Mangawhai Coastal Walkway

FEASIBILITY STUDY | May 2020

KAIPARA DISTRICT

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REVISION HISTORY

Version	Publication date	Comments
A	August 2019	Feasibility Report
B	May 2020	Feasibility Report

Contents

1.0_ Executive Summary

Overview

This report presents the feasibility assessment of the proposed Mangawhai Coastal Walkway project (MCW). The project is situated in Mangawhai, one of the southernmost localities in northland and situated just north of the Auckland regional boundary. The Mangawhai area consists of two sub areas, namely Mangawhai Heads and Mangawhai village. They have been and are currently still considered by some to be distinctly different areas. Mangawhai Heads overlooks the northern hauraki Gulf and is typified by its beach culture and coastal environment. Mangawhai village is located at the south end of the Mangawhai harbour and shares qualities of both a coastal settlement and a rural township centre. As populations and densities increase through fringe subdivision, and the prospect of future developments within the land between the settlements, such as Mangawhai Central, the distinction between Mangawhai Heads and Mangawhai village is diminishing Collectively the two areas are home to a passionate community of permanent and transient holiday residents that collectively total a population of 1329. (2013 Census). As with many coastal townships, it is recognised that the population of the Mangawhai swells significantly in the summer months.

In 2017 Kaipara District Council and representatives from the Mangawhai community completed the Mangawhai Community Plan (MCP). The MCP is intended to provide guidance to Kaipara District Council in the management of growth in Mangawhai. The MCP sets out six Key Moves to guide growth. Key move three, 'Improve Connectivity' identifies the Mangawhai Coastal Walkway (MCW) as a priority project for the Mangawhai area. The MCW is intended to provide an all tide coastal walkway that connects existing Mangawhai centres; Mangawhai Heads, Mangawhai Heads township and Mangawhai village and considers future centres such as Mangawhai central. It is identified in this feasibility report that a consistent all tide route may be hard to achieve without significant adverse effects on the natural landscape character and so this feasibility study also considers alternative inland routes where all tide access is problematic.

The feasibility study is founded on multiple site investigations, consultation and engagements. These include; site drone survey, ecology report, contamination reports planning reviews, coastal hazard investigation, cultural values assessment, archaeological report, and a landscape analysis and technical review. The feasibility report establishes six pathway responses suitable for the identified landscape character areas and pathway sections (Shown on the opposite page).

The proposed paths are located on land owned by Kaipara District Council and private property, that will require access permission from the owners. The proposed pathway typologies range from 2-3m in width and are constructed as; compacted aggregate, concrete, retained aggregate, timber boardwalk, timber / concrete steps and / or grass / sand (do nothing) paths. This feasibility report does not present a concept or developed detailed design report. It is intended to guide the subsequent design phases for the proposed pathway sections.

Engagement

The cultural values assessment formed the basis of engagement with Mana Whenua and incorporates Mana Whenua values and aspirations. Engagement with the Mangawhai community has been an important part of the process to understand in more detail the key community aspirations for the MCW. Consultation and engagement with the Mangawhai community has primarily occurred by way of public open days and online survey.

Design Principles and Strategy Alignment

This feasibility study aligns with the MCP. The design principles have been formulated from a collaboration of best practice walking and cycling standards, the Auckland Design Manual and the Local Path Design Guide (March 2017).

The design framework is based on the following principles; the paths must be safe, connected, accessible, comfortable and enabling. These principles are intended to work with the Te Aranga Design Principles (Should Mana Whenua deem this framework appropriate) to provide a more fine grained direction to the development of the MCW.

Key Findings

- A mix of coastal walkway types will most likely be employed along the Mangawhai Coastal Walkway, ranging from no formed walkway with wayfinding markers to gravel aggregate and concrete walkways and boardwalks which will also include wayfinding markers.
- An all tides coastal route will be problematic and would require significant structures to implement in low lying areas. Large structures must consider their impact on the natural landscape and environment
- A fully coastal walkway may be problematic in locations where no reserve exists and right of access cannot be negotiated with private landowners
- Breaking the MCW into landscape character areas and constructable sections has helped with:
    - Understanding the different requirements and sensitivities of the multiple landscape character areas
    - Providing constructable sections that can be constructed in isolation whilst providing meaningful local connections
    - Establishing a programme of works able to be constructed in parts, in line with available budgets
- While there is community support for a coastal walkway, this report has helped realise in more detail what the walkway could look like, what the community vision is, what route alignments are preferred
- In addition to community aspirations, the proposed alignment must consider a wide range of social, environmental, economic and cultural factors relevant to the Mangawhai environs.

