate**			**High**		**Very High**

What matters most

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

- In total, there are 17 Auckland Council-owned land parks and reserves in this unit including Selwyn Reserve - Mission Bay, Whenua Rangatira, Vellenoweth Green and Glover Park.

- This area includes 11 Auckland Council-owned buildings that serve both the community and visitors. Key Council-owned amenities include several public restrooms located at Selwyn Reserve in Misson Bay in St Heliers and in Kohimarama, along with the St Heliers Bay Croquet Club (Vellenoweth Green); and St Heliers Community Library.

- Underground and aboveground stormwater network assets servicing the local community.
- **Wastewater pump station:** Averill Avenue pump station; Sage Road pump station; St Heliers pump station.

- **Key walking tracks:** This unit contains five walking tracks in the unit which includes the Tāmaki Drive Coastal Path.
- **Key roads:** Tāmaki Drive and Cliff Road

- **Harbour access:** 3 x Kohimarama Beach boat ramps, 3 x St Helier Bay Beach Reserve boat ramps

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 over changing climate scenarios.

- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi, noting high level values and aspirations have been identified in Volume 2.
- Ongoing engagement with local iwi to understand the cultural landscape of the coast and ensure alignment with cultural values in coastal management will take place in the implementation of adaptation strategies.
- There are three identified cultural features in this unit: Melanesian Mission College – St. Andrews – Kainga, and Te Pane o Horoiwi, with the latter identified as both a Cultural Heritage and a site of significance to mana whenua.

- Unit 4 includes the communities of Mission Bay, Kohimarama, and St Heliers. These are coastal suburbs with residential areas and small village centres at the coast. The beaches along are highly valued by the local and wider community and include Mission Bay, Kohimarama and St Heliers beaches.
- Most of the social infrastructure is centred around Mission Bay and St Heliers. These areas host a variety of shops and services. These centres are within walking distance of the beach on the landward side of Tāmaki Drive adding to the popularity of the Mission Bay and St Heliers beach areas (Misson Bay the Promenade , n.d).
- Around the coast from Mission Bay is Kohimarama Beach also popular with the local and wider community for informal recreation including walking, picnicking and swimming. At the southern end of the beach, Kohimarama Yacht Club provides sailing classes, hosts regattas and can also be hired as a venue (Kohimarama Yacht Club, 2025). There is a small café, takeaway shop and general store located off Tāmaki Drive at Kohimarama Beach.
- The shared path continues through this unit. Key open space areas include Madills Farm Recreation Reserve, Vellenoweth Green and Glover Park. Both Madills Farm and Glover Park feature large green spaces, ideal for sports, family activities and casual recreation (Auckland Council, 2024s), Vellenoweth Green is home to the St Heliers Bay Artisan Craft & Gourmet Food Market Festival and the St Heliers Bowling and Croquet Club (My Guide Auckland , 2024).
- There are three educational facilitates located within Unit 4 which includes Kohimarama School, Saint Ignatius School, and A1 Student Arrowsmith School (Educaton Counts, 2024).
- The Tāmaki Drive Coastal Path is one of Auckland's most popular waterfront routes, stretching approximately 8 km from Auckland CBD to St Heliers Bay and is very popular for walking, running and cycling. The path is well-served by amenities such as restrooms, water fountains, and benches, making this a popular route for walkers, cyclists and joggers. The St Heliers to Mission Bay Path is a 5 km coastal walk which makes up a portion of the full Tāmaki Drive Coastal Path.
- In addition to this pathway, Unit 4 host has an efficient public transit system with regular bus services. The unit is serviced by several bus stops along Tāmaki Drive providing convenient access to nearby areas and the Auckland city centre. (Auckland Transport, 2024a).
- Unit 4 has ten heritage sites listed as category A and B heritage features under the Auckland Unitary Plan. These are as follows Garden Court Flat (B), Melanesian Mission R11_1706, including Norfolk pine tree (A), St Heliers Bay Library (B), Spooner Cottage (The Anchorage)

(former) (B), Mary Atkin Cottage (B), Headland pa site (Te Pane O Horoiwi) R11_94, R11_357, R11_95 and Māori settlement sites R11_355, R11_356, R11_1173, R11_2256 (B), Kohimarama Beach Changing Rooms (B), St Heliers Changing Rooms (B), Trevor Moss Davis Memorial Fountain (B), Drinking Fountain (B)

- Citizen Science is undertaken in this unit to monitor shorebird populations in and around ecologically significant areas (such as the nearby Tahuna Torea), noting the importance of supporting shorebird roosting sites in response to coastal hazards and climate change[10].

- Unit 4 encompasses minimal indigenous vegetation which is limited to one small area of pōhutukawa treeland adjacent to Kohimarama Yacht Club and a thin layer of coastal broadleaved forest located at the eastern cliffs (Auckland Council, 2024; Singers et al., 2017).
- A wide variety of coastal avifauna have been recorded along the entire unit, including variable oystercatcher, South Island pied oystercatchers, white-fronted tern, and royal spoonbill (*iNaturalist*, n.d.; Sullivan et al., 2009).
- Furthermore, the entirety of this unit (and the wider Hauraki Gulf) is mapped as an Area of Ecological Importance by the Department of Conservation (Department of Conservation, Accessed: 2024).

Community feedback

Who have we heard from?

Feedback was received via digital platforms Social Pinpoint and 'AK Have Your Say', along with community submissions from the individual submissions from residents in the area. Key themes in community feedback are discussed below.

Events located within, or neighbouring this unit, included an event at the Tagalad Reserve (former Mission Bay Bowls Club), St Heliers Church & Community Centre, a pop-up at Selwyn Reserve and drop-in sessions at St Heliers Library. Representatives from the Tāmaki Drive Protection Society and the Auckland East Community Network attended both the Tagalad Reserve (former Mission Bay Bowls Club), the St Heliers Church & Community Centre and the pop-up at Selwyn Reserve.

St Heliers Church & Community Centre – 12th November 2024

This event was facilitated with the support of the Tāmaki Drive Protection Society and the Auckland East Community Network and hosted at the St Heliers Church and Community Centre. A presentation was provided by Auckland Council followed by questions and discussion with those in attendance.

Key discussion topics included, but were not limited to:

- Climate change scenarios and associated modelling.
- Overtopping along Tāmaki Drive and the role of community networks in response.
- Advocacy for coastal protection measures in areas such as Ladies Bay.

