Tupua Horo Nuku.

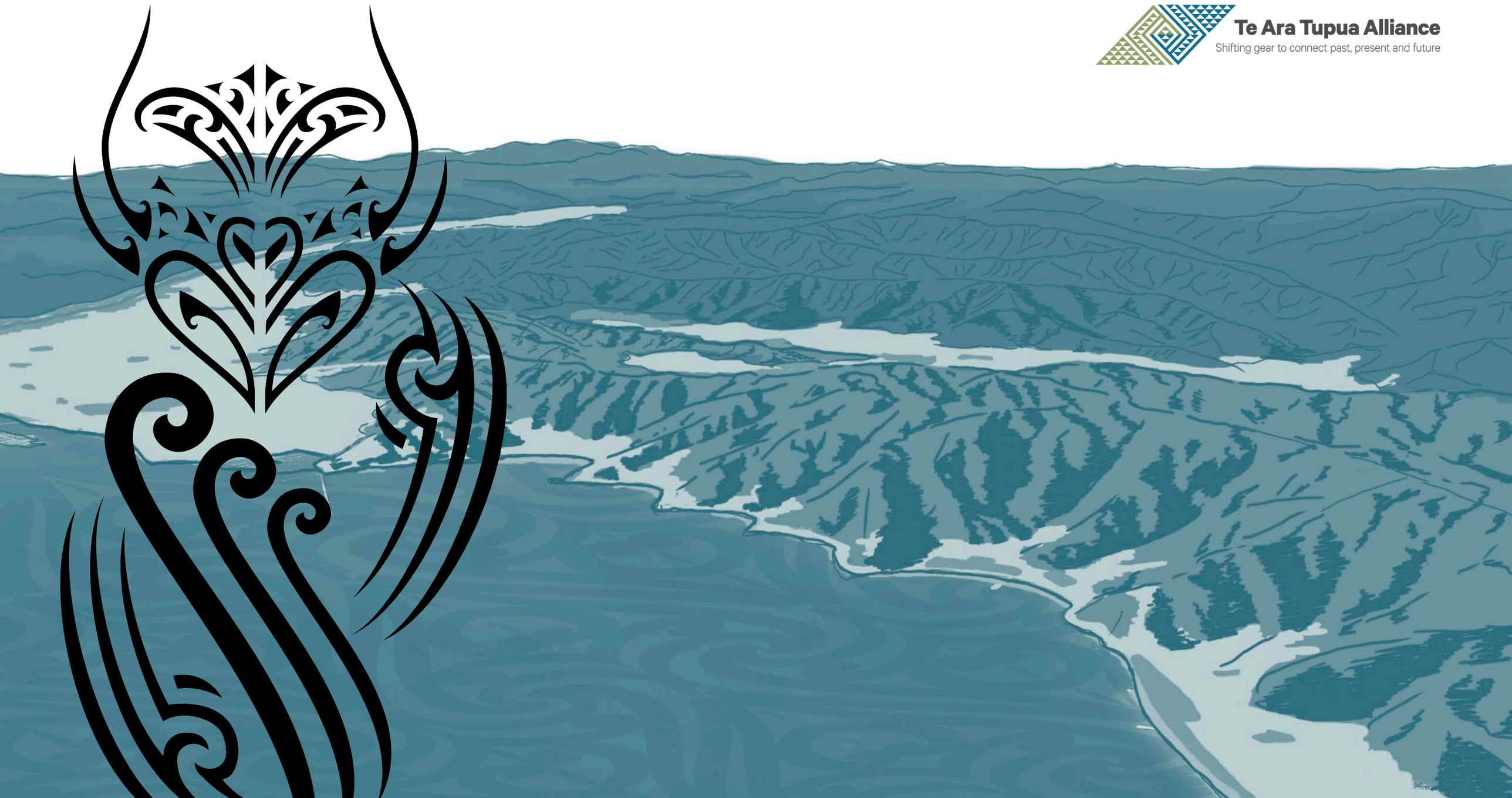
Landscape and Urban Design Plan (LUDP).

Eastern Bays Shared Path

10 December
2021

HUTT CITY
TE AWA KAIRANGI

Te Ara Tupua Alliance
Shifting gear to connect past, present and future



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Te Ara Tupua Alliance, Hutt City.
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Te Ara Tupua.
The Story of Ngake and Whataitai.

Let me take you back in time immemorial well before man walked the island the mountain clan were hauled from the great depths of Te Moananui a Kiwa (the great ocean of Kiwa) where only great mana could be calm the fish Maui. The gifted tear drop pathways were placed at its feet, giving birth to gifts of his own ilk.

Following the procreation of the mountainous ranges of the central plateau the mountain clan were summoned to the head of the fish, gathered on the summit of Pukeatua (summit of gods) where they were gifted the ritual incantations, instructing them to prise open the great mouth of the fish of Maui. Reciting the ancient incantations of invocations summoning from the depth of the fresh water lake came forth the two ancient phenomenon giving birth to "Te Ara Tupua".

Each responsible for their very own way to freedom from their land locked imprisonment of the fresh water lake. Both Tupua opting to take different pathways to freedom.

One Tupua commenced his journey on the eastern side of the lake, winding himself up leaving behind a destructive pathway. Hurling himself towards the distant barriers he bashed through escaping the freshwater lake to freedom, unto the great maiden ocean, Hine-moana. It was at this point the freshwater lake meet the salt water for the very first time. In his devastation to escape he left behind geographical icons evident to this day.

The second Tupua opted to take the western pathway, commencing from the throat of the fish of Maui (Korokoro o te Ika, later to be named Te Korokoro a Mana), arriving at Nga Uranga where he began to wind himself into a coil.

Through lack of communication between these Tupua, and no sooner did the second prepare himself for freedom, his companion had already escaped leaving a pathway of destruction and fresh water later following close behind. Unable to generate enough velocity and momentum while the water line was receding, the second tupua intent of escape was marred becoming stuck on a sandbar. Unable to move any further he remained there for some time as the water washed over his back. Aeons passed by where a great land mass uplifted him out of the water exposing his body to the open air elements bringing his life to a sudden end. In passing his spirit took the formation of a spiritual bird pursing the pathway of enlightenment to this day.

Figure 1.1 *Ngake and Whataitai artwork.*
Len Hetet, 2021

These two Tupua were both looking for freedom opting to take alternative pathways. One created the eastern inner harbour pathway and in doing so left us with the geographical iconic formations of Te Awa Kairangi, Matiu, Makara, Nga Mokopuna, Te Au a Tane and many more.

The second, created the western inner harbour pathway commencing from the throat of the great fist of Maui, leaving behinds the icons of the eastern harbour Horokiwi, Waihinahina, Parikarangaranga, Paroro-rangi, Tahataharoa and Nga Uranga.

Each pathway chosen by these Tupua allows for our international visitors to come to Te Whanganui a Tara. Ngake pathways allowed for the great Pacific navigator Kupe and larger cruise liners to frequent these shores.

Whataitai although unable to pursue the same pathway of his elk, still set himself free through his spiritual pathway in which many air craft carriers visit our harbour daily both nationally and internationally. The name Te Ara Tupua (The Ancient Pathway) is an acknowledgement to the guardians of our harbour, Ngake and Whataitai. They are both Tupua in the own right and have opted to use the word "Tupua" over the word "Taniwha" Tupua is a term for a phenomenon, something that is unexplainable and a term that aligns itself the total story of Te Kahui Maunga, namely

— Te Awa Tupua
— Te Kahui Tupua
— Te Ara Tupua

Kura Moeahu (August 2019)
Te Kahui Maunga, Te Ati Awa Nga Ruahine, Ngati Mutunga Taranakitututuru, Ngati Tama Ngati Ruanui, Ngati Toa

Tupua Horo Nuku.
Te Ara Tupua Alliance, Hutt City.
10 December 2021.

Tupua Horo Nuku.
Eastern Bays.

The Eastern Bay area encapsulates many wahi tapu from Te kongutu o Te Awa Kairangi to Te Waha o te Ikanui. Its beginnings emanate out of the power and mana of Tupua-horo-nuku (evolving mass of solid matter), known as the tupua, Ngake.

Instructed by the mountain clan people who were summoned to the head of the fish, gathering on Pukeatua where they were gifted the appropriate incantations to prise open the mouth of the great catch of Māui-tikitiki-a-Taranga to enable it to breathe again, where they summoned from the great depths of Rua Tupua and Rua Tawhito of the fresh water lake who brought forth Tupua-horo-nuku and Tupua-horo-rangi.

Tupua-horo-nuku, Tupua-horo-rangi
Tai kukume mai takiwā ia mouri e runga
Kia horo wawe mouri e raro koi ikaroa[1]

The narrative of the eastern bay speaks of and highlights "te ihi, te wehi me te mana nui o Tupua-horo-nuku."

Te Awa Kairangi, formed out of the raging whip lashing tail of Ngake as he wound himself up into a frenzy, generating and amassing energy and power, splitting the land mass immediately behind him lacerating Papatūānuku, imbuing "te ara mouri" inland to the Tararua and Remutaka. Whilst at the same time hurling himself towards the barriers hearing the pounding and thunderous waves smashing in the distant. Smashing his way out from his land lock imprisonment to freedom unto Hinemoana and Tangaroa. In his destructive escape came forth the islands of the harbour later to be named by Kupe the pacific navigator, and as centuries passed the peopling of Te Wai-manga arrived gifting new names later to be supressed through imperialistic and colonial methodologies which are still impacting on us since their arrival in 1769.

Tēnei te ara kei runga
Tēnei te ara ō Ranginui e tū nei
Tēnei te ara o Papatūānuku e takoto nei...[2]

Ripiripia te ika nui
Haehaea te ika roa
Ka hora, ka hora te kai ki a Tamanuiterā
Ka hora, ka hora te kai ki a Tāwhiri-mātea...[3]

1 He karakia nō te kainga
2 He karakia nō te kainga
3 He karakia nō te kainga

Immediately following the severing, Hine-wai-tootaa and Hine-kōrako went about their duties caressing and gently healing Papatūānuku. Calling upon their sister Hine-wairere they asked her if she could follow the scarification marks of Papatūānuku until she was fully covered to sooth her skin to ease the pain. To this day they still nurture and care for her.

Te Awa Kairangi like many rivers began its life through the kuia Hine-wai-tota, Hine-kōrako and Hine- wairere, being the ancestress of condensation, lunar droplets and water flow gathering on the many peaks on both sides of the river. Fed by melting snow, ice and rainwater running off the land, the collective of droplets follows cracks and crevices within the landscape formed out of the raging whip lashing of the tail of Ngake (seismic activity) in his attempt to escape to freedom from his land lock lake imprisonment.

The many small tributaries joining together growing larger forming the collective mass of Te Awakairangi, flowing every second of the day. The following whakatauaaki encapsulates who the people of Te Ātiawa are and our responsibility for the water and the whenua.

Te Ātiawa tupua rau, he auripo i te manga iti, he auripo i te manga nui rānei, he kaitiaki ki te whenua [4]

Te Ātiawa of many phenomena's, where there is a ripple in a small tributary or great river, there is a guardian and protector on the land.

Over time the continuous flow of Te Awa Kairangi has shaped the landscape moving and wearing away rock, carving out a network of valleys eventually reaching the lower grounds, widening and reaching the point where the fresh water meets the salt water.

Whakapakarukaru puare te waha o te ika roa Te hononga o ngā wai e rua...[5]

The Eastern Bay commences at the meeting of the waters.

4 Nā Kura Moeahu whakahī
5 He karakia nō te kainga

Figure 1.2 *Tupua-Horo-Nuku artwork.*
Len Hetet, 2021

Tupua Horo Nuku.
The Pathway.

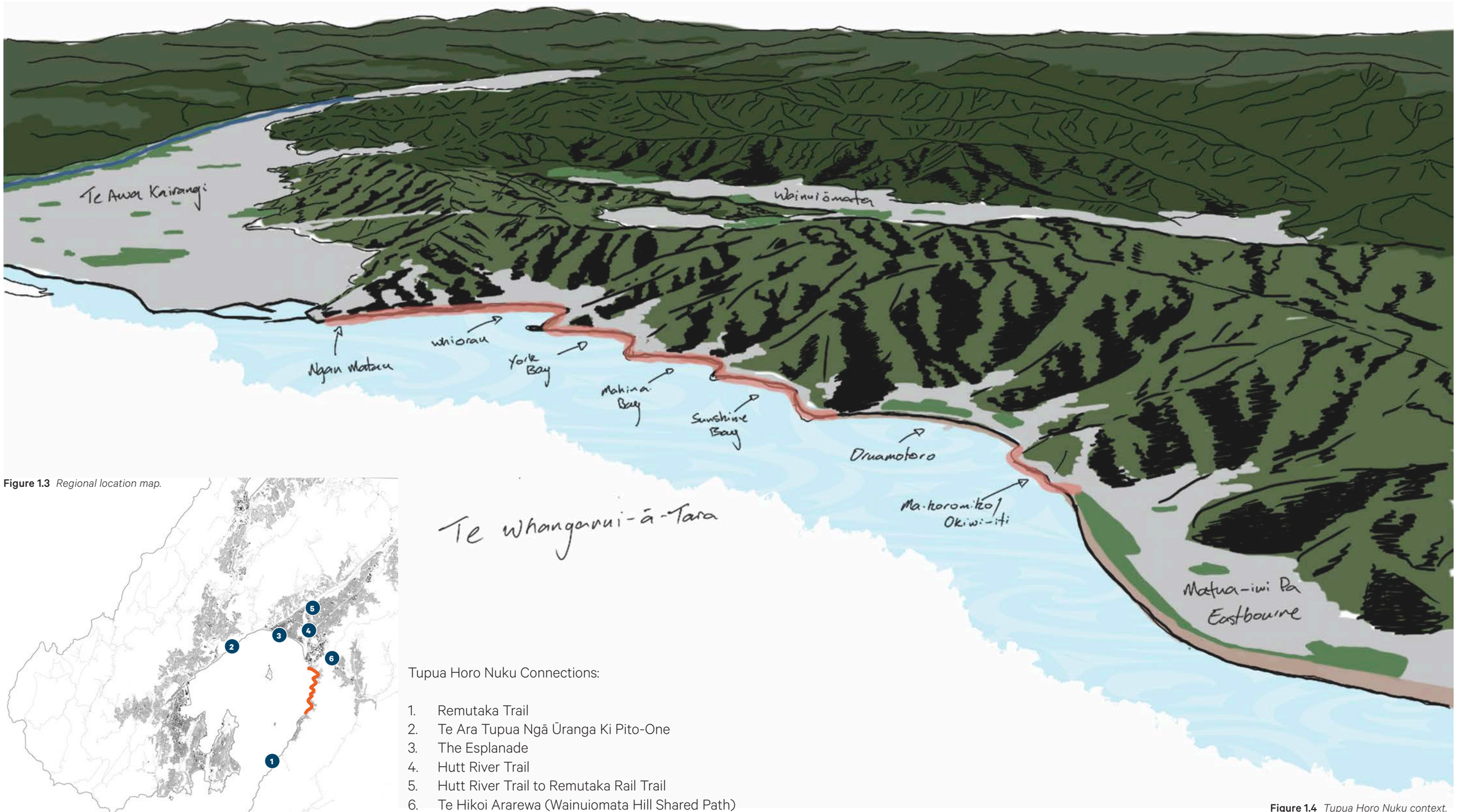


Figure 1.3 *Regional location map.*

Tupua Horo Nuku Connections:

1. Remutaka Trail
2. Te Ara Tupua Ngā Ūranga Ki Pito-One
3. The Esplanade
4. Hutt River Trail
5. Hutt River Trail to Remutaka Rail Trail
6. Te Hikoi Ararewa (Wainuiomata Hill Shared Path)

Figure 1.4 *Tupua Horo Nuku context.*

He Waiata.
A Song.

Tupua-horo-nuku, Tupua-horo-rangi
Tai kukume mai takiwa ia mouri e runga
Kia horo wawe mouri e raro koi ikaroa
E raro tapu wainuku
E raro tapu wairangi
E whai nui atu te moenga kōpae a ikaroa
Rangi Tukutuku te aho,
Pikimai Rawea te matau
I whiua e Maui Potiki

Ka mau te maihi a Ponaturi mā
Kai parirau a Ikaroa
Ki rāwhiti a matau hīraurau
Ko Haha Te Whenua te ika roo wai
Kihai i kau ake, maru ō Tū te Hiku te mana
Huti kukume ake,
ka pakaru mai Tangroa

Ka hora te kai a Tama nui te rā, Tawhirimatea ma
Te hangatanga a Te Kāhui Maunga ka hora a marino roto
Koi Matua Te Mana, Matua Te Toa, Matua Te Tapu, Matua Te Pononga
Ko ranga Kahui Maunga i piki ki Te Upoko

Ki Wai Maanga
Whakapakarukaru puare te waha o Ikaroa, te hononga o ngā wai e rua
Ka kau mai Kupe ka kī "kua kā kē ngā ahi"
E mura te aroha a Te Ātiawa te uri a Te Kāhui Maunga ki tuarangi te whakaeke mai

Give me terrestrial and celestial guidance
So I can quickly glimpse the ethos
That gave being to the fish of Maui
Descending the sacred depths, the sacred heights
As I seek the nest of beginning of the great fish of Maui-tikitiki-a-Taranga

Rangi Tukutuku is the fishing line
Pikimai Rawea is the hook
Maui Potiki casted into the depths and
Hooked the board of the house of the Ponaturi
The hook found entangled on the eastern fins
Haha Te Whenua was the fish under the water
The fishing was no easy task for Tu Te Hiku
The great fish hauled up breaking the surface.

Mass laid bare to the sun, exposed to the winds
The creation of the mountain clan Ruapehu, Tongariro, Taranaki and Ngauruhoe
A selected few of the mountain clan were sent to the head of the fish
Unto Te Wai Manga

To prise open the mouth of the fish
Ensuring the mixing of the waters
Kupe arrived quoting "The fires of occupation were already burning".
Let the flames of hospitality of Te Ātiawa, the descendants of Te Kāhui Maunga
welcome one and all

Eastern Bays Vision.

The Tupua Horo Nuku section of Te Ara Tupua, is a coastal shared path along the edge of Te Whanganui a Tara.

The Project is to construct, operate and maintain a shared path along the coast between Ngau Matau/Point Howard and Matua-iwi/Eastbourne (excluding Days Bay) improving overall access and connection while providing for gathering spaces and coastal planting. At its northern point the shared path connects with the Petone (Pito-One) to Melling and Pito-One to Ngā Ūranga sections of Te Ara Tupua via Seaview and the Petone Esplanade. It will replace an existing narrow and discontinuous path alongside Marine Drive and includes works required within bird protection areas. The means to review and reduce speed limits within the bays does not form part of this project.

The footprint for the Project will be formed along the edge of the harbour using a mixture of sloped rock revetments and seawalls. In some areas no seawall works are required. In summary, the Project includes:

- The construction of a continuous shared path along the coastal edge of Marine Drive.
- The replacement of parts of existing seawalls and the construction of new curved seawalls with either a single, double or triple curve seawall face.
- The placement of rock revetment to protect the path at certain locations subject to increased wave exposure.
- The construction of new structures, additions and/or alterations, replacement, and removal and demolition of existing structures including boat ramps, beach access structures and stormwater outlets.
- The placement of beach nourishment material at three beaches – Ngau Matau/Point Howard, Whiorau/Lowry Bay and York Bay.
- Construction of safety barriers at locations where the fall height from the crest of the seawall will exceed 1 m.
- The establishment of bird protection areas at Sorrento Bay, Whiorau Reserve, north of Bishops Park and HW Shortt Park.

Mana Whenua Partnership

Waka Kotahi has a formal partnership with iwi mana whenua (Taranaki Whānui and Ngāti Toa Rangatira). As part of this partnership, the Te Ara Tupua Alliance aims to include Mana Whenua and help realise broader outcomes for mana whenua, Māori, Pacifica and local communities – from inception to delivery. The Mana Whenua Steering Group (MWSG) is the place where Waka Kotahi and Mana Whenua work as partners to provide stewardship Te Ara Tupua, in particular input into all aspects of the project.

The Mana Whenua Steering Group gifted the name ‘Te Ara Tupua’. Te Ara Tupua includes Wellington to Ngā Ūranga, Ngā Ūranga ki Pito-One, Pito-One to Melling, and Tupua Horo Nuku (The Eastern Bays).

The Te Ara Tupua Kaitiaki Strategy provides an articulation of Mana Whenua expectations and aspirations. The Kaitiaki Strategy ensures the narrative of Tupua Horo Nuku and the principles expressed in the Kaitiaki Strategy are applied and given effect to in the design of the main components of the Project. This includes the overall shape of the footprint, the bird protection areas, structures, materials used, narrative and naming conventions, signage, arrangement of spaces, sculptures and artwork. Doing this recognises the mana and mouri of Te Ara Tupua.

What Will the project bring to the Eastern Bays

- Tupua Horo Nuku aims to promote walking and cycling in the Hutt and champion Council’s vision of a city which is a great place to live, work and play.
- A transport system that requires people to be active is hugely beneficial to cities, as well as to the health and wellbeing of the individuals that participate. Benefits include thriving business areas, reduced congestion and vehicle operating costs, greater safety, resilient infrastructure and a better environment.
- It offers opportunities to enhance habitat for intertidal species, little penguins and shoreline foragers.
- Embedding cultural designs throughout the project
- Depicting and highlighting cultural narratives

Connectivity, health and wellbeing

Presently there is little cycling and pedestrian usage along Marine Drive. This is a significant lost opportunity for the Eastern Bays community which identified completion of the project as its most important issue, with climate change and extreme weather event concerns next.

Marine Drive, with its narrow or non-existent road shoulders and footpaths, does not provide a safe and comfortable environment for cycling or pedestrian usage. The project will improve cyclist and pedestrian safety by providing a dedicated path, separated from vehicles, and improved connectivity:

- Between and within the Eastern Bays for recreation, access and commuting;
- To Lower Hutt and beyond for work, education and recreation; and
- To other regional cycle trails, such as the Remutaka Cycle Trail, the Great Harbour Way (Te Aranui o Pōneke) and the Beltway cycleway.

Further, enhanced connectivity provided by the project will result in significant social, cultural, economic and recreational benefits and enhanced connection with the coast along Tupua Horo Nuku. Improved safety will also encourage the uptake of active modes of transport, providing health and wellbeing benefits, reducing congestion and CO2 emissions and most importantly providing sustainable travel choice which aligns with the current Government Policy Statement for Transport.

Resilience

Marine Drive provides the only road, infrastructure and utilities connection to the Eastern Bays community. It also accommodates the main Hutt Valley sewer line between the Seaview Wastewater treatment plant and the outfall at Bluff Point (approximately 500m south-east of Te Rae-Akiaki/Pencarrow Head). The Seaview plant and outfall services some 140,000 people. As Marine Drive predominantly runs between the houses and the coast it also provides coastal protection to those properties.

Eastern Bays Vision.

Marine Drive is vulnerable to wave overtopping and closure or reduced operation. Presently this necessitates considerable ongoing maintenance requirements following storm events. The present 'seawall' is an adhoc mixture of various structures constructed on an as needed basis, normally following loss of structural integrity or washouts over many years. It is vulnerable to failure and does not provide consistent, nor effective, storm mitigation with roughly a third of the existing seawall having less than 15 years of life (some areas considerably shorter).

Sea level rise will increase the frequency of inundation and overtopping of the existing structures. The threat is imminent with a 16cm rise predicted between 2030 to 2040. Given the low lying and exposed nature of much of Marine Drive and the limited height and poor design of many existing structures, high tides already cause issues at some locations and sea level rise on its own will compromise Marine Drive. The effects of sea level rise are significantly compounded by climate change resulting in greatly increased storm events. Presently some areas of Marine Drive are significantly affected during storm events. But between 2030-2040 the present 1 in 100-year storm event is predicted to become a once per year storm event on average. Storm events increase tidal height as well as wave height. The combined effects result in significantly greater overtopping, inundation and wave effects.

It is predicted that without the Project (or comparable works) such storm events between 2030-2040 will considerably increase temporary closures of, and potentially result in the compromise of, ever larger sections of Marine Drive; resulting in an increasingly marginal level of service into the future. That will in turn result in reduced access (including utility connections) to the Eastern Bays and potential severed infrastructure (the most significant being the main sewer pipe). The loss of these connections would put the health and safety and wellbeing of some 5,000 people at risk as well as creating potentially significant regional adverse effects (for example if treated wastewater were to be discharged directly into Wellington Harbour).

While the project itself will not provide full protection against such events it significantly increases the resilience and functionality compared to the existing seawalls and provides a design to be adapted in future. In doing so it buys time for long-term solutions to be considered and, if required, provides a foundation on which additional resilience measures can be constructed in the future.

Responding to Eastern Bays Environment

The Project responds to the coastal environment of the Eastern Bays. Project development included a detailed alternatives assessment to consider other options. Due to the terrain, existing inland properties and driveway/road connections, an inland option was not recommended. Additionally, such an option would not have provided any resilience benefits to Marine Drive. Therefore, coastal options were considered. The recommended option (which became the Project) strikes a balance between providing a resilient structure to respond to climate change, and providing for safe cycling and pedestrian usage, while minimising the amount of land to be reclaimed from the coast and the effects on the coastal environment.

Following extensive engagement with the community and interested stakeholders the Project has gone through further design refinement to avoid and mitigate adverse effects on the environment. The result is that while the Project will change the current environment along Marine Drive, it will:

— Provide a safe shared pathway as a welcomed addition to the area for all
— Provide and recognise cultural narratives and values
— Not have a more than minor effect on ecology, including penguins, shorebirds, seagrass;
— Not have more than minor landscape and amenity effects;
— Have recreational and economic, health and safety and wellbeing benefits and;
— Provide a base for the community to adapt to the effects of climate change.
— Provide opportunities for cultural expression and placemaking.

Time Line

— Tupua Horo Nuku is important to the local community. Eastern Bays communities have highlighted the project as the most important issue in the area.
— Three business cases have been progressively completed: Strategic, Indicative and Detailed Stages.
— Development of the design in consultation with stakeholders and the community has been undertaken.
— The resource consent application was lodged in April 2019 with Greater Wellington Regional Council and to Hutt City Council.
— The application was publicly notified in November 2019 and over 200 submissions were received.
— Funding for the project was secured in August 2020.
— The hearing for the consent application was held mid-December 2020
— The Decision was issued on 5 March 2021. This included a final set of conditions.
— Development of the Landscape and Urban Design Plan as per the consent conditions including Community and Mana Whenua Steering Group Engagement.
— Development of the Bay Specific Urban Design Plans for Sunshine Bay and Windy Point being planned for late 2021 early 2022.

Kaitiaki Strategy.

A Kaitiaki Strategy has been prepared by Taranaki Whānui advisors. This provides an holistic guide for the project to realise the mana and mouri of Te Ara Tupua.

A summary of the strategy is included here, as an introduction to the design principles that have informed the LUDP and concept to date. The Kaitiaki Strategy is a 'living document' which will be used to guide future stages of the project. The Strategy background section is set out below and the principles in Section.

"Tenei ka tukuna atu ngā mihi kia koutou katoa

Everything that is here has a whakapapa which is long and deep – within that whakapapa lies our understanding of the world around us. When we re-build that connection we will come to realise that nature has its own way of doing things, of acting, responding and we the ira tangata are only one piece of that story. Our responsibility within that piece is to co-exist with our environment and deeply this strategy considers how that may be achieved as it relates to Te Ara Tupua.

We are not above the environment - we are pieces of an interconnected and interdependent web of tupuna (ancestors) and uri (descendants).

This kaitiaki strategy seeks to correct the relationship we have with our environment through the articulation of our ways of being which are sourced from our Taranaki Whānui association with Te Whanganui a Tara and in particular the creation of our new feature - Te Ara Tupua.

Within our natural lores there is no good or bad, punishment or reward for how we act to one another and our environment. Within our world there are only consequences. When we sit in solemnity with our environment we will hear and feel the vibrations of whakapapa. When we feel those vibrations, we know intimately what must be done.

Our iwi and wider community have much to gain from re-connecting to our environment, learning its stories, feeling its vibrations of whakapapa and giving heed to its identity. These are the building blocks which will assist us as we respond to the changing needs surrounding climate change, resilience, connection to nature and place as it connects to Te Ara Tupua.

This Kaitiaki Strategy will set out the principles of Te Ara Tupua. More than that it will chart a path of innovation – a tupuna pathway that through its implementation it will see the change in our behaviours that ensure within this corner of our great Harbour, we may be closer to a truer sense of co-existence.

Te Ara Tupua is interlocked with Ngāke and Whātaitai the great Tupua summoned by the Mountain Clan to prise open the mouth of the fish of Maui. Te Ara Tupua seeks to excite people through seeing differently and to generate a natural relationship to our world – the world left behind by Ngāke and Whātaitai.

This Kaitiaki Strategy challenges us as Mana Whenua to do our piece, to conjure up our true understanding of who we are and apply that in manner consistent with our tikanga. With our partners and friends, we will re-create something that others may see as unique, but to us we will see a mirror of our not so distant past.

Informed by the Te Ara Tupua Steering Group, partners and friends - priorities will be set which will inform our work, practice and application of resource.

When you look at this amazing landscape which our Tupua have left behind you quickly come to realise its dynamic nature, its beauty and its wonder and also its age and spirit. Te Whanganui a Tara has a history and memory that stretches far beyond what we can even think to comprehend. In living within this environment – Taranaki Whānui have aspired to live by the standards and principles set before us so we may achieve not only survival but also for permanency and prosperity."

