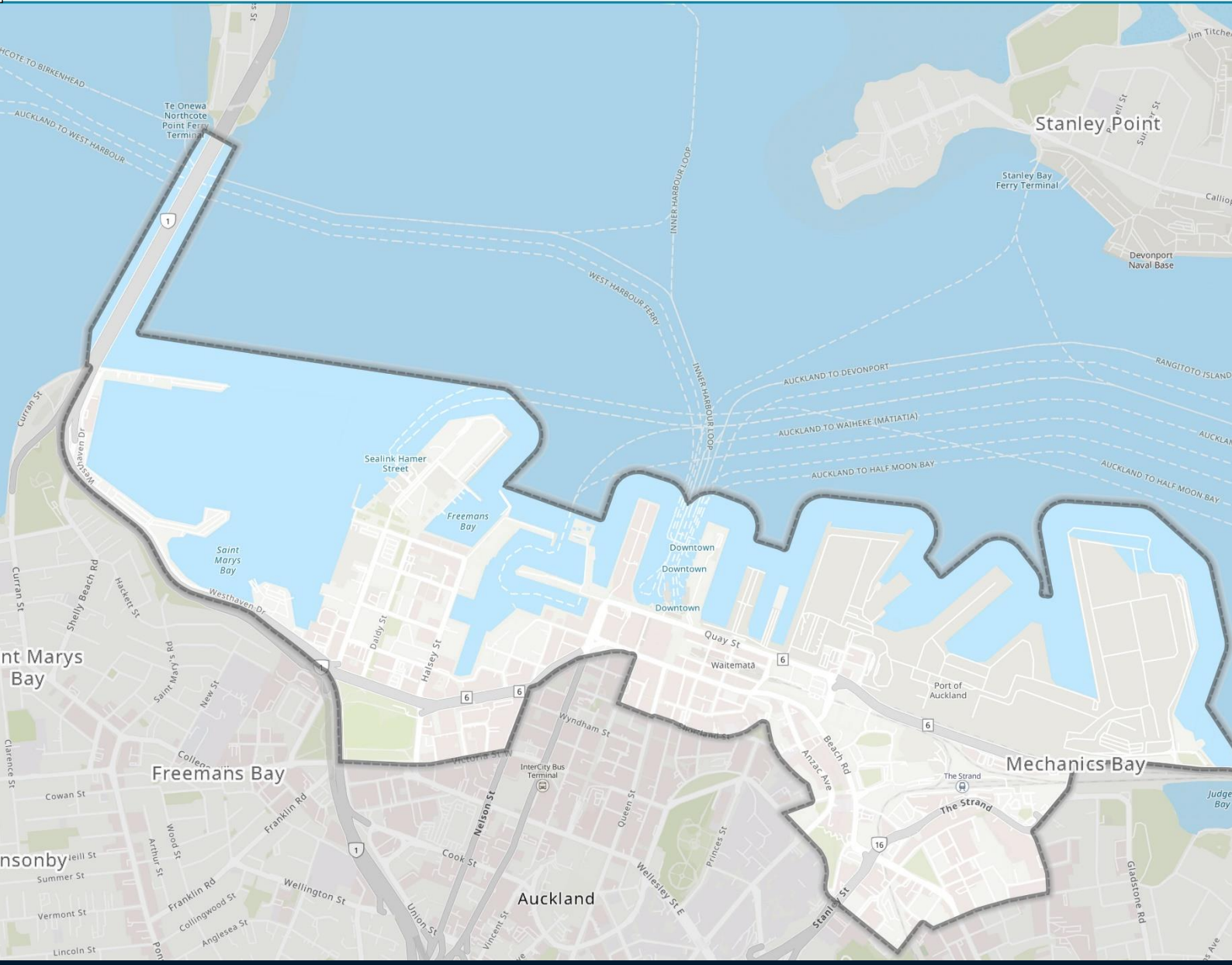

DRAFT for Engagement

Draft Shoreline Adaptation Strategies: Auckland Central

2024

Shoreline Adaptation Plan

October 2024 DRAFT

aucklandcouncil.govt.nz

Draft Shoreline Adaptation Strategies: Auckland Central

October 2024

Auckland Council

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Recommended citation:

Auckland Council (2024). DRAFT Shoreline Adaptation Strategies: Auckland Central

Front Cover

Shoreline Adaptations Plan area overview map for Auckland Central. Prepared for Auckland Council by Tonkin + Taylor 2023.

Contents

Figures

Glossary

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.
AVD-46	• Auckland Vertical Datum – 1946 was the mean sea level established in 1946 and used to define the zero datum for land development.
Biodiversity focus area (BFA)	• An area of ecological significance prioritised by Auckland Council for conservation actions.
Coastal Marine Area	• The coastal marine area is defined as the area of sea from the line of Mean High Water Springs (MHWS) to 12 nautical miles off the coast.
Fetch	• The length of an area of the harbour, estuary or sea in which waves are generated by wind, measured in the direction of the wind.
Highest Astronomic Tide (HAT)	• The highest tidal level that can be predicted to occur under average meteorological conditions and any combination of astronomical conditions.
Mean High Water Springs (MHWS)	• The average of high levels of spring tide.
Significant Ecological Areas	• Identified areas of significant indigenous vegetation or significant habitats of indigenous fauna located either on land or in freshwater environments or in the coastal marine area.

1.0 The Shoreline Adaptation Plan programme

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. In 2021, Auckland Council began developing a series of area-based Shoreline Adaptation Plans (SAPs) as the first step for the SAP programme in achieving a resilient future for Auckland's coasts.

1.1 Purpose and use of this document

The purpose of this document is as a consultation document.

This document does not represent a complete draft of a finalised Shoreline Adaptation Plan for Central Auckland. It has been prepared solely to enable the community engagement process for the development of the Central Auckland Shoreline Adaptation Plan (SAP) area.

The draft document provides a foundation to guide an understanding of the preliminary recommendations for adaptation strategies (across three timeframes) informed by the technical inputs of the Coastal Management Team within the Engineering, Assets & Technical Advisory department of Auckland Council.

Local iwi engagement, feedback, and cultural values, community engagement and feedback and asset and infrastructure provider feedback will be reflected in the final Shoreline Adaptation Plan and the final strategies included in that report.

1.2 Shoreline Adaptation Plan Programme purpose and scope

SAPs are non-statutory, strategic documents that support the sustainable management of Auckland Council-owned coastal land and assets (including but not limited to, reserves, coastal defence structures and public facilities), over the next 100 years.

These plans consider the potential impacts of coastal erosion, coastal inundation, rainfall flooding, and climate-change (including sea-level rise). They seek to provide an adaptive planning approach that responds to the changing nature of Auckland's coastal environment, asset and infrastructure owners' requirements, and the needs and values of local iwi and local communities.

This 'first generation' (Series 1) of plans have been developed in response to the *Coastal hazards and climate change guidance* from the Ministry for the Environment[1]. SAP area plans provide a 'roadmap' for changing coastal management strategies over time (over three timeframes) which can be further developed to implement Dynamic Adaptive Policy Pathways. The SAP area plans' development process also ensures consultation and the initiation of an opportunity for collaboration with mana whenua and communities to develop and implement the strategies identified in the SAP area plans. While this 'series' of SAP reports applies specifically to Auckland Council-owned land and assets, the programme acknowledges the need for holistic 'systems' thinking both in relation to coastal management and adaptation. The draft reports represent the initial technical recommendations ahead of the development of the full SAP report for the Central Auckland area ahead of community engagement and detailed engagement with programme partners.

1.3 Auckland Council-owned land and assets

The Auckland Central SAP area is unique, characterised by extensive reclamations and modifications to the original coastline. Auckland Council landholdings and assets are numerous within the central area including land area coastal structures, transport links and major infrastructure as well as networks of water infrastructure traversing the SAP area. An indication of Auckland Council-owned landholdings or areas where Auckland Council holds management intentions or interest is represented in Figure 1-1.

There are a significant number of Auckland Council-owned assets distributed throughout the SAP area including:

- 21 reserves/parks
- 27 buildings (including community buildings such as libraries and sports clubs, and utility buildings such as toilet blocks)
- Infrastructure such as water pump stations
- Walking tracks and/or footpaths traverse the SAP area from West to the East
- Significant landholdings, particularly around Wynyard Quarter, managed by Eke Panuku Development Auckland.