Proposed Scope:

Section 1 -	Wintle St Beach Car park to Wintle St Reserve
Stage One -	Wintle St Reserve to Sellars' Reserve
Section 2 -	Robert St Stairs to Findlay St
Section 3 -	Findlay St to Lincoln Reserve
Section 4 -	Lincoln St Coastal Walkway
Section 5 -	Jordan St Coastal Walkway
Section 6 -	Jordan St to Estuary Drive Coastal Walkway
Section 7 -	Estuary Drive Coastal Walkway
Section 8 -	Molesworth Drive
Section 9 -	Old Waipu Dr to Moir St and Mangawhai Wharf Space
Section 10 -	Moir St to Insley St
Section 11 -	Mangawhai Wharf Space
Section 12 -	Alternative Route

Mangawhai Heads Beach
Mangawhai Harbour
Mangawhai Heads
Tara Creek
Mangawhai Central
Mangawhai Village

SHEET 01
SHEET 02
SHEET 03
SHEET 04
SHEET 05
SHEET 06
SHEET 07
SHEET 08
SHEET 09
SHEET 10
SHEET 11
SHEET 12
SHEET 13
SHEET 14
SHEET 15
SHEET 16
SHEET 17

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	29.09.2019

KEY

- Mangawhai Harbour
- Existing Walkway
- Section 1
- Stage One
- Section 2
- Section 3
- Section 4
- Section 5
- Section 6
- Section 7
- Section 8
- Section 9
- Section 10
- Section 11
- Alternative Route
- Walkway Connections
- Tracks Trust Alignment

NB: Dashed line is where the proposed route currently crosses private property

CONSULTANTS:

RESILIOSTUDIO
Landscape Architecture / Architectural Design
Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
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DRAWING NUMBER:
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2.0_ Purpose + Background

2.1_ Purpose and Background

Purpose

The proposed outcome of this feasibility study is to present a coastal path to link Mangawhai village with Mangawhai Heads and eventually Mangawhai Central. The drive for the MCW project comes out of the Mangawhai community plan key move three 'Improve Connectivity' which identifies the Mangawhai Coastal Walkway (MCW) as a priority project for the Mangawhai area. Currently, the only links between Mangawhai's main centres is Molesworth Drive, an 80km/h main road and a small, unmaintained and degraded goat track adjacent to Molesworth Drive. It has been proposed to reduce the speed limit along Molesworth Drive to 50km/h when Mangawhai central is developed.

The Mangawhai Coastal Walkway is set to improve; connectivity between centres, accessibility, recreation, travel and engagement with Mangawhai and it's coastal environment.

Background

The purpose of this document is to determine the feasibility of developing a consistent, safe and inclusively accessible walkway connection from Mangawhai Village to Mangawhai Heads.

The MCW project presents a vision of an informative, natural walkway connecting Mangawhai's spectacular coastal environment with town centers, public facilities and recreation areas. The long term aim is to significantly improve walking, cycling and ecological connections around and along the coastline, engaging both tourists and local residents. The MCW is to provide the public access and improve engagement opportunities of the existing walkway, allowing users to experience the unique flora and fauna while having an unobtrusive natural walkway which complements the existing natural environment. There is also the opportunity to address roading issues and prioritising pedestrians and cyclists.

The intention of this feasibility study is to investigate the potential alignments of the proposed walkway and understand the range of plausible issues and opportunities associated. . The walkway has been divided into sections that are easier to analyse, reflect the surrounding environment and present logical sub connections within the broader MCW project. This study presents a strategy of implementation providing the foundation to deliver a comprehensive coastal walkway.