[10] Shaun Lee. (2019, March). *Shorebirds of the Tāmaki Estuary: Reversing the decline of the shorebirds of the Tāmaki Estuary* (Report prepared for the Maungakiekie-Tāmaki & Ōrākei Local Boards). Retrieved from https://blog.shaunlee.co.nz/wp-content/uploads/2019/03/Shorebirds-of-the-Tamaki-Estuary-by-Shaun-Lee.pdf

- Catchment flooding due to limited stormwater drainage capacity, highlighting the need for improved infrastructure management.
- Sand loss along parts of the coastline resulting from storm events. This said, it was noted that participants expressed positive feedback about the recent re-sanding of the beach at Kohimarama, noting that it has helped reduce flooding during storm events and that much of the sand has remained in place.

Selwyn Reserve (Mission Bay) Pop-Up – 9th November 2024

This engagement event took place in Selwyn Reserve, Mission Bay, centrally located within the consultation area. Over 60 individuals were approached, including families and young groups, with around two-thirds being local residents or regular visitors. Representatives from the Tāmaki Drive Protection Society attended. Feedback included concerns about uneven and potentially hazardous cycleways between Mission Bay and the city, and requests for improved maintenance of public facilities such as toilets and showers in this high-use area.

What is happening?

- **2023 Storm events:** Slips on Tāmaki Drive, Kepa Road and Ngapipi Road, caused road closures that lasted for several weeks, fallen trees in Madhills Farm, some beaches became unsafe for swimming due to stormwater contamination and high bacteria levels, with "no swim" warnings in place for weeks.
- **Flooding:** Concerns about rising water levels in the area (i.e. around Selwyn Avenue), highlighting issues with existing infrastructure, particularly drainage pipes, that may be contributing to flooding risks.
- **Kohimarama:** Community members raised concerns about coastal erosion and low sand levels at the western end.
- Some community members expressed concerns about swimming safety (concern over water quality), while overflowing bins were also frequently noted as a recurring issue impacting the cleanliness of the area.

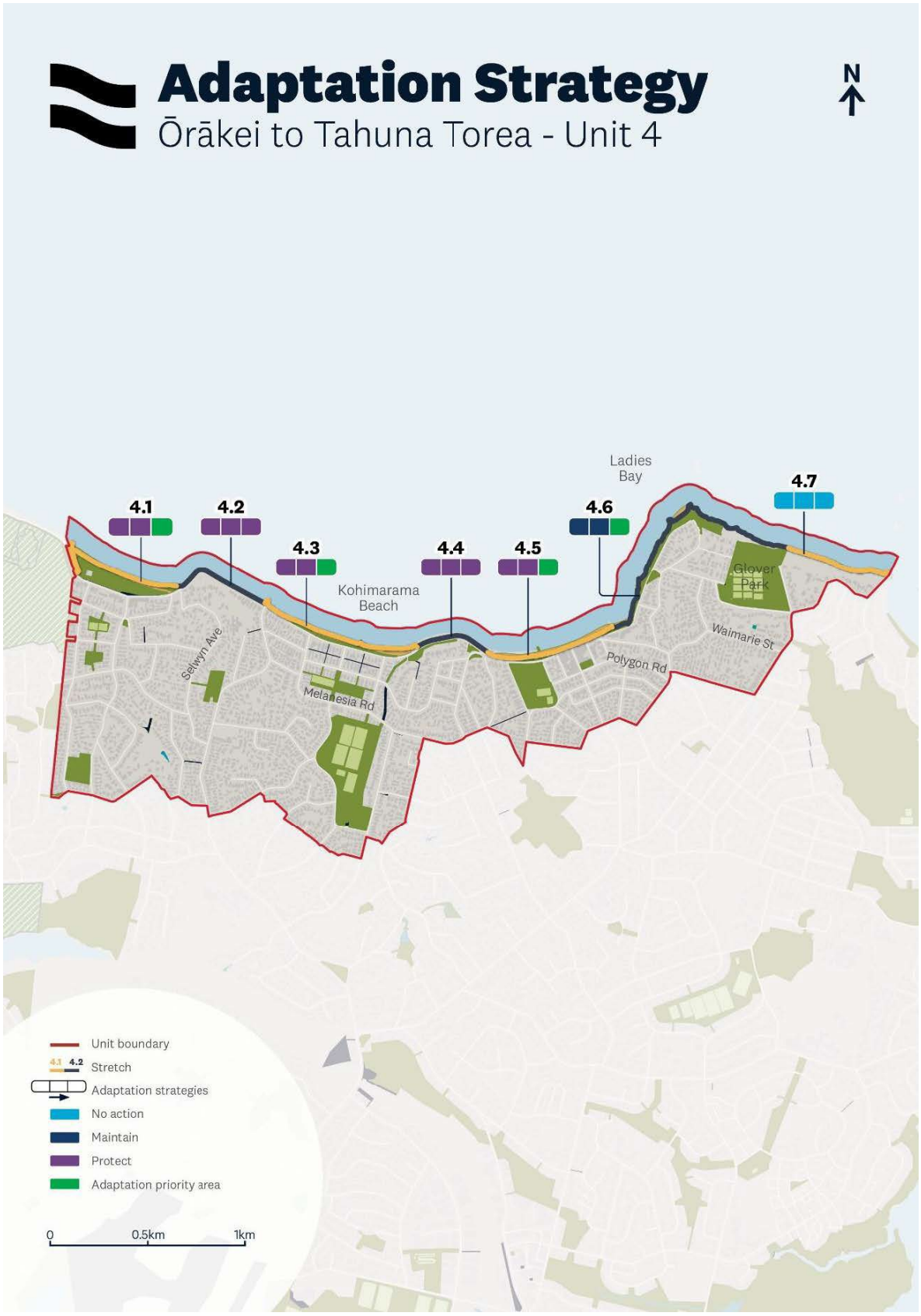
What matters most? Community values and uses

- Commentary that beaches and wildlife are taonga – treasured natural and cultural resources that must be protected and respected.
- Glover Park: Personal connections to this area of the coast, including enjoying activities such as paragliding is a reflection of the park's recreational value to locals.
- Dog walking along the beach was frequently mentioned as a valued activity, highlighting the area's role in supporting everyday recreation and wellbeing.
- Many community members highlighted their strong personal connections to nearby beaches as important spaces for relaxation and recreation (i.e. Kohimarama), noting that many people travel from outside the immediate area to visit these beaches, demonstrating their wider regional significance (as identified via engagement at Polyfest 2024 - Tāmaki Estuary Shoreline Adaptation Plan).
- Cycleways and coastal connections: Community members expressed appreciation for the coastal cycleway connecting St Heliers to Mission Bay (along Tāmaki Drive), highlighting it as a valued recreational and active transport route.
- Natural features: Trees, especially the pōhutakawa when they bloom around Christmas, are greatly appreciated for both their striking beauty and the essential shade they offer