[1] Ministry for the Environment (2024). Coastal Hazards and Climate Change – Guidance for Local Government

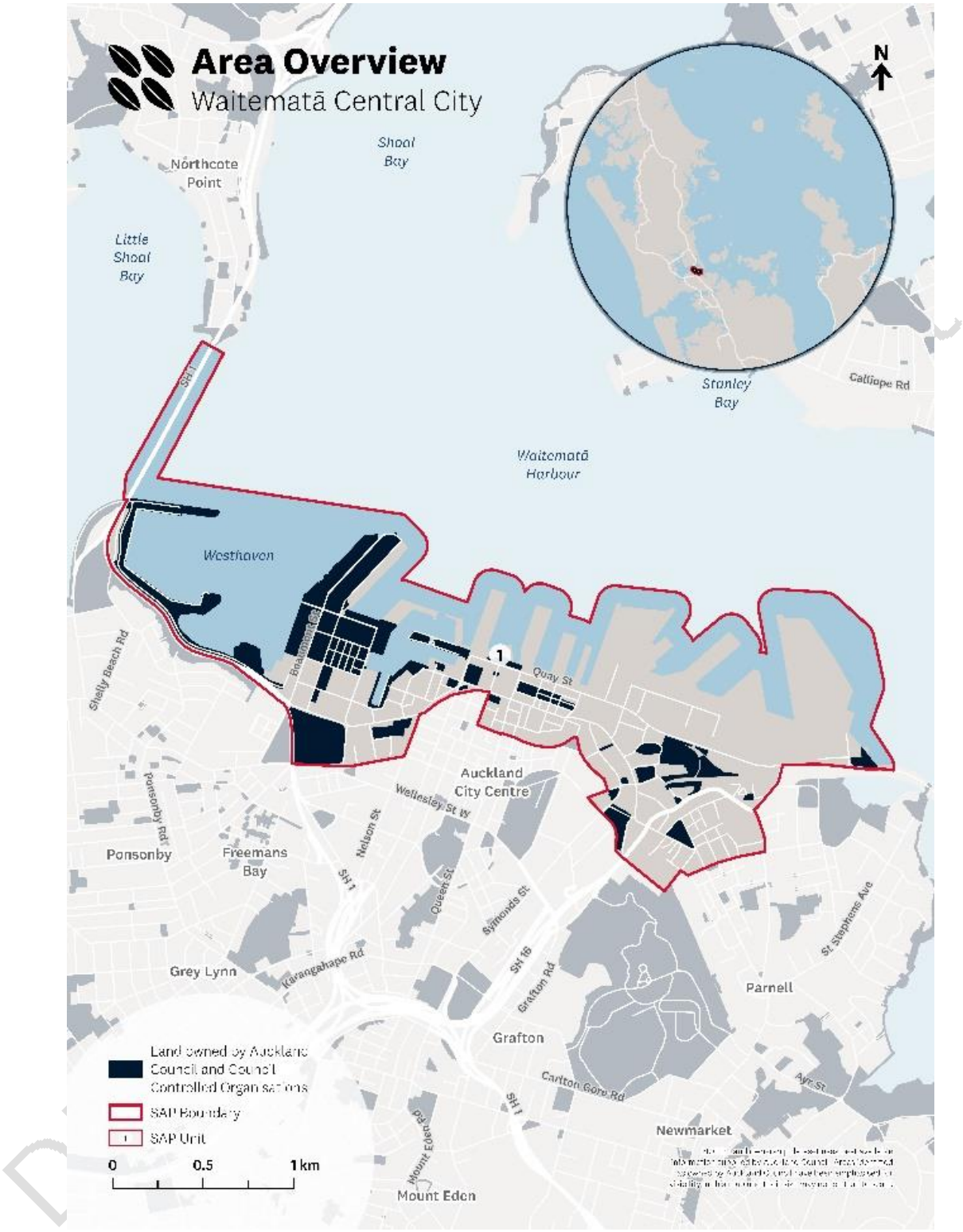

Figure 1-1: Area overview for the Auckland Central SAP area showing Auckland Council-owned land in dark blue.

1.4 Limitations

The SAP Series 1 reports are strategic documents which set a high-level direction for shoreline management and the assets within those areas. It is important to note there are limitations to the scope of these plans:

- They are not developed with the intention of applying directly to privately-owned land and/or assets within the wider SAP area.
- As the focus is on Auckland Council-owned land and assets, they are developed with limited consideration of third-party land, assets, interests and values.
- Draft adaptation strategies are selected using technical knowledge and understanding of coastal management. Analysis is supported by the best available information as set out in this report and supporting reports.
- They do not consider site-specific options assessments for what may be delivered in implementing each of the adaptive strategies.
- They do not consider any site or parcel-specific legal mechanisms, covenants or requirements or identify specific conditions or actions associated with individual resource consents (such as consents for coastal structures or discharge consents associated with water infrastructure).

2.0 Auckland Central Shoreline Adaptation Plan area

The Auckland Central SAP area is situated in Auckland's city centre, extending along the Waitematā Harbour from Westhaven (at the southern end of the Auckland Harbour Bridge) in the west to Mechanics Bay in the east. Generally aligning with the eastern extent of the City Centre Marsterplan (2020).

Figure 2-1: Auckland Council City Centre Masterplan (2020)

Moving eastward through the SAP area, there are popular community spaces such as Silo Park and Wynyard Quarter which are known for their parks, restaurants, and community events. Continuing along the coast, Viaduct Harbour and Britomart offer cafes, residences, commercial offices, and waterfront views. Further east within the SAP area is Queens Wharf and the Ports of Auckland - an industrial area that supports Auckland's maritime activities including ferries which enable access to the Waitematā Harbour and cruise ships.

Commercial Bay, lower Queen Street and Britomart are the key commercial areas within the SAP. There are extensive bus, ferry and train services operating within the SAP area, with Britomart Train Station and Queens Wharf operating as key transport hubs, contributing to the complex, highly modified landscape of the central city. Ferry services, the Port and Westhaven Marina all interface with the coast and waterfront dining, accommodation and walking tracks along the waterfront are key attractions in this SAP area.

Overall, the SAP area is characterised by providing access to the coastal environment, social infrastructure and commercial and retail spaces and marine activities. The total coastline is approximately 10 km in length

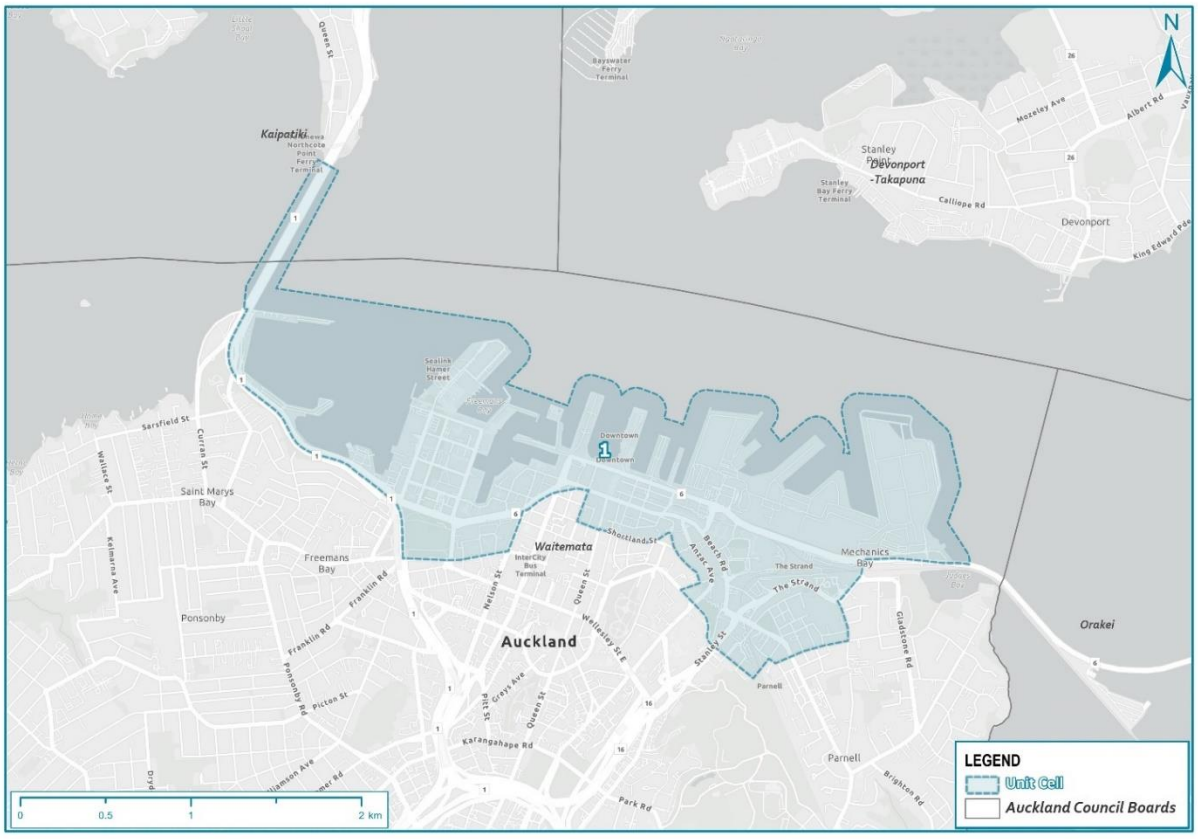

Figure 2-2: Central Auckland Shoreline Adaptation area, identification of Unit 1

2.1 Natural hazards and climate change

This SAP report considers natural hazards relating to sea-level rise, catchment flooding, coastal inundation, coastal erosion and land instability. Other hazard types, including inland land instability, drought, tsunami and wildfires, are not within the scope of this assessment. Risks from low probability but high potential impact events, such as volcanic, tsunami, and earthquake events, are not addressed through land use planning. Instead, they are addressed through measures put in place by emergency management groups such as Auckland Emergency Management (Civil Defence).