2.2_ Background Documentation

Mangawhai Coastal & Harbour Reserves Management Plan

(23 September 2009)

Kaipara District Council

KAIPARA DISTRICT

Kaipara te Oranganui • Two Oceans Two Harbours

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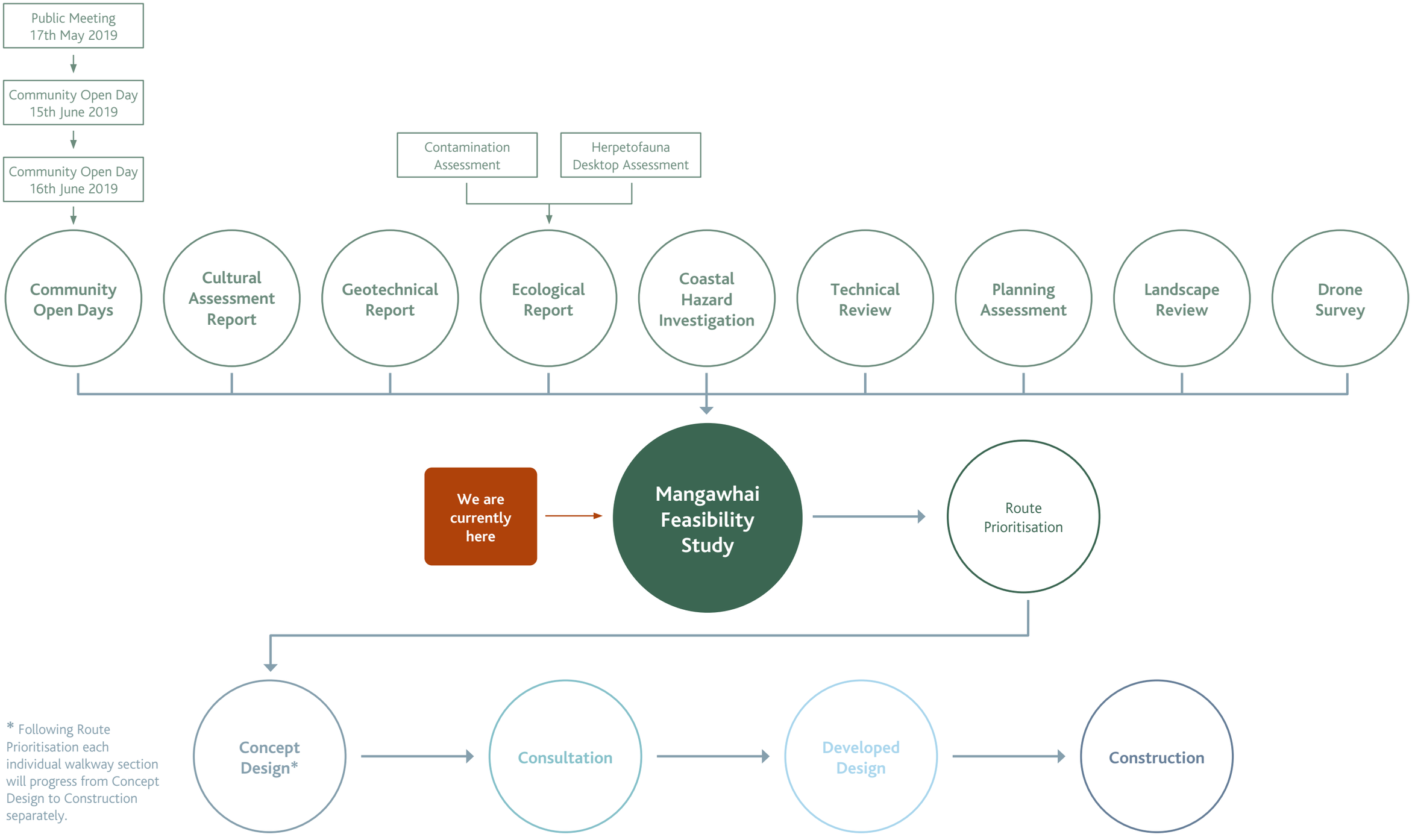
2.3_ Project Alignment



* Following Route Prioritisation each individual walkway section will progress from Concept Design to Construction separately.

3.0_ Engagement + Consultation

3.1_ Engagement and Consultation

Mana Whenua

Mangawhai has a strong Māori history. Descended from Ngāti Whātua, the hapū of Te Uri o Hau is the iwi of Kaipara. Te Uri o Hau descend from Haumoewaarangi through Hakiputatomuri, who is the tribe's founding ancestor, and includes people who affiliate to nga marae tuturu: Otamatea, Waikaretu, Oruawharo, Arapaoa.
A cultural values assessment produced by Environs Holdings Ltd (Environs) specifically for the Mangawhai area has formed the basis for understanding mana whenua aspirations and key considerations within the Mangawhai area. Communication has been made with Te Uri o Hau Settlement Trust with the understanding that further engagement with mana whenua for the MCW project will occur at the concept design stage for any given section of the walkway.