What can we do about it? Community feedback and aspirations

- Strong support for effective stormwater management to support flood prevention; commentary that the stormwater systems in Kohimarama and Mission Bay require future-proofing through planned, budgeted upgrades and maintenance. Feedback noted that this should include improving outflows to the ocean to avoid undermining coastal protections.
- Ongoing maintenance and improvement in catchment management of overland flow paths.
- Traffic Safety in Kohimarama: Residents strongly recommend reducing the speed limit to 30 km/h through Kohimarama and adding a pedestrian crossing near the bathhouse or at the Neligan and Tāmaki Drive intersection.
- Advocacy to maintain clean and safe beaches for recreation, with a focus on water quality, and managing rubbish disposal.
- Consider establishing a lifesaving club in the area, given the high number of visitors and the need to enhance safety along the coast.
- Kohimarama: Recommended that the stormwater outlet be redirected further out into the bay to reduce sand loss and help preserve the beach.
- Kohimarama: Recommended to consider additional sand replenishment or improved sand management strategies to maintain protection across the entire beach and bay area.
- Benches along the walking paths are frequently in use, highlighting the need for more seating to better accommodate visitors.
- Advocacy for more parking around the coast in this unit, noting this parking availability is limited in peak times.
- Improving water quality and better managing pollution in waterways and public coastal areas.

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



4.1: Mission Bay

Stretch 4.1 commences at the western end of the bay, including the embayment to the east culminating at the end of the bay area, adjacent to Mahua Road end.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Adaptation priority** 

Explanation

Protect under the low and moderate climate scenarios reflects current management of the coastal edge and existing armouring and control structures, and active management of the replenished beach area**. Protect** provides for the continued management of the modified coastal edge and the exploration of options to manage risk from coastal hazards and associated catchment flooding. This may include hard engineering solutions alongside soft engineering or natured-based solutions to manage risk.

Adaptation priority under the high climate scenario is reflective of increasing coastal inundation and catchment flooding impacting the function of stormwater systems, groundwater and low-lying areas near the coast. Adaptation priority signals the need for further engagement and exploration of options to consider how risk is managed and how iwi, community and asset owners' values and outcomes are supported through adaptive planning options to ensure uses, structures, buildings and roads are more resilient to future hazards.

Implementation Notes

- **Collaboration:** Key assets and infrastructure are located within reserve areas which are exposed to coastal hazards and catchment flooding. The area is also traversed by key transport connections, wastewater and key stormwater infrastructure. Engagement with iwi, asset owners, third party organisations, communities will be required when implementing adaptation strategies across all climate scenarios.
- **Community:** Strong support for further stormwater management to support flood prevention. Feedback noted that this should include improving outflows to the ocean to avoid undermining coastal protections and maintain replenished beach areas.

4.2: Tāmaki Drive Pipimea Point (Mission Bay to Kohimarama)

Stretch 4.2 commences at the eastern end of Mission Bay, wrapping around the coast adjacent to Tāmaki Drive, culminating adjacent to a residential area. The stretch includes St Heliers to Mission Bay Path, which is a shared path popular with walkers, runners, and cyclists.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 

Explanation

Protect reflects the importance of the Tāmaki Drive roading connection and the uses located in proximity to the coastline. It reflects the armoured and modified nature of the coastline in response to erosion, noting strategies do not include inland land instability.

Impacts of coastal inundation are already experienced in relation to wave overtopping and will increase with sea-level rise over time. Wave barrier gates structures have been installed, as an operational response to mitigate overtopping at coastal access points (steps, ramps) along the Tāmaki Drive seawall.

Implementation Notes

- **Management:** Inundation risk in the moderate and high climate scenarios will result in further challenges to manage inundation and overtopping. Protect supports the continued exploration of management responses to support management of risk to uses and assets located within this coastal stretch. This will include the need for engagement and collaboration with iwi, asset owners and communities.

4.3: Kohimarama Beach

Stretch 4.3 commences at the western end of Kohimarama Beach, culminates at the eastern end of the Kohimarama Beach Reserve and includes Melanesia Reserve which is situated further back from the coast.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Adaptation priority** 

Explanation

Protect in the low to moderate scenario is reflective of the current armoured shoreline and the management of the beach area, with the replenished beach providing a sand buffer to the backstop seawall. Protect also supports continued management of flood hazards and the ability to manage risk and support discharge of water to the coast.

Protect under the moderate change scenario reflects the ongoing maintenance of risk in relation to the coastal edge, noting that inundation hazard from both catchment and coast will increase with sea-level rise which may impact on the amenity of coastal areas and the need to consider further interventions to manage increased coastal flooding impacts and interface with catchment flooding and stormwater discharge to the coast.

Adaptation priority in the high change scenario signals the need for further engagement and exploration of options to consider how risk is managed and how iwi, community and asset owners' values and outcomes are supported through adaptive planning options to ensure uses, structures, buildings and roads are more resilient to future hazards.

Implementation Notes

- **Collaboration:** Key assets and infrastructure are located within reserve areas which are exposed to coastal hazards and catchment flooding. The area is also traversed by key transport connections, wastewater and key stormwater infrastructure. Engagement with iwi, asset owners, third party organisations, and communities will be required when implementing adaptation strategies across all climate scenarios.
- **Management:** Tāmaki Drive is exposed in this stretch. This strategy does not preclude localised interventions as required for roading connections. Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of these assets.

4.4: Tāmaki Drive Gower Point

Stretch 4.4 commences at the eastern boundary of Kohimarama. It extends around the coast adjacent to Tāmaki Drive, before culminating at the eastern end of St Heliers Bay. It includes the St Heliers to Mission Bay Path, which is a shared path popular with walkers, runners, and cyclists.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Protect** 
Explanation		
Protect reflects the importance of the Tāmaki Drive roading connection and the uses located in proximity to the coastline. It also reflects the armoured and modified nature of the coastline in response to erosion, noting strategies do not include inland land instability. The strategy can include both hard protection and the opportunity for soft engineering interventions as well as the exploration of nature-based solutions.		
Implementation Notes		
• **Management:** Inundation risk in the moderate and high climate scenarios will result in further challenges for the management of inundation and overtopping. Protect supports the continued exploration of management responses to support management of risk to uses and assets located within this coastal stretch. This will include the need for engagement and collaboration with iwi, asset owners and communities.		