Natural processes, such as coastal inundation and erosion, become hazards when they have the potential to negatively impact things of value. Tāmaki Makaurau / Auckland is frequently affected by natural hazard events and is likely to experience more frequent and severe events in the future due to climate change. Sea-level rise will increase the zone of exposure. For shoreline areas with assets and infrastructure, or cultural heritage sites near the coastal edge (including recreational and environmental areas), the impacts of coastal hazards can be significant.

For this work, the following timeframes are used to evaluate how the risk of coastal inundation, erosion and instability and sea-level rise adversely impacting the coast may change over time as a

result of climate change, noting that projected conditions may occur sooner or later depending upon rates of climate change:

- Short-term, 2021-2050
- Medium-term, 2051-2080
- Long-term, 2081-2130.

2.1.1 Sea-level rise

Sea level influences how coastal processes interface with the landward edge and consequently, is an important consideration for the changing exposure of assets and facilities. As the climate changes and sea levels rise, this sea-level rise combines with coastal storm surge (further discussed under coastal inundation below) to dictate the frequency and magnitude of future coastal inundation events. The location of mean high-water spring and the location of the land-sea interface will change because of sea-level rise over time.

The NZ SeaRise: *Te Tai Pari O Aotearoa Programme* (NZ SeaRise, 2024) has completed sea-level rise projections for the New Zealand coastline. This is based on Intergovernmental Panel on Climate Change (IPCC) Assessment Report 6 (AR6) projections and including climate-ocean responses, earth crustal, gravitational changes and vertical land movement (VLM) specific to New Zealand. The combination of projected sea-level rise and vertical land movement results in relative sea-level rise indicating more localised changes in sea level.

Ministry for the Environment guidance recommends using the high-end emission scenarios SSP5-8.5 for coastal planning (Ministry for the Environment, 2024). This is because the world has been on a high emissions trajectory over the past few decades, and the physical interactions at play that drive sea-level rise operate on very long timeframes (decadal to centuries). This means that there is a certain amount of sea-level rise that is 'locked in' for the future because of this long timeframe, but the timeline of this is uncertain. There is uncertainty on future emissions and planetary tipping points, which would mean the 'expected' sea-level rise might happen on a faster timescale than is expected (Ministry for the Environment, 2024). Table 2-1 below sets out MfE's projections for the years in which absolute sea-level rise could be reached for a central location in New Zealand.

Table 2-1: Summary of approximate year when absolute sea-level rise (SLR) heights could be reached using the recommended projections for a central location in Aotearoa New Zealand (Source: Ministry for the Environment, 2024)

SLR (metres)	Year achieved for SSP5 -8.5 H+ (83rd percentile)	Year achieved for SSP5 -8.5 (median)	Year achieved for SSP3-7.0 (median)	Year achieved for SSP2-4.5 (median)	Year achieved for SSP1-2.6 (median)
0.2	2035	2040	2045	2045	2050
0.3	2050	2055	2060	2060	2070
0.4	2055	2065	2070	2080	2090
0.5	2065	2075	2080	2090	2110
0.6	2070	2080	2090	2100	2130
0.7	2080	2090	2100	2115	2150

SLR (metres)	Year achieved for SSP5 -8.5 H+ (83rd percentile)	Year achieved for SSP5 -8.5 (median)	Year achieved for SSP3-7.0 (median)	Year achieved for SSP2-4.5 (median)	Year achieved for SSP1-2.6 (median)
0.8	2085	2100	2110	2130	2180
0.9	2090	2105	2115	2140	2200
1.0	2095	2115	2125	2155	>2200
1.2	2105	2130	2140	2185	>2200
1.4	2115	2145	2160	>2200	>2200
1.6	2130	2160	2175	>2200	>2200
1.8	2140	2180	2200	>2200	>2200
2.0	2150	2195	2200	>2200	>2200

2.1.2 Coastal inundation

Coastal inundation is the flooding of low-lying coastal land that is normally dry, due to elevated sea levels. Extreme high sea-water levels (commonly referred to as storm tides) are a result of storm surge. Storm surge occurs due to relatively low atmospheric pressure (the "inverted barometer" effect of 1 cm rise in sea level per 1 hPa fall in pressure) combined with water level set-up at the coast from onshore or alongshore winds. When king tides (the highest spring tides that occur over the year) occur, the risk of coastal inundation is greatest. In the future, present day temporary coastal inundation extents (e.g. during storms) will become permanent inundation as what is presently dry land will become intertidal due to sea-level rise.

A coastal inundation event with 1% Annual Exceedance Probability (AEP) (1% probability of occurring in any given year) has been considered in the short term, with no sea-level rise. In the medium term, 0.5 m of sea-level rise will increase the depth and extent of coastal inundation for the places that are exposed in the short term. The frequency of coastal inundation events is predicted to increase over time. In the long-term, 1.0 m of sea-level rise will further increase the depth and extent of coastal inundation for the places exposed in the short and medium term. Some areas there were not previously exposed, may now be exposed to coastal inundation. These maps are available through Auckland Council's Geomaps tool online.

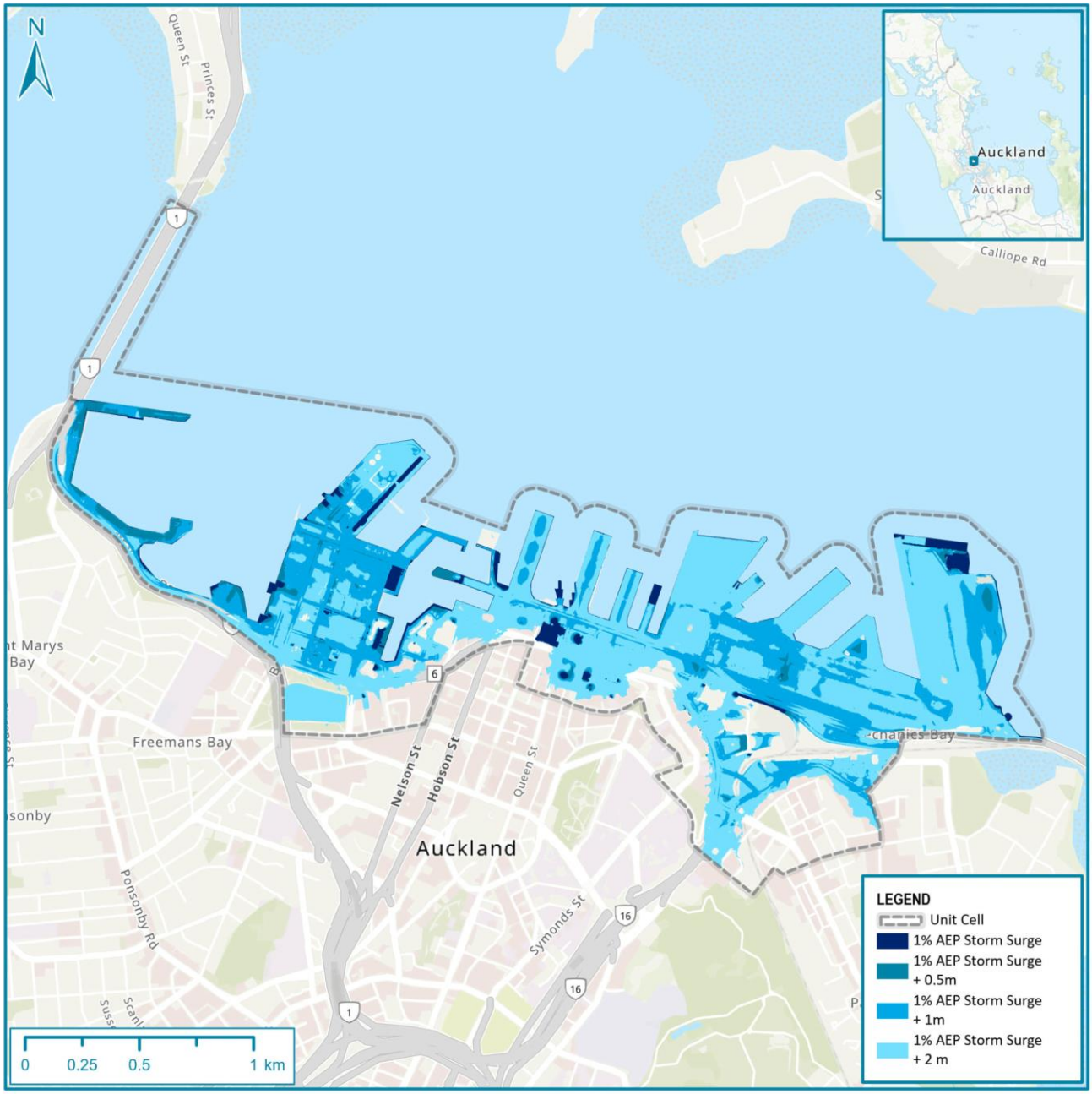

Figure 2-2: Coastal inundation areas for Auckland central (prepared by T+T for Auckland Council 2023) based on Auckland Council coastal inundation mapping (Carpenter, N., Roberts, R., & Klinac, P. (2020). Auckland's exposure to coastal inundation by storm-tides and waves.)