Mangawhai Community and Local Residents

It is recognised that the coastal environment is central to the identity of Mangawhai and is the draw-card that calls many people to reside, work, play and travel to Mangawhai. The planning for a coastal walkway must carefully consider the wants, needs and aspirations of the Mangawhai community to ensure the proposed design is fit for purpose.

As part of this feasibility study we have tailored a specific consultation programme to understand the Mangawhai communities high level aspirations. Key components of the consultation process have been:

- 2 x Public Open Days (15th and 16th June 2019)
- Online Surveys (closed 13th August 2019)
- Sharing of the final feasibility report findings

Information gathered through the community consultation process has been included in this feasibility study and has contributed toward the determination of; preferred route/s, alignments, construction materials, staging and construction programme.

Mangawhai Community Plan Liaison Group

Meetings with the Mangawhai Community Plan Liaison Group (MCPLG) have been held to keep the Mangawhai Coastal Project on track and integrated with other MCP projects. Specific members of the MCPLG will form a Mangawhai Coastal Walkway group with the intention to keep the project aligned with the wider Mangawhai community values, as well as discussing matters relevant to specific walkway alignments directly with affected local stakeholders.

Mangawhai Tracks Trust

Particular local residents have been actively involved in areas of the coastal walkway (especially physical works around walkway connections and actively maintaining walkways / reserves in front of properties) and have spent years advocating for the development / redesign / maintenance and connectivity of the existing walkways. Continual engagement with these community members and other residents is of vital importance to access valuable local knowledge and ensure the feasibility study considers local community visions and aspirations, and maintains local support for the project. It is paramount to communicate with the community and present all necessary and relevant information regarding the development of the MCW in a transparent and timely manner.

Next Steps

This feasibility study sets out proposed next steps surrounding future public consultation as part of the concept, development and detailed design stages that will follow on from this feasibility report.

Key Discoveries

- The community supports an enhanced coastal walkway that extends from Mangawhai Heads to Mangawhai village.
- The term 'Coastal Walkway' means different things to different people.
- There is a strong desire to keep the walkway as natural as possible.
- One of the key community drivers is to maintain and enhance the existing reserves and not break up or lose any green space.
- The walkway will connect into existing walkway networks - currently there is limited access to information regarding existing public connections and walkways.
- The walkway should have route options (reserve based and road based) to provide accessibility and all tide access without requiring large structures within sensitive natural environments.
- The walkway can be divided into smaller project sections; sections can be implemented individually or with others.

3.2_ Personas / Track Users

Personas / Track Users

The Mangawhai Coastal Walkway will aim to engage as many users as possible however, due to the nature of a coastal walkway, especially one as typographically diverse and environmentally unique as Mangawhai, some users may not have access to all parts of the walkway. In such instances provision of alternative road based route/s could enable continuous connections where physical restrictions or tidal patterns affect the coastal access routes.

Typical users for the current and predicted future Mangawhai demographic include:

- Able bodied / walkers / runners
- Families / Guardians with prams / young children
- Cyclists
- Wheeled assistance / wheelchair users / mobility scooters / mobility frames
- Elderly / assisted walking (walking sticks)

Walkway Design Parameters

- Walkways may be narrower than minimum widths where site constraints such as tree roots, property boundaries, heritage items and erosion / cliffs inhibit the ability to build / enhance a walkway to desired widths. Where this is unavoidable, sections of the walkway narrower than the minimum must conform to minimum sight lines relative to design speed. Typical minimum sight line distance is 20m.
- An allowance of an additional 0.5m width will be implemented for walkways constructed with an impervious surface.
- The height of the user envelope for a cyclist of 2.2m, a minimum overhead clearance of 0.3m above the 2.2m is required.
- The minimum walkway for a wheelchair user is 1.2m with a gradient of no more than 1:20. If the gradient of 1:20 is exceeded then the walkway will be treated as a ramp.

Able bodied / walkers / runners

- Most surfaces including natural, already existing surfaces, such as rocky ground and sandy beaches are suitable.
- Most gradients are suitable.

Families / guardians with prams / young children

- Suitable surfaces include boardwalks and concrete for prams and gravel and natural existing surfaces for young children.
- Most gradients are suitable.

Cyclists

- Most non slip, smooth surfaces are suitable.
- Most gradients are suitable.

Wheeled assistance / wheelchair users / mobility scooters / zimmer frame

- Most non slip, smooth surfaces are suitable.
- Gradients exceeding 1:20 are not suitable, unless on a ramp which should be no more than 1:14.