Schematic Draft Master Plan.

A Coastal Experience

Tupua Horo Nuku is comprised of a series of bays and spatial components which form the basis for the coastal experience along the shared path. The schematic masterplan opposite broadly illustrates the locations and repetition of these elements. Design requirements relating to location, experience, materials and maintenance for each element are discussed in following pages.

Project elements are broadly defined as the following:

New Coastal Edge

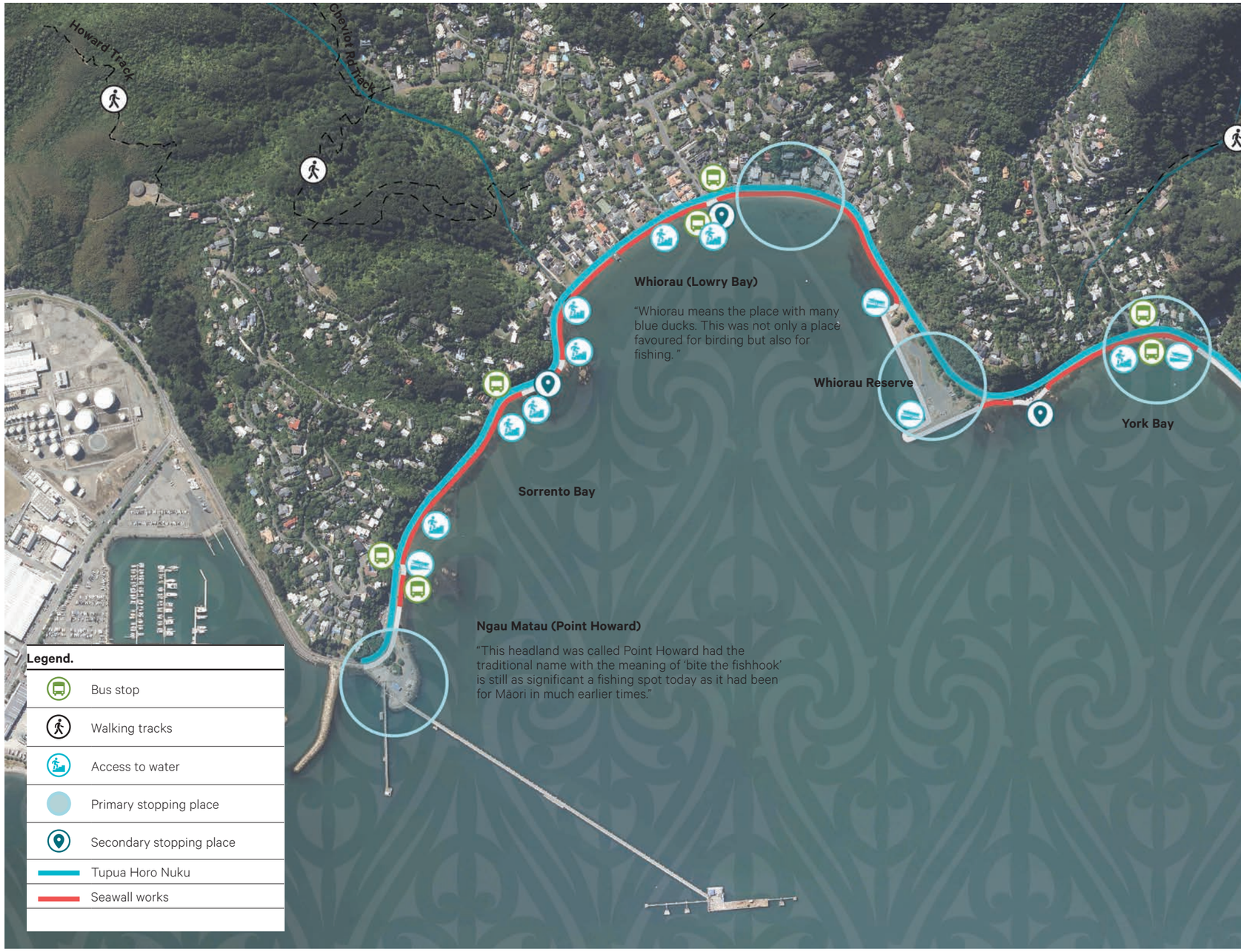
The new coastal edge will form the footprint and base of Tupua Horo Nuku and is to be constructed using a mixture of seawalls and sloping rock revetment. Some parts of the route will not have any seawall works undertaken.

The Path

The coastal path varies in width between 2.5-3.5m connecting Eastbourne to Pito-One and other sections of Te Ara Tupua while providing access to the coastal environment. New access points will connect the path to the foreshore along each of the bays.

Gathering Spaces

Gathering spaces and coastal planting off the main path, offer a varied experience along the route that connects people to the coastal edge and serve as destination and focus for cultural expression.



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N

Kaitawe Rd Track

Ferry Rd Track

Koromako Track

Kereru Track

Hawtrey Route

Mahina Bay

Sunshine Bay

Oruamotoro (Days Bay)

"This was a Ngati Ira fortified village however the name can also apply to the bay. Said to have been built by Te Hiha. Possible urupa/burial ground "

Ma-koromiko/ Okiwi-iti (Browns Bay)

"Browns Bay, so named after the notorious "Okiwi Brown". The original name of this spot was Ma-koromiko, it was renamed Okiwi after a Rangitane chief named Kiwi who was slain there, and later the suffix 'iti' was added to distinguish it from Okiwi-nui.

Okiwi-iti is the very small bay between Days Bay and Rona Bay on the eastern shore of the Wellington Harbour. "

Windy Point

Matua-iwi Pa (Eastbourne)

"A Ngati Ira pa at Robinson Bay, originally known as Okiwi-nui, now Eastbourne. Matua-iwi pa was sometimes loosely referred to as the Okiwi-nui pa but the real meaning intended, that if Elsdon Best's information can be relied upon, it would be the Matua-iwi pa at Okiwi-nui. "

LUDP Introduction.

The Project aims to develop a safe and integrated walking and cycling facility along Marine Drive to connect communities along Hutt City's Eastern Bays, and to provide links to other parts of the network for recreation, commuting and tourism purposes. Currently, pedestrians and cyclists connectivity and use along the Eastern Bays is low. This is due to a lack of dedicated cycling and walking facilities and the tightly constrained nature of Marine Drive. For the most part, cyclists and pedestrians must use the road shoulder, which is very narrow and non-existent in sections.

The proposed Shared Path varies in width depending on the physical constraints of the bay environments, from 2.5m to 3.5m. Vertical curved seawalls to support the shared path have been chosen across the majority of the Project length because they deflect wave overtopping most effectively and create a reduced footprint on the foreshore compared to other non-vertical seawalls. The Project also provides a basis for future opportunities for protecting the resilience of the road and underground services by upgrading the supporting seawalls. Approximately five thousand people live along the Eastern Bays, with Marine Drive providing the only road and infrastructure service connection.

A comprehensive suite of management plans relating to both the construction and operational phases of this Project have been developed to avoid or minimise the potential adverse environmental impacts of this Project and to meet the Project's resource consent conditions.

This Landscape and Urban Design Plan (LUDP) forms part of that comprehensive suite of management plans. It is a living document and will be updated, subject to necessary processes, throughout the course of the Project to reflect design and construction changes. Any amendments will be made in accordance with the processes agreed with the relevant Councils.

Purpose of the LUDP

The purpose of the LUDP is to provide detailed design for the Project that responds to local landscape character, identity and land use, and is in general accordance with the Design Features Report and other relevant management plans and documents referred to in Condition GC.1.

The Design Features Report (dated January 2019) set out a series of typical designs developed as part of the preliminary design that contributed to the mitigation of any adverse effects that may result from the Project.

Objectives of the LUDP

The objectives of the LUDP are to:

— Integrate the Project's permanent works into the surrounding landscape and urban context
— Illustrate the urban and landscape design elements of the Project
— Outline methods and measures to avoid or minimise adverse effects on natural character, landscape and recreational amenity during the construction of the Project.

Supportive References

The following documents and processes have been referred to in the development of this LUDP and the design elements.

— Design Features Report.
— Assessment of Environmental Effects for intertidal ecology.
— Assessment of Environmental Effects of beach nourishment on intertidal and subtidal beach areas.
— Bird Protection Plan
— Cultural Impact Assessment
— Cultural Overlay for Tupua Horo Nuku
— Te Ara Tupua CEDF
— Mana Whenua Steering Group Engagement
— Landscape and Visual Assessment
— Seawall and Revetment Habitat Plan
— Hutt City Council requirements.
— Waka Kotahi guidance for cycleway design.
— Community consultation and open day

Certification

This Landscape and Urban Design Management Plan (LUDP) must be submitted to Greater Wellington Regional Council ("the Manager") and/or Hutt City Council ("Team Leader") for certification, not less than 20 working days prior to the commencement of any stage of construction works.

Amendments to the LUDP may be requested by submitting the amendments in writing to the Manager/Team Leader. Any amendments made to this LUDP shall ensure that the plan will continue to achieve its stated objectives and functions to the satisfaction of the Manager/Team Leader. No changes may take effect until the Manager's/Team Leader's certification (that the plan will continue to achieve its stated objectives and functions) has been received.

Each revision of this document will differentiate between amendments (changes that occur as a consequence of construction).

Integration with other Management Plans

The Construction and Environmental Management Plan (CEMP) is intended to provide an "overarching" document comprising the general environmental management principles, processes and standards which are generic to achieve project objectives.

Definitions.

Acronym/Term.	Definition
BSUDPs	Bay Specific Urban Design Plans.
BNP	Beach Nourishment Plan.
BPP	Bird Protection Plan.
CEMP	Construction and Environmental Management Plan.
Certify, certification and certified	In relation to a management plan, means assessed by Council staff acting in a technical certification capacity and, in particular, whether the document or matter is technically consistent with the requirements contained within the conditions of this consent.
CMA	Has the same meaning as 'coastal marine area' in section 2 of the RMA.
Commencement of Construction	The time when Construction Works (excluding site investigations and Enabling Works) for the Project (or a part of the Project) commence
Completion of Construction	When construction of the Project (or part of the Project) is complete.
Construction Works	One or more of the various activities (excluding site investigations and Enabling Works) undertaken under these resource consents.
Consent Holder	Hutt City Council.

Acronym/Term.	Definition
Enabling Works	Includes the following and similar activities: (a) geotechnical investigations (including in the CMA), including access on land for these investigations; (b) establishing site yards, site offices, site entrances and fencing; (c) establishing bird protection areas for Little Penguin and Shoreline Forager populations and an oystercatcher protection area; (d) demolition or removal of buildings and structures; (e) relocation of services; and (f) establishing minimisation measures (such as erosion and sediment control measures).
HNZPT	Heritage New Zealand Pouhere Taonga.
Little Penguin Interest Group	Department of Conservation, Mike Rumble, Eastbourne Pest Control and Forest & Bird.
LUDP	Landscape and Urban Design Plan.
Manager, Environmental Regulation	The Manager, for the time being, of the Environmental Regulation Department, Wellington Regional Council.
MHWS	Mean High Water Springs.
MWSG	Mana Whenua Steering Group
Project	The design, construction, operation and management of Tupua Horo Nuku Project and associated works.
RMA	Resource Management Act 1991.

Acronym/Term.	Definition
Shoreline Forager	Variable oystercatcher and red-billed gull.
SRHP	Seawall and Revetment Habitat Plan.
Team Leader, Resource Consents	The Team Leader for the time being of the Resource Consent Department, Hutt City Council.
TMP	Traffic Management Plan.
Working day	Has the same meaning as in section 2 of the RMA.

Consultation Summary.

Historic Consultation & Review Summary

Historically, consultation with the local community and key stakeholders started in November 2016 when the project team sought views from members of the public at a community open day. The resident's associations for the respective bays were actively involved in meetings during the August 2017 consultation period and since September 2017, there has been further engagement with residents and representatives of the resident's associations to refine the design.

Many of the issues raised through the previous feedback process were taken on board and incorporated into the preliminary design. Similarly, the vast majority of the 'bay by bay' feedback received has been included in the design. Some of the main design features that have been included in the design in response to feedback, are:

- Accessways have been retained where possible, and new access steps have been proposed at regular intervals to ensure that the community has convenient access to the beaches and rocky foreshore.
- The ramps will have a 1:8 gradient to improve access to the beach.
- The shared path has incorporated varying widths (2.5m and 3.5m) so that there is a narrowing along beaches to reduce the amount of widening into the beach environment, thereby trying to retain as much of the foreshore as possible.
- Following consultation, the 'dwarf mass concrete' treatment was replaced by a single curved seawall to create a consistent profile to that of all other curved seawalls.

Ongoing feedback from the community has informed the design process and will continue to do so as the Project continues into the detailed design phase.

LUDP Consultation

In accordance with Condition LV.3 the LUDP is required to be prepared in consultation with:

(a) The Mana Whenua Steering Group. Condition MW.1;
(b) Relevant Resident Associations;
(c) Hutt City Council (Parks and Reserves);
(d) The Eastbourne Community Board; and
(e) The East Harbour Environmental Association.

Mana whenua partnership
Te Ara Tupua Mana Whenua Steering Group (MWSG) was initially established to enable a partnership between Waka Kotahi, Taranaki Whānui and Ngāti Toa. Mana Whenua Steering Group has evolved and extended to enable a Treaty partnership encompassing Tupua Horo Nuku and the RiverLink programme.

The Mana Whenua Steering Group is the central point for coordinating Mana Whenua specialists' input to the project and to the LUDP. The Mana Whenua Steering Group nominated cultural design lead Len Hetet to work with Kura Moeahu as cultural narrative expert and incorporate the Tupua Horo Nuku narrative into the plan.

Throughout the process of completing the LUDP, the project team provided updates to the Mana Whenua Steering Group at regular monthly hui. The Mana Whenua Steering Group provided comments on the draft LUDP in late November.

Relevant Resident Associations
In addition to the public open day, two workshop sessions specific to the bays' resident associations were held. These workshops provided an update on the project and an introduction to the purpose of the plan, followed by a semi-structured discussion focussing on broad subject areas within the plan, and on any particular topics of interest to the representatives present. Representatives of the resident associations were also invited to provide further written comment as a follow up to the workshop sessions.

Hutt City Council (Parks and Reserves)
A meeting was held with Janet Lawson, Reserves Asset Manager, Hutt City Council on Wednesday 24 November, to seek the feedback of the Parks and Reserves team on the plan.

Eastbourne Community Board
A workshop was held with the Eastbourne Community Board on Wednesday 10 November. This workshop followed a similar format to that outlined for the resident association workshops. Representatives of the Community Board also attended resident association workshops.

East Harbour Environmental Association
A meeting was held with the East Harbour Environmental Association on Friday 19 November. Subsequently, the EHEA sent written feedback on the plan.

Themes discussed

Cultural narrative in design
The cultural narrative was gifted to the project by Kura Moeahu of Te Ātiawa Taranaki Whānui, endorsed by the Mana Whenua Steering Group, and interpreted in a design cultural overlay by cultural design lead Len Hetet. These were incorporated in the draft LUDP. The cultural narrative and design elements were shared with the stakeholder groups as part of the consultation. There was broad support particularly from the Community Board for the prominent inclusion of the cultural narrative and a desire to learn more about the precolonial history of the area, and to highlight this through the project. Increased use of Māori placenames was strongly supported.

Seawalls, revetments and barriers
Seawalls, revetments and barriers were a subject of active design work during the period of consultation on the LUDP. In particular, the design of the seawalls was under consideration as the project examined the issue of safety from falling. The stepped curved seawall design prepared during the consenting phase did not sufficiently protect path users from injury in a fall to meet current building code and Health and Safety at Work Act requirements. At the same time, adjustments to the seawall design were developed to incorporate a construction methodology making use of pre-cast segments in the wall to help accelerate delivery.

Feedback from those consulted indicated opposition to balustrades as a fall from height barrier on visual grounds as well as concerns about maintenance and damage. There was support for continued use of the curved stepped design.

The solution for the fall from height issue will include use of a wider 'step' in the seawall design, which may result in a narrower shared path in some areas – as the footprint of the project overall cannot be increased within the consented boundaries. In some places, a balustrade will be needed but this is expected to be a minority of the path length and balustrade length will be minimised. Rock revetment will be used in areas of the shared path where an existing revetment exists on the coastal edge.

Ecological measures and bird protection areas
The LUDP makes reference to the Bird Protection Plan and the Bird Protection Areas. Some of the Bird Protection Areas are away from the main Shared Path project and have not been directly discussed with the community until now.

During consultation a view was expressed that new fences or screens bounding the bird protection areas might cause concern to some residents due to impacts on views. Further work will need to be done on this during the bay-specific planning stage, however this will focus how to best minimise the visual impact of the screens as the bird protection areas are required as a condition of consent.

There was support expressed in the consultation for use of textured concrete and manufactured tidal pools as part of providing habitat along the seawalls and revetments. These are included in the project's Seawall and Revetment Habitat Plan

Beaches
The consultation made it clear that the use of the beaches within the Bays is of high importance to many in the Eastern Bays community. Some feedback requested that the shared path be narrowed at beaches to avoid impacting beach area, while other feedback sought a consistent wide shared path throughout the project, suggesting this issue is finely balanced.
Access from the path to the beaches was raised many times and the design of steps and ramps will be refined during the Bay-specific Urban Design Plan stage.

Beach nourishment was discussed with some people wanting to see additional nourishment – either nourishment of beaches where this is not currently planned or a plan for ongoing nourishment (due to a view that nourished beaches would likely continue to deplete after nourishment). No further beach nourishment can be included (either over time or in additional bays) as this is limited by the resource consent.

Street furniture and signage
The LUDP envisages furniture that is coastal in nature, with chunky and rugged forms. It anticipates the furniture being placed sparingly to avoid creating visual clutter. This was accepted by those consulted. Signage was discussed at some of the consultation meetings. There was a request for clear cycling directional / wayfinding signage readable by moving cyclists, in addition to other more architectural signage.

There was support for historical / cultural interpretive signage to be placed along the shared path including sharing the Māori and early European history of the bays.

Bus stops
Throughout the consultation bus stops were discussed. The bus stop locations, the configuration of the road and path around bus stops, and the design of the bus shelters are all topics of interest. In some bays, retention of the existing bus shelter was important to those consulted.

This will require further development when the Bay-specific designs are completed. The LUDP establishes a framework which gives flexibility to this while ensuring good bus stop design from a path and public transport user perspective.

Parking and access
Some areas along the shared path route are currently used informally as parking. While these are not formal marked parking spaces, they will not be available during construction or when the shared path opens. An example is at the Sorrento Bay Bird Protection Area where a small headland currently has a gravel surface and a bench seat.

This area is proposed to be within the Bird Protection Area, meaning parking will no longer be possible. Details of these changes will need to be finalised as a part of Bay-specific designs.

Matters outside the scope of the project

During the consultation key topics were raised which sit outside the Tupua Horo Nuku project.

Shared path through Days Bay
At the public open day and in consultation meetings, continuing the shared path through Days Bay was raised. This is not currently part of the Tupua Horo Nuku project and has been considered in association with Williams Park redesign work.

Speed limit and traffic calming
Many of the Bays residents associations called for the speed limit on Marine Drive to be reduced. It currently varies between 70km/h and 50km/h. Mahina Bay Residents Association submitted a survey of residents showing strong support for a reduced speed limit. An investigation of speed limits is a condition of consent for the project but is being completed in parallel by Hutt City Council, rather than by the shared path project team at this stage.

Undergrounding of power poles
In some bays, power lines have been placed undergrounded historically, however this was not completed in all bays. There was a request from residents to consider inclusion of further undergrounding within the shared path project. This is currently outside the scope of the project and the team will work with Wellington Electricity on the relocation of power poles and lines associated with the project.

Relevant Consent Conditions & Compliance.

The consent conditions are set out in a comprehensive document and form the basis of this LUDP. The conditions outline the purpose of the management plans, the contents of the plans, expert inputs, stakeholders to be consulted, the approval and certification process and how to manage disputes. The conditions that are relevant to this management plan are listed below with a statement of compliance.

LV.1

The Consent Holder shall prepare a LUDP for the Project and submit this to the Manager, Environmental Regulation and Team Leader, Resource Consents for certification that the process is in accordance with the conditions to achieve the purpose in Condition LV.2 and in accordance with the requirements of Condition GC.5. The Consent Holder shall provide the LUDP for certification within 3 months of the commencement of the consents. The process to prepare the LUDP, including as set out in Condition LV.3, must be completed within this timeframe.

Compliance

This LUDP will be submitted on 10 December 2021 for certification. It should be noted this certification date is an agreed extension of time to the previous certification date that would of been 10 September, 3 months from the commencement of consents.

LV.2

The purposes of the LUDP are to:

(a) Provide a detailed design for the Project that responds to local landscape character, identity and land use and is in general accordance with the Design Features Report (dated January 2019) and other relevant plans and documents referred to in Condition GC.1;
(b) Integrate the Project's permanent works into the surrounding landscape and urban context and to illustrate the urban and landscape design elements of the Project; and
(c) Outline methods and measures to avoid or minimise adverse effects on natural character, landscape and recreational amenity during the construction of the Project.

Compliance

This LUDP provides a comprehensive response to integrate the Project's permanent works into the surrounding landscape and has done so in reflection of the Design Features Report and relevant Management Plans. The Design Features Report and relevant Management Plans have been referred to throughout the document when applicable.

Measures to avoid or minimise adverse effects during the construction of the Project have been summarised at the end of the LUDP and have also taken into account suggested mitigation measures from relevant specialist reports.

Relevant LUDP Sections:

— Design Features Report - page 53
— Urban Design Outcomes - page 52
— Environmental Outcomes - page 28
— Managing Construction Effects - page 76

LV.3

The LUDP shall be prepared by the Consent Holder with input from a suitably qualified and experienced ecologist, engineer, landscape architect, recreation specialist, traffic engineer, urban designer and access and mobility advisor and, in consultation with:

(a) The Mana Whenua Steering Group to be established under Condition MW.1;
(b) Relevant Resident Associations;
(c) Hutt City Council (Parks and Reserves);
(d) The Eastbourne Community Board;
(e) The East Harbour Environmental Association

Compliance

The LUDP has been prepared with input from all qualified and experienced personnel as per condition LV.3. This has been achieved through Te Ara Tupua Alliance and Hutt City Council.

The Mana Whenua Steering Group has been established under condition MW.1 and the group have been engaged at various stages throughout the development of the LUDP, providing review and direct input into the cultural narrative, project vision, and sought outcomes.

Consultation with residence associations, HCC Parks and Reserves, Eastbourne Community Board, and the East Harbour Environmental Association has been undertaken.

Relevant LUDP Sections:

— LUDP Consultation & Review - page 6
— Mana Whenua Principles - page 10
— Te Ara Tupua - page 12
— Tupua Horo Nuku - page 13
— He Waiata - page 15
— A Layered Cultural Landscape - page 24
— Environmental Outcomes - page 28
— Placemaking - page 40
— Cultural Design Response & Build - page 42
— Urban Design Outcomes - page 52

LV.4

The LUDP shall reflect and/or incorporate any relevant management plans as appropriate and, as a minimum, shall address how the detailed design of the Project:

(a) Achieves design outcomes based on the following environmental effects:
  (i) Safety;
  (ii) Ecology;
  (iii) Natural character;
  (iv) Public access; and
  (v) Urban design, recreational and visual amenity;

(b) In the event of conflict between the environmental effects in (a), they will be considered in accordance with their order listed in (a), subject to the significance (if any) of their values relevant to the specific design matters being considered, and the significance of the matters in the context of each individual bay;

(c) Responds to any relevant design elements recommended in the BPP while applying the same approach as in (a) and (b); and

(d) Responds to:
  (i) The design principles set out in Appendix J: Design Features Report (dated January 2019) and other relevant plans and documents referred to in Condition GC.1; and
  (ii) Relevant Industry Standards.

Compliance

The LUDP both reflects and incorporates relevant management plans throughout the document. Such management plans are the Bird Protection Plan (BPP) and the Seawall and Revetment Habitat Plan (SRHP).

Matters within the BPP relating specifically to penguin safety from road/ shared path crossings and penguin nesting opportunities within revetment structures will be addressed in detail through the BSUDPs.

Design outcomes have been addressed across two LUDP chapters; Environmental Outcomes and Urban Design Outcomes. All environmental effects listed under condition LV.4 have been addressed. Design elements sought in the BPP have been integrated into the LUDP through the Urban Design Outcomes Section.

The Environmental Outcomes and Urban Design Outcomes chapters of this management plan take into consideration principles set out in the Design Features Report and further principles provided by the Mana Whenua Steering Group. In addition to these principles, responses set out in the LUDP follow industry standards relating to best practice design, ecology, safety in design, and construction management.

Principles outlined in the Design Features Report specific to maximising the width of the shared path have been amended in response to safety concerns and community feedback. The design will now seek to strike a balance between maximising path width, minimising encroachment on the beaches, and minimising the use of balustrades as fall protection.

Relevant LUDP Sections:

— Environmental Outcomes - page 28
— Urban Design Outcomes - page 52
— Managing Construction Effects - page 76

LV.4A

The LUDP shall reflect and/or incorporate bus stop/shelter design that enhances safety and convenience, and minimises risk, for all users of the Shared Pathway and the road. Bus stops/shelters requiring replacement will, to the greatest extent practicable, be designed taking into account the following design principles:

(a) A preference that the shared path run behind the bus stop/shelter;
(b) The bus stop/shelter will be raised (separated with a kerb from the traffic lane where possible);
(c) The bus stop/shelter will be designed in accordance with universal accessibility principles (such as, but not limited to, wheelchair friendly ramps and tactile pavers); and
(d) Bus stop/shelter design will be fit for purpose to appropriately protect public transport users from the coastal elements.

Compliance

The LUDP supports the principles set out in LV.4A, and has responded to these considerations in the Bus Shelters section on page 71.

Due to the nature and scope of the LUDP and the site specific constraints that will be present at each bus stop/shelter location, the LUDP has not explored detailed design of the structures or the site specific setouts within each bay. This will be addressed in the bay specific plans with further community consultation.

Relevant LUDP Sections:

— Bus Shelters - page 71

Design Principles.

Mana Whenua Principles

These principles guide our Mana Whenua aspirations and expectations for Tupua Horo Nuku, they create a foundation on which the intangible impacts of the Project can start to be assessed, and provide a mechanism for Taranaki Whānui and Ngati Toa interests to be provided for. These principles link our connection to the environment in both a physical and spiritual way which guides our behaviours to protect and care for our environment.

Ranginui
The connection to the various spiritual realms of the great and vast heavens, the source of light and understanding, growth and ultimate link to the celestial family.

Mouri
The mouri of Tupua Horo Nuku – the living relationship between the forests, the cliffs, the waterways, the harbour and everything that lives within that environment have their own individual and interdependent vitality

Wai Tai, Wai Māori - Ngā wai tuku kiri tai noa atu ki Hinemoana
The connection between the springs, streams, aquifers, rivers and all waterways that bring with them their life, mouri and mana which eventually mingles together with our harbour

Ahua
The character of Tupua Horo Nuku is seen, the beauty, the mystique, the wonder, the wild and rawness – the identity of Tupua Horo Nuku endures beyond the present through capturing and captivating the hearts and minds of the few and the many

Tātai Whakapapa
The history, the connections, the relationships and friendships – they shape the land and the people

Whānau
The care of visitors and people is embedded in the identity of Tupua Horo Nuku seeking to ensure a strong sense of connection imbuing a strong sense of responsibility towards the area

Mana Whenua
Tupua Horo Nuku is seen as a living piece of the identity of Mana Whenua who take pride in this space, taking on the obligation of care, responsibility and giving life to its history and story

Papatūānuku
The mountains, the cliffs, the landforms, the geology, ngahere, trees, birds – they all need each other to exist.

Universal Design Principles

Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. Such principles for the Tupua Horo Nuku are (but not limited to);

— Slip resistant and even, well-maintained surfaces free from obstacles and trip hazards
— Enough turning space for mobility devices
— Tactile indicators to warn and direct pedestrians
— Strong tonal contrast between street furniture and pavements
— Use texture and colour contrast to provide pathway guidance
— Use audible or tactile indicators to provide warning or wayfinding information
— Clear signage with appropriate colour contrast and font
— Steps to beach areas have handrails

Overarching Design Principles

The overarching design principles outlined in the Eastern Bays Marine Drive Design Guide were taken into account in the earlier design stages and have been incorporated into the Design Features Report which the LUDP must respond too. These design principles are summarised below with further detail adjacent.

— Achieve **compatibility** along the Bays by consistency in the location and design of elements and use of materials.
— Consideration of the whole environment into an **integrated solution**.
— All work must be an **improvement** on what is existing.
— Change seawall type, if necessary, at a promontory, rock outcrop or other major feature within the bay, or in locations where a ramp or set of steps provides a **logical/neat transition** point between wall types.
— Recognise the individual **character of each bay** by reinforcing and strengthening those valued patterns that establish the unique identity of the bay.
— Locate all elements carefully to **avoid visual clutter** and maintain a focus on the seashore and natural environment.
— Design the seawall to be **multi-functional**.
— Design the seawall to be easily **adaptable** to accommodate sea level rise.