2.1.3 Coastal erosion

Coastal erosion is the removal of the material forming the land due to natural processes, resulting in the coastline moving inland over time. It is a complex process caused by factors including wave energy, changes to sediment availability and land use, and sea-level rise. Although some types of shorelines (e.g. beaches) may undergo short-term periods or episodes of erosion and then recover (i.e. build out again), other types of shorelines (e.g. cliffs) continuously erode with no cycle of recovery. Coastal instability is the movement of land (typically as a landslide) resulting from the loss of support caused by coastal erosion.

Areas Susceptible to Coastal Instability and Erosion (ASCIE) have been mapped using IPCC Assessment Report 5 (AR5) climate change scenarios (RCP emission trajectories), and LiDAR data. In the short-term (2050), RCP4.5 has been used, whereas in the medium-term (2080), and long-term (2130), have been used the RCP8.5 emission scenario. The ASCIEs are shown as a line, representing the distance (in metres) landward of the current coastline that is predicted to be susceptible to coastal instability and erosion, for a given time period. These maps are available through Auckland Council's Geomaps tool online.

Areas with higher exposure to erosive forces are more at risk to coastal instability and erosion, where waves interact directly with cliff faces (e.g. no beach) or where cliffs are steep with little vegetation cover. As sea-level rise occurs, waves will interact with a larger portion of the cliff and slope instability and erosion along the coast are expected to increase. Evaluation of projected shorelines in this report considers predicting Auckland's exposure to coastal instability and erosion, Technical Report (Roberts, 2020), as well as site specific understanding based on recent observations. If observational trends change, this assessment of cliff erosion would require updating.

Much of the Auckland Central coastline has been historically reclaimed and modified. ASCIE lines have not been identified for this area of the coast as it is assumed the current shoreline position will be maintained by the reclamation owners in perpetuity as per the Auckland Unitary Plan definition. While the location of the coast is considered permanent, it is important to note that areas of engineered fill and associated protection structures may be subject to different design considerations and that a residual risk may remain. The latter includes the risks presented by ongoing sea-level rise and lower probability, high magnitude events, such as Tsunami.

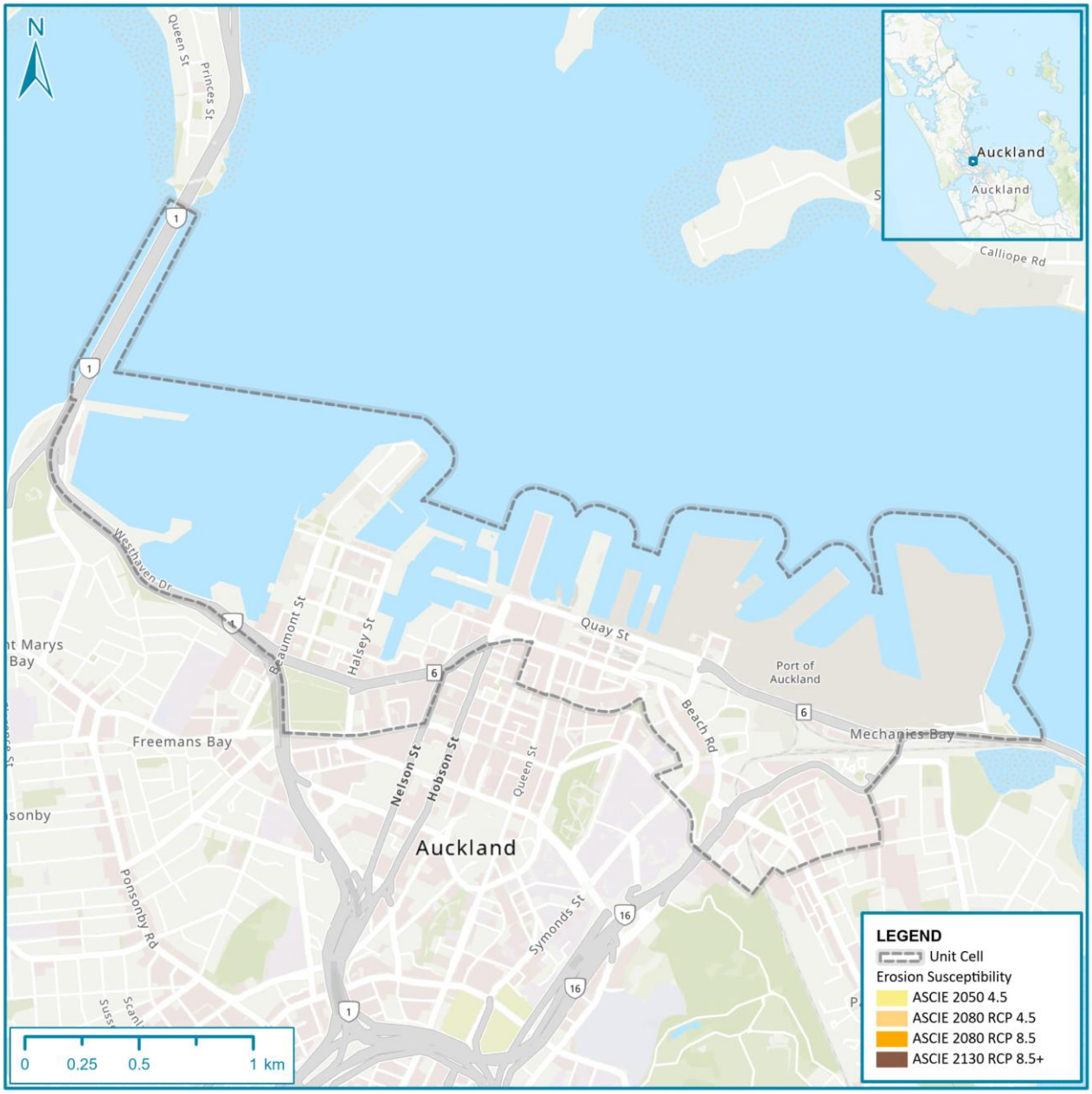

Figure 2-3: : Coastal instability and erosion susceptibility for Auckland Central prepared by T+T for Auckland Council (2023) based on Roberts, R., N. Carpenter and P Klinac (2020). Predicting Auckland's exposure to coastal instability and erosion, Auckland Council, technical report TR2020/021 NOTE: The ASCIE lines have not been identified for Auckland Central area of the coast.as it is a reclaimed and modified coastal area.

2.1.4 Catchment flooding

Flooding, as a result of extreme rainfall when the drainage capacity of the natural and/or built environment systems cannot cope, is a natural occurrence and is Auckland's most commonly occurring natural hazard. The flooding event with the highest probabilistic risk is a 1 % AEP event (1% probability of occurring in any given year), because an event of such intensity is likely to result in more severe consequences than flooding events that are more common but of lesser intensity.

Auckland Council's web-based portal GeoMaps (Natural hazard theme) models the spatial extent of potential flooding. The maps, developed at catchment scale, indicate areas – flood plains, flood prone areas, flood sensitive areas, and overland flow paths - which may be affected by a rainfall event that has a 1% AEP, assuming maximum probable development in the catchment (as per the AUP) and future climate change.