Elderly / assisted walking (walking sticks)

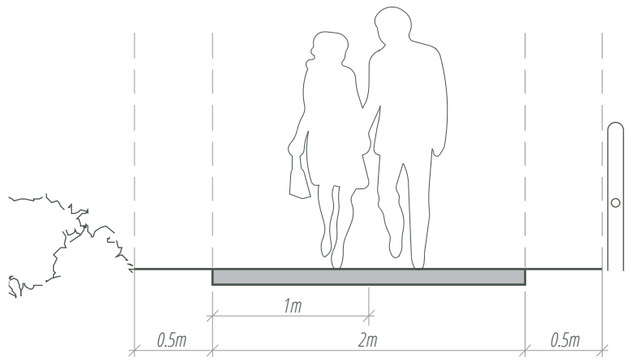
- Most non slip, smooth surfaces are suitable.
- Gradients should be gentle aligning with wheelchair assistance typologies.

Typical Walkway Sections

Pedestrian_ 2m

Desirable width - 2m
Minimum width - 1.8m
Minimum offset - 0.5m[A]

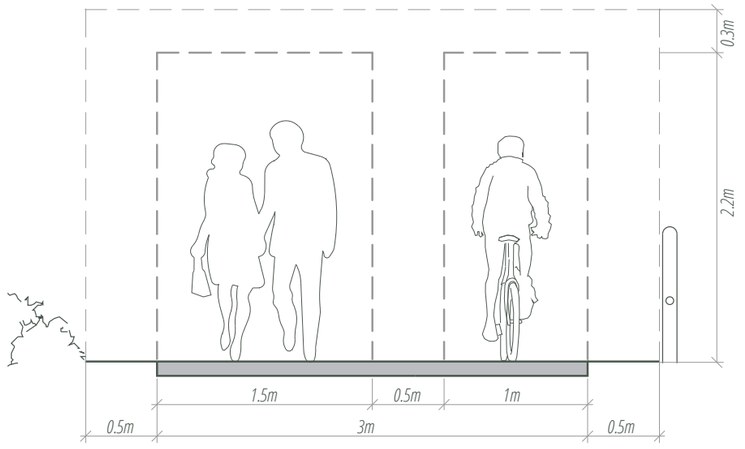
[A] Utilise only low lying ground covers with the 0.5m strip along the edges of the path.



Shared Path_ 3m

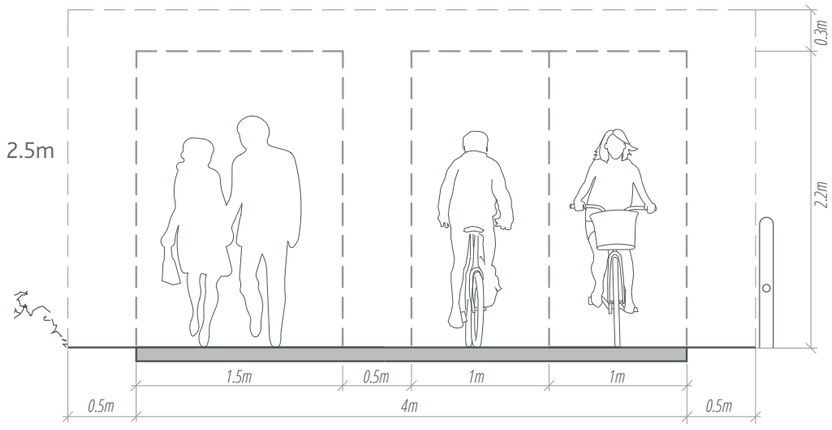
Desirable width - 3m
Minimum width - 2m[B]
Minimum offset - 0.5m
Minimum clearance height - 2.5m

[B] Lane separator marking should only be used over short lengths of and walkway where a 3m minimum clear width is not possible.



Multi Use_ 4m+

Desirable width - 4m+
Minimum width - 4m
Minimum offset - 0.5m
Minimum clearance height - 2.5m



4.0_ Landscape Framework

4.1_ Overview

This section covers a range of topics relevant to the site and context. Investigations are organized into sections that address a wide range of socio-cultural and environmental considerations at the scale of Mangawhai and the wider surrounding context.

Separated into key headings, an overview of each specific topic is explored. Strategic questions that need to be considered by the design team and/or community members, before action, have also been proposed, as well as areas that require additional detailed investigations.