Consistency
— To achieve visual consistency within each bay.
— To ensure consistency of style of design elements.
— To ensure that the top of the seawall is consistently and accurately profiled.
— To avoid the use of construction rubble.
— Stormwater pipes are to follow a common design theme and new plastic pipes are to be flush with the seawall
— The transition between types of seawalls is to be integrated to avoid abrupt divisions.
— To maintain general consistency of edge detailing and surfacing along the length of the bays.

Integrated solution
- To develop a safe and integrated walking and cycling facility to connect communities along Tupua Horo Nuku , and to provide links to other parts of the network for recreation and tourism purposes.
- To provide a basis for future opportunities for protecting the resilience of the road and underground services by upgrading the supporting seawalls.

Improvement
- Overall, the work is to be an improvement on what is existing. This will be achieved through consistency of design and an integrated solution. An example of where practical improvements can be made is to remove visible construction rubble (currently used in places as seawall material) with the replacement of seawalls and revetment.

Character of bays
- Design guidelines recognise the individual character of each bay by reinforcing and strengthening those valued patterns that establish the unique identity of the bay. This is achieved (amongst others) by locating all elements carefully to minimise or avoid visual clutter and maintain a focus on the seashore and natural environment.

Seawall transition
- A change in seawall type, if necessary, is to be undertaken at a promontory, rock outcrop or other major feature within the bay, or in locations where a ramp or set of steps provides a logical/neat transition point between wall types.

Multi-functional
- Designing to reduce 'slop and splash' onto the road, ensuring that splash reduction performance (i.e. wave redirection) of new walls is better than those that they replace.
- Providing for/maintain safe pedestrian access to beaches through steps and ramps at frequent intervals.
- Providing appropriate means of access for penguins and maintaining, and where practical enhancing, fish passage.
- Placing stormwater outfalls as low as practicable on the wall and locate where they do not cause erosion at the beach, and where they can provide access for fish.

Adaptability of Design
- The design includes elements that incorporate iterative long term management principles to address sea level rise. The design of a curved seawall can be easily adapted to accommodate sea level rise through increasing the height of the structure. The present designs have adequate structural competence to support the additional loads from raising the defences in the future. Therefore, the proposed seawalls do not preclude future adaptation options or lock-in a future approach beyond that of the present situation and Marine Drive alignment.

Width of shared path
- Both path width options, 2.5m and 3.5m widths, are considered thereby allowing a combination of path widths to be applied. The two options provide the opportunity to alter the width of the path at beaches and sensitive locations. This flexibility in design also enables the shared path to respond to the constraints unique to the various bay environments and mitigate environmental effects on the environment.

Design Objectives

In addition to the overarching principles the following landscape and urban design objectives have been defined for the detailed design stage to support integrating the design elements of the project into the landscape and urban context.

- Sensitively integrate the shared path, the seawalls and associated features with the natural coastal and built urban environment through which they traverse.
- Improve the integration and visual coherence of existing built elements along the coastal edge where appropriate.
- Support the creation of improved habitat for intertidal marine biota and provide for fish passage through existing culverts that are extended as part of the Project.
- Support access to and enjoyment of the project area for people walking, cycling and using other mobility devices (e.g., e-scooters etc) including for local residents and visitors.
- Incorporate cultural values of the Mana Whenua Steering Group into the project design including within places and design elements (Condition MW.3)
- Integrate the aspirations of bays' residents' groups where appropriate (note, these are covered in the BSUDP)
- Design a safe facility for the enjoyment of all users of the shared path.

Detailed Design Principles

Further design principles have been developed to inform the detailed design of landscape elements and support the integration of the design into the landscape and urban context.

- Reflective of rugged coastal environment in terms of materiality and robustness.
- Less is more. Emphasis is to be placed on the natural landscape setting, predominantly the coastal edge, and views, predominantly of the water.
- Allow natural rock outcrops to maintain their integrity when they interface with built elements, such as the path edge.
- Retain natural coastal planting where possible and avoid the use of amenity plant beds along on the coastal edge.
- Where coastal edge conditions / structures change, abrupt changes are to be avoided or minimised through the design of a transition zone.
- Detailing within selected elements to reflect bay specific character / qualities.
- Design consistency across elements, creating a coordinated suite.
- Forms are to be simple and chunky.
- Embellishments are to be used sparingly. Suitable uses include limited colour highlights on new built elements (reference to bright colours seen in the dinghys, bus stops and boat shed) surface texture to path at key locations, signage, ecological habitat and protection features.
- Reflective of existing coastal structures and elements:
  - Wharfs: timber, rectilinear, robust, unrefined, weathered.
  - Boat sheds and bus stops: colourful, historic, decorative, telling a story.
  - Existing furniture: simple, chunky, weathered timber.
- Maintenance considerations – minimal maintenance requirements, especially in the first 5 years (HCC request)

2. Context.

A Dynamic Coastline.

The landscape along the Project route is dynamic with a modified coastline. The natural land forms are characterised by historic and ongoing seismic activity and high energy coastal processes such as waves, strong winds and tides.

The narrative of Tupua Horo Nuku clearly expresses a dynamic landscape created by the Tupua. The word Tupua refers to phenomenon and the narrative of Ngāke and Whātaitai, in creating the harbour Te Whanganui a Tara and Te Awa Kairangi, the Hutt River, are expressive of the land formation events that characterise the area.

The Project design response does address these dynamic conditions, and the effects of future sea-level rise and climate change. A design response to climate change provides an opportunity to consider resilience for the transport corridor, as reflected in the objectives. The design for this Project includes allowance for adaptive response for the predicted climate change effects and sea-level rise (SLR) over that time. Safety for pedestrians, cyclists and other user groups in this environment is also essential.

Seismic Context

Wellington is a seismically active region, sited upon the meeting point of two tectonic plates; The Australian Plate and the subducting Pacific Plate. Major faults in the region include: The Ohariu Fault, Otaki Forks Fault, Wairarapa Fault, and Wellington Fault.

The Whitemans Valley Fault is the closest active fault to the Project and runs through Wainuiomata, some 4km to the east. All of the major faults in the Wellington Region (and the subduction interface) have the potential to rupture causing instant and severe damage to the built environment and transportation networks, and landscape surrounding the Project area, and the wider Wellington region.

Bays and Uplifted Landforms

Wellington harbour occupies a down faulted valley with remnant ridges of Matiu (Somes) and Mākaro (Ward) Islands remaining above sea level.

A steep, rolling ridgeline within the East Harbour Regional Park provides a prominent backdrop to the coastal bays of the Project area. To the south, the Project area is defined by the Windy Point and Browns Bay that sit at the end of a spur. Similarly to the north the Project is defined by Ngau Matau/ Point Howard. Various streams descend from the ridgelines. All streams are culverted under the transport corridor.

The existing road transport corridor from Matua-iwi Pa/Eastbourne to Ngau Matau/Point Howard is built on the narrow raised platform, uplifted during the 1855 Wairarapa earthquake. This earthquake changed the landscape of the Wellington Region and its coastline dramatically with a maximum uplift of 6.4 metres near Turakirae Head, east of Wellington. The maximum horizontal movement along the fault was approximately 18 metres. Globally, this is the largest displacement along a vertical fault line ever recorded.

There were a number of noticeable changes to the coastline between Pito-One and Matua-iwi Pa/Eastbourne. The land rose by 1.5-2m, presenting new beach and rock platforms along the shore which created natural routes for roads to be developed in the following years. Parts of this coastal route would have been previously impassable at high tide.

Subsequent transport and reclamation projects over the years have removed ends of spurs, and introduced rip rap and concrete seawalls with backfill to extend the shelf area for wider roads, pathways, reserves, and property. The uplifted coastal shelf and modifications resulted in a coastline with engineered structures interspersed with remnant headlands, gravel beaches, and offshore natural rocky outcrops.

Mean Sea Level, Tides and Currents

Mean sea level (MSL) is the base level of the ocean on which all waves, storm-tides and other hydrodynamic processes (such as tsunami waves and tidal currents) are measured. Mean sea level in Wellington Harbour, Te Whanganui a Tara, is +0.195m above Wellington Vertical Datum 1953.

Tides in the harbour are typically within a tidal range of 1.25m during mean spring tides. Mean High Water Springs (MHWS) has an elevation of +0.82m above Wellington Vertical Datum 1953. These matters are key to design for an adaptive response to Sea Level Rise and management of over-topping during storm surges.

It is important to consider these process to minimise any adverse effects on beaches which are habitats utilised by Threatened or At Risk bird species.

Climate Change

In addition to sea-level rise, climate change will influence storm intensity, storm tracks, storm-tides and waves throughout New Zealand. Extreme winds are also likely to increase slightly in winter and decrease slightly in summer. There is also likely to be an increase in cyclones (sub-tropical and mid-latitude low pressure systems) in the Tasman Sea over the summer. Storm surges could be expected to become more frequent for the Wellington region.

A Dynamic Coastline.

Waves

Wave conditions within Wellington Harbour/ Te Whanganui a Tara, are the result of locally generated winds combined with ocean swell, which enters the harbour through Wellington Heads from Cook Strait. When these waves reach the coastline they break at the beach, revetment or seawall causing wave run-up and over-topping.

Waves are a powerful dynamic force affecting the Eastern Bays coastline in a number of ways:

— Wave erosion weathers and alters the shape of the coastal shoreline and reclaimed edges through repeated strong impacts onto the natural shoreline or man-made reclaimed edge.
— Wave run-up and over-topping affects comfort levels and safety for pedestrians, and other user groups along coastal routes, and large wave events have the potential to damage and disrupt adjacent transportation corridors and properties. There are two types of wave over-topping; white water spray and green water surges. White water spray occurs regularly, rarely causes damage, but does make user experience uncomfortable, while green-water surges occur occasionally, with potentially hazardous volumes of water over-topping the edge, which can cause erosion and damage structures.

Coastal processes will influence the design of the coastal edge and address timeframes to ensure the Project is future proofed against sea-level rise. Coastal processes are also key considerations for user experience, comfort and safety, and will inform the design response to the character and habitats along the coastline. Understanding coastal processes is key to the design measures that can be used to create a naturalised edge through the varied design of the revetment and vertical seawalls, that actively avoid and minimise loss of existing beaches, habitats and natural rocky outcrops.

Outcomes & Opportunities

While the Project is sited in a dynamic and ever-changing landscape, an opportunity exists to provide a resilient active mode connection and coastal edge which enables communities to share and enjoy this section of waterfront while also allowing coastal wildlife to thrive into the future. Key outcomes and opportunities include:

— To ensure the design of Tupua Horo Nuku considers the possible effects and issues, including allowance for a flexible and adaptive response to the predicted climate change effects and sea-level rise over that time.
— A new coastal edge to meet requirements for structural performance, user safety and user experience in relation to wave over-topping.
— To ensure the materials and plant species used are appropriate to the rugged coastal environment and landscape character, and consider the habitat needs of coastal wildlife.
— To ensure the coastal edge and seawall design gives consideration to coastal processes that may influence the gravel beaches.

Figure 1.6 *Recent storm event showing debris across road and waves lapping the road*

Figure 1.5 *Existing double curved seawall, York Bay, built 2007–2008. Photo (taken close to high tide)* Ref: *Assessment of ecological effects 2019*

Ecology.

The ecological environment surrounding the Project area has been modified through past reclamation and development to provide the road infrastructure required between Eastbourne and Seaview. However, bird and marine habitats have endured along the coastal edge.

The Project is required to actively avoid and minimise impact on these habitats. It also offers opportunities to improve the long term condition of the coastal edge through a naturalised approach, and to introduce new terrestrial habitats and values along this edge of Wellington Harbour/ Te Whanganui a Tara.

Plants

The vegetation of the project area is entirely coastal, and reflects an interplay of strong natural factors and human disturbance. Three seagrass occurrences were found at south Lowry Bay with sparse vegetation cover along narrow streches of beaches. Two native sand binders, pīngao (*Ficinia spiralis*, At Risk - Declining) and kowhangatara (*Spinifex sericeus*), were found at the south end of Lowry Bay.

Vegetation inland of Marine Drive consists of hard beech (*Fuscospora truncata*) and black beech (*Fuscospora solandri*) forest, broadleaved indigenous hardwoods and urban environments with coastal species such as kohekohe (*Dysoxylum spectabile*). Much of the vegetation has regenerated since European settlement fires and is now protected within the East Harbour Regional Park. One Nationally Critical (*Atriplex cinerea*) and eight At Risk indigenous plant species occur within or very near to the shared path footprint.

Beaches

Small gravel beaches are present above MHWS in all five bays of the project area. These beaches belong to a naturally uncommon ecosystem. Naturally uncommon ecosystems often have a highly specialised and diverse flora characterised by endemic and nationally rare species. The vegetation on the gravel beaches within the Project area has a predominance of introduced species. Erosion is occurring, a feature of the natural variability of the coastal sediment system

Birds

Despite being a highly modified environment, coastal birds use the existing rock revetment, beaches and off shore outcrops for nesting, roosting and foraging. The Projects Assessment of Ecological Effects records numerous bird species on and adjacent to the alignment. Two species are classified as 'Nationally Threatened', nine species as 'At Risk'.

Variable oystercatcher and little blue penguin have been recorded nesting along the Project route.

Threatened Species:
— Taranui *(Hydroprogne caspia)*, caspian tern.
— Mātukutuku *(Egretta sacra sacra)*, reef heron.

At Risk Species:
— Kororā *(Eudyptula minor)*, NZ little blue penguin.
— Tarapunga *(Laurus novaehollandiae scopulinus)*, red billed gull.
— Tara *(Sterna s. striata)*, white fronted tern.
— Kāruhiruhi *(Phalacrocorax varius)*, pied shag.
— Tōrea pango *(Haematopus unicolor)*, variable oystercatcher.
— Pakahā *(Puffinus gavia)* fluttering shearwater.
— Kawau pū *(Phalacrocorax carbo novaehollandiae)*, black shag.
— Kawau tūī *(Phalacrocorax sulcirostris)*, little black shag.
— Pāngurunguru *(Macronectes sp.)*, Giant petrel.

These species bring a focus to design measures required to actively avoid effects and ongoing habitat disturbance.

Mātukutuku
Egretta sacra sacra,
Reef heron

Taranui
Hydroprogne caspia,
Caspian tern

Tōrea pango
Haematopus unicolor, variable
oystercatcher

Kororā
Eudyptula minor,
NZ little blue penguin

Figure 1.7 *Some threatened or At Risk bird species along Tupua Horo Nuku.*

Image sources:
Caspian tern: https://www.flickr.com/photos/almiyi/9534165426/sizes/l/
Reef heron: https://www.flickr.com/photos/patrick_k59/40724593200/sizes/l/
Variable oystercatcher: https://www.flickr.com/photos/joerghempel/6710742395/sizes/l/
NZ little blue penguin: https://www.flickr.com/photos/pie4dan/3705981571/sizes/l/

A Layered Cultural Landscape.

Due to their orientation and location at the entry to the harbour, the Eastern Bays have a long history of use, initially by Māori who occupied kāinga in the sheltered bays and more substantial pā on the headlands, and later by early European settlers who drove stock along the coast between the Hutt Valley and the Wairarapa.

An access track was formed prior to the 1855 earthquake, but the consequent land uplift provided the opportunity to form a road over the rocky edge to the coast rather than having to excavate into the hills. The road has been progressively raised and widened: to the west out over rocky outcrops and the foreshore; and to the east into the headlands. The bays then became a destination for Wellingtonians for both daytime excursions and holidays.

The Project design provides culture and heritage benefits to residents and visitors to the shared path. This is through highlighting and providing information about heritage features along the shared path and integrating Māori cultural narratives specific to the area.

Māori Culture and Heritage

From the Cultural Impact Assessment (Raukura Consultants): The Eastern Bays were the sites of Māori occupation from the earliest times following the arrival in the Harbour of the Polynesian explorer Kupe and the subsequent later settlement by the Whatonga people particularly Taraika (Whatonga's son) whose name recognised in Te Whanganui a Tara along with his half-brother Tautoki. Māori Pa and Kainga were close around the coastline at regular intervals in a pattern not unlike present settlements. These Māori settlements used the abundant local resources such as kaimoana – shellfish and fin fish along with seaweeds. Birds were also abundant as is recognised by the name Whiorau (many blue duck).

Physically, little remains of these Māori settlements in the coastal margins particularly given the degree of tectonic uplift that has occurred around this coastline. For these works Māori archaeology is unlikely to be revealed, however having an accidental discovery protocol in place for the whole scheme is supported by iwi.

The harbour as a whole is highly significant to tangata whenua, and is covered by statutory acknowledgments in the Treaty claim settlements of both Te Ātiawa/Taranaki whānui and Ngāti Toa Rangatira. The harbour is still a fishery of significance to the tangata whenua and care should be taken around its margins.

A Cultural Impact Report was produced by Raukura Consultants in April 2018. It concludes that the occupation of this part of the harbour appears to have little Māori heritage, however there are places that remain significant for Māori all around this coastline. The Project should have only minor cultural impacts largely related to the rocky coastline of the area and perhaps on some sites around the harbour. There is some chance that remnants such as shell middens may be uncovered. These will be allowed for with the inclusion of an accidental discovery protocol, which is considered to be is sufficient for this project. It was noted that the provision of a safe shared pathway for pedestrians and cyclists would be a welcome addition to the area for all.

Early European Heritage

European settlement

From the Hutt Valley, a track followed the coast around to the Wairarapa. William 'Okiwi' Brown, the first European to settle in the Eastern Bays, provided overnight grazing, and accommodation en route to the Wairarapa. Access to the Wairarapa improved after the massive 1855 earthquake, which raised the eastern shore of the harbour by 2 metres.

Rona Bay

Rona Bay sits just outside the Project area. This bay was originally known as Brown's Bay. In 1892 it was renamed Russo Bay after Italian immigrants Bartolo and Italia Russo settled there. They started several enterprises, including fishing, horticulture and a hotel. Relatives from their home of Stromboli (an island near Sicily) also migrated, and the bay became a thriving fishing village. Rona was the name of Russo's boat.

Lowry Bay and Days Bay

At the same time, the Eastern Bays became Wellington's seaside playground, famously depicted in Katherine Mansfield's short story 'At the bay', which recalls her family's summer holidays at Muritai, now part of Eastbourne. Whiorau/Lowry Bay was an exclusive retreat, in contrast with Oruamotoro/Days Bay which catered for the general public. Developed in the 1890s, Oruamotoro/Days Bay had a large pavilion for dining and dancing, a hotel and an amusement park. For the more energetic, there were cricket grounds, tennis courts and hockey fields. Oruamotoro/Days Bay's golden era ended before the First World War, when John Williams's land was subdivided for housing. The hotel became a school, known today as Wellesley College.

Features

The Skerrett Boatshed is a European heritage feature located in Whiorau/Lowry Bay and owned by the Hutt City Council. This boatshed is listed on the New Zealand Historic Places Trust Register as a Category 2 building. To avoid effects on this heritage feature, the shared path will be narrowed alongside it. A double curve seawall will extend beneath the boatshed but will be designed to limit impact on the structure of the boatshed. Further detail of the wall design in this location will be included in the BSUDP for Whiorau/Lowry Bay.

The Project proposes benefits to users of the shared path by way of highlighting features and locations relevant to the areas European History, using information signage. This could also include information about the changes to the coastline from both natural (earthquake, coastal erosion) and man-made (excavations for forming the road) events, and cultural narratives.

Other features in the Project area, related to or impacted by the Project are described below with reference to how the Project design addresses effects on them.

A brightly coloured boat shed with associated launching rails, sits on the rocky coastal edge, opposite 201 Marine Parade. This is a prominent, heritage feature within the local landscape. The Project design will include a localised pinch-point in the shared path and a bespoke retaining wall solution at this location to avoid impacts on this feature. The specific design solution will be confirmed during detailed design for Whiorau/Lowry Bay and documented in the BSUDP.

A memorial tree has been planted in York Bay and is known locally as the 'Atkinson Tree'. To avoid extending the shared path further into the CMA and to mitigate effects on ecology and coastal landscape values, the tree is likely to be removed. Consideration for retaining the tree will be determined in the bay specific plans. The tree is in poor health and is unlikely to survive relocation. However, there is potential to propagate cuttings from the Atkinson Tree to replant at later stages. An arborist would need to be engaged to provide further advice on such a process. Furthermore, trees are proposed to be planted within a roadside green space on the inland side of the road at Taungata Road.

The beach access steps and ramps are long standing features of the Project area, providing recreational access to the foreshore and harbour. The Project design retains three boat ramps in their existing location (Ngau Matau/ Point Howard, York Bay and Mahina Bay) with improvements made to their functionality. Two further boat ramps at Whiorau Reserve and Windy Point are retained without any works to them proposed. Some existing steps are proposed to be removed, however these will be replaced with new steps. The new steps include 'Standard Steps' and 'Mini-Steps'.

Figure 1.8 *The houses "The Lodge" (left) and "The Ngaio", Lowry Bay, Eastbourne, Wellington. A boy and a girl stand in the centre. Taken by Frederick James Halse in 1888.*

Figure 1.9 *Overlooking Lowry Bay, Eastbourne, Lower Hutt, Wellington. Shows hills in the foreground, covered with native bush and cabbage trees. Photograph taken on 24 May 1889 by Frederick James Halse.*

Transport Connections.

Existing Shared Path Connections

The number of cyclists and pedestrians travelling between Matua-iwi Pa/Eastbourne and Pito-One is increasing. Existing cyclists either travel on the road, or on a narrow path between the road and the coastal edge.

The existing path connection from Matua-iwi Pa/Eastbourne to Ngau Matau/Point Howard is along the coastal edge. This path links into other shared paths within the Hutt Valley and South to the proposed Rimutaka cycle trail. The proposed Path will connect with the Ngā Ūranga ki Pito-One section of Te Ara Tupua via the Petone esplanade.

The level of service and safety concerns associated with the existing connections is a primary driver for the Tupua Horo Nuku Project. It will also form part of the community vision for Te Aranui o Poneke (The Great Harbour Way), as will the proposed Ngā Ūranga ki Pito-One section of Te Ara Tupua.

The Project is to provide a much safer alternative route for cyclists groups and pedestrians. Recreation tracks with links to the Tupua Horo Nuku include;

— The Howard Track
— Cheviot Rd Track
— Kaitawa Rd Track
— Ferry Rd Track
— Koromako Track
— Kereru Track
— Hawtrey Route

Refer to schematic masterplan for locations

Road

The section of road between Matua-iwi Pa/Eastbourne and Petone runs along the coastal edge of the Eastern Bays. It provides one lane in each direction, with speed limits of 70km/h in some places and 50km/h in others, and eventually connects to the Petone Esplanade through Seaview Road and Wainoe Street at the northern end of the project area. The southern section of road continues through Eastbourne and eventualy stops at Burdans Gate to the south.

This road is a key connection between the Eastern Bays and the Hutt Valley, Wairarapa and Wellington, making it a critical lifeline for the bays communities. There are known congestion issues along this road and the Tupua Horo Nuku will provide an alternative safe commuting option.

Bus services

Bus services through the Project area include:
— 81 Eastbourne - Petone - Wellington
— 83 Eastbourne - Lower Hutt - Petone - Wellington
— 84 Eastbourne - Gracefield - Petone - Wellington
— 887 School Bus
— 888 School Bus

Ferry

The East by West Ferry transports passengers between Queens Wharf, Matiu/Somes Island, Seatoun Wharf and Days Bay Wharf. On weekdays, the ferry is a popular commute method for Eastbourne residents that work in Wellington CBD and runs with a reduced service in weekends and on public holidays. Combined with the proposed Te Ara Tupua project this service provides further multi-mode options for cyclists and pedestrians to travel around the Wellington harbour.

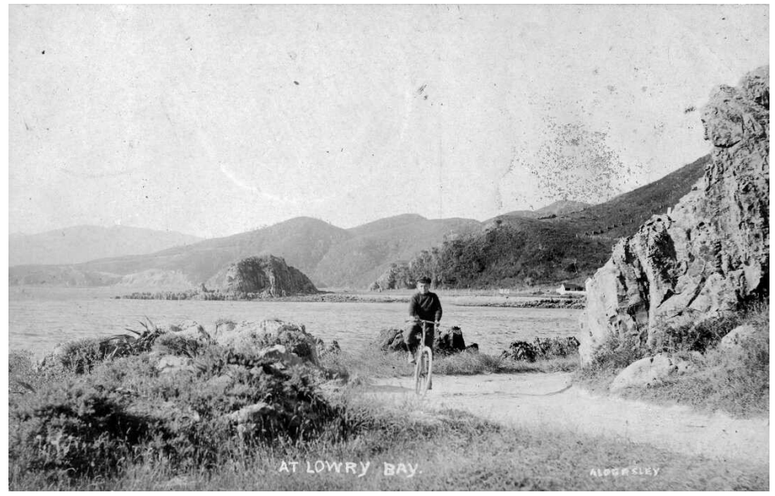

Figure 1.10 *Lowry Bay, Eastbourne, and cyclist, taken from the south point of Mahina Bay. Point Howard is in the background. Photograph taken by David James Aldersley, ca 1910.*

Figure 1.11 *Unidentified man standing in the bus stop in Mahina Bay, Wellington, during a storm on the weekend of 14-15 June 1975. Photograph taken by an unidentified photographer for the Evening Post.*

Existing Coastal Edge Condition.

Figure 1.12 *Point Howard/ Ngau Matau Revetment*

Figure 1.13 *York Bay Seawall*

Figure 1.17 *Lowry Bay coastal edge*

Figure 1.14 *Sunshine Bay Revetment*

Figure 1.15 *Pump Station at Sunshine Bay/ Days Bay*

Figure 1.16 *York Bay bus stop on coastal edge*

3. Environmental Outcomes.

Ecology.

This section of the LUDP presents Environmental Outcomes informed by the vision, context and design principles for the Project.

The purpose of the Environmental Outcomes section is to translate the key findings of the context analysis and design principles into specific measures and parameters to be carried through into the Bay Specific Urban Design Plans (BSUDPs), as required by the consent conditions. The outcomes sought and design measures to achieve these are illustrated in the following sections. The overall maximum footprint of the design and the structural approach has been outlined in the consent design.

Outcomes sought are detailed in relation to:

— Ecology
— Bird Protection
— Natural Character
— Place Making
— Cultural Landscape Response

Intertidal Ecology

An ecology assessment of intertidal benthic ecology was undertaken in 2016-2017 by EOS Ecology. The following is a summary of the report's findings as written by Shelley McMurtrie (principal report author).

The existing intertidal environment is currently highly modified, with seawalls along the majority of the shoreline (87% of the Project length) consisting primarily of angled concrete seawalls that support low species diversity and richness. The community composition of the intertidal area is typical of rocky shore intertidal habitat and is similar to the rocky shore communities found elsewhere in the Te Whanganui-a-Tara / Wellington Harbour. There were no species of conservation concern (as listed in the threatened species list of Freeman et al. (2014) and Nelson et al. (2019)) were recorded.

Potential construction effects on the receiving benthic intertidal environment relate to sedimentation, release of contaminants, habitat disturbance from machinery working in the CMA, and encroachment into the subtidal area of the construction works site. Potential operational effects relate to changes in habitat type and encroachment into the existing intertidal area.

A range of measures will be implemented during construction to reduce effects, including minimising the construction footprint, controlling the release of contaminants, undertaking the works in a staged approach. These measures are covered in the Construction and Environmental Management Plan. By choosing seawall options with a smaller footprint where possible, the chosen design limits the level encroachment into the intertidal area, whilst the addition of textures on the curved seawalls and rockpool habitats within the new seawalls and revetments will improve the habitat value of the proposed seawalls over the old seawalls that currently exist. The reuse/redistribution of existing larger rocky material colonised by biota within the construction footprint to the appropriate intertidal/subtidal zone will also provide habitat in front of the new seawalls and within the new revetments.

These interventions to improve habitat values of the new seawalls is covered in the Seawall and Revetment Habitat Plan. As a result of the construction measures and seawall habitat improvements, it is expected that any potential effects to benthic ecology will limited to a 'less than minor' level of effect.

Intertidal & Subtidal Ecology of Beaches

An ecology assessment of the intertidal and subtidal areas of the Project was undertaken in 2016-2019 by EOS Ecology. The following is a summary of the report's findings as written by Shelley McMurtrie (principal report author).

The infauna community of the surveyed beach sediments were considered to be healthy, with the dominant species (made up of polychaetes and crustaceans) indicating little nutrient enrichment, chemical contamination, or presence of finer sediments (i.e., mud). The infauna community of three bays proposed for beach nourishment (Point Howard, Lowry Bay, York Bay) were similar to other bays in the Project area and no species of conservation concern were recorded.

Potential effects of beach nourishment relate to the disturbance and possible compaction of habitat from machinery use on the beach during initial nourishment, potential smothering of biota when the beach material is added and during subsequent movement by the tides of the material beyond the introduction sites, as well as increased suspended sediment during these times.

Measures to be implemented to limit the effects of beach nourishment include using similar beach substrate with no fines, placing material during low tide and calm conditions, adding material in smaller volumes, avoiding the emergent rocky areas in Southern Lowry Bay, and replacing woody debris in the beach wrack line. These measures are included in the Beach Nourishment Plan, which also includes a monitoring programme to monitor the benthic biota before and after beach nourishment. As a result it is expected that any potential effects to benthic ecology will be short-lived and limited to a 'minor' or 'less than minor' level of effect.

Ecology.