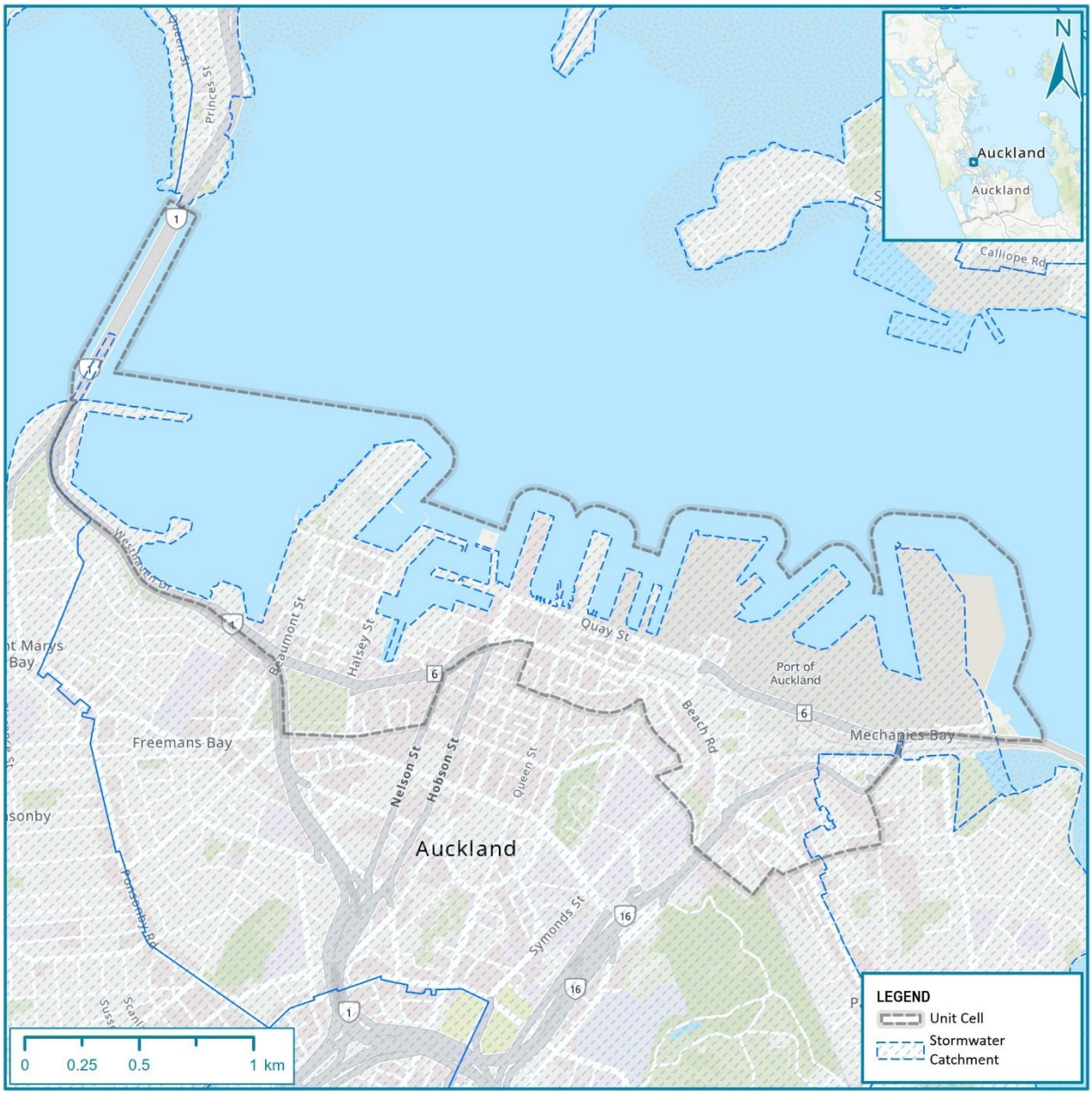

Figure 2-4: Stormwater catchments located within the Auckland central SAP area, prepared by T+T for Auckland Council

The map below illustrates that flooding hazards along this SAP area are focused in lower-lying areas where streams and overland flow paths within the catchment drain to the coast. Overland flow paths and floodplains cross throughout the SAP area.

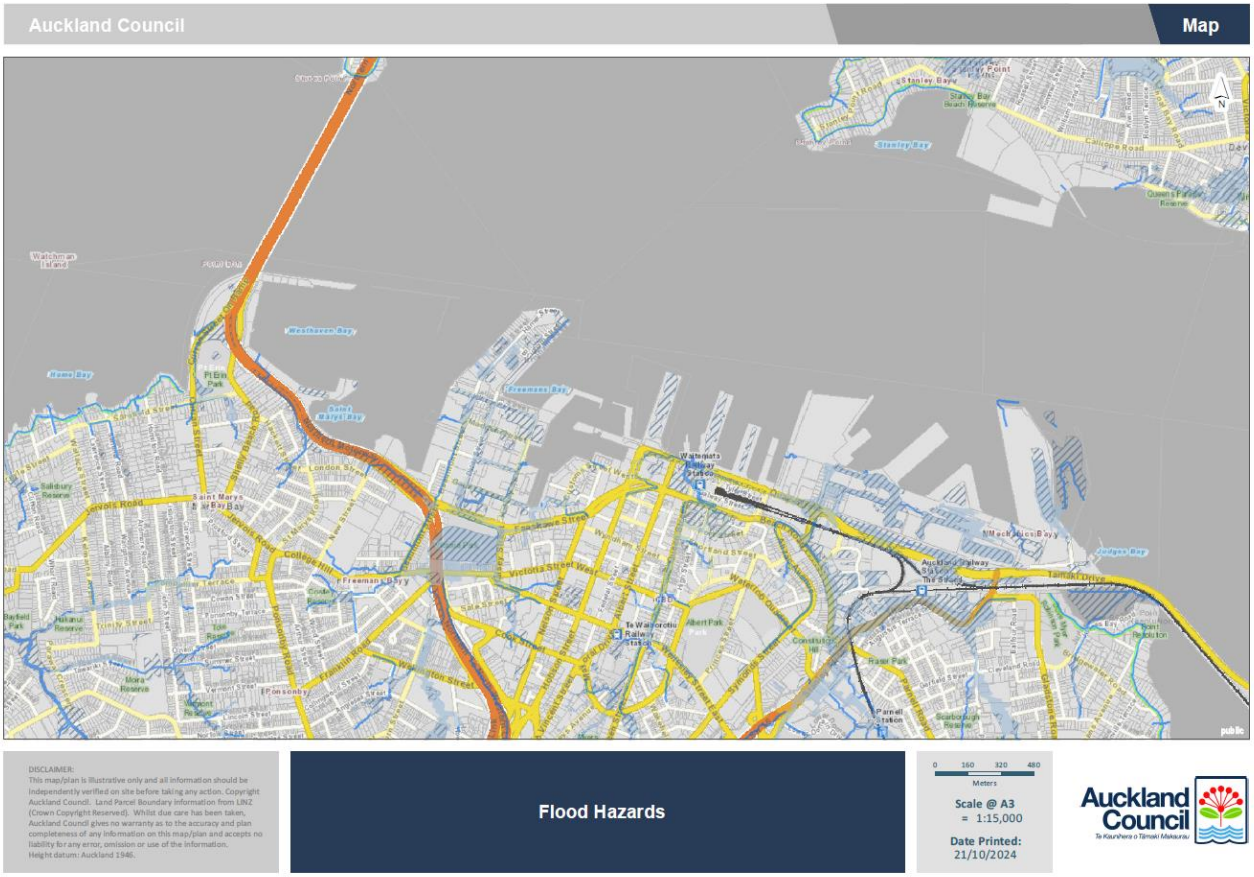

Figure 2-5: Flood hazards (Flood Plain 1% AEP, flood-prone areas and overland flow paths) located within the Auckland Central area. Source: Auckland Council Geomaps.

2.1.5 Other natural hazards

In addition to coastal inundation, coastal instability, coastal erosion, and flooding, Auckland is affected by a number of natural hazards that occur less frequently. Wildfire, volcanic activity, tsunami, earthquakes, severe wind (such as cyclones), and tornadoes are other notable but less frequently occurring natural hazards that may impact Auckland. This report does not specifically consider risks from any of these aforementioned hazards in the development of these DRAFT adaptation strategies.

2.2 Units and stretches

The Auckland Central SAP area consists of 1 unit area and 1 stretch, with proposed strategies acting as a placeholder for ongoing comprehensive engagement and collaboration with local iwi, communities, land owners, infrastructure providers and asset owners to inform the development of the final SAP report for Auckland Central.

The landward extent of the unit area is reflective of the potential coastal hazardscape (inundation and erosion) and the interaction with catchment flood hazards. These areas have then been mapped to a property boundary or geographics feature. In this case, including the extent of the reclaimed shoreline.

Within each unit, smaller coastal 'stretches' have been identified based on coastal processes, the presence of Auckland Council-owned land and asset location, public-land boundaries, and infrastructure considerations. A stretch is the smallest scale at which the SAP plans apply bespoke adaptation strategies.

	Unit	Stretches
Unit 1	Auckland central	1:1 Auckland Waterfront

2.3 Adaptation strategies and timeframes

Adaptation strategies are then assigned to each coastal 'stretch' over three timeframes:

- Short term (0-20 years) 2021-2050
- Mid-term (20-60 years) 2051-2080
- Long term (60-100 years) 2081-2130.

The adaptation strategies are described below and are applicable to all Auckland Council-owned land and assets and may respond to more than one hazard risk, e.g. coastal erosion, coastal inundation and catchment flood risks may all be relevant considerations in some coastal areas.