4.5: St Heliers Beach

Stretch 4.5 commences at the western end of St Heliers Bay, encompassing the beach extent before ending at the eastern end of the beach.

Scenarios for change		
Low	**Moderate**	**High**
Protect 	**Protect** 	**Adaptation priority** 
Explanation		
Protect for St Heliers Beach provides for the continued maintenance of the hard protection structures and active management of the beach and control structures, as well as the management of stormwater/stream outfalls to the coast. In the high change scenario, increasing inundation risk combined with existing catchment flooding exposure presents a transition to **adaptation priority** to provide for further engagement and identification of options to manage coastal and catchment hazard flooding risk. Adaptation priority indicates a need to be responsive to iwi, communities and asset owners' values and aspirations, including how reserve and coastal areas are managed and assets located to manage risk.		
Implementation Notes		
• **Collaboration:** Key assets and infrastructure are located within reserve areas which are exposed to coastal hazards and catchment flooding. The area is also traversed by key transport connections, wastewater and key stormwater infrastructure. Engagement with iwi, asset owners, third party organisations, communities will be required when implementing adaptation strategies across all climate scenarios.		

4.6: Cliff Road to Glover Park

This stretch commences at the eastern end of St Heliers Beach, and extends east around the cliffs to Glover Park, including Ladies Bay Beach and the headland lookout and associated carparking area.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Adaptation priority** 

Explanation

Maintain reflects the need for ongoing management of risk to Council-owned land and assets, in response to coastal instability and erosion. Documented management of cliff instability and landslides resulted in localised protection works and management of underground services including the management of risk to coastal stair access to Ladies Bay (impacted by 2023 storm events). **Maintain** provides for ongoing management of assets with a preference for the management of risk through resilient design and relocation of assets. It also signals soft engineering being preferred (where possible) for the management of risk reflective of the coastal character and amenity values of this coastal stretch. At Glover Park, predicted impact is limited to cliff top path, with the sports fields and associated Eastern AFC facilities currently set an adequate distance landward to avoid hazards. **Maintain** signals there may need to be localised realignment of the path network landward to avoid future erosion hazards that can be accommodated without impacting on existing users of the wider reserve area and sports fields.

Adaptation priority in the high change scenario responds to the ongoing erosional risks to this cliff coast and the potential need to consider the future realignment of roading connections and coastal reserve areas. The transition to adaptation priority proactively indicates a need for further community engagement and exploration of adaptive options for assets and land uses with consideration of how risk to assets and landholdings can be addressed in collaboration with asset owners, local communities and iwi.

Implementation Notes

- **Ecology:** Coastal broadleaved forest is located at the eastern cliff area.
- **Historical:** Part of the Headland Pā site (Te Pane O Horoiwi) and Māori settlement sites are included in the stretch, which are heritage features under the Auckland Unitary Plan (AUP:OP).
- **Maintain** does not preclude the use of engineered solutions, as necessary to manage risk to linear infrastructure including road access and piped networks, noting that management through alignment and design, including reduced carriage width and landward realignment could also be considered as options to respond to ongoing erosion and instability hazards.

4.7: Waitaka Road to West Tāmaki Head

Commencing to the east of Waitara Road end including the coast east to Tāmaki Head and the end of the unit, north of Karaka Bay.

Scenarios for change		
Low	**Moderate**	**High**
No action	**No action**	**No action**
Explanation		
No Action is identified to reflect the limited Auckland Council land and assets located within this coastal stretch.		
Implementation Notes		
• **Management:** Riddell Road and piped water networks are within the predicted ASCIE extend in this stretch. This strategy does not preclude the continued management of risk to roading and piped infrastructure as required.		

Unit 5
Ōrākei to Tahuna Torea

N

Karaka Bay

Karaka Bay is a highly important cultural landscape, identified as being a site of one of the signings of the Treaty of Waitangi, marking the area of high significance to local iwi.

Churchill Park

Riddell Rd

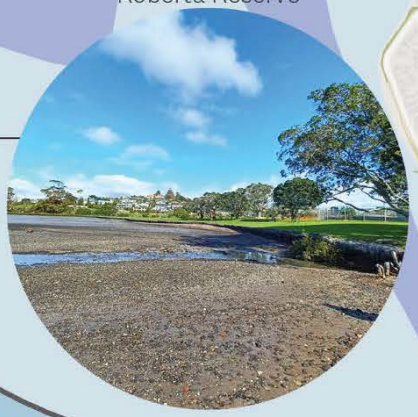
Andersons Beach Reserve

Glendowie Park

Whitehaven Rd

Glendowie Rd

Roberta Reserve



Vista Cres

Glendowie Park to Tahuna Torea Path

West Tāmaki Rd

Tahuna Torea

Wai o Taiki Bay

Tahuna Torea contains remnant stone built fish traps, which have been identified as remnants of a culturally significant landscape, noting that these fish traps would have been important tools to local iwi who variously occupied the wider landscape.

Point England Park

Unit boundary

5.1 5.2 Stretch

Walking tracks

Informal recreation park

Auckland Council owned land

0 500m 1km

Unit 5: Karaka Bay to Tahuna Torea

Unit 5 commences at the northern end of Karaka Bay at the entrance to Tāmaki River Inlet and extends to the southwestern border of Tahuna Torea Nature Reserve. It includes the coastal portion of the Glendowie area. It also has swimming beaches, coastal access, walking tracks, parks and reserves, culturally significant areas, and community facilities / community buildings. Karaka Bay is only accessible by foot.

The Tahuna Torea Nature Reserve is a Significant Ecological (SEA) consisting of a 1 km sandspit that extends across the estuary channel. The reserve is rich in Māori history as well as native birds and vegetation. The reserve can be explored via multiple tracks, including the upper and lower bush tracks and Lagoon Walk.

What is happening? Coastal context and hazardscape

Unit 5 extends along the outer reaches of the western shoreline at the mouth of the Tāmaki River from West Tāmaki Point, the headland to the north of Karaka Bay, to Tahaki Road on the southern side of Tahuna Torea Nature Reserve.

Coastal erosion and instability

This unit has a diverse coastal geomorphology including the steep bounding cliffs of West Tāmaki Point and Glendowie, the embayed beach of Karaka and the sandspit that forms part of Tahuna Torea Nature Reserve. As a result, the frontage is significantly exposed to coastal erosion and instability as identified in the figure below, sections of the coast within the inner Tāmaki estuary are susceptible to erosion susceptibility across all climate scenarios.