Figure 1.18 Stormwater pipe used by little penguins, Wilmore Way, northern end of Whiorau/Lowry Bay. Little penguins were reported in this drain on the inland side of the road in May 2017. Ref: *Assessment of ecological effects 2019*

Fish Passage & Streams

Consideration of fish passage through existing stream culverts along the Project was undertaken in 2019 by EOS Ecology. The following is a summary of the report's findings as written by Shelley McMurtrie (peer reviewer of the report).

The Project area includes 14 culvert outlets that have open channels upstream that may provide habitat for migratory freshwater fish. Of these outlets, five were confirmed to have migratory fish, such as the banded kokopu, in their catchments; six were deemed to possibly have migratory fish in their catchments; and three were considered to be unlikely to have migratory fish in their catchments. A conservative approach was adapted, in that it was assumed that migratory freshwater fish are present in all waterways connected to the 14 culverts listed in the EOS report, and as such fish passage during the creation of Tupua Horo Nuku must be taken into account. Of the 14 culverts:

— Three currently extend beyond the extent of the proposed seawall at beach level and may not require any pipe extensions.
— Eight will require installation of extensions to the existing pipes to the face of the new concrete seawall or rock revetment. These extensions should not result in any alteration to fish passage provided erosional and depositional processes around those outlets remain the same.
— Three are elevated above current beach levels and will also require extension of pipes to the face of the new seawall or rock revetment. However, given their elevation, the extension design will need to ensure they do not become perched fish barriers.

The Project proposes beach nourishment for sections of beach at Point Howard, Lowry Bay, and York Bay (as described in the evidence of Mr Reinen-Hamill). There is the potential the addition and subsequent movement of sand and gravel material at these locations could block culvert outlets and have adverse effects on fish passage.

A number of consent conditions ensure the current level of fish passage is maintained or improved, including ensuring culvert extensions associated with the Project are designed in consultation with a qualified freshwater ecologist (Condition EM.12(a)); avoiding the addition of beach nourishment gravels within 10 m of culvert outlets (Condition EM.14 (h(ii)); and pre/post-construction monitoring and during/post-beach nourishment monitoring to ensure the new extended outlets are operating as intended and have not developed any features that may impede fish passage (and if so recommend remedial actions) (Condition EM.12(b-e) and Condition EM.14(h(iii)). Overall, with the implementation of these matters, the Project will have negligible to less than minor adverse effects on the passage of migratory freshwater fish.

Outcomes & Opportunities

Stream Names

— Explore the opportunity to provide names for unnamed streams, working alongside Mana Whenua, Greater Wellington Regional Council and other key stakeholders. The names should contribute to the cultural narrative of Tupua Horo Nuku .
— Identify stream names at locations of stream crossings, to assist with wayfinding.

Stream Crossings

Locations where the path crosses piped streams should be celebrated and referenced on the surface as a threshold, and accompanied by integrated signage indicating the stream name. Stream crossings should be seen as an opportunity to integrate the cultural narrative of Tupua Horo Nuku .

Threshold experiences at the stream locations could be achieved with a combination of the following (or other appropriate treatments):
— Surface treatments on the path itself, through change in paving material and/or finish. This may include use of timber or textured or patterned concrete, or surface patterns to express cultural narrative.
— Change of landform or levels adjoining the path.
— Vertical elements (e.g. sculptures, furniture or structures).
— Accent planting if there is room.
— Integrated stream name signage.
— Interpretation signage.

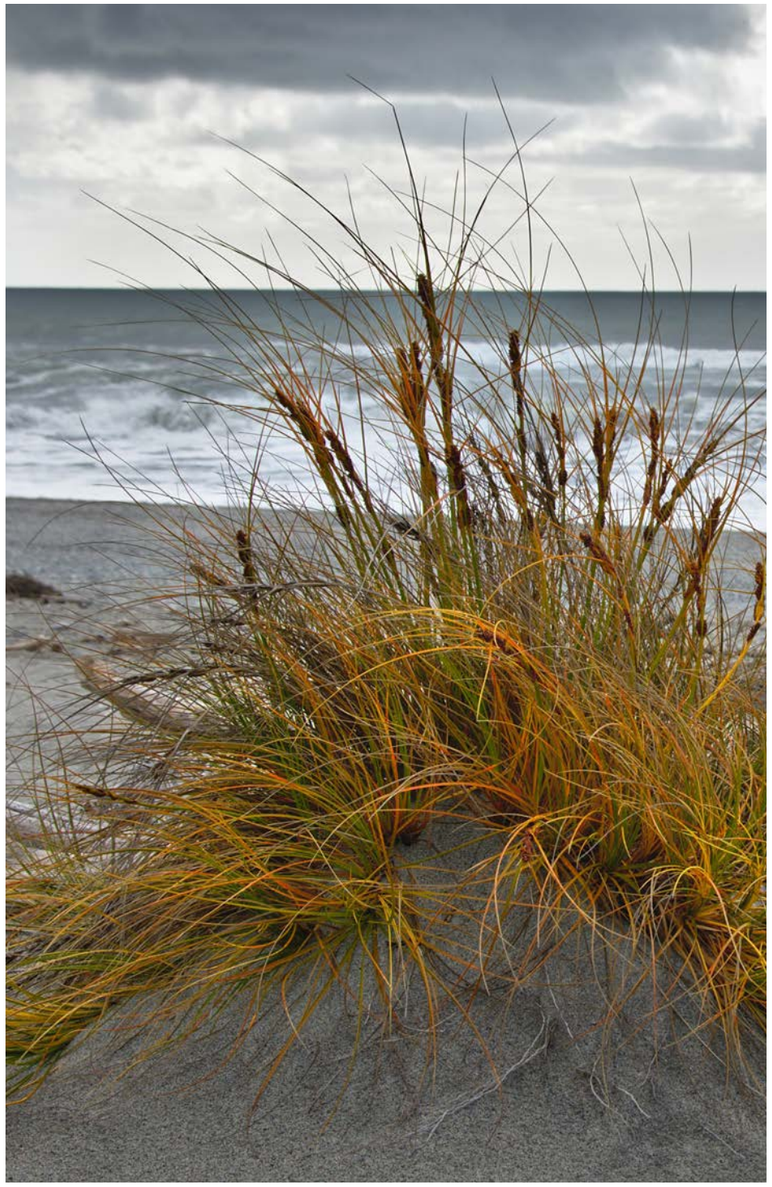

Figure 1.19 Pīngao (Golden sand sedge). An at risk plant species found along the Eastern Bays. Ref: *https://www.flickr.com/photos/tomas_sobek/12247111876/in/photolist-ccjaQw-jEeDFj-tWK1S-tWJG2-dZYus1-tWJtL*

Vegetation

Vegetation habitats in the Project area are seagrass in the intertidal and subtidal, beach gravels and sands, rocky islets, rocky headlands and promontories, landscape plantings and open space habitats.

Seagrass is a listed habitat with significant indigenous biodiversity values in the coastal marine area in Schedule F5 of the PNRP. A baseline survey was conducted in December 2018 to confirm the presence or absence of seagrass at three locations (Ngau Matau/Point Howard, Whiorau/Lowry Bay and York Bay) where beach nourishment is being proposed, and to gain initial information on its site status and environmental parameters. The status of other past seagrass records around Wellington Harbour was also investigated, including surveying the Hutt River Estuary.

Sites within the Project area and zone of influence have moderate to high ecological values associated with the presence of seagrass and the eight other Threatened and At Risk plant species. The gravel beaches have a moderate rarity/distinctiveness ecological value.

Seagrass

Seagrass beds will be avoided by the physical location of the Shared Path and beach nourishment. There are however potential effects associated with construction of the Shared Path (seawall replacement) and the placement of material for beach nourishment with the release of fine sediments which could result in water turbidity, and partial burial of the seagrass.

Effects on seagrass beds from beach nourishment will be managed through a series of measures that guide the way the beach nourishment is to take place, and are detailed in the Beach Nourishment Design and Effects Assessment, March 20196 and included in the CEMP. Beach nourishment is proposed at Ngau Matau/Point Howard, Whiorau/Lowry Bay and York Bay.

The Shared Path alignment will affect six ‘At Risk’ species in the HCC landscape plantings. A single pīngao plant is located within the 3.5 m wide seawall/shared path footprint at Whiorau/Lowry Bay and its habitat will be lost. Some *Atriplex cinerea* plantings may be vulnerable to crushing by Project vehicles and machinery.

Mitigation of effects on this vegetation includes translocating the existing plants and their gravel to suitable locations. These locations are in adjoining grassed areas or nearby Whiorau Reserve, Bishops Park as part of establishing the bird protection areas, and beaches at Ngau Matau/Point Howard, Whiorau/Lowry Bay and York Bay in conjunction with the beach nourishment programme. There is also the possibility of holding them at Percy Scenic Reserve till they can be reinstated.

It is proposed to translocate the single pīngao plant immediately seaward of the footprint, again in conjunction with the beach nourishment programme. Detail of these and other mitigation measures will be included in BSUDPs. Further mitigation measures are to be included in the CEMP to guide the translocation process and construction in the vicinity of the vegetation and gravels.

Ecology.

Figure 1.20 Tōrea pango (variable oystercatcher). An at risk bird species found along the Eastern Bays. Ref: *https://www.flickr.com/photos/joerghempel/6710742395/sizes/l/*

Avifauna

The Bird Protection Plan (BPP) outlines a range of measures that Hutt City Council (the Consent Holder) will implement over the lifetime of the Tupua Horo Nuku project to avoid or minimise adverse impacts on avifauna within the project area, with a particular emphasis on little penguins and shoreline foragers such as variable oystercatchers. The measures contained within the Bird Protection Plan are designed to meet Consent Conditions EM.3 through to EM.9.

A range of measures to ensure that the potential adverse impacts of construction works on little penguins and shoreline foragers are avoided or minimized.

- A collaboration with Mainland Island Restoration Operation (MIRO) with their Educate Residents About Trapping project (ERAT) to implement a pest management strategy along the Eastern Bays coastline, targeting mammalian predators that impact the productivity of coastal ground-nesting bird species such as little penguins and variable oystercatchers.
- Design and maintenance plans for four new Bird Protection Areas in Sorrento Bay, Whiorau Reserve, Bishops Park and HW Shortt Park, designed to create and/or improve nesting habitat for both little penguins and shoreline foragers including variable oystercatchers.
- A rubbish and waste management plan designed to mitigate potential increases in litter associated with increasing public usage of Tupua Horo Nuku and the adjacent coastline.
- A 10-year public education campaign for avifauna, designed to provide local residents with opportunities to encounter and learn about the coastal bird values along the Eastern Bays coastline, and to participate in local conservation management activities.

The BPP is intended to be a living document to be updated in response to little penguin and mammalian predator monitoring programmes included in this plan and incorporating lessons learned during the implementation phase of the project.

Bird Protection Plan Outcomes

Sorrento Bay

The Sorrento Bay Bird Protection Area includes an area of 200m² of rocky foreshore that has been identified as being a known breeding site for at least one pair of variable oystercatchers. Specific elements included in the design of this BPA include:

- A fence designed to exclude dogs from the rocky foreshore and to screen breeding oystercatchers and their young from people using the shared path.
- Predator traps designed to target key predators of variable oystercatchers, namely mustelids, hedgehogs and rats.
- Interpretation panels and warning signage, informing the public of the presence of nesting birds and providing information on key elements of the birds' biology, life cycle and threats.

Whiorau Reserve

An area of 2181 m^2 at Whiorau Reserve will be developed as little penguin nesting habitat. The area already accommodates little penguin nest sites. Specific elements included in the design of this BPA include:

- A 1.2 m fence along the seaward edge of the shared path, to prevent dogs on the shared path wandering into the little penguin nesting habitat, and to prevent little penguins from wandering through Whiorau Park and onto the shared path and Marine Drive after dark.
- A suspended rope barrier and associated warning signage around the perimeter of the constructed little penguin nesting habitat within Whiorau Park, to reduce the risk of dogs and people venturing into the nesting habitat while allowing little penguins unimpeded access.
- Predator traps designed to target key predators of little penguins, namely mustelids, hedgehogs and rats.
- A planting plan for the little lenguin nesting area, designed to create a low canopy of native coastal shrubs to provide shelter and cover to nesting little penguins.
- Interpretation panels informing the public of the presence of nesting little penguins and providing information on key elements of the birds' biology, life cycle and threats.
- The installation of up to 25 little penguin artificial nest boxes, arranged in five clusters of five boxes.

Bishops Park

An area of 6782m² at Bishops Park will be developed as little penguin nesting habitat, and a further area of 7781m² will be developed into a foredune restoration area. Specific elements included in the design of this BPA include:

- A 1.2 m fence along the seaward edge of Bishops Park between Marine Parade and the Rona Bay Wharf carpark, to prevent dogs and people on Bishops Park from wandering into the adjacent little penguin nesting habitat, and to prevent little penguins from wandering through their habitat and onto Bishops Park after dark.
- A suspended rope barrier and associated warning signage along the seaward perimeter of the combined foredune restoration area and little penguin nesting habitat, to reduce the risk of dogs and people venturing into the dunes and penguin nesting habitat from the foreshore, while allowing little penguins unimpeded access after dark.
- Predator traps designed to target key predators of little penguins, namely mustelids, hedgehogs and rats.
- A planting plan for the little penguin nesting habitat and foredune restoration area.
- Interpretation panels informing the public of the presence of nesting little penguins and providing information on key elements of the birds' biology, life cycle and threats.
- A single, re-designed pedestrian accessway through the little penguin nesting habitat and foredune restoration areas, between Marine Parade and the foreshore.
- The installation of up to 60 little penguin artificial nest boxes, arranged in up to 12 clusters of five boxes, and the creation of penguin pathways providing little penguins with unimpeded access from the foreshore to each cluster of boxes.

HW Shortt Park Bird Protection Area

An area of 2017m² at HW Shortt Park will be developed as little penguin nesting habitat, and a further area of 3875m² will be developed into a foredune restoration area. Specific elements included in the design of this BPA include:

- A 1.2 m fence along the seaward edge of HW Shortt Park between the Maire Street Carpark and the Eastbourne Community Hall, to prevent dogs and people using HW Shortt Park from wandering into the adjacent little penguin nesting habitat, and to prevent little Ppenguins from wandering through their habitat and onto HW Shortt Park after dark.
- A suspended rope barrier and associated warning signage along the seaward perimeter of the combined foredune restoration area and Little Penguin nesting habitat, to reduce the risk of dogs and people venturing into the dunes and penguin nesting habitat from the foreshore, while allowing little penguins unimpeded access after dark.
- Predator traps designed to target key predators of little penguins, namely mustelids, hedgehogs and rats.
- A planting plan for the little penguin nesting habitat and foredune restoration area.
- Interpretation panels informing the public of the presence of nesting little penguins and providing information on key elements of the birds' biology, life cycle and threats.
- Two pedestrian accessways through the little penguin nesting habitat and foredune restoration areas, from the Maire Street Carpark and from HW Shortt Park.
- The installation of 25 little penguin artificial nest boxes, arranged in five clusters of five boxes, and the creation of penguin pathways providing little penguins with unimpeded access from the foreshore to each cluster of boxes.

Figure 1.21 *Example of rope fencing to bird habitat areas to minimise pedestrian movement*

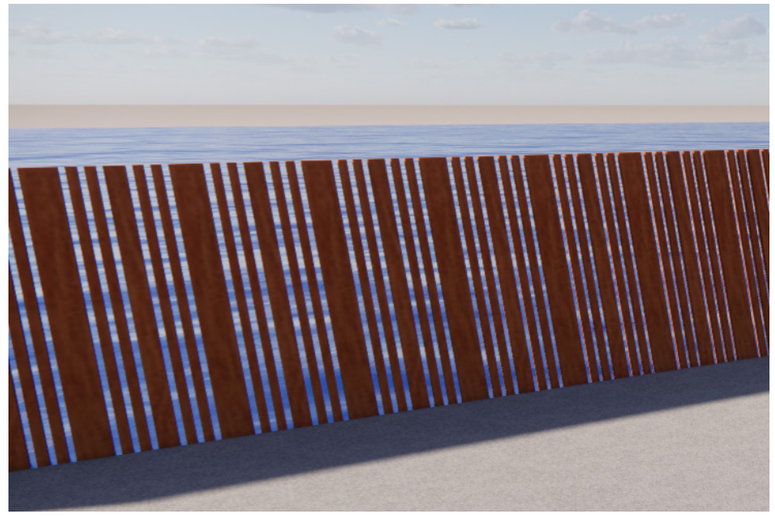

Figure 1.22 *Example of timber screening to bird habitat areas*

Bird Protection Areas.

Refer to the Bird Protection Plan for further site specific details and descriptions

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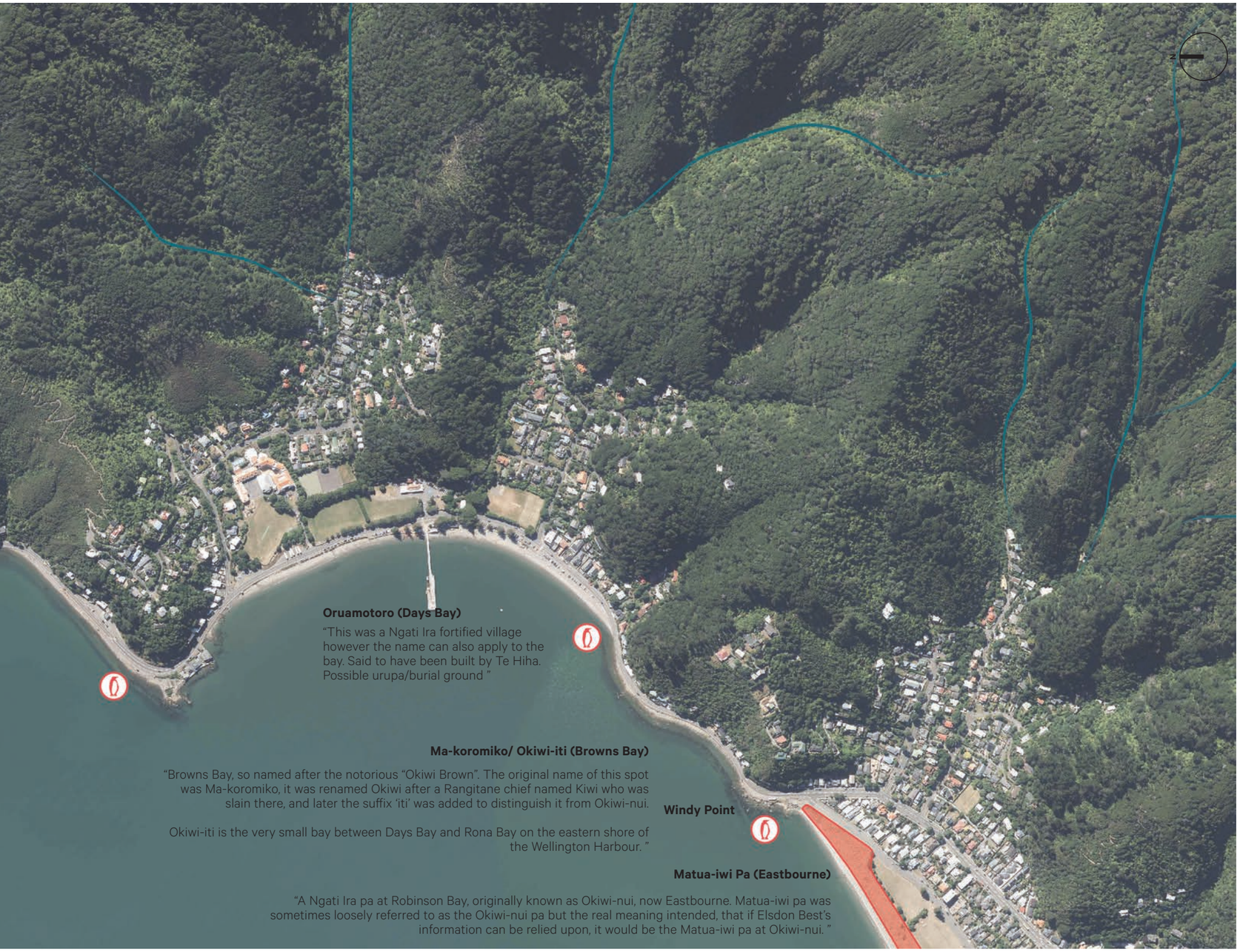


Natural Character.

Marine Drive has a distinctive pattern of settlement and land use. The road is contained between the harbour and the hills. At a local scale, each bay has a unique identity, the cumulative product of the settlement pattern and the bay landform including the curvature of the bay, the steepness of the hills and their proximity to the coastline, the orientation of the bay and its exposure to the prevailing winds and the coastal edge.

The overall coherence of the landscape derives from the wider setting including the enclosing, vegetated hillslopes, the sequence of bay and headland, the rocky outcrops and the harbour waters and the natural processes of the beach environment including the changing sea, light and weather conditions.

The LVA concludes that “the most important landscape issue is the potential effect on natural character of the coastal environment. Overall, the adverse effects on (experiential) natural character of the proposal are considered to be Low for the wider Eastern Bays coastal landscape. Effects are mitigated through the use of consistent path and seawall detailing to reduce visual impact of new structures.”

Biophysical Landscape

Biophysical effects relate to changes to landform, vegetation cover and waterways. The main biophysical effects of the Project are generated from changes to landform and the encroachment of the proposed seawall onto the foreshore. There is little vegetation to be disturbed and the overall approach is to retain existing vegetation by deviating the shared path or seawall around the vegetation, with removal due to safety or ecological requirements being a last resort. All natural waterways within the Project area have already been channelled under the road to the sea, so effects on these have not been considered.

The Project design includes the following mitigation measures for effects to landform and the CMA:

— The alignment of the seawall follows the coastal edge and natural formation of the bays to minimise encroachment into the CMA.
— The use of new large revetment structures has been limited to areas of highest exposure near the headlands with a curved concrete wall used elsewhere where coastal protection is required to minimise loss of beach and rocky foreshore landform.
— The alignment of the path follows the coastal edge and natural formation of the bays to avoid additional structures needing to be built within the CMA.
— Alignment of the path varies between 2.5 - 3.5m to minimise encroachment onto the CMA and includes localised pinch-points to avoid damage to rock outcrops and trees.
— Locations for repositioned bus shelters have been selected to limit further encroachment into the CMA.
— Opportunities for stopping along the shared path are located at existing headlands between bays, at widenings of the margin between the shared path and the existing coastal edge, and at the larger stairs providing beach access. Utilising these locations for recreational use has avoided additional encroachment into the CMA.

Further detail of path and seawall alignment to mitigate effects on the biophysical landscape are included in the BSUDPs.

Visual Amenity

The narrow fringe of land between the road and the water, where the Project interventions will be located, has a low visual prominence in the Eastern Bays landscape. The existing collection of road shoulder, paths and structures along Marine Drive will be replaced by the Shared Path, concrete curved wall and revetments. The Shared Path will provide a different user experience by changing the scale of the road corridor and creating a more consistent and formal coastal edge, but overall, the adverse effects on visual amenity are considered to be less than minor.

The landscape and urban design objectives, principles and materials palettes, have been developed to mitigate effects of the project on, and where possible enhance, visual amenity. The detailed principles and materials have been informed by the coastal landscape character and associated features visible in the local context. These have informed the designs of the landscape elements described in the Urban Design Outcomes Section.

The development of the BSUDPs, in consultation with bay communities, has carefully considered how any negative effects of the Project can be further mitigated for each bay.

Natural Character

It is expected that the effects on natural character from the Project, including the seawall and shared path will lessen over time as they weather into established or familiar features. Overall adverse effects of the Project on natural character of the proposal are considered to be less than minor for the wider Eastern Bays coastal landscape.

The landscape and urban design approach and principles have been developed to mitigate effects of the project on natural character.

A list of mitigation measures related to natural character attributes is provided below. Further detail of mitigation of effects on natural character and integration with the natural landscape is provided with the description of design areas and elements in the Urban Design Outcomes Section.

Mitigation Measures.

Natural Character Attribute	Mitigation
Legibility – geomorphology:	Beach nourishment replacement material is to be sourced locally and Hutt River grey sands and gravels are to be used. (Overall adverse effects on natural character are considered Low but could increase to Moderate-Low if beach nourishment is undertaken with imported material.) Retention of local rock for reuse at base of CSW. Where practicable, stone used in the revetment will incorporate naturally occurring brown-yellow tones to improve visual blending with the natural rock found along the coastline.
Legibility – way- finding and orientation:	Reinforcement of the undulating coastline morphology by positioning the shared path along the coastal edge. Opportunities for local variation/reinforcement of local identity in the form of access points from the path to the foreshore. Improved access to headlands with strong natural character and natural features (such as trees, rocky outcrops and rock stacks). Provision of wayfinding marker, street furniture and signage to reinforce the bays and associated neighbourhoods. Provisions for cultural expression and naming to reinforce sense of place
Visibility – public and private views:	Consistent detailing along the coastal edge and road edge to reduce the visual impact. Appropriate/considered design of urban design and landscape elements such as seating, bins, handrails, seaward side linear barriers, stormwater outlets, planting, signage and path markings to integrate them with the landscape setting. Incorporation of eco-mitigation surface textures consistently applied along the lower curve and 'step' of the wall to reduce the visual presence of the CSW. Use of fly-ash, or similar, to reduce the reflectivity/brightness of the wall. Any safety balustrades to be designed as 'transparent' as possible to reduce visual appearance
Picturesqueness:	Path alignment responds to the local landform and land use patterns. Sensitive detailing of urban design and landscape elements, that respond to Mana Whenua and community identity and sense of place. Removal of existing unsightly structures and infrastructure along the project site and the replacement of an eroding road with a consistent structurally stable edge

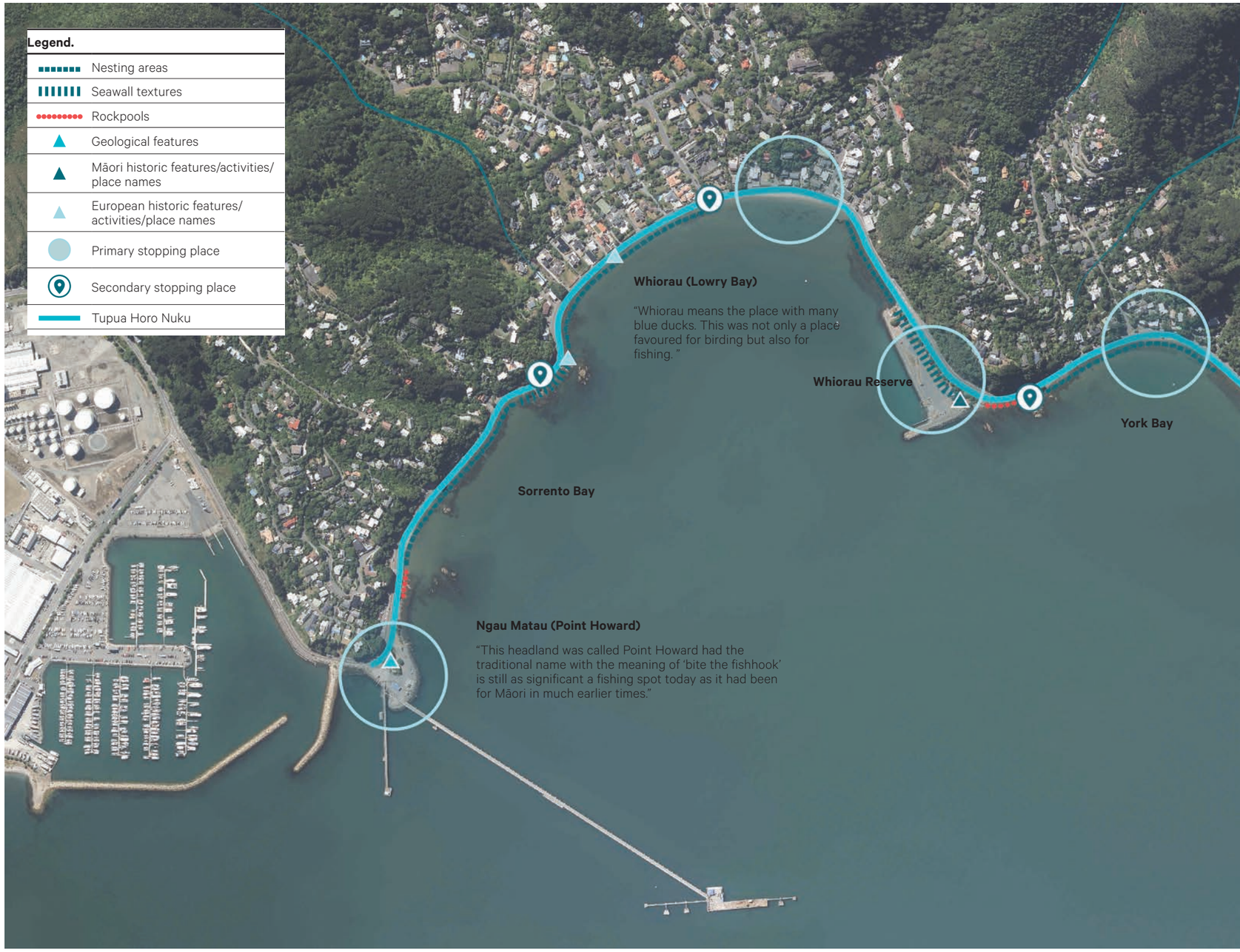
Placemaking.