Strategy name	Summary	What does this mean?
Hold the line (HTL)	The coastal edge is fixed at a certain location.	• Defence of the coastal edge may be through nature-based options (e.g. beach nourishment) or engineered hard structures (e.g. sea walls). • Nature-based options are the preferred method where possible, but in most cases, engineered hard structures would be required. • An identified use or service is maintained within its existing location, e.g. a road is maintained in a fixed location or parks' land uses are maintained in an existing location. • This approach could result in losing some intertidal areas or beach space due to preventing landward realignment of the coast in response to sea-level rise.

Strategy name	Summary	What does this mean?
Limited intervention (LI)	Maintaining and managing existing assets, uses and land.	• Repair and maintenance of existing protection structures, apply a best practice approach to the consideration of coastal hazards and catchment flooding. assuming an adaptive approach for asset design. • Works may support localised realignment of individual assets. Maintain uses or assets within a general area, not in a fixed location. • Does not support a fixed coastline.
Adaptation priority area (APA)	Further adaptation planning is required to manage risks to Auckland Council-owned land and assets.	• Further engagement with multiple partners, communities and stakeholders will be required to ensure risk from coastal hazards can be managed and other values maintained. • Assets and land uses may be relocated or realigned from hazard areas to reduce risk to assets/activities and maintain identified values (ecological, cultural, recreational etc). assets may be designed to accommodate hazard impacts and localised protection and risk mitigations may be implemented for some land uses or asset types. • Relocation is planned and undertaken proactively over time. • Planning to protect, retreat, relocate, accommodate risk or avoid risks is responsive to community, cultural and ecological opportunities needs and aspirations. • Supports opportunity for nature-based solutions, and maintenance of coastal values.
No active intervention (NAI)	Natural processes are allowed to continue. Pro-active management of risk to Auckland Council land and assets is not identified, unless specified.	• Includes no investment in the provision or maintenance of any hazard protection structures associated with coastal hazards and flood protection (does not apply to the management of land stability or subsidence or other hazard risk management). • This strategy is identified for areas of the coastline where Auckland Council-owned land and assets are not identified as exposed/vulnerable to coastal hazard and catchment flooding risk. • Does not preclude the management of risk if required.

2.4 Next steps

The draft strategies and supporting notes included in this document are designed to inform the community and enable feedback through the engagement process.

Following the close of the engagement process all feedback will be reviewed and analysed. This is then used to inform the develop of community objectives, which are applicable to all areas within the SAP and considered in the decision-making framework. Unit and stretch-specific feedback on the adaptation strategies will be considered alongside feedback and advice from asset owners, mana

whenua and technical experts. This information will be used to support review of the draft strategies alongside use of a decision-making framework to confirm the selection of final strategies.

The final SAP will include guidance notes to support implementation and may refer to key values, features and considerations required. These notes may also reference feedback received through this engagement process.

Finalised adaptation plans will be presented to Local Boards for their endorsement. Following this, they will be provided to the Governing Body (the Planning Environment and Parks Committee) for approval. Once approved, the plans will be available on Auckland Council's website.

3.0 Unit 1: Auckland central

This unit is located within the Waitematā Local Board area, extending along the Waitematā Harbour from Westhaven (at the southern end of the Auckland Harbour Bridge) in the west to Mechanics Bay and TEAL Park in the east.

The shoreline of the Auckland central area is subject to historic reclamation and has been progressively modified since 1840. This has involved a series of reclamation fills using material excavated from local sources as well as hydraulic fill sourced from the Waitemata Harbour, including Wynyard Quarter and areas of Britomart Transport Centre. In the late 1980s and early 2000s, mudcrete was used to extend reclamations in the Viaduct Harbour and eastern areas of Wynyard Quarter[2].

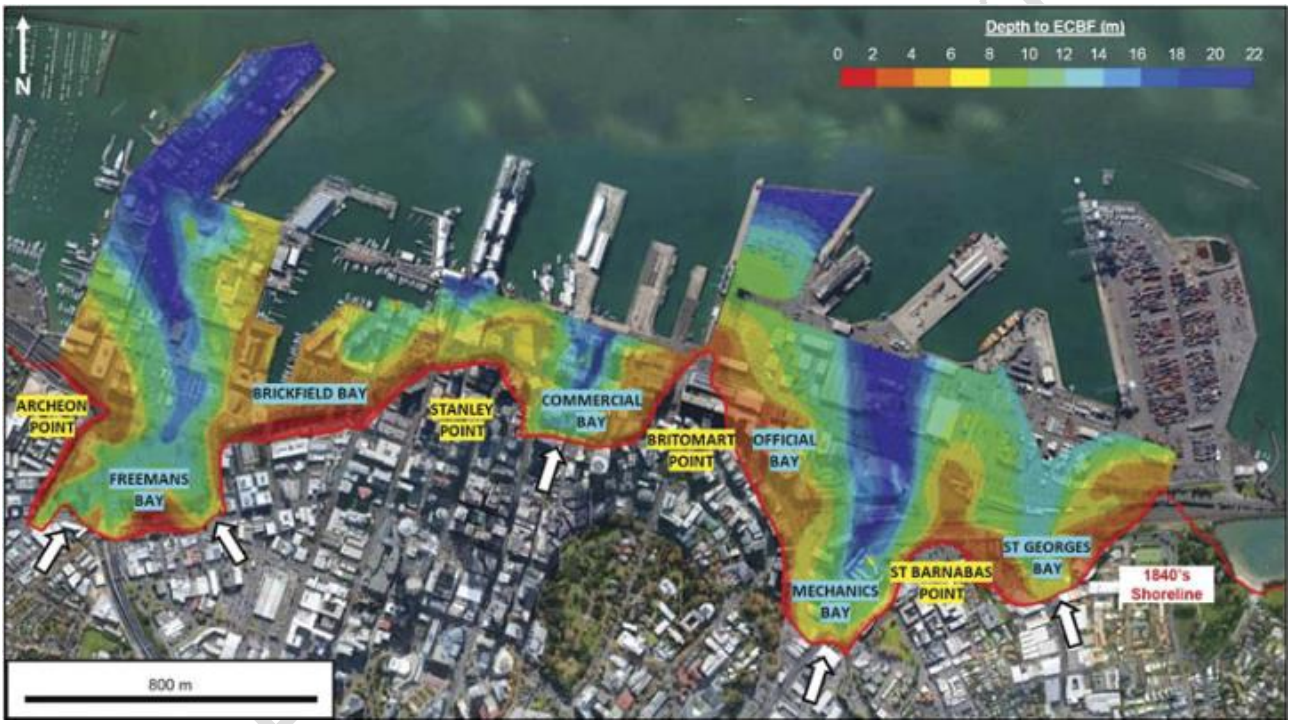

Figure 3-1: Auckland's reclamation zones are north of the original 1840's shoreline (red). Map shows historic bays (light blue), headlands (yellow), paleo-river/stream channels (white arrows showing direction of flow). The surface represents the depth to unweathered ECBF based on subsurface site investigation data and geomorphic cues. Zones without contours did not have enough investigation data to develop surfaces[3].

2 Lee, K. Wotherspoon, L. (2016)

3 Sourced from Lee, K. Wotherspoon, L. (2016) Dynamic Characteristics of Auckland Central Business District Reclaimed Zones, Compilation NZ Geomechanics News. Issue 92 - December 2016, ISSN 0111-6851

Figure 3-2: Graphics sourced from the Foreshore Heritage Walk (Discover Auckland's Original Foreshore Te Takutai Taketake o Tāmaki Makaurau) developed by the Waitematā local board and located as way finding information signage within the SAP area.

Auckland Council landholdings in the SAP area include Victoria Park, Silo Park and Wynyard Quarter which are known for their parks, restaurants, and community events. Victoria Park is recognised as a major city centre destination and a gateway for pedestrians and cyclists in Auckland[4].

Extensive transport networks converge in the central area at Britomart transport station, including major motorways, ferry terminals, and railway stations that connect the regional to the city centre and its coast. Key transport routes include the Auckland Northern Motorway and SH1 (NZTA Waka Kotahi Highway) near Westhaven and Quay Street which runs along the viaduct until Tāmaki Drive. Fanshawe Street runs through most of the SAP area and is a key route, along with The Strand. There are extensive bus services within the SAP area; Lower Albert Street and Fanshawe Street are key hubs for bus services. The Auckland waterfront is also popular with walkers, joggers and cyclists.

Policy documents and strategies including the Westhaven Plan (Eke Panuku Development, 2015), Auckland City Centre Plan (Auckland Council, 2020), and Waterfront Plan (Eke Panuku Waterfront Auckland, 2012) identify opportunities to create greenways and enhance connections between local parks and key active transportation routes.

A summary of the key areas within the SAP area are discussed below (from west to east) and generally represented in the graphical overview of the Auckland central area.