Figure 18 Coastal Hazardscape for Unit 5, reflecting coastal erosion susceptibility for 2050, 2080 and 2130 considering RCP4.5 and RCP8.5 emission scenarios.

South of Karaka Bay, heading towards Tahuna Torea, the cliffed coastline of Glendowie continues. The cliffs are predominantly fronted by exposed shore platforms, with intermittent beaches to the east of Karaka Bay and further south at Andersons Bay, adjacent to Glendowie Sailing Club. The cliffs are prone to coastal erosion and instability and numerous Auckland Council and Auckland Transport projects have addressed this in the past. A series of sea caves in the cliffs are present south of Glendowie Boating Club which prompted some reconfiguration of cliff-top parking on Glendowie Road and monitoring.

Tāhuna Tōrea is the largest, most accessible and outstanding example of a cuspate foreland formed from two sand/shell spits in the Auckland region. A low triangular shell and sandspit encloses salt marsh and ponds at the western end, with a narrow shell spit extending a further 1 km out across Tāmaki Estuary. The distal shell spit shifts in response to wind, wave and tidal action

There are multiple existing coastal protection structures along this section of coastline. Some of the key features are as follows:

Gabion mattress backstop protection at Karaka Bay.

Karaka Bay (Source: Auckland Council)

Andersons Bay mass concrete retaining wall to protect the toe of the cliff from ongoing toe erosion and retain the cliff behind, with legacy masonry rock wall visible in the background.

Andersons Bay seawall (Source: Auckland Council)

Roberta Reserve gabion basket seawall armouring reclaimed reserve land. The structure is low lying and is overtopped during present-day, king tide events.

Roberta Reserve (Source: Auckland Council)

Timber groynes and rock armouring along southern shoreline of Tahuna Torea sandspit.

Tahuna Torea (Source: Jo Morriss)

Coastal inundation

Coastal inundation extents are limited within the northern areas of Unit 5 with areas impacted under the moderate and high climate scenario limited to Karaka Bay where low-lying land is located in proximity to the coast. Refer to Figure 17 below.

Further south, the low-lying land between Glendowie Road and Tahuna Torea is known as Roberta Reserve. Noting its low elevation, the land is exposed to coastal inundation and the edge is currently protected by gabion baskets, which are overtopped during spring and king tide events. Coastal inundation under the moderate and high climate scenarios is likely to continue to impact areas resulting in a greater spatial extent and increased depth of inundation.

Figure 19: coastal hazardscape for unit 5, showing one per cent coastal storm inundation with a 0.5 metre and 2 meters of sea level rise.

Flooding

Unit 5 is located within the Glendowie stormwater catchment. The Glendowie catchment is 4.3 km^2 and is primarily drained by the Glendowie and Tāhuna Tōrea streams. Areas identified as subject to 1% AEP flood plains are primarily associated with Glendowie Park (also a closed landfill area) and impacting low-lying areas near the stream channel and coast at Roberta Reserve. These areas can be identified in Figure 18 below.

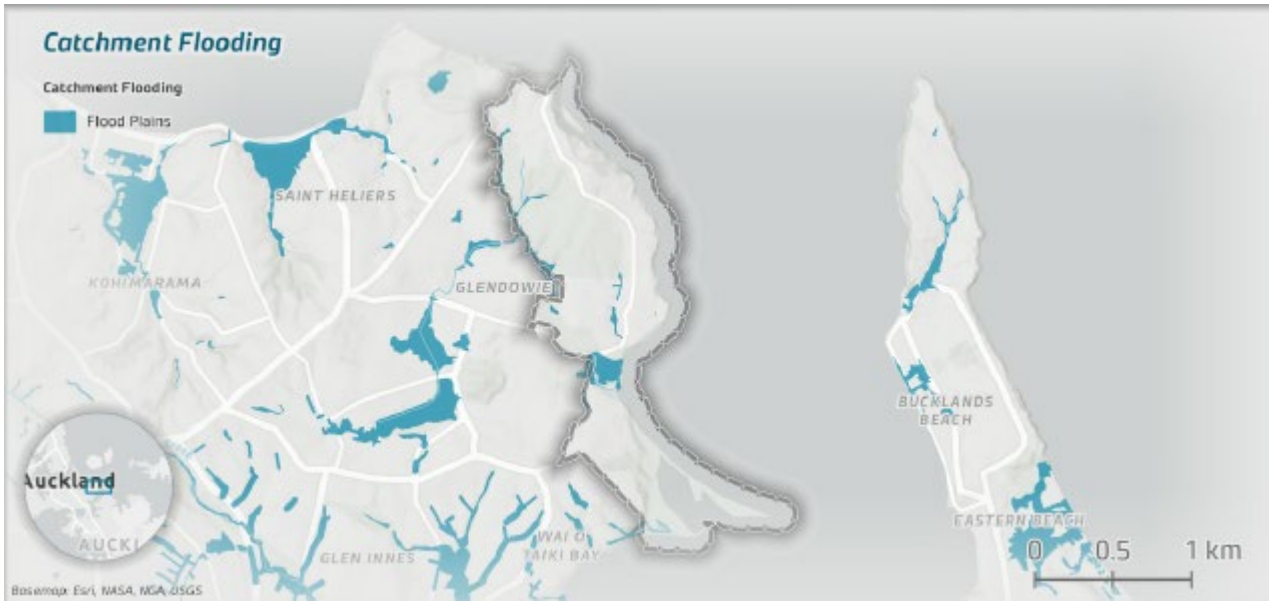


Figure 20: Floodplain areas for Unit 5 showing the 1% AEP floodplain

Risk assessment

The risk table below represents key groups of assets (e.g. Auckland Council-owned land, buildings, road extents) which are supported by the regionally consistent data set. The risk

assessment provides a regionally consistent method for comparing risk to Auckland Council-owned land and assets allowing for identification of areas with highest risk for potential future assessment (e.g. Series 2).

At the unit level, risk to Auckland Council-owned land from coastal erosion susceptibility and coastal inundation is high in the short term (e.g., Wai-o-Taiki Nature Reserve, Karaka Bay, Andersons Beach Reserve and Roberta Reserve). The closed landfill area at Glendowie Park is not included in this risk assessment.