Key opportunities for placemaking are at areas along the shared path where people have space to stop and rest, enjoy the views, and explore the features in the locality. They are important recreational moments, in a hierarchy according to size, along Tupua Horo Nuku .

In addition to their physical attributes, these places have histories and cultural narratives associated with them that can be sensitively revealed as part of their design.

Primary stopping places are located at larger headlands, promontories or beaches. Designs for these areas will celebrate, and be sensitive to, the cultural heritage, ecology and geological features found there. Secondary stopping places are generally smaller than the primary stopping and recreation places. The main purpose of these areas is to offer an opportunity for stopping, resting, interacting with, and enjoying the views along the coast.

The new 'Standard Steps' are another stopping and placemaking opportunity. These create small platforms off the side of the shared path which will include a large seat and bike stand. This design approach will be replicated along the shared path.



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Mahina Bay

Sunshine Bay

Oruamotoro (Days Bay)

"This was a Ngati Ira fortified village however the name can also apply to the bay. Said to have been built by Te Hiha. Possible urupa/burial ground "

Ma-koromiko/ Okiwi-iti (Browns Bay)

"Browns Bay, so named after the notorious "Okiwi Brown". The original name of this spot was Ma-koromiko, it was renamed Okiwi after a Rangitane chief named Kiwi who was slain there, and later the suffix 'iti' was added to distinguish it from Okiwi-nui.

Okiwi-iti is the very small bay between Days Bay and Rona Bay on the eastern shore of the Wellington Harbour. "

Windy Point

Matua-iwi Pa (Eastbourne)

"A Ngati Ira pa at Robinson Bay, originally known as Okiwi-nui, now Eastbourne. Matua-iwi pa was sometimes loosely referred to as the Okiwi-nui pa but the real meaning intended, that if Elsdon Best's information can be relied upon, it would be the Matua-iwi pa at Okiwi-nui. "

Placemaking.

The following areas are larger places, located at headlands, that enable people to stop, rest, spend time exploring the features in the locality, and access information about the shared path and area. The beaches themselves within the Bays are also primary stopping places, but at this stage are not considered for landscape and urban design interventions. Oruamotoro/Days Bay is a key destination, and origin for people arriving by ferry, along the Eastern Bay coastline. However, Oruamotoro/Days Bay is not included within the scope of this Project.

Ngau Matau (Point Howard)

Represents the northern gateway/threshold space for the shared path, Ngau Matau/Point Howard offers visitors and shared path users an opportunity to gather, to orient to the local landscape and the shared path, and to rest at the beginning or end of their journey. At the northern extend of Ngau Matau/Point Howard, the new shared path will tie into the existing off-road shared path. Public toilets are provided nearby (these are existing and modification to them is not within the Project scope). Public parking will be provided for informally within the headland and formally on the roadside immediately to the east. The bay to the southeast is a popular swimming spot in calm weather.

Designs for this area will celebrate, and be sensitive to, the geological and vegetative features found here. These include the large rock formations with self-seeded vegetation, rocky and vegetated foreshore, and well-established amenity planting. Equally celebrated will be the views to the south and east, along the Eastern Bays coastline and the vegetated ranges, and across Whiorau/Lowry Bay to Lowry Peak. Elements within the landscape design for this gateway area shall include seating, picnic tables, cycle parking, informational and directional signage, and any identified cultural markers. The potential for rationalization and improvement of the existing parking arrangement, internal pathway network and planting should also be considered. Variation in the surface materials to highlight gathering places, beach access or viewpoints could be explored.

It is understood that Centre Port is looking at redeveloping their area. It would be advantageous if the redevelopment of Ngau Matau/Point Howard headland could be done collaboratively with Centre Port, to maximise the benefits to the local landscape character, visual amenity and recreational value of the headland.

Whiorau Reserve

Whiorau Reserve provides a valuable stopping place along the shared path, giving users an opportunity to rest and enjoy the views across Te Whanganui-a-Tara/Wellington Harbour. As an important nesting area for little penguins, it also provides the opportunity to learn about these animals.

Located between Whiorau/Lowry Bay and York Bay, Whiorau Reserve is a key recreation reserve along Tupua Horo Nuku. As such, it already includes many landscape design features such as seating, picnic benches, bins and informational signage. Most of the furniture is of a consistent theme, utilising old wharf timber. It also provides access to the water for fishing and for launching boats via the Lowry Bay Boat Ramp, which is protected from southerly swell by a breakwater made with revetment rock. As a key destination, it currently includes public car parking.

Pohutukawa trees, shrub beds, earth mounds and placed boulders follow the road along the southern side of the reserve. The shrub beds provide habitat for little penguins and are to be retained. An additional area is being created for little penguins as described within the BPP. This will include protection fencing, native coastal shrubs planting designed to create a low canopy to provide shelter and cover to nesting little penguins, artificial nest boxes and interpretation panels highlighting the presence of the little penguins and information on their biology, life cycle and threats. Further detail regarding planting and bird protection features can be found in the BPP.

To accommodate the nesting areas, some existing furniture will need to be relocated. This should be done in a way that supports the reserve's extended function as a habitat area and major stopping place along Tupua Horo Nuku. Any new furniture required should be designed in the same design language as the existing furniture. There is also an opportunity to consolidate existing and new signage to minimise visual clutter.

York Bay

Located between York Bay and Mahina Bay this rocky headland which includes a large rock feature approximately 6-7m high, a remnant of the original landform which has been excavated to form the road. In front of the outcrop is an extended road shoulder with a bus shelter and an area of taupata, flax and coastal grass plantings. This headland offers an opportunity for people to stop and explore these features, and learn about the history of the Eastern Bays coastline and the events and actions that have shaped what is visible today.

Ma-Koromiko/Okiwi-Iti (Windy Point)

The southern gateway space for the shared path to and from Eastbourne, Windy Point offers visitors and shared path users an opportunity to gather, to orient to the local landscape and the shared path, and to rest at the beginning or end of their journey.

The area is currently dominated by informal car parking over a gravel surface, fringed by amenity planting beds. Access to the water is provided via a boat ramp and access to Rona Bay Beach is provided via a set of stairs; both of these features are to be retained.

The design for this area provides more space for people walking and cycling and formalises parking arrangements to achieve greater efficiency. Elements within the landscape design for this gateway area include planting, seating, cycle parking, informational and directional signage. Variation in the surface materials highlight the threshold to the shared path, gathering places, beach access and access to the boat ramp.

Secondary Stopping Places

These locations are smaller than the primary stopping and recreation places. They are to include light provision of seating, cycle stands and informational signage where co-located with historic or ecological features. The main purpose of these areas is to offer an opportunity for stopping, resting, interacting with and enjoying the views along the coast. In addition to those areas listed below, the 'Standard Steps' beach access also provide secondary stopping spaces.

- Sorento/Lowry Bay headland: Includes nesting area and associated fencing for the variable oystercatcher.
- Lowry Bay: Bus stop and associated decking area with seats and beach access.
- Whiorau Reserve/York Bay: Area beside pumping station with pohutukawa trees, rocky outcrops and rock formations.
- Mahina Bay north: Small area beside shared path with pohutukawa trees.
- Mahina/Sunshine Bay headland: rocky promontory with single pohutukawa tree.
- Sunshine Bay fishing area: Extended paving area along the revetment edge with seating and signage.

Wayfinding & Interpretation

Tupua Horo Nuku is set next to a transport network, providing a new way for a wide range of users to experience the dynamic coastal and cultural landscape, and enjoy a series of destinations along the way. People using a wide range of transport modes need to be able to navigate the route clearly and safely, and an effective approach to wayfinding will contribute to this. The approach to wayfinding and interpretation should also relate to the vision and principles of the Project. In addition to facilitating safe, easy connections between Matua-iwi Pa/Eastbourne and Ngau Matau/Point Howard, the wayfinding and interpretation signage should also serve to educate and connect people with the dynamic and layered coastal and cultural landscape.

The Mana Whenua design principles applied to Tupua Horo Nuku emphasise the living relationship between the landscape and landforms, geology, streams and waterways and everything that lives within those environments; they are all connected and interdependent. The approach to wayfinding and interpretation should enable these stories of Tupua Horo Nuku to be shared with path users through simple, bold, integrated design details, signage and artistic interpretation. To uncover and illustrate narratives along its length to bring meaning to place and to highlight its context.

Effective wayfinding and interpretation signage will assist in the safe and enjoyable use of the path and gathering spaces, as well as providing a means of education, sharing the stories of Tupua Horo Nuku, and connecting people with place.

The approach to wayfinding and interpretation
The wayfinding and interpretation design is to be developed for the Project and should:

- Create a visual language specific to Tupua Horo Nuku which suits the needs of the Project and relates to adjoining cycleway infrastructure and complements cultural expression artworks.
- Facilitates wayfinding along Tupua Horo Nuku, as well as to/from the path and the wider urban fabric.
- Clearly communicate and link key destinations and named landmarks and assist in legibility of the proposed path.
- Ensure the level, format and intensity of wayfinding signage varies along the path, according to need.
- Detail the range of wayfinding and signage types which create a unique and coherent graphic language for Tupua Horo Nuku, using robust materials, suited to the coastal environment.
- Give consideration to HCC cycleways, Transport Agency standards and Great Harbour Way precedents (but reinforce Tupua Horo Nuku as a coastal path with its own identity).
- Ensure CPTED concerns inform the wayfinding design approach.
- The connection to papatuanuuku (mother earth).
- The connection to the life upon papatuanuku and to life that lives within the realm of Tangaroa (god of the sea).
- The connection to Ranginui (sky father) with rain and sun that settles upon the land and water masses that feeds everything it touches .
- The connection spiritually
- The connection of people to the area

Design Approach
The family of wayfinding and signage should be represented by a coherent suite of wayfinding and interpretive signage with robust materials, suited to the coastal environment.

Landscape treatments and design cues are generally preferred over formal signage where possible. A graphic approach should be used which allows icons and graphics to signal use and complement the design identity of the path and any interpretive information provided.

Cultural expression will draw design inspiration from the narrative of Tupua Horo Nuku and its cultural significance to the area which is known today as the Eastern Bays. Let the historical hurt of our Taranaki Whānui and Mana Whenua ancestors be acknowledged.

Cultural Design Response & Build.

Called upon by our ancestors Te Kahui Maunga
Amass the power and energy
Fashion upon the skin of papatuanuku
The marks that lie before us today
The splitting of the land masses
The pounding of thunderous waves
Unveil yourself before us
Te Tupua Horo Nuku, Ngake

Celebration and interpretation of the cultural landscape is integral to the Project vision, design principles and design themes.

The Cultural Narrative and Overlay for Tupua Horo Nuku sets out the principles and design response that will guide the cultural expression and create a foundation for the Project in partnership with Taranaki Whānui and Ngati Toa and key project groups.

The Cultural Narrative and Overlay for the Project will reflect in all parts of the urban and landscape design process, from the overall form of the footprint, through a focus on kaitiakitanga and in the design of the seawall and other structures. This can also be realised though materials used, naming conventions, arrangement of gathering spaces, treatment of the stream crossings, signage, lighting, sculptural elements and artwork along with the consideration of options for future events, recreation and education activities.

Figure 1.23 *Tupua-Horo-Nuku artwork.*
Len Hetet, 2021

Tupua Horo Nuku - Ngake

Rip, lacerate, heeled by the energy of the sun. heeled by the power of the wind, this is the path ahead, the path of Ranginui, the path of Papatuanuku.

Healing of Papatuanuku by:

Hine wai tota - Fresh water maiden
Hine Wairere - Running water maiden (falling water, rain)
Hine korako - Mist maiden (generated by cold elements, snow, ice)

Cultural Practices and Protocols

Ensuring correct cultural practises and protocols are established and working with Mana Whenua to ensure they are aware of timeframes for:

- Closing buildings ready for deconstruction
- Blessings
- Induction

Raukura Maxwell (Partner Integration Manager) to act as conduit between Mana Whenua and Tupua Horo Nuku project teams

Cultural Safety

- Ensure any matters that have connection to cultural expression be approved by Cultural Design Lead.
- Ensure Mana Whenua are kept up to date with project progress.
- Ensure all marketing and communication that has cultural connection be approved by Cultural Design Lead.

Sites of Significance

The following places and whakapapa of the Tupua Horo Nuku section of Te Ara Tupua has been identified by the cultural advisory team and are used as a starting point to establish an experiential narrative for the Project. The use of these names, and the details of their application, is to be confirmed through the bay specific plans by the cultural advisors to the Project and through further consultation with iwi.

Their use in the LUDP has resulted from the partnership with Taranaki Whānui. A Cultural Expression resource has also been developed, by Len Hetet, Taranaki Whānui's cultural expression advisor, to help inform the LUDP and Project design. A summary of the sites of significance is provided below.

Paetutu Kainga
Pae Tutu Kainga once located on the west side of the Hutt River near the site of the Pipe Bridge. It was originally a fortified Pā on an island (Gear Island) in an area of swamp. Later the Kainga was moved to firm ground on the right bank of the river opposite the current Paetutu Kainga Housing development. There were significant changes to the river mouth both with the uplift in 1855 as well as river works over the years. Pae Tutu Kainga was not reserved out from the Crown Grant to the New Zealand Company in 1848 and eventually disappeared when lands transferred into private ownership.

Okautu Stream
Described as one of the tributaries that fed into Te Awa Kairangi near its river mouth. It was also named Opahu, and following settler arrival renamed Black Creek and Second River. 'Kautu' means fordable, this stream, for the most part sluggish and deep, being fordable by wading at a place somewhere near Whites Line. The name Opahu may have been more properly applied to the upper course of the Okautu.

Hikoikoi Pā
Hikoikoi Pā located near the current Hikoikoi Reserve on the right bank of the Hutt River. The people of Hikoikoi moved between Hikoikoi and Waiwhetu Pā. Prior to 1855 the mouth of Te Awakairangi, Te Awa Mutu and Waiwhetu Stream formed a very large estuary where all the streams came together. Boat buildings were located on the rivers including the Waiwhetu river. Even before the Tory arrived with the New Zealand Company officials in 1839 at a place near the Hikoikoi Pā a European Joe Robinson established a boat yard and married into the local Māori. Māori of course had built waka around the harbour for centuries.

Te Awamutu
A former broad spring fed affluent of the Hutt River, now shrunken flow discharges into the Waiwhetu stream. The name means a channel or watercourse with an abrupt end, strong springs of sub-artesian water welling up to form a full-sized but sluggish water course. In the early days of European settlement in the Hutt Valley, Te Awamutu was renamed by settlers as Third River; today it is largely underground in pipes and most of the original channel is filled in and built over. Exposed at certain places, Hinemoa street, Wainuiomata road, York street and immediately in from of the Hutt Park Golf Range.

Waiwhetu Stream
Waiwhetu stream drains the eastern side of the Hutt valley plain. Prior to the 1855 earthquake and uplift, it was a broad gently flowing stream, hence the name which means 'stream reflecting the stars, 'star stream', or even 'starry water'. Until the year 1855 it was navigable for small schooners as far upstream as White's Line where in 1842 Willcox's shipyard and mill were located. It is said that the Wai-whetu was formerly what may be termed a 'flood distributary of the Hutt River, part of its flow being derived from the Hutt River when in flood, the overflow of the Hutt occurring near the lower end of Taita Gorge. The course of the Wai-whetu is shown on Maps I, VI, but the original name may have been used only for the lower one or two miles of the stream.

Waiwhetu Pā
Waiwhetu Pā was located on the eastern side of Te Awa Kairangi near the mouth. Close by was Owhiti which is the name now on the urupa beside the Waiwhetu Stream adjacent to Waiwhetu Pā. The Pā was partitioned and allocated to owners along Seaview Road. The geography has changed considerably over the years as the beds of the rivers rose and land was reclaimed. Many of the people from Waiwhetu Pā moved inland to live on Hutt Section 19 where Waiwhetu Marae is now located.
During the first two decades of the 19th century Ngati Ira were settled in various pa along the eastern shores from Waiwhetu to Turakirae. Whereas the settlement at Waiwhetu was fortified, other Pā sites in the vicinity were not. Eventually Ngāti Ira were driven out of Waiwhetu, Te Mahau, Okiwi, Paraoanui, Orongorongo, Kohangatera and Hakoiwi, with the last battle taking place at Turakirae. With the final Te Ātiawa migration to Te Whanganui-ā-Tara in 1832 from Ngā Motu/New Plymouth and then the on-migration of Ngāti Mutunga from the Hutt and around the harbour in 1835 to the Chatham Islands the final arrangement was set with Ngā Motu, Te Ātiawa taking up residence at Waiwhetu Pā just prior to the arrival of the New Zealand Company and its settlers in 1839/40.

At the time of the arrival of the European settlers the mouth of Te Awa Kairangi and the Waiwhetu River were deep prior to the 1855 uplifts. The area was fished to tuna/eel, rock oysters, mussels, kahawai and kanae/mullet along with inanga/whitebait and flounder. The acquisition of Waiwhetu Pā by the Hutt River Board using the Public Works Act was a principal tool utilised by both central and local government to alienate Māori from their land. The Hutt River Board's rationale to take the land seems to have been due to the belief that Māori Landowners would benefit from land accrued through the reclamation work, thereby decreasing any major advantage that could be gained from the project.

Owhiti Pā
Owhiti Urupa is still in use today near the mouth of the Waiwhetu Stream. The site is traditional and is located adjacent to the old Waiwhetu Pā. In the first District Plan this was called the "Seaview Road urupa as site."

Te Ngohengohe Battle Site
This was the site of a battle located near to Ngutu-ihe Pā at the foot of Puke-atua. This was a battle between Te Ātiawa and Ngāti Ira where Te Ātiawa prevailed.

Puhara-keke-tapu
Puhara-keke-tapu battle ground was on the left bank of the Waiwhetu Stream opposite Hutt Park. The battle was between Ngāi Tahu and Ngāti Kahungunu (probably Ngāi Tara at that time) prior to Ngāi Tahu migrating to the South Island.

Ngau matau (Point Howard)
This headland was called Point Howard had the traditional name with the meaning of 'bite the fishhook' is still as significant a fishing spot today as it had been for Māori in much earlier times.

Whiorau (Lowry Bay)
Whiorau means the place with many blue ducks. This was not only a place favoured for birding but also for fishing.

Orua-motoro Pā (Days Bay)
This was a Ngati Ira fortified village however the name can also apply to the bay. Said to have been built by Te Hiha. Possible urupa/burial ground

Cultural Design Response & Build.

Ma-koromiko/Okiwi-iti (Browns Bay)
Browns Bay, named after the notorious “Okiwi Brown”. The original name of this spot was Ma- koromiko, it was renamed Okiwi after a Rangitane chief named Kiwi who was slain there, and later the suffix ‘iti’ was added to distinguish it from Okiwi-nui. Okiwi-iti is the very small bay between Days Bay and Rona Bay on the eastern shore of the Wellington Harbour.

Matua-iwi Pā (Eastbourrne)
A Ngāti Ira pa at Robinson Bay, originally known as Okiwi-nui, now Eastbourne. Matua-iwi pa was sometimes loosely referred to as the Okiwi-nui pa but the real meaning intended, that if Elsdon Best’s information can be relied upon, it would be the Matua-iwi pa at Okiwi-nui.

Okiwi-nui (Robinsons Bay & Muritai)
Located on the eastern shore of Wellington harbour later named Robinson Bay. A Ngāti Ira pā Okiwinui was named Matua-iwi and sometimes referred to in general terms as the Okiwi-nui Pā.

Korohiwa Pā (Point Arthur)
This site is near the old Eastbourne bus terminal. This old Pā site is opposite Makaro/Ward Island. This was located at the spur end of Point Arthur. This old Ngāti Ira site was probably occupied even after 1840. It was probably a fortified Pā.

Paraoanui Kainga
This village was located south of Camp Bay between Eastbourne and Pencarrow Head. This was probably a fishing village used from time to time. There were middens in the stream valley[M1].

Matiu, Mokopuna and Makaro Islands
There were at least two Pā sites on Matiu. One was Te Moana a Kura Pa parts of which are still visible today. The Pā probably traversed what is now the main access road from the wharf to the building on top of the Island. Haowhenua was near the summit of the island and around where the main part of the quarantine station was built.

The small island of Mokopuna was no more than a refuge and almost surely a burial ground. It was later called Leper Island but the name never persisted. Makaro of Ward Island did not have natural springs as Matiu had but there was at least one if not two Pā sites and the flat summit of the island.

Ngā Hū/Ngā rerenga
These were places named after women who were saved from drowning there. The land section is given as Quarry Bluff (Hinds Point). This place was later to be associated with the Wahine disaster as survivors and others came ashore at this point[M2].

Te rae-akiaki (Pencarrow Head)
Pencarrow Head, meaning the headland where the sea rushes up or pounds – this very exposed headland marks one side of the entrance to Wellington Harbour and the channel known as Te Au a Tane.

Kohanga-pipiri
Kohanga –piripiri is a lagoon close to Pencarrow Head. This is the smaller of the two lagoons or lakes with the smaller catchment. These were an important source of food and materials for Māori.

‘The first lagoon east of Pencarrow Head’. Originally a narrow arm of the sea but ponding by ancient shingle beach-ridges converted the inlet into the ponded mouth of a stream identified as the old-time Wai-mikomiko. This stream rises in the hill now known as Mt Cameron and on modern maps it is re- named Cameron Stream.

Best’s 1916 map and S.P. Smith’s Map No.6 in his Taranaki Coast, of Port Nicholson (Wellington Harbour) as it was prior to 1840, shows Kōhanga-piripiri as being more extensive than now. This conforms to the geomorphological evidence, the 1855 uplift causing the level of the lagoon to be lowered and reduced, a south-western arm being eliminated.

The name has been explained thus: It is a very wind-swept place. The hollow containing the lagoon was figuratively referred to by Māori as a ‘nest’ (kōhanga), which had to ‘cling very strongly’ (piripiri), hence ‘a strongly clinging nest’. Processes from the marine side of these lakes which could adversely affect the ecology, hydrology or limnology of these lakes would be very significant to tangata whenua.

Kohanga-te-rā
‘The second lagoon east of Pencarrow Head’, about 1.2km beyond Kōhanga-piripiri.’ These two lagoons are of identical origin but Kōhanga-te-rā is the larger surface area of water; and Gollans Stream is a ponded watercourse. In supposed contrast to the basin of Kōhanga-piripiri, the hollow occupied by Kōhanga-te-rā is taken to be a sheltered place, again linked to a ‘nest’, but one basking in the sun (te rā), and the literal meaning is given as ‘nest basking in the sun’ (J.B. Palmer) (cf., Kōhanga- piripiri).

Paiaka Stream
A small stream flowing into Fitzroy Bay about 3 kilometres west of Pencarrow. The name is shown on modern maps as Paiaka, Paraka or Te Karaka. However, the later may have been an entirely different location.

Okakaho Stream
Located in Fitzroy Bay, east of Kohanga-te-rā lagoon. A small Ngāti-Awa village was situated there’ (Best, 8, Pt5, p165), with the name spelt ‘Okakao’, but the more exact spelling is given on modern maps. This stream enters the sea a mile east of Kohanga-te-rā, and its name means ‘place of the flower culms (stalks) of the toetoe (Arundo conspicua)’; the valley bottom was presumably marshy and showed a prominent growth of this plant, as the name implies.

Parangarahu Pā
Parangarahu was the ancient Pā/fortified village of Ngāi Tara who had developed settlements along the South Wellington coast from the earliest period of Māori Settlement. Ngāti Ira who succeeded and intermarried Ngāi Tara later occupied the site and were in occupation at the turn of the 19th century. Te Ātiawa later occupied the site as a seasonal fishing village where fish and shellfish were harvested and dried for later usage. Paua was a staple along with koura/rock lobster, tuna/eel and kokopu from the lakes. The area was rich with kaimoana supplemented by bush foods such as karaka berry anaruhe/fern root. Parangarahu was supplied by the Okakaho Stream which reliably provided clean fresh water.

As shown by Bagnall and Petersen the true position of Para-ngarehu (a pā, not a headland) was at the eastern angle of Fitzroy Bay. There, traces of the place were seen by C.R. Carter in May 1852, when on his journey on foot to the Wairarapa Valley (17, vol 2, p85). He recorded that a stone wall 300f in length was one of the surviving features of the place. The remnants of this wall still exist today.

The village visited by Carter probably carried the old name but was located on the lower plain near the beach where indentations for huts are still visible. Perhaps this should be called Para-ngarehu kainga with the Pā directly above. Admiralty Chart of Port Nicholson (issued about 1905) confirmed this location of the site with the name ‘Pa rangi rau’, which is a corrupted form of Para-ngarehu. An examination of the locality by J.B. Palmer has disclosed a former large settlement at the place indicated, and gives further confirmation of its correct position, which is over 4.2km east of Pencarrow Head. This coastal zone gives recognition to the traditional seasonal occupation of this area by tangata whenua for fishing.

Archaeological sites:
a) R28/49 – midden and oven stones southern end of Fitzroy Bay on raised beach flat immediately south of where the road meets the coast and 40 m south of the gate. Feature exposed in erosion scar on east side of fence between two sets of vehicle tracks immediately north of swampy area.
b) R28/9 - this is an important set of features associated with the coastal village of Parangarehu. It consists of midden, pit, soil, garden and stone wall. See photo above with the end of the stone wall. Site comprises an approximately 80m long stone wall, a cluster of four pits and reported midden at the northern end of the wall although this was obscured by vegetation at the time of present visit. The raised beach flat between the stone wall and the road was probably the location of the cultivations mentioned by Colenso in the 1840s.
c) The pits are clearly visible in Google Earth imagery from April 2010. d. R28/8 – midden below 10cm of topsoil. A 30 cm thick cultural layer containing shell, charcoal, bone and stones with 6 pits adjacent. 3 of the pits are clearly visible being 3 x 2 m side by side and the others less distinct.

Te rae ō paua

This site, recently more precisely fixed by J.B. Palmer during and ethnological examination of Fitzroy Bay (between Pencarrow and Baring Head), consists of rock stacks and a reef projecting seaward, with traces of human occupation on the landward side. Best was unable to locate it more definitely than 'a place in Fitzroy Bay' (8, Pt 5, p165), and on his 1916 map places it at what is now known to be the true position of Tautoki Para-ngarehu pā. The amended position is 50 chains [1 km] north-west of Baring Head.
The name appears to mean 'the promontory or coastal salient of Paua', the last element being a personal name, but this, as Mr Palmer has agreed, may be a corruption of 'Poua', which would link this with the vernacular name of Baring Head (O-rus-Pouanui, q.v.). In 'Te Rae-o-paua', the reference is unlikely to be to the edible shellfish, päua (Haliotis iris), as in that case the name would be written 'Te Rae-paua'.

Te wera

'A place on the coast just west of Baring Head' (Best, 8, Pt 5, p165) and shown on Best's 1916 map about 50 chains (1km) north of Baring Head. According to Fitzgerald (33, p4), Te Wera is a spot in Fitzroy Bay, marked by a small well, that bears the name of a warrior of Ngāti-Mutunga, slain there by Te Retimana, a war prisoner from the Wairarapa (citing Best, 8, pt4, p110). The name is therefore a personal one that has become a commemorative place name (as frequently happened in former times for persons of note) and is not in any way descriptive of local features or conditions. Ngāti Mamoe of Hawkes Bay and Ngāi Tahu ki Wairoa are said to have coexisted around the harbour with the Ngāti Ira people.

Oruapouanui

Best fixes this as the vernacular name of Baring Head, on Cook Strait (8, Pt5, p165). In a recent reconnaissance of the old native sites at Fitzroy Bay, of which Baring Head forms the eastern limit, J B Palmer found an old habitation cave at Baring Head. This may give the clue to the significance of the vernacular name, if divided thus: O-rua-Pouanui, and translated 'the place of the den or retreat of Pouanui'. On this assumption, Pouanui and Paua (or? Poua) of the neighboring site of Te Rae-Paua (or Poua?) (q.v.) may be one and the same person – a tentative suggestion that has the support of Mr Palmer. In the Wellington area there is still another place commemorating the person named Poua, namely, Te Kauae-o-Poua, a rock islet of great traditional significance (see Best, 6, p155; Smith, 51, p408), located at Te Rimurapa (Sinclair Head). This gives further evidence that Poua or Pouanui was not only a person but of considerable importance in his time.

Archaeological Site:
a) R28/43 – pit/terrace Features are spread over about 300 m, along the foot of the cliffs. The northern end lies just beyond the swampy ground south of the road, which comes down onto the coastal platform from higher ground behind. 15 Adkin, G. Leslie. 1959: The Great Harbour of Tara, Whitcombe and Tombes Ltd p55 Raukura Consultants Page 31
b) R28/12 - At mouth of small stream; north of Baring Head. In vicinity of several tall wind-eroded sea stacks. Deflated scatter of midden and ovenstones. Species include paua, cooks turban, rock cockle, cats eye. Site is located on upraised beach post dating 1855 so quite likely the result of modern activity.
c) R28/19 - Pit/terrace. On ridge parallel to lighthouse access road; just south of saddle. Four to five terraces, also pits on ridge. Larger terraces appear on the same ridge, above where the track leaves the road for the beach.

Te raina

Te Raina Pā is located in this vicinity. The site was recorded by Best in 1918 which was said to be an occupation site between the Wainui-o-mata and Orongorongo Rivers. It is also recorded by Adkin as a Pā.
The site is recorded as significant cultural resource site in the Lower Hutt City District Plan as shown in Map Appendix 1C at 18. Te-Raina. A former fortified village located approximately half-way between the Wainui-o-mata and Orongorongo Rivers.