4 Auckland Council, 2022

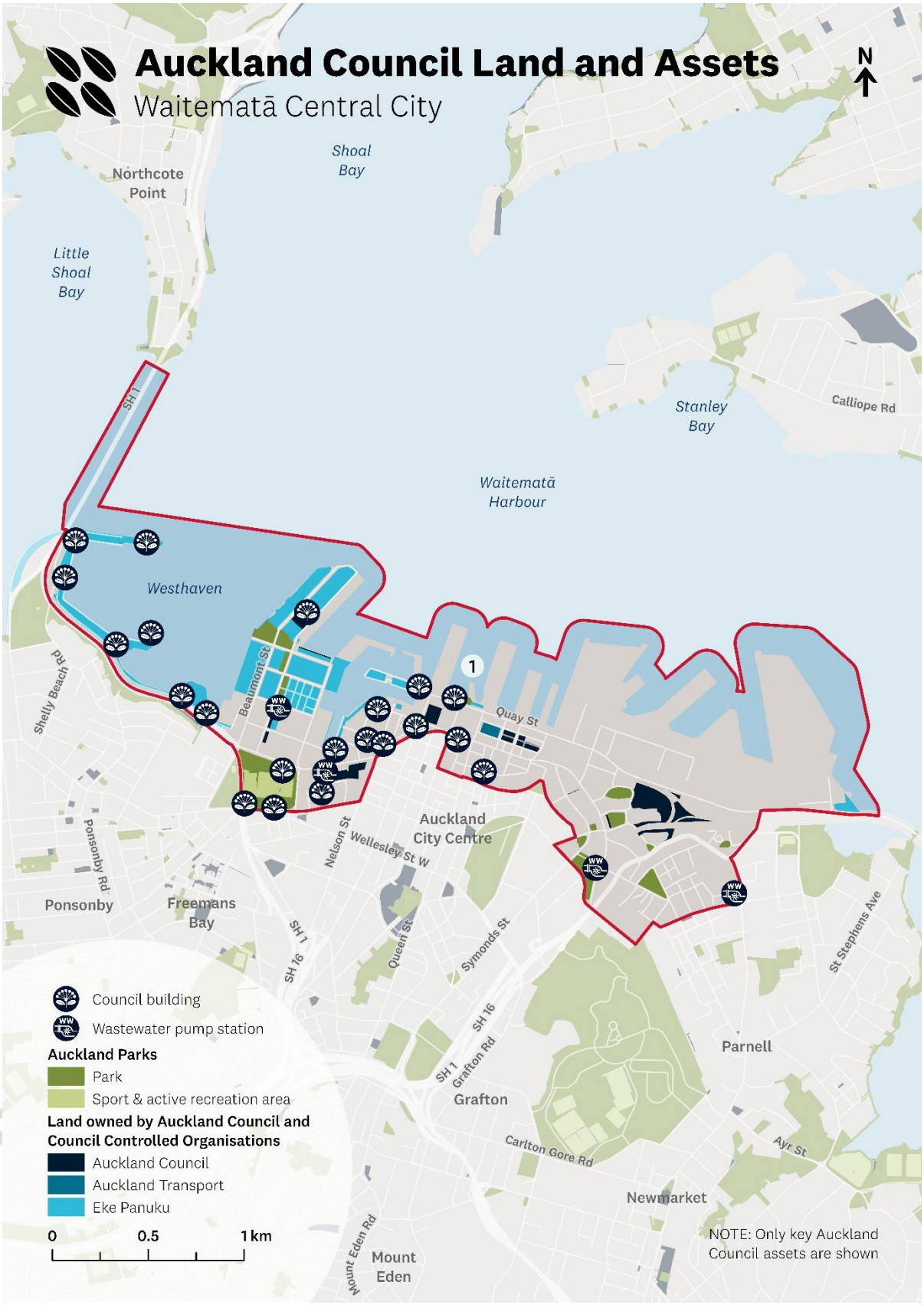

Figure 3-3: Summary diagram of Auckland Council landholdings located within the Auckland central area

Area	Description & use	Auckland Council land & Assets (*not intended as a comprehensive list)
Westhaven & St Marys Bay	Westhaven Marina is home to a marina and supporting facilities. Westhaven Promenade connects Westhaven with Wynard Quarter (to the east) for pedestrians and cyclists.	• Landholdings /breakwaters and marine structure and services, including car parking areas. • Public toilets, stormwater, potable water and wastewater infrastructure, roading access. Jacobs Ladder and St Marys Bay Walkway connections to the south. • Future aspirations include further development of the Westhaven area and St Mary's Bay beach.
Wynard Quarter (Victoria Park)	Wynyard Quarter is a waterfront precinct which provides for marine and port activities alongside mixed use development. This already hosts key marine uses and transport connections for the wider Hauraki Gulf (Sea Link facilities). Wynyard Point has historically been used for industrial uses and storage of hazardous substances and contemporary use includes hosting bases for Americas Cup sailing competition. Aspirations for the future development of the point are currently in development. This area of the waterfront has also been subject to speculation in relation to future harbour crossing proposals. The area is popular for walking, jogging and dining and there are events such as markets held regularly around Silo Park. Paths between Wynyard Pavilion and the Viaduct Harbour include The North Wharf Promenade and Wynyard Crossing.	• Auckland Council landholdings and interest in this area are primarily managed by Eke Panuku, alongside key park landholdings of Silo Park, Daldy Street, and the development of Te Ara Tukutuku. • Access to the water at the Karanga Plaza and Victoria Park provides key sport facilities within the wider SAP area. • The area includes and is serviced by wastewater pipes and pump stations, extensive potable and stormwater networks, including rain gardens and treatment devices. • The area is serviced by a network of Auckland Transport roads, connecting to regional arterials to the south. • Auckland Council assets included within parks and other landholdings range from key event centres, playgrounds, toilets, pathways to marine and port facilities and access structures (Wynyard Crossing).
Viaduct harbour	The Viaduct Basin includes the area east of Wynyard Quarter and is home to mixed land uses and supporting infrastructure and open space areas.	• Auckland Council landholdings are primarily managed by Eke Panuku, alongside Tataki Auckland Unlimited that manages the Auckland Maritime Museum. • The Auckland Council Tepid Baths are also located within this area.

Area	Description & use	Auckland Council land & Assets (*not intended as a comprehensive list)
Central Waterfront (Britomart & Downtown area)	The Britomart area is located in the centre of the SAP area. A key feature of this area is the Downtown Ferry Terminal, and the Britomart Transport interchange.	• Auckland Council landholdings and assets include ferry terminal facilities and multiple access and wharf structures, associated facilities such as toilets, carparking areas, public amenities, • This area includes Te Wananga (Quay Street) park, Auckland Transport downtown parking building and Britomart transport station.
Ports of Auckland Mechanics Bay	Located within the western area of the Auckland's CBD. Landholdings within this area are primarily owned and managed by the Port of Auckland (not Auckland Council-owned) and also include numerous commercial areas landward of the reclaimed coastal edge and major event venues. To the east, 'Mechanics Bay', includes a marine rescue centre and helicopter landing area.	• Auckland Council landholdings and assets are primarily related to roading and piped infrastructure networks in this eastern area of the waterfront. • Landward of the coastal edge are several park areas including Mahuhu Ki Te Rangi (Quay Park), and Te Taou Reserve Railway Gardens Auckland Council holds interest in TEAL Park redevelopment aspirations and key transport connections along Tāmaki Drive to the east.

Major Projects of relevance

In the Waitematā Central City area, numerous projects are either underway or planned, primarily within Wynyard Quarter. These projects collectively aim to improve mobility to and from the city centre, create sustainable environments, enhance public spaces, improve access to the waterfront/ coastal environments and stimulate economic growth in Auckland's city centre. As more people make use of these spaces, these projects focus on enhancing the street environment to create a vibrant place where people want to live, work, and visit.

While not an exhaustive list, notable projects planned for the city centre include:

- City Rail Link (CRL): A major transport initiative to improve Auckland's rail network by providing twin 3.45 km rail tunnels up to 42 m underground between Waitematā Station (Britomart) and Maungawhau Stations Victoria Street Linear Park.
- Te Ara Tukutuku: Eke Panuku, in collaboration with mana whenua, is aiming to transform the northern end of Wynyard Quarter into an urban waterfront destination known as Te Ara Tukutuku. Over the next 10 to 15 years, this area will become a premier open space and public attraction in Tāmaki Makaurau.
- Harbour crossing: A new connection—either a tunnel or bridge—has been proposed to cross the Waitematā Harbour. This initiative aims to improve transportation efficiency and accommodate future growth and development, as well as enhancing connectivity between the North Shore and Central Auckland (NZ Transport Agency Waka Kotahi, 2024).
- Marsden and Captain Cook Wharves: There is a redevelopment initiative aimed at revitalising and enhancing the functionality of the historic wharfs.

In addition to the projects listed above, a variety of infrastructure and public space enhancement projects have been proposed throughout the SAP area. These initiatives support sustainable urban development, improve connectivity, access to amenities, and overall quality of life for residents. Projects range from wastewater system upgrades and new community hubs to enhancing green spaces and transport options.