Risk from coastal erosion susceptibility to Council community facilities (e.g. park amenity structures, carparks), transport infrastructure (i.e. Glendowie Road) and water infrastructure is generally moderate in the short term with no increase to risk in the medium or long term. This is reflective of the low-lying topography at the mouth of the inlet and the elevated residential areas of Glendowie and Wai O Taiki Bay.

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

Council-owned land			**Council Community facilities**			**Transport infrastructure**			**Water infrastructure**		
Park and reserve land, 86.9ha			Park amenity structures, carparks, 0.4ha Buildings, wharves (7 No.)			Bridges, 54.4m^2 AT roads 8.2km			Water pipes, 46.8km		
Short	Medium	Long	Short	Short	Medium	Long	Short	Short	Medium	Long	Short
Coastal erosion and susceptibility											
High	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Coastal inundation											
High	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Moderate
Key											
None			**Low**			**Moderate**			**High**		**Very High**

What matters most

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

- Auckland Council-owned land parcels in this unit include Churchill Park, Karaka Bay, Riddell Road Reserve beach access, Andersons Bay Reserve, Glendowie Park, Roberta Reserve and Tahuna Torea Nature Reserve.

- This area includes four Auckland Council-owned buildings that serve both the community and visitors. Key Council-owned amenities include several public restrooms and a playground in Roberta Reserve.

- **Closed landfill:** Glendowie Park.

- Underground and aboveground stormwater network assets servicing the local community.
- **Wastewater pump station:** Karaka Bay, Riddell Road, PS 14 Glendowie.

- **Key roads:** Glendowie Road, Riddell Road.
- **Key walking tracks:** Karaka Bay path Peacock Street; Riddell Road beach access, coastal walking connection to Glendowie Road, Roberta Reserve coastal walkway, Glendowie Park to Tāhuna Tōrea Path, Bush Track, Lagoon Track

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 over changing climate scenarios.

- Specific cultural values and outcomes for this unit will be developed through ongoing involvement with local iwi, noting high level values and aspirations have been identified in Volume 2.
- Ongoing engagement with local iwi to understand the cultural landscape of the coast and ensure alignment with cultural values in coastal management will take place in the implementation of adaptation strategies.
- There are numerous cultural features within this unit; three sites which are both identified as Cultural Heritage features and sites and places of significance to mana whenua. These are: Te Pane Horoiwi in Stretch 5.1, Karaka Bay in Stretch 5.1 & 5.2, which is the site of several battles and the signing of Te Tiriti o Waitangi, and Te Pupu o Kawau (Tahuna Torea) in Stretch 5.5.

- Unit 5 comprises of a mix of residential zones (mostly Mixed Housing Suburban) and open space (Auckland Council, 2016). Churchill Park is the largest park in the area and Riddell Road provides access for many of the communities within the unit.
- Social infrastructure within Unit 1 includes the boat ramp at Karaka Bay, the public playground at Roberta Reserve, and the bowling and tennis clubs in Churchill Park.
- There are several walking tracks within Tahuna Torea Reserve (Stretch 1.6), including the Bush Track and the Lagoon Track (Auckland Council, 2024).
- Churchill Park School is the only school located in the unit.
- Karaka Bay Beach and Andersons Beach Reserve are key attractors and areas used by the community. Karaka Bay is a secluded beach which is also a site of one of the Te Tiriti o Waitangi signings (Auckland Council, 2024).
- There are three features within Unit 1 that are listed as Category A or B heritage features within the AUP(OP) (Auckland Council, 2016): Tahuna Torea Sandspit site R11_220, R11_827, R11_830, including fish traps (Category B), Residence (Category B), Kulka House (Category B).
- Tahuna Torea is considered an Outstanding Natural Feature under the AUP(OP) (Auckland Council, 2016).
- Glendowie Boating Club (GBC) is a highly valued, volunteer-run, not-for-profit club, active since 1949, focused on teaching sailing and boating skills to both youth and adults. GBC promotes marine safety, environmental awareness, and provides a community hub for boating activities. The club is accessed from Glendowie Road with limited parking availability.

Unit 5 consists of threatened and/or vulnerable terrestrial and wetland features. This includes:

- The coastal broadleaved forest bordering the cliffs.
- Small areas of seagrass at Karaka Bay.
- The Tahuna Torea Nature Reserve, which is a biodiversity focus area. It has a mosaic of ecosystems made up of saltmarshes, shell barrier beaches, mangrove scrubs, regenerating broadleaved scrubs, and raupō reedlands. It is also a key shorebird roost location for a number of Threatened and At-Risk species, including the Caspian tern, South Island pied oystercatchers, banded dotterel, New Zealand dotterel, and several gull.
- Acknowledging the unique coastal ecosystems within this unit, opportunities for nature-based solutions may include: Wetland restoration (around Tahuna Torea) and restoration and protection of vulnerable and uncommon coastal ecosystems (with a focus on the Tahuna Torea salt marsh and seagrass at Karaka Bay).

Figure 21: Tahuna Torea and its matrix of saline, dune, freshwater and regenerating vegetation. Source: Andrew Macdonald, Biospatial Ltd 2017.

Community feedback

Who have we heard from?

Feedback was received via digital platforms Social Pinpoint and 'AK Have Your Say', along with community submissions from the Tāmaki Estuary Environmental Forum and Glendowie residents. Key themes in community feedback are discussed below.

Events located within, or neighbouring this unit, included a pop-up at Eastern Market, an event at the Tagalad Reserve (former Mission Bay Bowls Club), a pop-up at Selwyn Reserve and drop - in sessions at St Heliers Library. Representatives from the Tāmaki Drive Protection Society and the Auckland East Community Network attended the Tagalad Reserve (former Mission Bay Bowls Club) and the St Heliers Church Presentation (captured in Volume 2 and Unit 4). A community submission was also received from the Tāmaki Estuary Environmental Forum which spoke to key values and aspirations for Tahuna Torea. While individual submissions and feedback was received in relation to management options for Karaka Bay.

Auckland Eastern Market Pop-Up – Sunday, 17 November 2024

A pop-up stall was set up at Auckland Eastern Market to promote the Ōrākei to Tahuna Torea SAP consultation. Key areas of interest included Ōrākei Basin, Mission Bay, St Heliers, Onehunga Lagoon, and Tāmaki Estuary. Common concerns focused on stormwater and wastewater systems, particularly blockages caused by sand and vegetation in East Auckland drains. Attendees also voiced strong concerns about new developments on green spaces and flood-prone coastal areas, citing negative impacts on stormwater management.

What is happening?