Some references appear to show the Pā high up on the coastal escarpment, however other evidence indicates that it was on the coastal platform at the base of the escarpment. The karaka groves are a sign of habitation along the coast in particular as a food source

Orongorongo

There are several other archaeological and cultural sites in the vicinity such as those located on the western side of the Orongorongo River near its mouth. These have been recorded as follows:
Archaeological Site:
a) Pits and stone walls (R28/16) in paddock on the right bank of the Orongorongo River between the road and the foot of the hills. This site was recorded in 1964. There are descriptions of stone wall being mounded constructions. There is a complex of circular pits indicating substantial occupation of Māori going back many centuries. It is noted that at this site subsequently a house was built on part of the site obliterating part of the site.18
b) There are a number of other sites on the left bank of the Orongorongo river mouth including house sites, middens and find of adzes and other signs of Māori occupation of the area over many centuries. I will not list these in detail however the presence of the Orongorongo Pā on the eastern side of the river is well known.

Turakirae

The headland at Turakirae has considerable significance as an agreed boundary between Ngāti Kahungunu and Te Ātiawa. When peace was made in 1840 with the agreed division being along the line of the Remutaka Range to the coast at Turakirae Scientific Reserve.
Statutory Acknowledgements register the special association of Taranaki Whānui ki Te Upoko o Te Ika to Turakirae Head Scientific Reserve through Port Nicholson Settlement Trust (PNBST). Statutory Acknowledgements are recognised under the Resource Management Act 1991 and the Historic Places Act 1993. 56. R28/26 – midden.

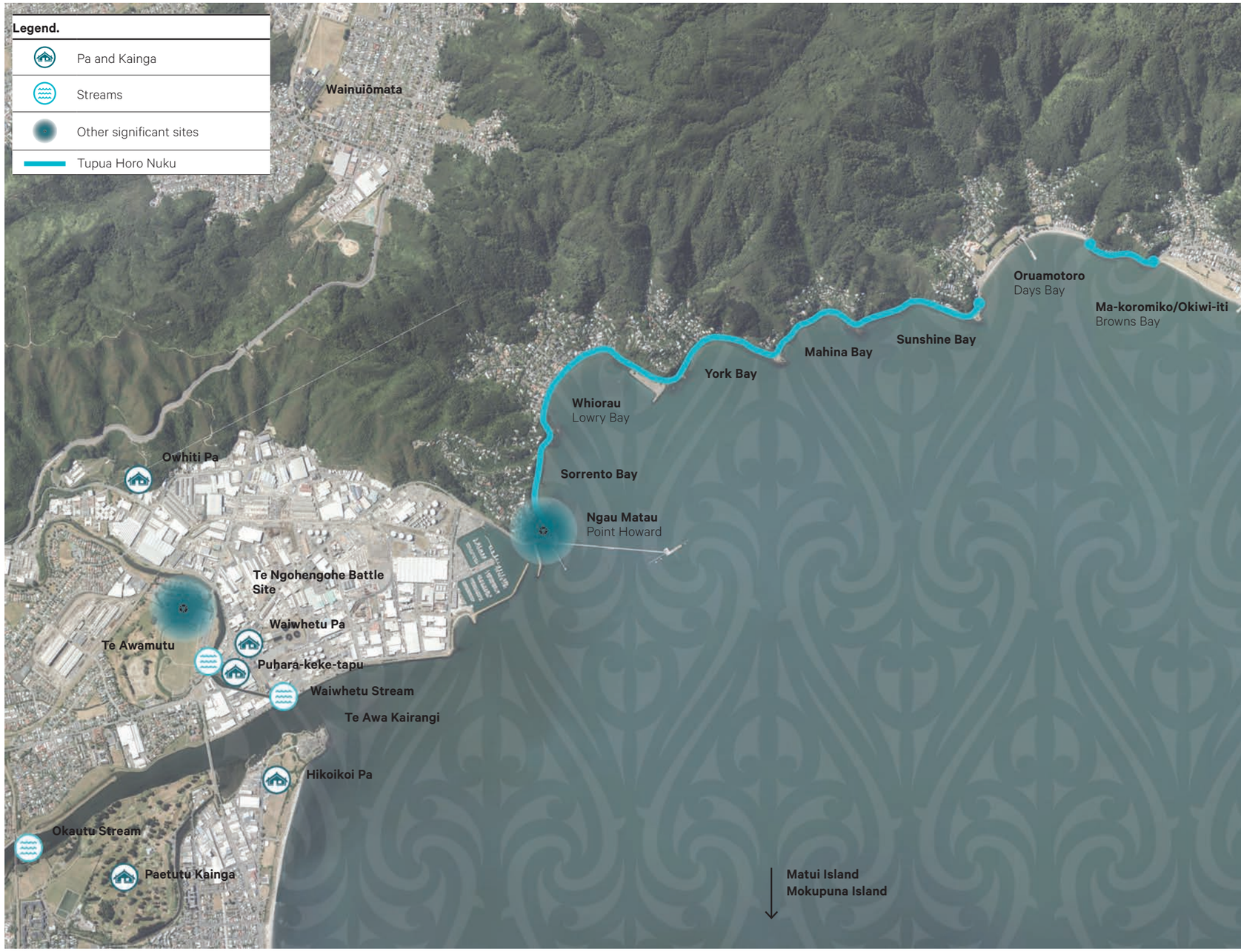
Sites of Significance.

Meeting of saltwater and freshwater is the beginning of Tupua Horo Nuku

Marine: fish, birds, pounding waves, tidal waters, land, sea, islands, marine life, kina, streams, lagoons, paua, koura, tuna, kokopu, mussels
Trees and land: Karaka, Fern root, rata, pohutukawa, birds

1 Ngau Matau - Bite the hook – Fishing ground Point Howard.
2 Whiorau - Place of many blue ducks, bird life, fishing.
3 Oruamatoro - Pa site , Days Bay
4 Okiwi iti/Ma Koromiko - Browns Bay
5 Matua iwi - Pa site – Robinsons Bay
6 Okiwi nui - Muritai – Pa site – Robinson Bay
7 Korohiwa - Pa site – Point Arther
8 Paraoanui kainga - Pa site – Fishing village
9 Matiu
10 Nga mokopuna
11 Makaro
12 Nga huu/Nga perenga – woman saved from drowning
13 Te rae akiaki – the rushing tide/water pounding the shore
14 Kohanga Piripi – Lagoon,clinging nests
15 Kohanga te Raa – Lagoon- sunny nest
16 Parangarahu - Pa site – Fishing/shell fish
17 Te Wera - commemorative site...Ngati mutunga, warrior killed
18 Oruapouanui – Baring Head
19 Te Raina – Situated between Wainuiomata and Orongorongo
20 Orongorongo
21 Turakirae – Significant site as this is the boundary marker between Ngati Kahungunu and Te Ātiawa Taranaki Whanui.

Highlight/showcase – Landmarks
— Māori and English
— Meanings for artworks and patterns
— Naming process
— Mouri marker (an acknowledgement to the area that this marker will sit within)
— Pathing application



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Kohanga-te-raa

Kohanga-Pipiri

Matua-iwi Pa
Eastbourne

Paraoanui Kainga

Okiwi-nui
Robinsons Bay & Muritai

Korohiwa Pa
Point Arthur

Te Rae-Akiaki
Pencarrow Head

O Ruapouanui
Baring Head

Parangarhu Pa

Ngā Huu/Ngā Rerenga

Mākaro Island

Te Whanganui-a-Tara

Seatoun

Cultural Expression Design Elements.

Te Ātiawa tupua rau,
he auripo i te manga iti,
he auripo i te manga nui raanei,
he kaitiaki ki te whenua.

Te Ātiawa of many phenomenas,
where there is a ripple in a small tributary
or great river, there is a guardian and
protector on the land.

The following imagery illustrates specific Cultural Expression design elements by Len Hetet. These elements complement and form part of the integrated approach to cultural expression as setout in the vision for the Project and outcomes for all of the components; from the underlying form to specific details. This LUDP includes concept and design ideas for the narrative of places, and of the proposed artwork and elements that will bring to life the overall design vision; to restore the mana and mouri of Te Ara Tupua.

These elements will continue to be developed by the cultural advisors for the Project and Mana Whenua, with the designs, and their application, to be finalised in the bay specific plans of the Project.

Pattern Development

Path Treatment - Graphic Examples

Coloured asphalt

Sand blasted concrete

Mouri Marker

CNC pattern into hardwood with countersunk laser cut letters

4. Urban Design Outcomes.

Design Features Report.

This section of the LUDP presents Urban Design Outcomes informed by the vision, context and design principles for the Project.

The purpose of the Design Outcomes section is to translate the key findings of the context analysis and design principles into specific measures and parameters to be carried through into the Bay Specific Urban Design Plans (BSUDPs), as required by the consent conditions. The outcomes sought and design measures to achieve these are illustrated in the following section. The overall maximum footprint of the design and the structural approach has been confirmed in the consent design.

Outcomes sought are detailed in relation to:

— Safety
— Public Access
— Urban Design, recreational and visual amenity
— Cultural Expression

Figure 1.24 New Plymouth Foreshore.
Isthmus Group, 2019

The Design Features Report (DFR) (Stantec, 2019) establishes a set of design principles and outlines the engineering requirements for the project. This LUDP and the project's detailed design has been developed in general accordance with these principles and requirements. The DFR design principles form the overarching principles for the detailed design of the project.

Specific design outcomes for the Project identified in the DFR are summarised adjacent with identification of accordance or departure captured in the table.

Design principle from DFR.	**In general accordance or departure**
Achieve compatibility along the Bays by consistency in the location and design of elements and use of materials.	In general accordance. Refinement will occur at Bay scale and incorporated within the BSUDPs.
Consideration of the whole environment into an integrated solution.	In general accordance.
All work must be an improvement on what is existing.	In general accordance.
Change seawall type, if necessary, at a promontory, rock outcrop or other major feature within the bay, or in locations where a ramp or set of steps provides a logical/neat transition point between wall types.	Path alignment responds to the local landform and land use patterns. Sensitive detailing of urban design and landscape elements, that respond to community identity and sense of place. Removal of existing unsightly structures and infrastructure along the project site and the replacement of an eroding road with a consistent structurally stable edge
Recognise the individual character of each bay by reinforcing and strengthening those valued patterns that establish the unique identity of the bay.	
Locate all elements carefully to avoid visual clutter and maintain a focus on the seashore and natural environment.	In general accordance. Refinement will occur at Bay scale and incorporated within the BSUDPs.
Design the seawall to be multi-functional.	In general accordance. The addition of textures on the curved seawalls and rockpool habitats within the seawalls and revetments will improve the habitat value.
Design the seawall to be easily adaptable to accommodate sea level rise.	

Design Features Report.

Design principle from DFR.	In general accordance or departure
The seawall design allows for adaptive pathways to address sea level rise, such as future protection to be added on top of the wall in future as required.	In accordance.
Achieve consistency in the seawall profile throughout the corridor.	In accordance. The seawall profile is consistent across all Bays.
The seawall is to be constructed from reinforced concrete, following details in the C400 Series drawings for the project. Construction methodology of the sea wall, either precast or cast insitu, or a combination of both, will be determined by site conditions.	In general accordance. Seawall is constructed from reinforced concrete. Construction methodology intended to be proposed by the Contractor at tender.
Resilience of the road and underground services is a priority in the design.	In accordance.
Replacement and extensions to stormwater pipes through the wall are to be like for like, and finish flush with the face of the seawall.	In accordance.
Seawall transitions to be integrated to avoid abrupt ends/divisions. Transitions between seawall types, e.g. between double and triple will be managed between access points (steps and ramps). Transitions between wall edges and the existing coastal edge, e.g. at headlands, will be softened/ integrated with natural rock.	In general accordance.
The width of the shared path is to range between 2.5 – 3.5m generally.	In general accordance.

Design principle from DFR.	In general accordance or departure
The path surface is to be asphalt with a 300mm wide concrete strip on the 'sea side' to define the coastal edge.	Path surface in accordance. Concrete strip width now 370mm (plus 80mm including curved nose of seawall) due to structural requirements of the revetment walls and curved concrete seawall.
A concrete separator on the roadside and no separator on the seaward side.	Concrete separator on roadside is in accordance. A separator has been included on the seaward side above double and triple curve seawalls as a safety feature. Balustrades have been included to sections where fall from height can not be mitigated through seawall design.
The revetment is to be constructed using rocks that shall interlock to provide resistance to the oncoming wave climate with limited damage only within the most extreme events (> 1% AEP). Some maintenance may be required during the design life.	In general accordance.
The toe of the revetment shall be keyed into the bedrock or founded down to the anticipated scour level to provide a solid founding for the structure.	In general accordance.
The top of the revetment shall allow for additional rocks to be placed to adapt to future sea level rise.	In general accordance.
The work is to be an improvement on what is existing throughout the corridor.	In general accordance.

Project Precedents.

Te Ara Piko, Porirua.

Te Ara Piko (The Meandering Path) follows the northern edge of the Pauatahanui Inlet, extending from Pauatahanui Village to Motukaraka Point. A joint venture between Porirua City Council and the Rotary Club of Plimmerton it provides a safe walking and cycle path that wends its way alongside the native salt marshes and through wetland habitat

Peninsula Connection, Dunedin.

This project consists of approximately 17km's of road widening along Portobello and Harrington Point Roads on the Dunedin Peninsula to incorporate safety improvements, raising of the pavement due to sea level rise and new cycling and walking facilities.

The Peninsula road is narrow and winding, with little room for pedestrians and cyclists. Most of the road is bound by the harbour and seawall on one side and land on the other. The road will be widened and raised, a new rock seawall built and a shared path for pedestrians and cyclists created. The work will include seating, landscaping, native planting, boardwalks, stairways to the harbour and rest areas making the path more welcoming and accessible.

New Plymouth's Coastal Walkway, Taranaki.

The overall strategy applied at New Plymouth involved extending the city grid across road and railway to the coast. At the edge, the street grid dissolves into finger piers, the largest of which is an extension of the Puke Ariki Landing, which cantilevers out eight metres over the Tasman Sea.

While New Plymouth's collective spaces allow for a number of civic and recreational experiences, the coastal walkway is the city's most evocative built landscape. At the intersection between shoreline and city, marked by the ceaseless shifting of Len Lye's Wind Wand, the walkway extends out, protected from the sea by a deep and wide boulder wall. At certain points, when enough protection is not offered, the walkway ducks inland to provide shelter, but at all times the vast expanse of water and horizon is maintained.

Te Ara Ihutai, Christchurch.

The purpose of the Christchurch Coastal Pathway is to promote and facilitate the creation and use of an international-standard coastal pathway from Ferrymead to Scarborough Beach, Sumner for the benefit of the people and city of Christchurch.

By creating a coastal pathway and enhancing native planting we are also restoring the area's cultural history and connection to Ngai Tahu. The area will tell a symbolic and meaningful story and evoke the cultural significance and importance of the Mana Whenua (local indigenous people) and their connection to both the land and sea.

Recreation and Amenity.

Tupua Horo Nuku provides a connection to a continuous coastal edge experience. It will provide new access points to the coast via steps and ramps and will serve to connect existing paths and cycleways. Between Ngau Matau/ Point Howard and Matua-iwi Pa/Eastbourne there will be range of stopping points positioned at intervals along the path.

A Recreation Assessment (LVA) was produced in January 2019 by Rob Greenaway and Associates. The following section includes text from that document.

The Project area is mostly of local recreation value given that the area is predominantly used by local residents for swimming, small boat launching, walking and dog walking. Some shellfishing occurs with a little set-netting by locals offshore, and some floundering in Whiorau/Lowry Bay. Swimming rafts are moored offshore in summer in Whiorau/Lowry Bay, Oruamotoro/ Days Bay and Mahina Bay, and are mostly used by locals. All rocky areas provide snorkelling and fishing opportunities. Waka ama is also present within Whiorua/ Lowry Bay and Sorrento Bay is a popular location for open water swimmers.

The effects of Tupua Horo Nuku on recreation and loss of amenity value are mitigated by placing beach nourishment at Ngau Matau/Point Howard, Whiorau/Lowry Bay and York Bay. By addressing adverse effects on these beaches with 'dry' high tide areas used for sitting and other 'dry' beach activities, the proposal will maintain coastal amenity and ensure effects are no more than minor. Losses in the width of beach – where nourishment is not proposed – and at rocky areas, are minimised by relying on a narrowed path where appropriate, and may be addressed through future coastal resilience planning if they are regarded as priorities. As such, no further mitigation measures are covered in this LUDP.

The Project will enhance existing levels of recreation and amenity values by way of the shared path improving access for people walking and cycling along the coast and between bays. This enhanced access includes new beach access points providing access to the foreshore. This benefit will be provided to both residents in the Project area and visitors from elsewhere, drawn to the coast by the improvements. This benefit is further enhanced by connections to other cycle trails in the area including the Great Harbour Way/ Te Aranui o Pōneke (one of the New Zealand Great Rides) from the mouth of the Orongorongo River to Burdan's Gate, the Remutaka Trail (Leg 3 Burdan's Gate to Seaview), Hutt River Trails, and through the connection to the ferry terminal at Days Bay, where visitors will be able to access the shared path from central Wellington.

Other benefits include improved amenity through the provision of furniture, such as seating, cycle stands and interpretation signage. Currently there is a mix of furniture styles and materials scattered along the coast in varying states of repair. New furniture installed as part of the Project will be generally consistent across all bays and will form a coordinated suite. Existing adhoc and deteriorated furniture will be replaced. Whiorau reserve will retain its existing coordinated suite of furniture. Further information on the furniture elements is provided in the following sections.

Opportunities for customisation by bay will be developed with Bay's community representatives in the BSUDPs.

Outcomes

The Project offers the opportunity to further connect the region and extend active transport options between the Lower Hutt City and the Eastern Bays. In further connecting the community to the coastal edge there are enhanced opportunities for water-based recreation, bay events, and increased public access to a valued coastal edge.

Key outcomes and opportunities to be achieved in the design include:

Coastal Edge Connections

— Improve the transport connections between Eastbourne and Pito-One, for the greatest range of cyclists and pedestrians, including micro-mobility users.
— Provide a safe and easily navigated, smooth route for both commuting and recreational users.
— To achieve a path suited for the wide range of users, ages and levels of ability and to support recreational use.
— Re-establish connections for Mana Whenua and the wider community to the coastal edge.
— To retain harbour views as much as possible through the design of structures and detailing along the path.

Waterfront Amenity and Safety

— Provide for a varied journey and an immersive coastal and cultural landscape experience to encourage the wide range of use.
— Provide gathering spaces at regular intervals with seating, shelter and design features integrated within a new coastal edge.
— Accommodate varying length return journeys and to provide amenity for everyday commuting walkers and cyclists as well as for a range of recreational including picnicking, fishing, larger group gathering and events.
— Provide an integrated approach to wayfinding and interpretive signage which is in keeping with the coastal edge treatment, environmental conditions and which allows for further opportunities for cultural expression.
— Design of the project is to enhance the waterfront experience, and be in keeping with the mana and mouri of the Projects namesake, its environmental conditions and its setting.
— Use an integrated landscape/spatial approach to ensure clear cues for movement along the path, to avoid user conflict and the need for physical separation and excessive signage.
— Use of an integrated landscape approach to safety and CPTED.

Resilience and Emergency Access

— To consider the resilience of the transport corridor between Eastbourne and the Hutt Valley, and help to safeguard it as a lifeline for the Eastern Bays.

Path Users

The Project design is flexible to cater for multiple user groups. It provides an important transport and recreational facility for people - to improve their health and wellbeing. Use of the shared path will vary hour-to-hour, and day-to-day, and will need to allow for maintenance and larger group and occasional event use. Potential speed conflicts may occur, as there is a wide range of users and movement speeds expected. The design should reduce conflicts by separating fast and slow movements through design and graphic cues and socialising of behaviours.

Gathering areas off the shared path to allow for regular breaks and points of interest. The Project may have to cater for ten modes/user groups, each with differing needs. Those identified include but are not limited to the following:

— Commuter cyclists (including those on e-bikes).
— Recreational cyclists (fast and slow).
— Walkers.
— Runners
— Event participants/spectators (e.g. running,cycling).
— Skateboarders and kick scooters.
— E-scooters and other low-powered transport devices.

Coastal Edge & Access.

— Mobility devices & wheelchairs.
— Parents/family groups with buggies.
— Recreational fishers.

User Experience

The design of Tupua Horo Nuku is to allow for a safe and efficient connection along its length. The Project should be designed to suit a range of users for ease of commuting, recreation, event use, and maintenance purposes. Key user considerations include:

— Provide access for all to Tupua Horo Nuku.
— Providing safe and logical connections with crime/anti-social behaviour mitigated through CPTED and design approaches.
— Provide for user safety from environmental hazards (e.g. coastal storms, wind).
— Provide strong movement cues to support the range of users and activities expected.
— Provide a logical sequence of destinations to encourage the wide range of users. The Project should provide regular stops and points of interest for users and have space and amenities for people to gather and enjoy the coastal environment.
— Surfacing should be suitable for various transport modes, e.g. provide smoothness for cyclists, skateboarders, scooter and e-scooter riders and be comfortable for walkers and runners.
— The design should consider users needs and safety - conforming to slip resistance criteria and not contain trip hazards, fixtures or level variations that could trap wheels or obstruct pedals.
— Use high quality materials and finishes suited to the location for paving, fencing and furniture for the enjoyment and safety of people and animals.
— Provide interesting and varied coastal planting along the route when possible for both amenity and habitat purposes.
— The Project should limit impacts on the views of motorists and residents
— Wayfinding should be allowed for at appropriate locations to guide users to/from and along the journey.
— The path and gathering areas should be easily maintained. Debris should be cleared regularly and all elements should be easily repaired.

The coastal edge is defined by the following edge conditions:
— Concrete curved seawall (single, double and triple curve)
— Revetment.
— Existing revetment retained.
— Existing beach retained (note beach nourishment areas)
— Existing natural rocky edge and outcrop retained.

Gathering spaces and beach access points along the path are placed at strategic locations to enhance the coastal experience, and encourage appreciation of the natural and cultural qualities along the route. They will cater to a range of users, age groups and abilities and provide for varying journey lengths, use and identity; as named features marking significant sites.

Outcomes

Gathering spaces are to reflect a site-specific narrative which links it to the geographic and cultural location.

Experience
The character of gathering spaces and beach access points is to establish spaces for people - focussing views, and providing areas for access, seating and cycle racks.

Coastal Planting
Is to be used to contribute to natural character. Planting is to enhance the naturalised coastal edge character of the Project and provide respite and enclosure to gathering spaces.

Revetment Design and Boulders
Variation of the coastal edge is to be enhanced by using rock armour in specific places and larger rocks as landscape elements (where appropriate).

Path Separation and Linemarking
Where width allows, gathering spaces, beach access points and bus stops are to be appropriately separated from paths, to allow for slower and safer movement. These opportunities should be explored during the bay specific plans. Linemarking, symbols, and directional arrows are also to be considered at the approaches (thresholds) and alongside bus stops and beach access points to visually separate fast and slow movement to minimise conflict.

Path Alignment
Where width allows, in the consented footprint, path alignments may be adjusted to improve pedestrian and cyclist safety and enjoyment, e.g. to create chicanes to further signal the need for slow movement and pedestrian priority within the gathering spaces and around bus stops.

Multi-functional Elements
The Project should contain elements which are multi-functional or shared. These elements could include (but are not limited to):
— Freestanding seating which could incorporate habitat for insects or lizards
— Rocks which can be used by nesting birds.
— Beach access points that allow incorporation of cycle racks, scooter racks place names, cultural expression, and seating.
— Planting areas that absorb runoff from paved surfaces.
— Planting for amenity and with species that are ecologically appropriate; to create habitat opportunities.

Planting and Habitat Creation
Coastal planting is to be utilised to provide shade, shelter and amenity, while also providing opportunities for habitat. Planting is to provide a level of enclosure and protection from the elements (where possible), frame views and to provide interest and variety along the coastal edge.

Cultural Expression
Cultural expression should be visible in various forms (with specific elements to be detailed through the bay specific plans):
— In the underlying form of each gathering space as a direct response to the wider landscape patterns and sites of significance.
— Integrated in approaches to providing habitat within the gathering spaces.
— Placenaming and narrative for each bay.
— Artwork and sculptural elements- beach access points will be identified by graphic thresholds in the path. Artwork developed for the Project may be applied to walls, furniture, and surfaces. Each bay will have a coherent palette with artwork varying to express a particular connection.

Coastal Edge & Access.

Beach Access

An important aspect of the Shared Path is that public access to the beach is maintained and, at certain places, enhanced. Three forms of access are provided to the coastal marine area, these include 'Standard Steps', 'Mini Steps' and 'Ramps'. Specific locations of steps and ramps will be determined in the Bay Specific Plans.

Outcomes

The design outcomes relating to beach access are:

— Should draw people to the coastal edge, away from the main path and provide a space for rest.
— Should be inviting and intentionally separate to the main path at main access points.
— Fit for purpose, using materials suitable for the marine context.
— Safety in design, considering ease of use, surface texture/grip and handrails .
— Steps to be sited in logical, accessible locations with visual links to and from the shared path to enable their use.
— Boat ramps to be sited to ensure best possible outcomes relating to shelter and tidal influences.
— Design to reflect a distinctly Tupua Horo Nuku aesthetic, fitting in with their surroundings while providing opportunity for unique, place based expression.
— Parallel design to seawall/coastline to reduce footprint on the beach and interference with coastal processes.

Standard Steps

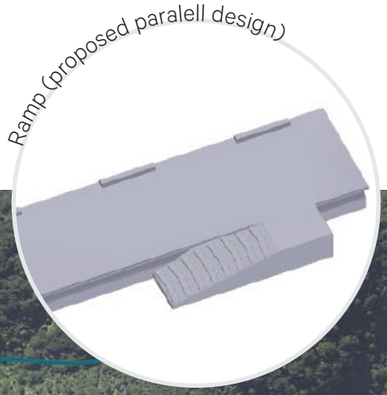
The Standard Steps are the largest beach access structures. In addition to beach access, they are a stopping and placemaking opportunity. Their shape is driven by the accommodation of steps and environmental influences such as waves and typography. The platforms created off to the side of the shared path will include a large seat and bike stand, providing refuge and opportunities to enjoy the coastal views. Wayfinding / mauri markers will be incorporated.

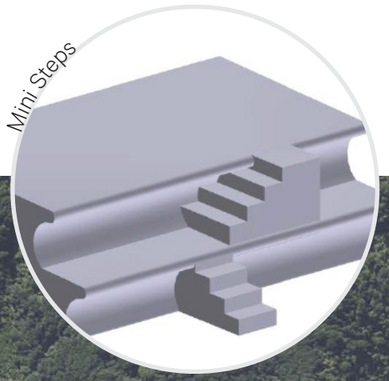
Mini Steps

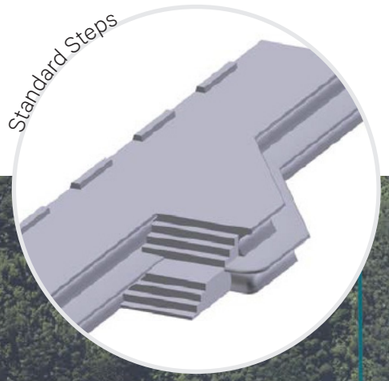
Mini steps are proposed intervals between the standard steps to achieve additional access to the beach without encroaching unnecessarily onto the coastal marine area. These steps will also be suitable for penguin access given that the rise of the step is approximately 350mm in most places.

Ramps

Parallel boat ramps are proposed so as to minimise encroachment onto the beach. The boat ramp shown has a gradient of 1V:4H which is similar to the existing ramps (like for like ramp access will be provided, which do not accommodate vehicle launch. A corrugated texture will be added to the concrete surface to shed sea water and reduce slipperiness.







1:7,500 scale bar

0m 100m 200m 500m 1000m

N

Legend.

- Curved seawall - single
- Curved seawall - double
- Curved seawall - double/triple
- Curved seawall - triple
- Revetment
- No seawall works
- Indicative location of standard steps
- Indicative location of Mini steps
- Indicative location of ramp

Mahina Bay

Sunshine Bay

Oruamotoro (Days Bay)

"This was a Ngati Ira fortified village however the name can also apply to the bay. Said to have been built by Te Hiha. Possible urupa/burial ground "

Ma-koromiko/ Okiwi-iti (Browns Bay)

"Browns Bay, so named after the notorious "Okiwi Brown". The original name of this spot was Ma-koromiko, it was renamed Okiwi after a Rangitane chief named Kiwi who was slain there, and later the suffix 'iti' was added to distinguish it from Okiwi-nui.

Okiwi-iti is the very small bay between Days Bay and Rona Bay on the eastern shore of the Wellington Harbour. "

Windy Point

Matua-iwi Pa (Eastbourne)

"A Ngati Ira pa at Robinson Bay, originally known as Okiwi-nui, now Eastbourne. Matua-iwi pa was sometimes loosely referred to as the Okiwi-nui pa but the real meaning intended, that if Elsdon Best's information can be relied upon, it would be the Matua-iwi pa at Okiwi-nui. "

Material Palette.