Environmental context

The Auckland Central SAP area has undergone significant changes in land cover since the arrival of humans. This has resulted in a significant loss of native habitat, leaving fragmented remaining pockets which are impacted by their isolation, introduction of non-indigenous species and plant diseases. Shoreline and catchments within this highly developed, urbanised landscape have been subject to several large-scale reclamations and shoreline modifications. No indigenous vegetation remains in the Waitematā Central City area, as the area has been largely developed and the existing vegetation comprises street trees and planted reserve vegetation. Despite this, a variety of coastal birds have been recorded within the Waitematā Central City area, particularly within the Wynyard Quarter area. Marine mammals, including leopard seal (Hydrurga leptonyx) and New Zealand fur seal (Arctocephalus forsteri), have occasionally been recorded within the marine area and resting on docks (iNaturalist, n.d.).

Cultural sites, values and landscape

The wider Auckland Central SAP area occupies a culturally significant landscape, embedded with sites and places of significance to local iwi. Local iwi engagement, cultural values and narratives will be reflected in the final Auckland Central SAP report.

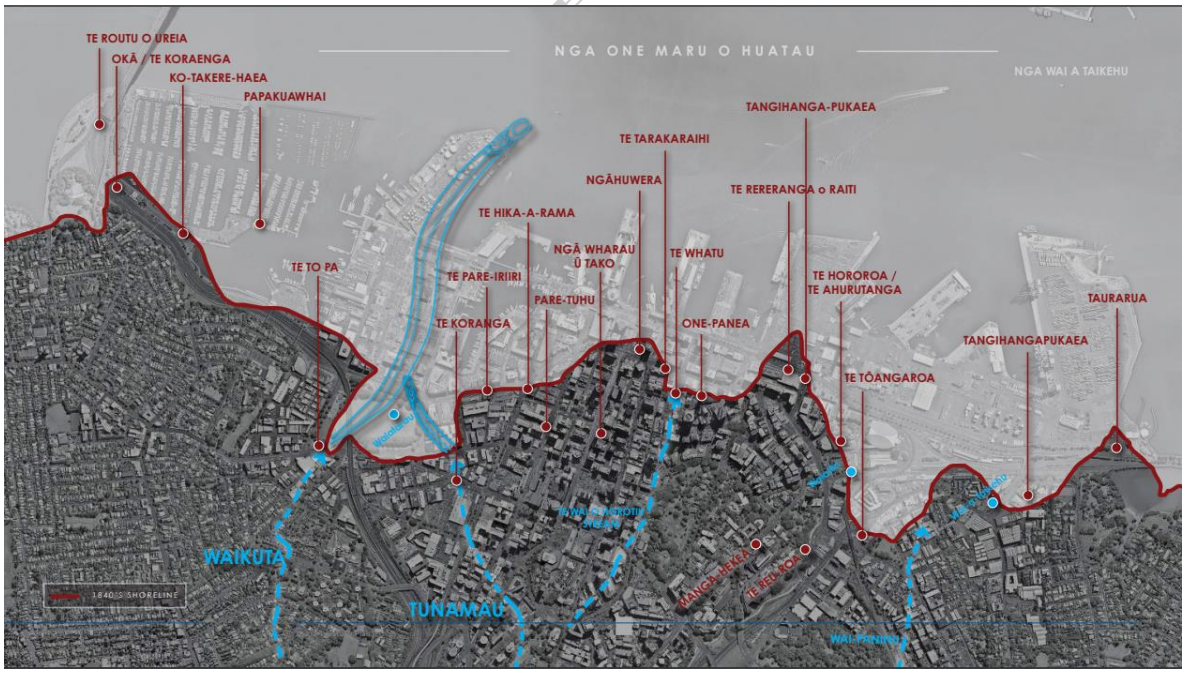

Figure 3-3: 1840's shoreline graphic, sourced from Te Ara Tukutuku, Eke Panuku (2021) https://www.ekepanuku.co.nz/media/341j2qss/te_ara_tukutuku_plan.pdf

DRAFT Adaptation strategy summary for stretch 1.1

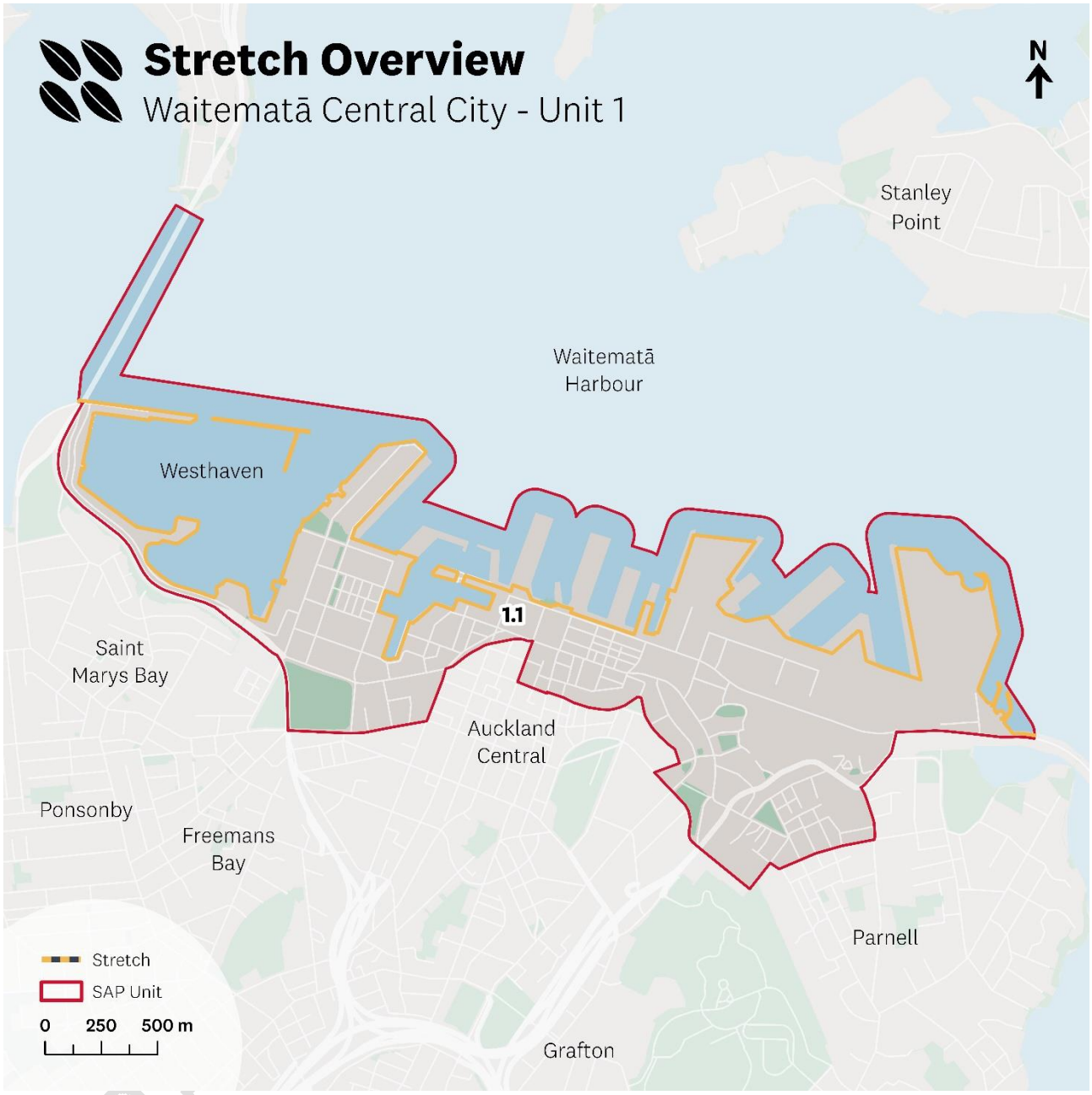

Figure 3-5 Stretch Map for Unit 1, Auckland Central SAP area

Stretch	Terms (years)			Explanatory notes
	Short (0-20)	Medium (20-60)	Long (60-100+)	
1.1: Auckland Waterfront Including the full SAP area commencing at Auckland harbour bridge to the west and culminating at Teal Park/Tāmaki Drive in the east.	HTL	HTL	HTL	**Hold the line** over all timeframes reflects the reclaimed, highly modified, urbanised landscape of the central city and the need for ongoing engagement with a range of parties to ensure alignment and successful, proactive adaptation of the city centre in response to changing coastal hazard risk. Management of the coastal edge (where land is owned or managed by Auckland Council) is important for managing coastal hazard risk to Auckland Council-owned land and assets recognising the significant economic investment and built development and infrastructure (and social outcomes this supports) within the central Auckland area. Physical infrastructure and reclaimed land support essential transport connections, functionality of piped infrastructure and maintaining and supporting open spaces. Note: Further engagement and collaboration with land holders, asset owners, local iwi, communities and infrastructure providers will be required to inform the further development of the Auckland Central SAP and inform the implementation of this document.

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