Environmental protection, coastal erosion, historical and cultural value, wildlife conservation, and preserving community access and enjoyment are central to local concerns and experiences. Key points included, but are not limited to:

- Erosion and pollution: Perception that increased cliff erosion is contributing sediment to the marine environment (it is noted that coastal erosion is a natural process and erosion is a key source of sediment for adjacent beaches signalling a need for further engagement and understanding of coastal processes).
- Littering and presence of debris on beaches around Roberta Road, and along the Glendowie shoreline was also highlighted as a concern.
- Risk to/ loss of shorebird roosting habitats and seagrass: Concern that rising sea levels, erosion and poor water quality (high turbidity) are destroying seagrass habitats and leading to the loss of high-tide bird roosting sites along this unit (particularly at Tahuna Torea, impacting key shorebird populations).
- Roading collapses impacting coastal connections and networks (Roberta Road).

What matters most? Community values and uses

- Cultural/ historical landscapes: Karaka Bay was highlighted by local communities as a highly significant cultural and historical landscape, with an awareness that this this site marks the historic signing of the Treaty of Waitangi by Auckland iwi.
- Karaka Bay is highly valued by locals and visitors alike for swimming, grassy recreational spaces, opportunities for fishing and shellfish gathering, along with its unique natural beauty and lack of vehicle access, which helps preserve its tranquil character
- Green spaces, recreation and leisure: Commentary that the coastline supports a wide range of recreational activities including dog walking, playground use, café visits, bird watching, kayaking, paddle boarding, sailing, low-tide walks, and enjoying scenic views and walking paths.
- Feedback highlighted Glendowie Boating Club as a highly valuable community facility. Locals commented on regularly using the coast and club facilities for family outings, boat storage, and socialising, emphasising strong community ties to the area and its facilities.
- Cycleways: Shared coastal paths offer a safe and enjoyable alternative to road cycling.
- Feedback that parts of this unit (Tahuna Torea) supports one of the most important summer shorebird roosts, now threatened by climate change and sea-level rise.
- Natural Sanctuary: Tahuna Torea highly valued as a peaceful bird sanctuary where families and nature lovers can observe native wildlife in a tranquil setting.

What can we do about it? Community feedback and aspirations

- The need for Karaka Bay to be protected, well-maintained, and kept clean for both public enjoyment and local residents (calls for regular, budgeted asset renewal and systematic maintenance, consistent with those applied in Kohimarama, Mission Bay, and St Heliers), to ensure equity and long-term care of this valued coastal area.
- Protecting and preserving the integrity of shell banks, along this unit (i.e. around Tahuna Torea) which are important habitats for shorebirds, with commentary that a range of shorebirds are known to roost and migrate to and from unique coastal ecosystems within this unit.
- Foreshore and beach protection at Karaka Bay: Calls for the renewal and replacement of existing coastal protection measures (gabions and reno mattresses) to support the ongoing protection of the bay.
- Karaka Bay: Calls for improvements to the car park (Peacock Street) and accessways/ paths to the beach, with a focus on repairing potholes, clearing drainage, replacing handrails on walkways, maintaining retaining structures, managing vegetation obstructing accessways/ lighting, protecting pōhutukawa trees.
- Accessibility Issues: Locals expressed a desire for a safe, walkable route from Glendowie Yacht Club to St Heliers, as the current path over rocks is inaccessible for many.
- Weed control: Invasive weeds are overtaking native vegetation, especially along the beach access path; a council-led eradication plan is needed.
- Conservation priorities: Calls to conserve natural areas such as Tahuna Torea and to protect local beaches and reserves from further degradation. Advocacy for nature-based solutions and natural approaches to coastal management.

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

5.1: Karaka Bay

Stretch 5.1 begins at the entrance of Tāmaki River Inlet at the northern end of Karaka Bay and continues down the length of Karaka Bay, culminating south of the small point at the southern end of the bay at the end of the reserve landholding. The stretch encompasses a small length of coast backed by a residential area.

Karaka Bay is a secluded shell and sand beach. The reserve and private properties located along the backshore of the beach can only be accessed on land via a steep zig-zag pedestrian path from Peacock Street. The reserve edge is protected by a partially buried backstop gabion structure with further gabion structures present to the south of the bay. A wastewater pump station is located within the southern section of the reserve.

Karaka Bay is a culturally significant area to mana whenua as it is the location of a signing of Te Tiriti O Waitangi, and it is also a Māori Heritage area.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Adaptation priority** 	**Adaptation priority** 

Explanation

This stretch is identified as being susceptible to coastal erosion and instability with landslides located on cliffed coastal areas to the north and south of the embayment. A gabion mattress structure provides backstop protection to the reserve edge from erosional processes along the main beach (including wastewater connections traversing this area). **Maintain** provides for the ongoing maintenance of this structure and the management of risk to activities within the reserve through resilient design and location of those assets. Coastal inundation is identified as temporarily impacting low-lying areas of the reserve in a 1% AEP event, including the wastewater pump station facility. Coastal protection structures to the south of this stretch provide limited benefit to the minimal Council assets located nearby,

Residents of the bay have expressed ongoing interest and input to the management of coastal hazard risk and adaptation planning considerations. **Adaptation priority** in response to the moderate climate scenario reflects the need to undertake further engagement with iwi, communities, asset owners and other parties (such as third party asset owners) to determine the objectives and options available to respond to changing coastal hazard risk.

Implementation Notes

- **Cultural:** Part of the area is of cultural significance to mana whenua so specific engagement is required determine the most appropriate management strategy for this area. Karaka Bay is the site of several battles, the signing of Te Tiriti o Waitangi and is a Site of Significance in the Auckland Unitary Plan. In 2012 it was reported that Ngāti Pāoa signed the Tāmaki Makaurau Redress Collective Deed at Karaka Bay given the significance of the area. Engagement with mana whenua will be required to implement adaption strategies, including actions or options associated with the monument and wider area of cultural significance.
- **Ecology:** There are small areas of seagrass at Karaka Bay. The area is also a roosting habitat for a variety of shorebirds, such as for the South Island pied oystercatchers and Caspian tern. Understanding and managing any potential impacts of adaptation strategies on ecological values will be required in implementation.
- **Existing structures:** maintain provides for the further consideration of management and maintenance responses related to the coastal protection structures located within the southern section of this coastal stretch.