A simple and robust palette of materials will help to ensure visual cohesiveness and quality to define Tupua Horo Nuku. The design outcome is to realise a seamless, continuous and uncluttered landscape seamlessly integrating a path, seawall, and other structures.

The palette of materials should be limited and refined for suitability to the marine environment. Materials should have a coastal-residential aesthetic and be chosen to weather and age well. Surfacing and materials for furniture should be interchangeable to provide for a range of experiences.
Materials should be robust, easily maintainable and have a life expectancy fit for purpose. Plant species are to be suited to the sites exposed coastal location.

A range of natural browns and grey tones should be used to complement and not distract from the harbour-side environment. Occasional application of bright, contrasting colours are to be used with restraint such as for visual identity, wayfinding, or placemaking purposes at limited locations.

Surfacing

— Surface treatments should be consistent and varied according the their application.
— A single material is to be used for the majority of the shared path. Asphalt has been shown in the consent design. Alternative surfaces and treatments chosen for other areas, for example in the gathering spaces and over streams should use a coherent palette and allow for a range of users.
— Variation of finish or surfacing might occur at locations of cultural significance, where slower movement is desirable and pedestrians have priority (e.g. gathering spaces associated with bus stops and beaches with their access points).
— Surfacing for all wheeled transport modes should be smooth along the shared path, and provide comfort for walkers and runners.
— Variation of finishes should be controlled to ensure no trip or wheel hazards exist.
— Any delineation (e.g. in the form of linemarking, disc inserts or guides for the visually impaired) should be part of a site wide approach to graphics.
— Surfacing should be cost effective and factor in maintenance, whole of life costs and be easily repairable.
— Permeable paving is to be considered for gathering spaces and coastal carparking such as compacted gravel and reinforced grass paving options.

Walls & Structures

— Walls, balustrades and ecological screens should be considered together with site-wide landscape treatments.
— The materials palette is to be appropriate to coastal conditions and to minimise maintenance.

Furniture Elements

— Furniture is to be designed as a series.
— Furniture should be designed to be multi-functional where possible
— Materials should be fit for purpose, e.g. seating should be provided that is comfortable and suitable for a range of conditions. This should include seating with a timber top, backrests and armrests in most locations.
— Structures and furniture should be designed to allow ease of access and maintenance. They should be constructed with materials appropriate to the coastal environment and to minimise maintenance.
— Furniture shall be mostly comprised of elements from HCC suite of furniture.

Signage & Wayfinding

— Signage and wayfinding should be integrated into or onto structures.
— Wayfinding should allow users to orientate via places of cultural and landscape significance.
— Signage and wayfinding is to support pedestrian and vehicle safety and avoid conflict where appropriate

Planting

— Plant species selection and placement should be appropriate to the coastal location, provide for a variety of character and experience along the route, encourage birds, lizards and insects, and contribute to user experience, amenity, and the context and narratives of Tupua Horo Nuku.
— A stone/pebble mulch should be used to visually complement the rock revetment materiality and resist movement in the coastal setting.

Accessibility & Safety

Design and selection of materials is to be user-friendly and allow use by a broad range of users.

— Access is to be specifically addressed, access requirements defined and provided in line with New Zealand Building Code Standards (NZBC).
— The safety of all users will be considered and risks mitigated. Safety in design risk assessments are to be included throughout the design process to assess design and whole of life risks.

Maintenance

The maintenance of the Project will help to ensure high levels of use, safety and longevity. Its coastal context should be a key design consideration. Materials and elements used in the Project should be chosen and designed with consideration of durability and longevity against strong winds, wave over-topping and salt/sea-spray. All structural elements will consider maintenance operations and years to first maintenance requirements, and whole of life costs.

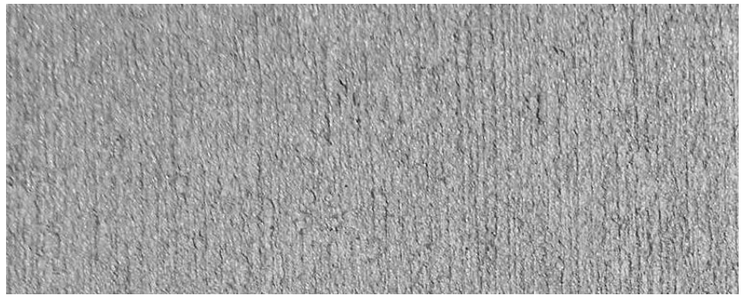
Materials
The surfaces, materials, furniture, fixings and finishes specified throughout the Project should minimise ongoing maintenance requirements:

— Selection of materials is to meet minimum first maintenance and functional life requirements.
— Whole of life costs should be assessed and sustainable sourcing used where possible when selecting materials.
— All hard surfacing should allow for maintenance vehicle access and be reviewed against access and maintenance requirements.
— Design of all surfaces, furniture and structures should give consideration to ease of repair and/or replacement and access.
— The final choice of these materials and treatments will be developed in discussion with the Mana Whenua partners and as part of the wider Community Liaison Group process, as required by the consent conditions.

Paving
Paving quality for all paths is to be maintained to enable safe and comfortable use. A maintenance programme is to be prepared which clarifies the proposed maintenance regime.

— Defects are to be quickly repaired and deviation from specified tolerances checked.
— Paving is to be kept clear of debris via regular sweeping and maintenance.
— Timber surfaces are to be designed for maintenance and occasional emergency vehicular loading.
— Compacted aggregate and other permeable paving used should be a material which is durable, maintainable and visually appealing.

Vandalism
Prevention and ease of repair following vandalism should be considered in the design of all surfaces, furniture and structures.


Concrete


Loose gravel


Timber


Asphalt


Corten Steel


Rock

Figure 1.25 *The following groups of images illustrate the overall character or "look and feel" of the materials and applications they will be used in.*

Plant Palettes.

Bird Protection Areas

Taupata
Coprosma repens, NZ laurel

Oioi
Apodasmia similis, jointed wire rush

Wīwī
Ficinia nodosa, knobby clubrush

Māhoe
Melicytus crassifolius, thick-leaved māhoe

Panahi
Calystegia soldanella, shore bindweed

Whaririki
Phormium cookianum, coastal flax

Pohuehue
Muehlenbeckia complexa, wire vine

Wī
Poa cita, silver tussock

Tutae koau
Apium prostratum subsp. Prostratum var. filiforme, sea celery

Napuka
Veronica speciosa. purple hebe

Grey saltbush
Atriplex cinerea. grey saltbush

Kōuaha
Brachyglottis compacta. castlepoint daisy

Kōwhangatara
Spinifex sericeus, coastal spinifex

Pīngao
Ficinia spiralis, golden sand sedge

Ngaio
Myoporum laetum, ngaio

Tauhinu
Ozothamnus leptophyllus, cottonwood

Taramea
Aciphylla squarrosa var. squarrosa, speargrass

Kakaha
Astelia chathamica, chatham island astelia

Waiuatua
Euphorbia glauca, shore spurge

Plant Palettes

The proposed plant palettes for the Project has been developed with the Project Ecologists.

Rocks/ Landscape/ Headland Areas

Taupata
Coprosma repens, NZ laurel

Oioi
Apodasmia similis, jointed wire rush

Wīwī
Ficinia nodosa, knobby clubrush

Māhoe
Melicytus crassifolius, thick-leaved māhoe

koromiko
Veronica sricta, koromiko

Whaririki
Phormium cookianum, coastal flax

Pohuehue
Muehlenbeckia complexa, wire vine

Wī
Poa cita, silver tussock

Tutae koau
Apium prostratum subsp. Prostratum var. filiforme, sea celery

Napuka
Veronica speciosa. purple hebe

Grey saltbush
Atriplex cinerea. grey saltbush

Monro's groundsel
Brachyglottis monroi. monro's groundsel

Tupere
Pachystegia insignis, marlborough rock daisy

Whaririki
Phormium cookianum subsp. hookeri, mountain flax

Ngaio
Myoporum laetum, ngaio

Taramea
Aciphylla squarrosa var. squarrosa, speargrass

Kakaha
Astelia chathamica, chatham island astelia

Waiuatua
Euphorbia glauca, shore spurge

Kōuaha
Brachyglottis compacta. castlepoint daisy

Tupua Horo Nuku.
Te Ara Tupua Alliance, Hutt City.
10 December 2021.

Planting Approach.

The planting design for the Project should give consideration to the dynamic coastal environment, its ecology, the various user experiences along the route, and maintenance and operations factors.

Outcomes

The required outcomes related to planting are:

- Many identified species are in national risk categories – including those that HCC have already planted
- We see the main opportunities for planting being in ecological protection areas and at headlands
- Dynamic/modified and narrow landscape

Coastal Location

- Plant species should be chosen from the Plant Palette (previous pages) which has been developed with the Project Ecologists. This includes indigenous species, which are suited to this specific coastal environment, and will encourage species of birds, lizards and insects which currently (or could potentially) inhabit areas along the route.
- Coordinate planting proposals with the Bird protection Plan.
- Consider tolerance to (and refuge from) strong southerly winds when selecting plant species and their locations.
- Consider sea spray, salinity and wave over-topping when selecting and positioning plant species from the Plant Palette.
- A stone/pebble mulch should be used to promote moisture retention in the soil, prevent weeds, complement the rock revetment materiality and resist movement in strong winds and from wave over-topping.
- Tree staking details (if required) should contribute to a high quality waterfront experience, be robust to withstand the coastal conditions, and be in keeping with the aesthetic and materials used along the length of the Project.

User Experience

- Plant using a variety of species and scale that is consistent with a high quality waterfront and coastal edge environment.
- Select and arrange plant species to create the aesthetic of a naturalised coastal edge. Large swathes of single species or long lengths of evenly/regularly spaced trees are not to be used.
- Consider the experience of those using the path during windy days when selecting plant species and their locations. This may include planted refuge points at regular intervals along the route.
- Integrate 'Crime Prevention through Environmental Design' (CPTED) principles in the planting design to ensure spaces are safe for all users. This includes specifying plants of appropriate heights, and trees with clear stem where required, to ensure clear sightlines along the path.
- Ensure tree and plant species arrangements do not create trip hazards as plants grow and roots establish alongside paths.

Context and Narrative

Establish planting that is reflective of (and reinforces) its context; planting should provide a variety experiences, in response to the character, context, landscape and natural features along the route. Examples include:

- Feature planting at piped stream crossings, as an integrated part of the stream crossing threshold experience.
- Create plant mixes to provide each gathering space with a slightly different character, and consider including signature species at key locations along the route as part of cultural expression.
- Provide shade for people at along the route through considered placement of tree species.
- Position trees to reference the natural features, e.g. spurs.

Maintenance and Operations

- The planting design should consider ease of maintenance during both the establishment period and long-term.
- The planting design and species chosen should not require ongoing irrigation or manual watering after establishment.
- The design should consider safety and ease of maintenance for pest control.

Planting for Habitat

Refer to the Bird Protection Plan for more detailed requirements related to habitat.

- Plant species and arrangements should provide potential habitat for coastal bird species. Key nesting plants are low growing, and include *Phormium cookianum* (flax) and *Muehlenbeckia* sp (wire vine).
- Planting may be used to provide visual or separation between habitats and people/dogs without screening views.
- Seek opportunities along the length of the Project to provide habitat for bird, lizard and insects.
- Enhance and improve the stream environs (where possible) with naturalised planting at the edges and surrounds.
- Seek opportunities to provide a visual green corridor connection to stream corridors and large areas of native bush through planting.

Plant Sourcing and Establishment

Measures to ensure successful plant establishment shall be included in detailed design specification. Given the sometimes harsh coastal conditions along the Project length, aspects of the planting specification should be trialled to determine the most successful planting methods and materials. Trials may include sourcing from coastal nurseries, hardening off, phased installation, watering regimes, tree staking and tie details, plant mixes and grades, topsoil specification, windbreaks (if needed), and pebble/stone mulch size and type. Planting is likely to require extended establishment/maintenance periods.

Shared Path.

The shared path is to be the main walking and cycling connector between Point Howard and Eastbourne, connecting communities, places and experiences along the way. A key driver for the shared path is to improve connectivity, and the health and wellbeing for the surrounding communities.

Outcomes

The design outcomes that relate to the experience of the main path are:

— It should provide a simple, smooth and unobstructed route of travel between Ngau Matau/Point Howard and Matua-iwi Pa/Eastbourne.
— It is to be as generous as possible, taking into consideration the constraints of the bay environments.
— It should allow enjoyment and access to the coastal environment by linking features and facilities along the way.
— The path is to be shared safely by multiple users travelling at different speeds and directions at various times of the day, week and year.
— A standard material is to be used along the majority of the main path for visual consistency and ease of use by various modes. Materials may change to denote upcoming features.

Surfacing

— Generally, asphalt throughout where path runs alongside the road.
— Subtle bands of coloured and textured overlay is used at bus stop and gathering locations as a safety measure to indicate areas of increased mixing between people walking and cycling.
— The consistent use of asphalt as a surface material in the context of the adjacent road helps the path blend into the immediate environment and reduces its visual impact.
— At headlands, path surfacing changes to exposed aggregate to indicate a higher amenity, pedestrian focused environments such as bus stops. Exposed aggregate concrete is also used for accessible locations within the headlands, such as to seating, signage and bins.

Width

— The path width measured from the white line on the road verge to the top of the seawall, varies from 2.5m to 3.5m depending on the physical constraints of the bay environments. The general width avoids encroachment into beach areas and/or the CMA or where an existing feature is to be retained, such as the heritage Skerrets Boatshed or rocky features. The path will also be narrowed to 2.5m where it runs behind bus shelters on the seaward side.
— The modulation of the path width has been done in a way that achieves a smooth, gradual transition and avoids any abrupt changes.
— This modulation of path width responds to and supports the integration with the local landscape by reflecting the spatial modulations already experienced when travelling along Marine Parade, such as the widening and narrowing of the carriageway, the changes in proximity of the landform and built edge on the landward side, and the changes in proximity of the water to the road on the seaward side.
— The use of low ‘wheelstop-like’ edges on the seaward side shall be designed and installed in appropriate areas and must avoid catching cyclist wheels.

Path Graphics

Graphics are to be used to socialise the use of the path. The Projects path is to include a range of painted line-marking which is a combination of:

— Painted graphic thresholds to pedestrian/slow movement areas approaching bus stops and access points.
— Painted graphics icons to/derived from Waka Kotahi standards representing a shared path. These would be designed /integrated with other linemarking.
— Painted graphic strips/marking to highlight any hazards - such as seawall edges.
— Paint or applied finish must be resilient and able to be re-applied.
— Consider appropriate colour choices for markings, symbols, and linemarkings on the path as high contrast (such as black & white) can cause depth perception issues for people with low vision.

Figure 1.27 *Example of a shared path in use*

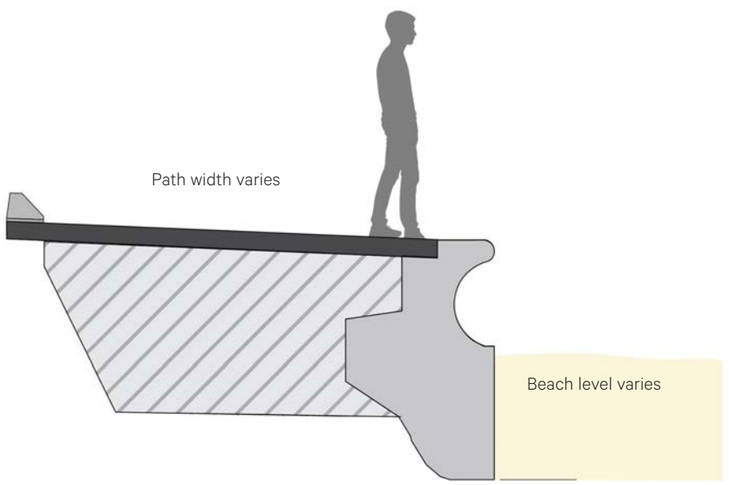
Figure 1.26 *Example of a coastal shared path in New Plymouth*

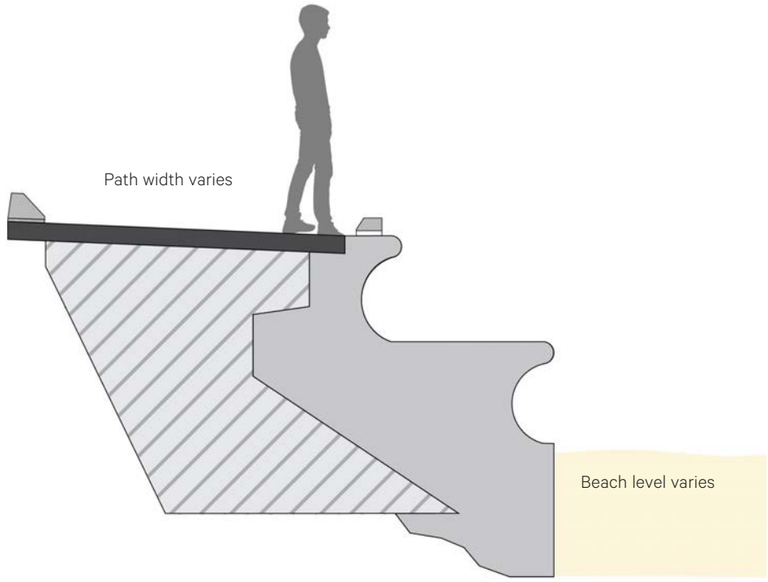
Seawalls.

Vertical curved seawalls have been chosen across most of the Project length because they deflect wave overtopping most effectively and create a reduced footprint on the foreshore compared to other non-vertical seawalls. This design also offers the flexibility to adapt the design to accommodate sea level rise in the future. Seawalls are required to be rebuilt along the majority of the shared path. They are designed to prevent coastal erosion and protect against storm surge and are therefore integral to protecting the shared path.

Outcomes

The design outcomes relating to curved seawalls are:
— Unobtrusive, settling into the landscape through the use of complimentary colour/tone, materials and texture.
— Sympathetic transition between existing structures and new.
— Integrated with the shared path/new structures to reduce visual dominance.
— Provide opportunities for the public to interact with the water where appropriate.





Seawalls

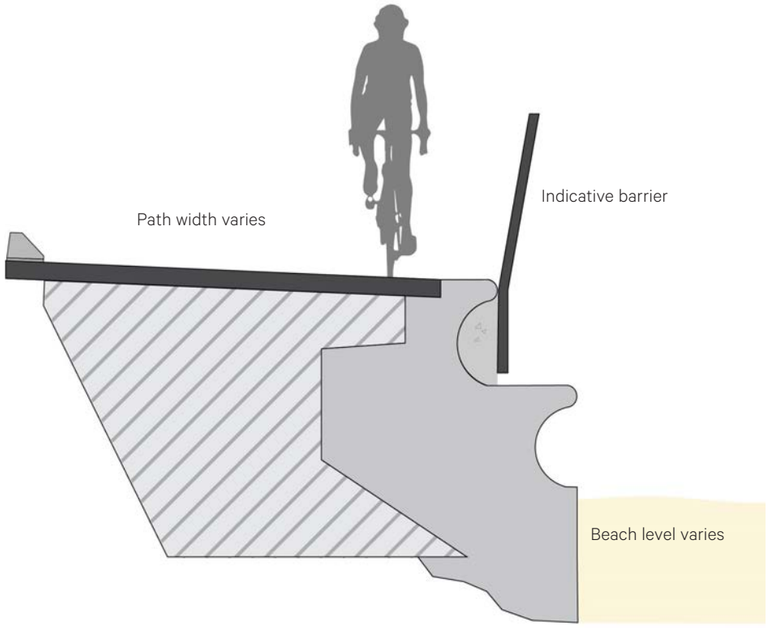
— An approximate length of 3.1km of the total 4.9km Shared Path requires rebuilding of the seawalls.
— The concrete seawalls create steps which can be used by the public for sitting on. These also offer a stepped access to the coastal marine area for more agile members of the public.
— The top of the concrete curved seawall forms the foundation for the asphalt shared path, and a concrete edge continuous with the wall contains the asphalt on the seaward side. In this way, the seawall is fully integrated with the path and therefore reduces its visual dominance.
— To reduce the reflectivity/brightness of the wall a grey oxide is proposed to be added to the concrete mix.

Typical Single Curve

— Single curve seawall to beach or existing rock condition
— Asphalt path with visible concrete edge treatment on sea side of path
— Roadside barrier
— No barrier to sea edge

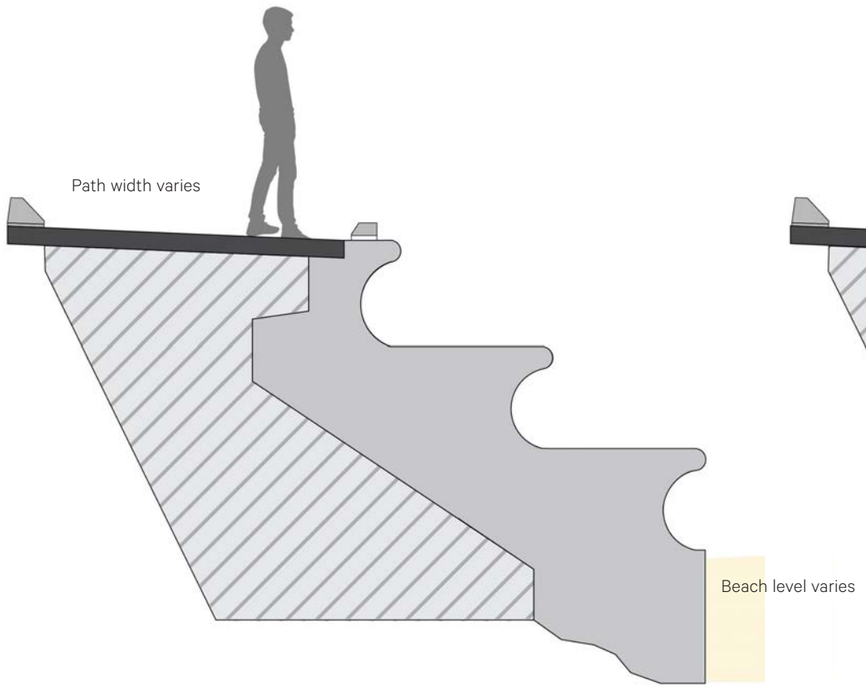
Typical Double Curve

— Double curve seawall to beach or existing rock condition
— 1.2m ‘landing’ between curves
— Asphalt path with visible concrete edge treatment on sea side of path
— Roadside barrier
— Low barrier to sea edge



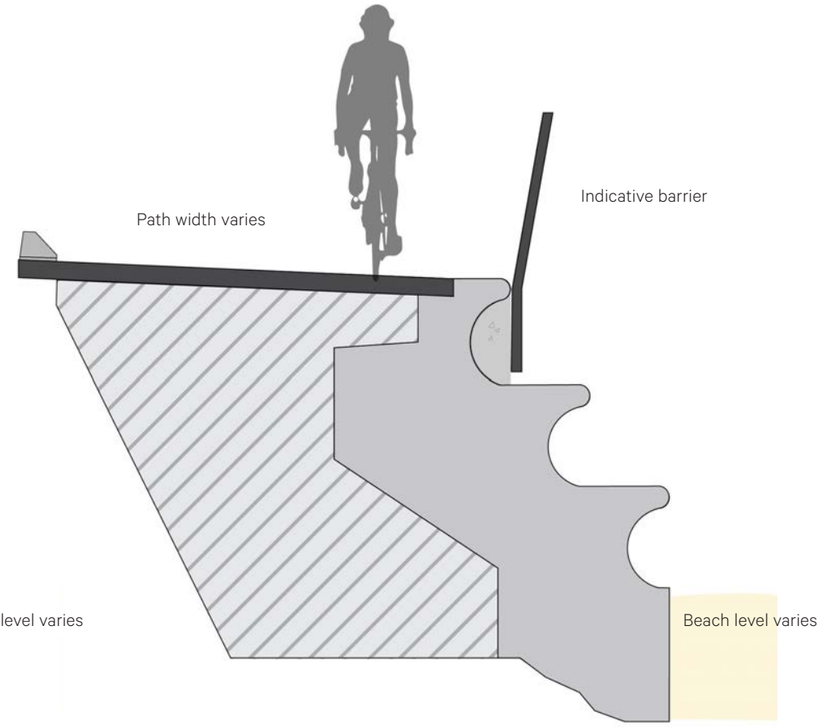
Typical Double Curve with Barrier

— Double curve seawall to beach or existing rock condition
— ‘Landing’ between curves reduced
— Barrier fixed to wall
— Asphalt path with visible concrete edge treatment on sea side of path
— Roadside barrier
— Low barrier to sea edge removed



Typical Triple Curve

— Triple curve seawall to beach or existing rock condition
— 1.2m ‘landing’ between curves
— Asphalt path with visible concrete edge treatment on sea side of path
— Roadside barrier
— Low barrier to sea edge



Typical Triple Curve with Barrier

— Triple curve seawall to beach or existing rock condition
— ‘Landing’ between curves reduced
— Barrier fixed to wall
— Asphalt path with visible concrete edge treatment on sea side of path
— Roadside barrier
— Low barrier to sea edge removed

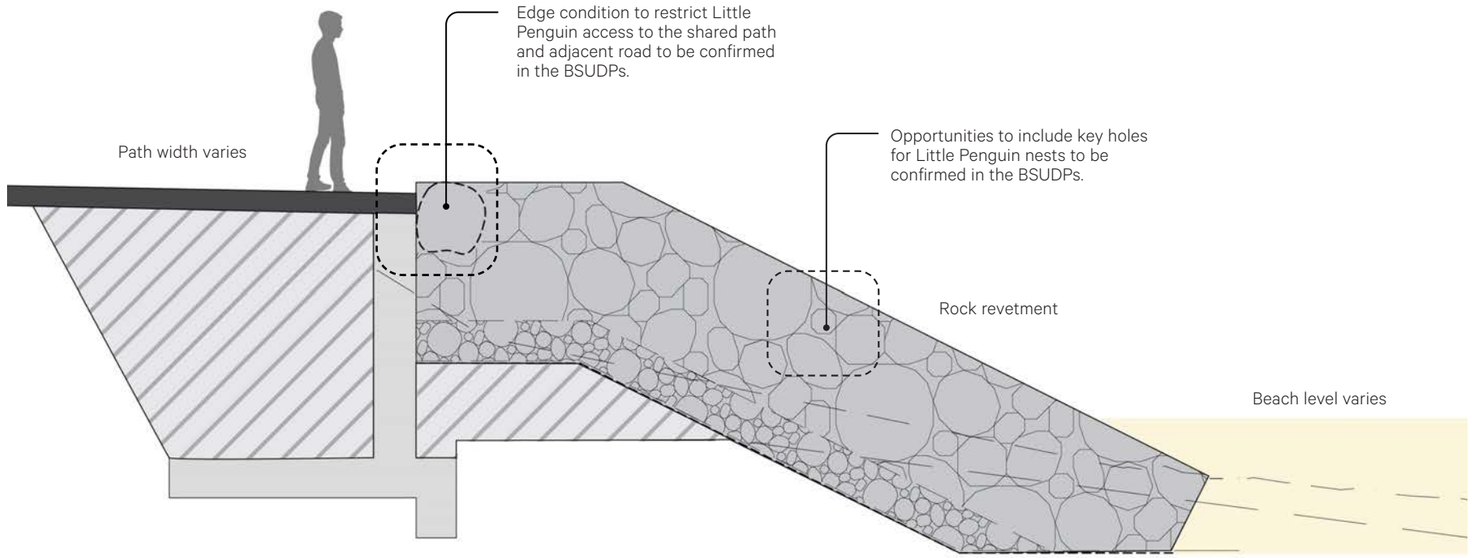
Rock Revetment.

Designed to protect against coastal erosion, revetment has been used in several locations within the project scope. The revetment structure is likely to consist of a top double layer of large rocks overlaid onto smaller rocks. Most of this is due for replacement, so it is important any new structures are integrated with the receiving environment.

Outcomes

The interface between the revetment and the shared path varies according to the structural requirements of the wall and the beach location and may include:

— A concrete cantilever wall which supports the shared path. The top of the wall is flush with the shared path. The revetment is at grade with the top of the wall and is level for 1.5m before it slopes down to the water
— Top of revetment is approximately 300mm above the shared path and is level for 1.5m before it slopes down to the water.
— Unobtrusive, settling into the landscape through the use of complimentary colour/tone, materials and texture.
— Reuse of existing material found onsite is to be encouraged.
— Rock colour to best match local rock tones where possible.
— Edge condition to restrict Little Penguin access to the shared path and adjacent road to be confirmed in the BSUDPs.
— Opportunities to include key holes for Little Penguin nests to be confirmed in the BSUDPs.



Revetment

Revetment structures are limited to rocky shore areas where it was desirable to maintain a ‘non-concrete’ or ‘non-seawall’ shoreline, or replace existing rock revetment and where additional protection was required to reduce wave overtopping. Where a revetment structure is proposed the carriageway and path facility will be supported by a reinforced concrete cantilever wall.

— Approximately 430m is revetment. This replaces in most parts existing revetment. The location of the revetment is at Ngau Matau/Point Howard, York Bay, Mahina Bay (new revetment) and Sunshine Bay. The revetment locations avoid foreshore and shoreline areas with high biodiversity values, such as northern Whiorau/Lowry Bay.
— The revetment structure consists of a top double layer of large rocks, overlaid onto smaller rocks. The structure slopes down towards the water at a gradient of 1V:2H or 27°.

Transition zones

Design principle from the Design Features Report: Change seawall type, if necessary, at a promontory, rock outcrop or other major feature within the bay, or in locations where a ramp or set of steps provides a logical/neat transition point between wall types.

Detailed design considerations: Where coastal edge conditions / structures change, abrupt changes are to be avoided or minimised through the design of a transition zone.

Safety in Design.

To ensure a safe and enjoyable experience for the wide range of users along Tupua Horo Nuku, the design must give consideration to Safety in Design, Crime Prevention Through Environmental Design (CPTED) principles and appropriate design and specification of lighting, fencing, and pedestrian access.

Safety in Design

The design of Tupua Horo Nuku and its connections to other sections of Te Aranui o Pōneke must provide good levels of user safety from hazards including environmental hazards, fall from height, and crime. Safety in Design requirements are to conform to Health and Safety in Work Act, building code.

- Ensure robust Safety in Design processes are followed throughout design and construction, including workshops and assessments with all relevant parties, including Project consultants and specialists, Waka Kotahi and contractors.
- Safety in Design should be considered for the full life-cycle of the Project from construction through to operation, maintenance and demolition.
- Safety in Design should consider health and safety for all during the life-cycle of the Project including (but not limited to) construction staff, path users, motorists, maintenance staff and contractors.
- Ensure the design response gives full consideration to the safety of users, and provides clear design cues to address the range of users and movements at different speeds and directions along the same path.

CPTED

By its very nature, there are numerous opportunities for exits along the Project path but they involve crossing a road and that road doesn't always have an adjacent footpath. 'Crime Prevention Through Environmental Design' (CPTED) principles must be an overarching consideration, integrated in the selection and development of all design solutions.

Gathering spaces and beach access points provide intermediate destinations or pause points for recreational users who want shorter round trips, while the overall Project length is likely to attract commuter cyclists, joggers and long distance walkers or micro-mobility users (e.g. scooters). The provision and regular spacing of gathering spaces and beach access points are fundamental to achieving activation. Likewise the quality and flexible design of these spaces will be key factors in their level of use.

Activation

- The quantity and spacing of gathering spaces and beach access points as shown in the consent design ensures activation, these should be retained. The regular spacing of gathering areas provides intermediate destinations and pause points for rest, and a variety of attractive 'return walk' destinations.
- Design the path and its immediate environment to be attractive and well-used, including opportunities for shade, shelter and points of interest.
- Ensure the route is appealing to commuters, recreational pedestrians and cyclists, a range of age groups and ability levels.
- Provide spaces and edge treatments which encourage a range of other uses along the Project, including (but not limited to) fishing, kayaking, spectating watersports, small informal events, etc.

Access & Layout

- Provide safe movement and connections with clear and logical wayfinding and orientation.
- Ensure the path and gathering spaces are generous enough to allow people to regulate the extent of interaction with other users.
- Ensure fencing and screening is integrated into landscape design to ensure public safety and security, while also considering amenity.
- Ensure unauthorised vehicular access to the path is controlled.
- Work with local authorities to ensure carparking quantities and locations are safe and promote activation of the path.

Natural Surveillance & Sightlines

- Maintain long sightlines along the length of the path, ensuring users can see well in advance of travel.
- Minimise visual clutter and opportunities for concealment.
- Eliminate entrapment spaces.
- Give careful consideration to the selection and placement of proposed plant species to maintain sightlines.
- Assess existing vegetation and consider any requirements to improve sightlines.

Quality Environments

- Provide quality spaces to promote high levels of use by a diverse range of users, age groups and abilities.
- Ensure the Project-wide design details, treatments and maintenance regime illustrate that the path is a valued, used and loved asset. This includes the use of robust materials which will weather and age well.
- Acknowledge, respect and showcase places and stories of cultural significance.
- Discourage vandalism and graffiti of potentially targeted areas through creating physical and visual barriers (e.g. planting) to restrict access.
- Provide rubbish bins throughout the Project. Exact locations and quantities to be determined during future design stages.

Barriers & Screening.

During consultation, community feedback indicated a preference to avoid the use of balustrades, due to their impact on views. As a result, a solution using wider 1.2m landings was developed and will be used where space and footprint allow. Balustrades will be required in some areas where the risk of falling cannot be mitigated through the use of landings. Details of this will be determined in the Bay-specific plans. As a further response to the feedback a balustrade design with minimal visual impact will be used when a balustrade is required.

Bird Protection Screening is required at several locations within the Project scope. These areas have been identified in the Bird Protection Plan (BPP). For further information on the functionality of the bird protection fencing, please refer to the Bird Protection Plan.

Outcomes

The design outcomes relating to barriers are:

— Used only where necessary, and placement considered to avoid visual clutter and impact to views.
— Sympathetic to the receiving environment, using appropriate materials and colours/tones.

The design outcomes relating to Bird Protection Screening are:

— Sensitively designed with appropriate scale, materials and colours/tone.
— Design responds to place, providing opportunities for integrated design expression and interpretation.

Handrails

— Suitable materials for longevity in marine environment.
— Consideration given to colour/tone and reflectivity to ensure structures don't detract from setting.
— Location and number considered with the aim of reducing visual clutter.
— Investigate use of Braille design within furniture elements to encourage narrative and placemaking opportunities for the visually impaired.

Roadside Barriers & Edges

Concrete kerb separators will be used to separate the shared path from the road. They should include paint/reflectors for improved night time visibility for both vehicle and people on bikes/e-scooters moving at speed in the dark and low light. The benefits of concrete are:

— Concrete is preferable to timber due to structural integrity and cost
— Durability in a marine environment
— Concrete barrier chosen for safety and longevity.
— Opportunity to include cultural expression if appropriate

Safety considerations should be made to prohibit vehicles from parking on or accessing the shared path, except for maintenance vehicles when required. Spacings of road side barriers should be adequately spaced to achieve this.

As per the consent conditions kerbs are required around bus stops. Kerbs will provide a recognisable edge to the path and improve accessibility and safety for bus commuters. Narrower edge treatments should be considered where practical to reduce risk of peddle strike and improve width of path by taking up less room. The design of barriers should be of an appropriate height so not to become a trip hazard.

Seaward side Barriers

The Project must ensure adequate safety measures are in place to mitigate fall from height risks across the project. As such balustrades are proposed in locations where there is a potential for a fall greater than 1m. The project endeavours to make any balustrade as transparent as possible to reduce visual appearance for locals and visitors.

When balustrades are not required a low level barrier is proposed in some locations of the path. The preference is for a low barrier to be applied to the seawall. Care would need to be taken to ensure that such a barrier did not become a trip hazard and would need to be obvious through the use of a contrasting material to the path.

Figure 1.29 *Example of a handrail for steps into a coastal environment. Ref; Stantec*

Figure 1.28 *Example of a coastal balustrade with timber top rail and wire lines to reduce visual impact. Ref; Westhaven Promenade, Auckland. By Landlab.*

Bus Shelters.

As per the conditions bus shelters shall enhance safety and convenience, and minimises risk, for all users of the Shared Pathway and the road. Bus stops/ Shelters requiring replacement will, to the greatest extent practicable, be designed taking into account the following design principles:

(a) A preference that the shared path run behind the bus stop/ shelter;
(b) The bus stop / shelter will be raised (separated with a kerb from the traffic lane where possible);
(c) The bus stop / shelter will be designed in accordance with universal accessibility principles (such as, but not limited to, wheelchair friendly ramps and tactile pavers); and
(d) Bus stop / shelter design will be fit for purpose to appropriately protect public transport users from the coastal elements.

Bus stop structures are an integral part of the local identity and will be designed in consultation with the community to ensure that there is some variation to respond to local prevailing wind, rain, and waves. New bus shelter designs will be undertaken separately to the seawall works, but the required platform footprint for a new bus shelter will need to be incorporated into the detailed design of the seawall.

Although the existing bus stops hold some inherent value within the local community, it is considered uneconomic to relocate the existing bus stop structures to new locations given that many of the structures are in poor condition. De-constructing and re-establishing the existing structures (if even possible), is likely to be a costly exercise in terms of both design and construction, hence reasonably robust and proprietary shelters suited for the coastal conditions are sought. However, this will be subject to further community input through the BSUDP.

Other bus shelters along the corridor will be retained with a preference that the shared path will be directed to the rear of the shelter to minimise conflicts with path users and bus passengers.

Outcomes

The design outcomes relating to new bus shelters are:
— Fit for purpose, providing best possible shelter from wind, rain and seawater ingress during storm events.
— Bus stop location needs to be safe & convenient for users
— Bus shelters and entrance point onto the bus should be accessible for wheelchairs.
— Bus shelters should be designed so there is enough space for wheelchairs to get under shelter
— Design to reflect a distinctly Tupua Horo Nuku aesthetic, fitting in with their surroundings while providing opportunity for unique, place based expression.
— Investigate coastal plantings next to bus stops to soften hardscape through the bay specific plans
— A standard bus shelter is preferred by GWRC. These shelters were chosen as the design aligns well with the landscape and urban design principles with the potential for modifications:
  — Incorporate timber slats with a panel that can be painted and/or used as a community noticeboard
  — Painting of the roof fascia in a colour that matches the other urban design elements
  — Apply cultural expression onto glass or other materials.
  — Potential to involve local schools in art creations
  — Modification to entrance point to avoid prevailing wind and splashback from passing vehicles when wet

Habitat Enhancement.

The opportunity for habitat enhancement is present in a number of built elements within the project. The water's edge is characterised by a heavily modified environment, with sea walls and revetment being the dominant edge treatment. These structures in the intertidal zone are typically inhabited by rocky shore communities, therefore opportunities exist to create habitat for these species in the new built environment. Likewise, consideration needs to be given to fish passage relating to modification of existing outlets.

Outcomes

The design outcomes relating to Habitat Enhancement are:
- Integrated into the built form.
- Subtle in nature, facilitating an experience of reveal and exploration.
- Support a range of typologies to facilitate best possible outcomes for a range of species.

Seawall textures

Seawall textures will be applied to the curved and horizontal faces of the seawalls and vertical flat surface of access points to provide habitat for intertidal biota. This improves the ecological benefits of what would otherwise be a smooth concrete surface. Design outcomes relating to seawall textures are:
- The more roughness to the surface the better, as a smooth surface has higher mortality rates/supports less biota.
- Opt for a variably rough surface to cater to different species, with both micro- and macro-scale roughness/textures/features.
- Create complexity at the micro-scale (mm or less scale) for barnacles.
- Use both macro-scale (cm) scale and micro-scale (mm) complexity surfaces to encourage development of significantly greater macroinvertebrate abundances and more diverse communities.
- Concrete colour to be light to mid range, avoiding very dark tones due to potential detrimental effects on biota.
- Utilise texture as a means for decreasing reflectivity and helping to soften and integrate an engineered element into the coastal landscape setting.
- Use the same pattern or similar graphic style across the Project to contribute to overall cohesiveness and continuity.
- Create a seamless pattern effect and avoid obviously repetitious or geometric appearance to limit the effects on natural character.
- Refer to the Seawall and Revetment Habitat Plan for further information.

Set within revetment

- Small rockpools drilled into revetment rock after construction.
- Larger rock pools embedded into the revetment structure during construction.
- Natural recolonization of upgraded revetment by Little Penguins over time is likely, and purpose-designed revetment nesting sites are proposed. Revetment walls for the Shard Path will be designed so that rocks of appropriate sizes are placed so that penguins will be able to gain access to cavities between the rocks and will be able to breed within the revetment walls.

Waterway and Stream Outlets

- For the three fish passage outlets that are currently elevated above the existing beach level (Howard Stream, Wilmore Way Stream and Sunshine Bay Stream) it will be important to ensure that the extended outlets do not become perched with an overhang. Solutions will be site-specific as it will depend on the relative level of the outlet and seawall design at each location, but may include constructing a short concrete ramp or use of mussel spat rope.
- The majority (11 of the 14 assessed) of fish passage outlets are at beach level and a modest extension of the same diameter and gradient should not alter this. Provided conditions around these beach level outlets remain the same as they are now there should be no alteration in their fish passage status as a result of construction of the shared path. The exception are four outlets that currently have or are proposed to have structures installed, which are detailed in Fish Passage Report.

Rockpools

Rockpools embedded into the revetment structure within the intertidal zone cater to a number of species. The rockpools consist of three typologies, large tide pools and small drilled tide pools and vertipools (pools added on to vertical surfaces). Refer to the Seawall and Revetment Habitat Plan for further information.

Design outcomes relating to large tide pools are:
- Install pools of varying height, volume, surface area, depth, exposure and drainage to support a range of species.
- Design/select rock pool types to suit the varying conditions, including continually submerged options and deeper rock pools at higher tidal levels.
- Avoid larger tide pools in areas above the MHWS. Small tide pools maybe considered within the splash zone.

Design outcomes relating to small drilled tide pools are:
- To be located in the intertidal zone.
- 2-4 holes to be drilled into selected rocks.
- Avoid straight lines or grids, with the intention to achieve a random and organic appearance.

Design outcomes relating to vertipools are:
- Vertipools are to be positioned in alternating upper and lower positions, avioding repeating the same level of two upper or lower Vertipools in sequence.
- Placement and installation is to be done under the oversight of the Project Intertidal Ecologist, the Engineer or Engineer's Representative, and the Project Landscape Architect.
- Vertipools as per SRHP, added to surface after construction.

Figure 1.31 *Example of a concrete texture incorporating cultural expression that could be used on a seawall design.*

Figure 1.33 *Penguin nesting box.*

Figure 1.34 *Drilled Tide Pools. Ref; Aberystwyth University*

Figure 1.32 *Artecology 'Sandown' Vertipool installed on a seawall. Ref SHRP*

Figure 1.30 *Tide pools installed in rock revetment. Ref SHRP*

Furniture & Features.

The furniture palette for the project consists of interpretation signage and wayfinding, seating, bike racks and bins. The palette is to reflect the coastal setting of Tupua Horo Nuku and provide opportunities for cultural expression and narrative to some elements.

Outcomes

The design outcomes relating to furniture are:
- Use of standard HCC design elements where practical.
- A cohesive suite across multiple elements using robust materials suitable to the coastal environment.
- Appropriate in scale and number, avoiding visual clutter so as not to detract from their environment.
- Contribute positively to the character of Tupua Horo Nuku.
- Allow for opportunities to incorporated individual bay identities
- Investigate installation of water fountains in key locations.

Street lighting

An assessment of existing street lighting will be undertaken during the BSUDP stage to establish if additional street lighting will be required along the route. There are a number of existing street lighting columns that will need to be relocated as part of the Project.

Road Signage

Traffic signage and markings will form part of the detailed design stage. The position of such signage should ensure minimal visual clutter and follow a clear design logic to the positioning, combining and layout of signs.

Interpretation & Wayfinding

- Give consideration to HCC cycleways and Transport Agency standards and Great Harbour Way precedents.
- Ensure CPTED concerns inform the wayfinding design approach.
- Create a visual language for the Tupua Horo Nuku which suits the needs of the project and is in line with HCC standards.
- Facilitate wayfinding along the shared path, as well as to/from the path.
- Clearly communicate and link key destinations and named landmarks and assist in legibility of the proposed path.
- Ensure the level, format and intensity of wayfinding signage varies along the path, according to need. It is envisaged that Primary Stopping Places
- Create a coherent graphic language for Tupua Horo Nuku, using robust materials suited to the coastal environment.

Seating

Formal seating is generally to be provided at places where stopping and gathering is encouraged

- Locate where stopping is encouraged and there is sufficient space
- Create a cohesive suite of seating options, including benches and seats with back rests and arms.
- Use hardwearing materials suitable for the coastal environment, and those that will weather over time such as hardwood timber.
- Design should be robust, with preference given to solid, chunky forms and are more in keeping with the coastal environment.

Bins

- Bins should be located to allow easy of access via maintenance vehicles.
- Bins should be design and placed to minimise rubbish being blown out of internal bags in high winds.
- The placement of bins is to align with the Bird Protection Plan (BPP) to ensure that pest management practices achieve the best outcome.
- Where appropriate, co-locate bins with furniture.
- Investigate use and placement of ‘smart bins’ that are solar powered and compact rubbish to reduce maintenance costs
- Investigate specific dog waste bins along the path

Bike racks

- Simple design and narrow profile to reduce footprint.
- Of a material that reduces damage to bikes when resting against them.
- Co-located with complimentary furniture and place in appropriate locations.
- Investigate need for e-scooter parking in appropriate locations
- Appropriate number of racks provided
- Locate appropriately to assist safe and easy movement along the path.

Narratives & Cultural Expression

Opportunities for cultural expression are to be integrated within the overall journey, on structures, in wayfinding and free-standing elements where appropriate. These will complement the overall narrative of Tupua Horo Nuku. Opportunities for integrated narratives or cultural expression include (but are not limited to):
- The Path - incorporated onto path via painted graphics.
- Carved pou designed as bird roosts, place names included in places of significance.
- Site wide wayfinding and interpretation strategy, Project graphics and identity.
- Cladding on bus shelters (if possible)
- Carved into furniture elements

Services

Service Covers
Should any service covers be identified or required they should be placed where they are easily and safely accessed. Such areas could be within planting or outside of the path alignment.

Cellphone Towers
Along with a number of existing street lighting columns that will need to be relocated as part of the Project, cellphone towers will also be relocated where required.

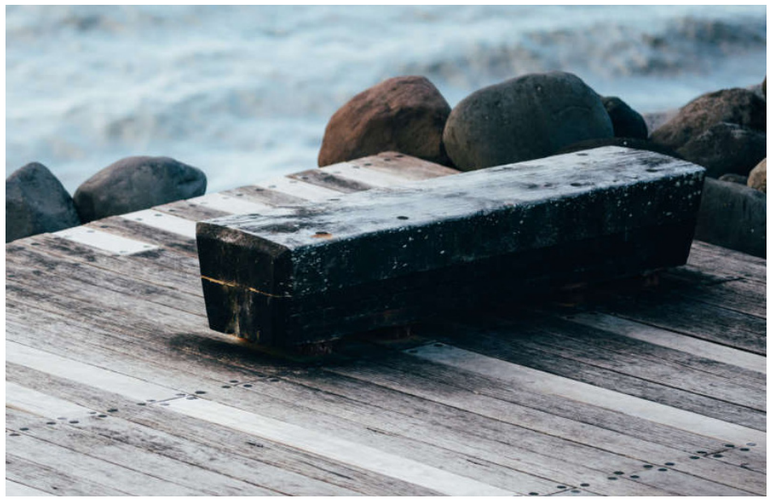


Figure 1.35 *Coastal seating example from New Plymouth.*

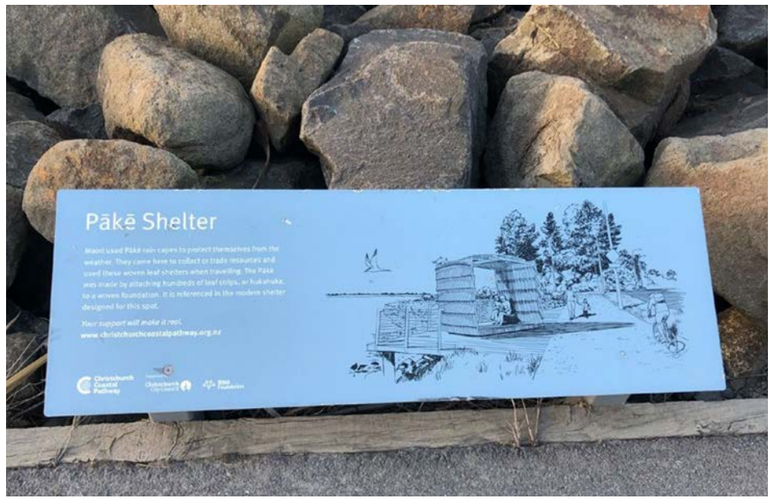


Figure 1.36 *Example of interpretive signage. Ref Stantec*

Figure 1.37 *Example of a narrow profile bike rack*

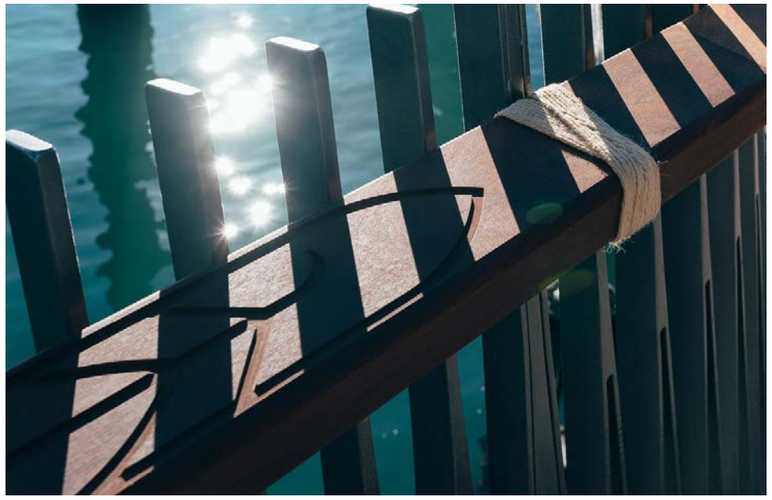


Figure 1.38 *Example of cultural expression applied to timber rail*

Figure 1.39 *Example of cultural expression used as path graphics for shared spaces. By Len Hetet*

Managing Construction Effects.

As per condition L.V2(c) this LUDP must outline methods and measures to avoid or minimise adverse effects on natural character, landscape and recreational amenity during the construction of the Project. During demolition and construction works there are a number of actual and potential risks and opportunities relating to natural character, landscape and recreational amenity and the environment. These risks, along with measures and methods to avoid or minimise effects are outlined below. Measures and methods used include considerations, recommendations, management plans and will be subject to Resource Consent Conditions.

Construction and Environmental Management Plan

A Construction and Environmental Management Plan (CEMP) will be prepared for the various stages of the Project. It will include the environmental management and monitoring procedures to be implemented during the Project's construction phases. The CEMP outlines details of the 'who, what, where and when' in respect of the environmental management and mitigation measures to be implemented. The CEMP will be a condition of the consent and will be updated and modified as appropriate once a Contractor is appointed.

Other plans to be prepared within the CEMP are a Beach Nourishment Management Plan (BNMP), Construction Traffic Management Plan (CTMP), and Landscape and Urban Design Plan (LUDP). The intention is that all construction, demolition and maintenance work comply with NZS 6803P "Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work" and therefore comply with the activity status in the HCC District Plan.

The CEMP, its subplans and other site-specific environmental management plans are to be consistent with and complement the AEE report. They will be developed in accordance with the proposed consent conditions.

Excavation and 'make good' works

It is assumed excavation and construction will be staged, with the possibility that there will be a delay between excavation and construction with excavated areas being reopened to the public for a time before construction takes place. Any completed excavation sites will need to be 'made good' for public access, this entails:

- Clearing the site of hazards, construction equipment and rubbish.
- Establishing safe access and circulation, with the use of temporary measures to restrict access or protect against falls as necessary.

Noise and vibration

Noise from machinery and construction will be present during demolition and construction phases of the Project. Measures to mitigate adverse effects - in particular to the surrounding residents - from noise include:

- Noise barriers.
- Limiting working hours.
- Implementation of SSNMP (Site Specific Noise Management Plan).
- CNVMP (Construction Noise and Vibration Management Plan) - establish acceptable noise and vibration measures and steps to keep noise and vibration within these criteria.

Opportunities exist for barriers to showcase the project and provide information.

General site works

This Project will see construction occurring in a high amenity coastal zone with residential setting on the hill behind. It is therefore important that construction sites are kept to a high standard for visual and environmental impact. These include:

- Keeping a well organised site free from rubbish at all times.
- Site Specific Safety Plans.

Dust

Dust from construction works has potential for environmental impact as well as negatively affecting nearby residents and recreational users. Mitigation measures could include:

- Covering bare soil, use of temporary seeding if exposure times are likely to be lengthy (especially post demolition as a temporary measure).
- Use of water trucks or temporary irrigation.
- Application of dust-retardant products.
- Creating wind breaks.
- Restricting earthworks during high wind events.
- Phase site clearing to minimise soil disturbance.
- Implementation of a Dust Management Plan.

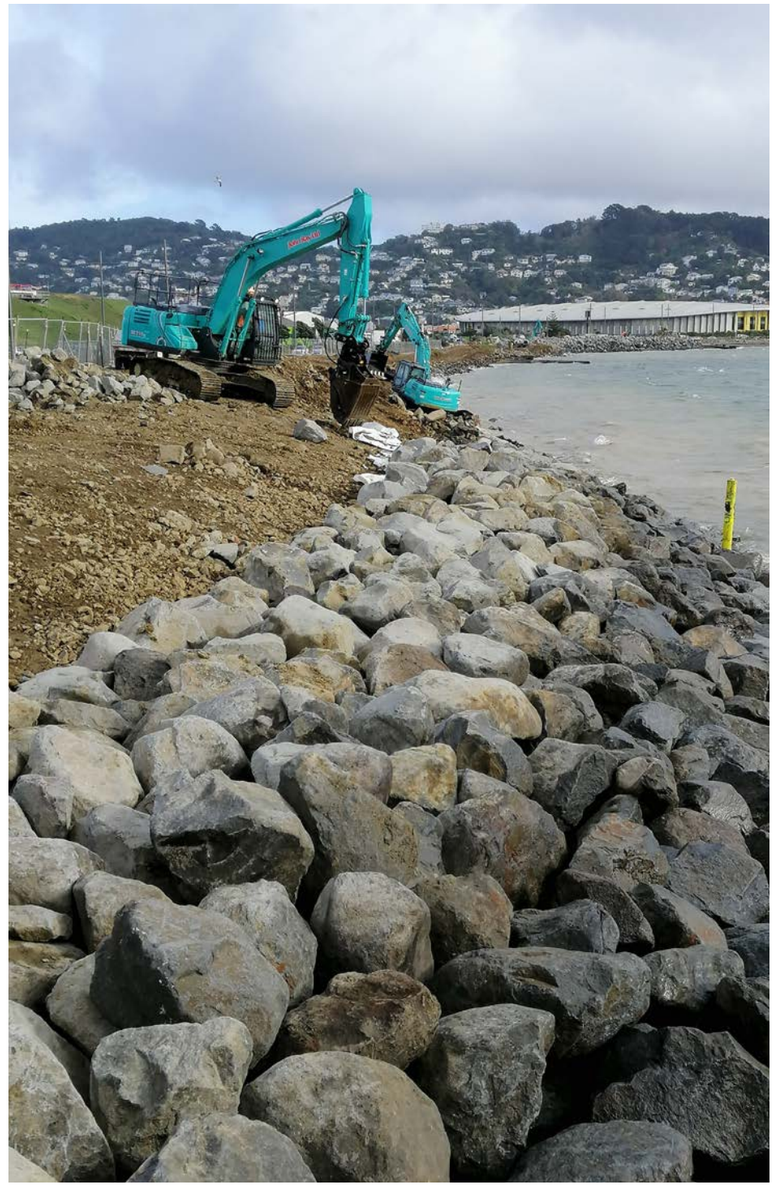


Figure 1.40 *Example of Revetment being installed at Cobham Drive, Wellington*

Beach access

Access to the beach is important to both residents and visitors to the area. During demolition and construction public access to the beach should be maintained where it is possible to safely do so.

Community and Neighbours Management

During the construction phase it is important that the public/stakeholders are kept informed. Measures to facilitate open and responsive communication between the contractor and stakeholders include:

— A Stakeholder and Communications Plan.
— A dedicated Stakeholder Manager who will act as the point of contact.

Traffic Management Plan

Marine Drive is an arterial road and a connecting segment in the Great Harbour Way/Te Aranui o Pōneke pedestrian and cycle path. During demolition and construction works it is important that effects on all traffic modes are minimised. Mitigation measures could include:

— Temporary measures such as road dividers to separate and protect pedestrians, cyclists and vehicles.
— Minimise construction vehicle movements to and from the site during peak hours.
— Access to bus stops to be retained where possible, or temporary measures put in place to facilitate bus travel.
— Traffic Management Plan.

Erosion and Sediment

Erosion and sediment runoff created from earthworks can have detrimental environmental effects on water quality and fauna and in extreme cases site stability. It is therefore important that measures are put in place to prevent erosion and sediment runoff. The following measures may include:

— Use of bunding/silt fences to trap sediment on site.
— Minimising bare soil or using temporary cover measures such as matting to prevent erosion.
— Stage construction.
— Stabilise and protect slopes and exposed areas.
— An Erosion and Sediment Control Plan.

Safety and Quality

To ensure public safety during and after construction, appropriate Health and Safety measures need to be in place, and the Project needs to be built as designed, specified and to all relevant standards.

Terrestrial and aquatic ecology

The site is important nesting habitat to several species, and construction has potential to adversely affect these populations. Steps need to be taken to avoid adverse affects and reference to the following management plans is essential:

— Refer to Bird Protection Plan for construction mitigation and timing.

Mana Whenua values

It is important Mana Whenua principles are upheld throughout the construction process. This can be aided through the following measures:

— Facilitating site access for blessings and induction should they be required.
— Reporting any archaeological finds.
— Working to the above ecological plans to allow fish relocation and avoiding adverse affects on habitat.

Figure 1.41 *Dog handler Alastair Judkins with penguin detection dog Mena checking for penguins on Cobham Drive ahead of work*

Figure 1.42 *Construction workers building penguin nesting boxes.*

Ngā mihi nui.