5.2: Karaka Bay to Clouston Street

Stretch 5.2 begins south of Karaka Bay Reserve landholding, continues south around the cliff coast towards Tāmaki River Inlet, ending adjacent to Clouston Street where the Anderson Beach reserve commences. It includes undeveloped sections of road reserve with limited public access to this cliffed coast, adjoined by private residential land use along Riddell Road. It also includes the Riddell Road beach access and wastewater pump station.

Scenarios for change		
Low	**Moderate**	**High**
No action 	**No action** 	**No action** 
Explanation		
The stretch is exposed to coastal erosion susceptibility under the low climate change scenario. **No action** refers as most of this stretch is private land and undeveloped road reserve with limited to no Council assets.		
Implementation Notes		
• **No action** does not preclude the continued management of risk to the single wastewater pump station and beach access at Riddell Road, in response to coastal erosion or instability. Options to maintain beach access from Riddell Road can be considered on an as-needed basis subject to monitoring of coastal hazard susceptibility and options to maintain safe access. • **Cultural:** The foreshore area south of Karaka Bay, is of significance to mana whenua. Engagement with mana whenua is required to support implementation of strategies.		

5.3: Andersons Beach Reserve

Stretch 5.3 commences at the northern end of Andersons Beach Reserve south of the Clouston Road end and continues into Tāmaki River Inlet around the low cliff coastline adjacent to Glendowie Road, culminating at the northern border of Roberta Reserve. A coastal path is located south of Clouston Road which provides a connection to Glendowie road adjacent to the boating club.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Adaptation priority** 	**Adaptation priority** 
Explanation		
Coastal areas within this stretch are identified as susceptible to coastal erosion and instability with coastal slips occurring along sections of this coast in the past. **Maintain** under the low change scenario supports the ongoing management of risk to coastal walking and roading connections, supporting a range of interventions including realignment and protection measures. **Maintain** recognises the high value of Glendowie Road to the community (for residential properties and access to Glendowie Boating Club), with a preference for the management of risk through resilient design and landward location of assets. In the high change scenario, the road is projected to be increasingly susceptible to erosion and instability. The transition to **adaptation priority** proactively indicates a need for further community engagement and exploration		

Scenarios for change		
Low	**Moderate**	**High**
of options for assets and land uses within this stretch, with consideration of how risk to assets and landholdings can be addressed in collaboration with asset owners, local communities, local residents and iwi.		
Implementation Notes		
• **Maintain:** As Glendowie Road is exposed in this stretch, maintain provides for localised interventions as required for roading connections. Auckland Transport, the asset manager, will be engaged to understand how adaptation strategies may impact on operation of these assets. • **Ecology:** The vegetated coastal cliffs are recognised as SEA Terrestrial, and the coastal marine area south of Glendowie headland is part of a wider SEA Marine that extends to Tahuna Torea.		

5.4: Roberta Reserve

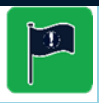
Stretch 5.5 begins at the northern border of Roberta Reserve and continues a short distance along the embayment to encompass the wide open grass open space of Roberta Reserve bordered by Glendowie Stream.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Adaptation priority** 	**Adaptation priority** 
Explanation		
Coastal inundation is mapped as impacting the coastal walkway and reserve areas over all climate scenarios with existing protection structures located along coastal edge providing protection from erosional processes. **Maintain** is appropriate to manage access to the walkway through maintenance of existing defences. In the moderate to high change scenarios, inundation will expose toilets and the playground as well as much of Roberta Reserve. Noting there are multiple assets exposed to both erosion and inundation, **adaptation priority** is identified to signal a need for engagement with iwi and park users to identify options for the management of uses and assets in response to increasing flooding hazards.		
Implementation Notes		
• **Ecology:** The coastal marine area within the embayment is part of a wider SEA Marine that extends to Tahuna Torea. Engagement with the Council Ecology Team may be needed to understand and manage any potential impacts of adaptation strategies on ecological values. • **Closed landfill:** Glendowie Park closed landfill is located within this stretch. This is to be managed under the Closed Landfill Asset Management Plan.		

5.5: Tahuna Torea

Stretch 5.5 begins inland where Glendowie Stream emerges in Roberta Reserve and extends southeast around Tahuna Torea sandspit at the western entrance to Tāmaki Inlet, culminating at the Ōrākei local board area boundary east of Tahaki Road.

The Tahuna Torea Nature Reserve encompasses 25 ha of unique wildlife sited on a long spit extending out into the Tāmaki Estuary, along with popular walking tracks and bird-watching areas. The area is an Outstanding Natural Feature and an area of High Natural Character.

Scenarios for change		
Low	**Moderate**	**High**
Maintain 	**Maintain** 	**Adaptation priority** 

Explanation

Current erosional processes are impacting the coastal edge within this stetch. The southern shoreline of the reserve has been modified with existing groynes (7) and a section of rock revetment that provides protection to walking tracks and the earth dam that impounds the southernmost freshwater pond for a wildlife refuge. **Maintain** recognises the high value and importance of the walkway network connections to and through Tahuna Torea Nature Reserve. Maintain supports the continued maintenance of protection structures (current coastal asset renewal project, initiating 2025) and reflects the past modification of areas within this coastal stretch.

Adaptation priority in the high change scenario is identified due to increasing inundation risk to the Tahuna Torea reserve areas. While there are limited physical assets, the community feedback and local board views have identified the high importance of reserve areas for ecology, amenity and community wellbeing associated with the access within reserve areas and the habitats and species reserve areas and coastal environments support.

Implementation Notes

- **Walking connections:** Maintain supports the management of risk to these connections through design and alignment, the use of nature-based solutions (where possible) is preferred.
- **Cultural:** Te Pupu o Kawau - Tahuna Torea Nature Reserve is classified as a site of significance to mana whenua and a cultural heritage site; it has not been considered in the decision-making framework and specific engagement with mana whenua will be needed to determine a management strategy for this area.
- **Ecology:** The site is identified as a Biodiversity Focus Area/Significant Ecological Area. The stretch is a roosting habitat for a variety of shorebirds. Ongoing consideration of ecological values and understanding/ managing the impact of any potential impacts of adaptation strategies on ecological values will be required, noting opportunities for the restoration and protection of vulnerable ecosystems like salt marsh in this stretch.
- **Community:** Tahuna Torea and the importance in safeguarding vulnerable shorebird roosting habitats was a common theme in community feedback, with a need to monitor the impact of sea-level rise and provide spaces for natural ecosystems to adapt.
- **Monitoring:** Ongoing monitoring of the impact of coastal processes on this outstanding natural feature will inform the review of adaptation strategies.

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