4.2_ Regional Context

The Mangawhai area is located on the south eastern coast of the Kaipara district and consists of two small rural coastal settlements positioned along the edge of the Mangawhai Harbour (with a third settlement, Mangawhai Central, situated between the heads and village. Construction is underway).

Located 102 km from central Auckland, 65-70km from Whangarei, and 13km east of State Highway one, the Mangawhai villages are easily accessible and have become popular destinations to live and holiday. Both townships have experienced rapid development and population growth over the last 10 years. A number of residential subdivisions have recently been completed and a further retail development is in the final stages of planning.

The area is extremely picturesque with naturally occurring harbour, inland tidal estuary and an outstanding natural feature in the form of an impressive white sand spit, which is also a breeding ground for the critically endangered native fairy tern. Mangawhai village is located on the south west extent of the Mangawhai Harbour and Mangawhai Heads is 5km away on the north east inlet of the harbour, overlooking the Mangawhai sandspit.

Mangawhai sandspit is a 4km long spit of sand dunes, ocean beach and estuarine shore separating the Mangawhai Harbour from the open sea. The sandspit displays high ecological values and is only accessible by boat or foot. Sections of the sandspit are protected by the Department of Conservation.

The inlet of the Mangawhai Harbour has a deep water channel with strong currents. As the harbour travels inland towards Mangawhai village it expands into a tidal estuary, eventually reducing to a cluster of small stream valleys that course through the rural landscape. Access to Mangawhai Heads from Mangawhai village is via a bridge crossing the northern end of the harbour estuary and Tara Creek.

The landscape inland west of Mangawhai is scenic and fertile countryside, consisting of low rolling hills and small pockets of native and exotic vegetation.

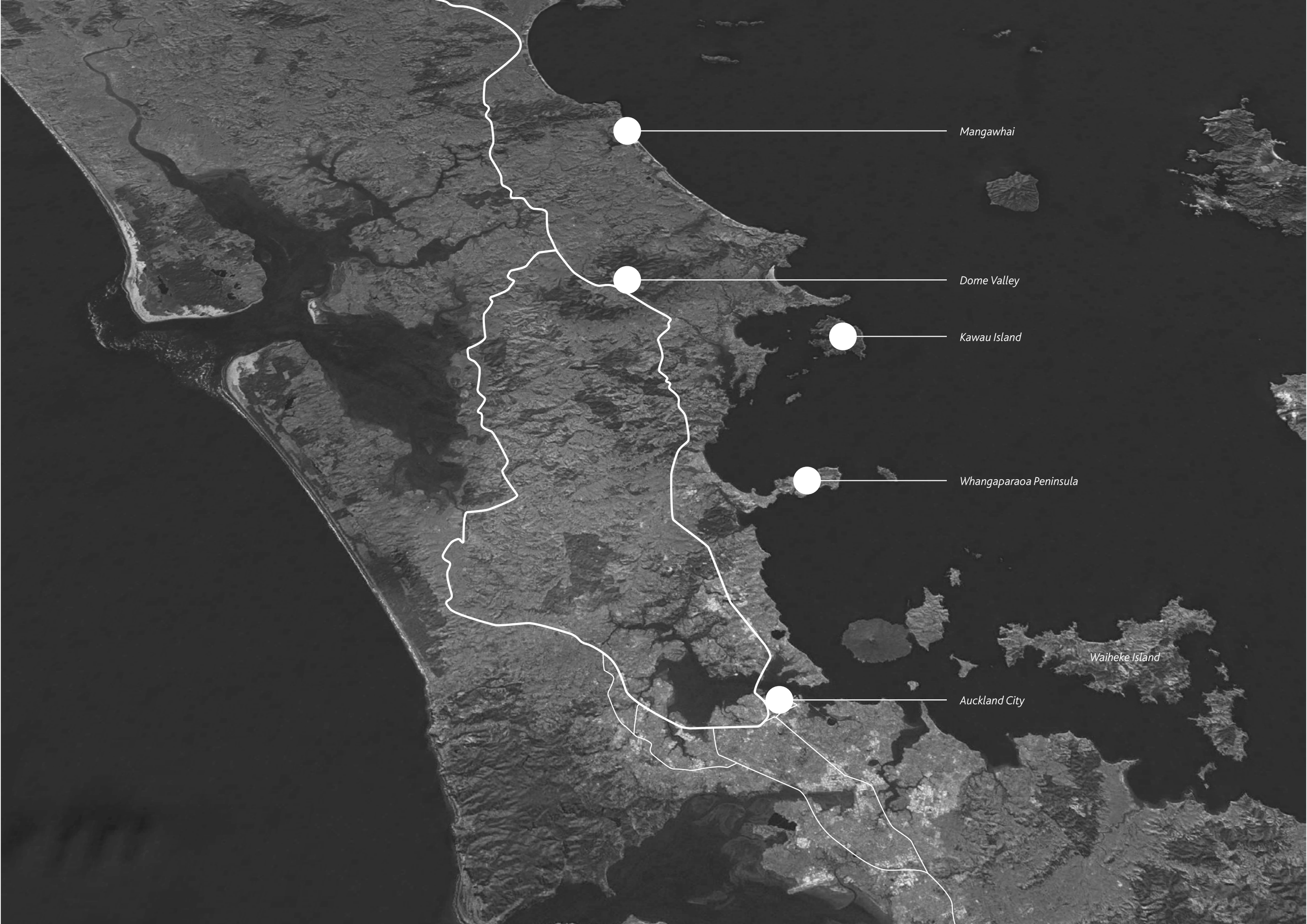
Added notes[1]:

Within the upper Mangawhai catchment, the principal features of the landscape are:

- Ridges and valleys with re-generating and remnant patches of indigenous vegetation
- Interspersed areas of open pasture
- Exotic forestry and horticulture
- Small clusters of farm and residential buildings

The wider Mangawhai area combined is the largest settlement area in the lower Kaipara District east coast.

1 https://www.kaipara.govt.nZ/site/kaiparadistrictcouncil/files/pdf/A-Z%20Documents/Mangawhai%20Structure%20Plan//part%202%20overview%20p1-24.pdf


Mangawhai
Dome Valley
Kawau Island
Whangaparaoa Peninsula
Waiheke Island
Auckland City

4.3_ Socio-Cultural and Built Environment

Socio-Cultural History

Mangawhai takes its name from the Ngāti Whātua Chief Te Whai, who lived at Pākiri before escaping a Ngāpuhi war party and retired with the survivors of his tribe to Manga-Te-Whai, the place of Te Whai (where the streams meet) in the early 1800s. Te Uri o Hau, who have mana whenua status over Mangawhai and westwards to the Kaipara are of Ngāti Whātua descent.

The direct translation of Mangawhai is 'stream of the stingray'. Whai being the Māori name for the short-tail stingray, Dasyatis brevicaudata, that reside within the harbour and manga, refers to a watercourse.
The pā site of rangitira chief Te Whai and his people was located at Mangawhai Point and is now preserved as a protected site. Mangawhai Harbour was a key portage route into the Kaipara. Māori would drag their waka from the estuary west, to inland rivers accessing the Kaipara harbour.[2]

As a measure of respect to such treasured taonga; the pā has been preserved and protected for future generations to enjoy. A stone plinth has been placed to inform visitors of the significance of where they stand (See Chapter 6 - Section 6). [3]

The Crown purchased a large block of land in Mangawhai in 1858 with European settlement starting a year later in 1859. Early European settlers used the harbour and estuary to cargo kauri gum and logs to Auckland. Shipbuilding began in the 1840s and continued until the 1870s. The area supported other industries including gum digging and logging; as these resources dwindled dairy and sheep farming became the predominant industries and still remain the primary industry today.[4]

Identification of archaeological sites around the Mangawhai Coastal harbour was commissioned by the Kaipara District Council (KDC) in the form of a Cultural Effects Assessment, which relates to the potential effects of the proposed coastal walkway development. Environs Holdings Ltd (Environs) is the environmental subsidiary of Te Uri o Hau Settlement Trust. The intent of the Cultural Effects Assessment is to;

Identify historic and cultural sites of significance.
Protect the health of the harbour by identifying untreated stormwater discharge, which consequently impacts the water quality of the harbour and health of the marine life.

Environs has identified and recorded forty-one archeological sites along the coastal reserves and harbour. These sites range from spaces that hold cultural, spiritual, historic and traditional association to sites that have physical footprints of past occupation. Archaeological findings include a historic homestead, pā sites, possible terracing and midden pits.

Te Uri o Hau, as mana whenua have a well-established connection with Mangawhai through on-going occupation and current historic and territorial rights. Identification will enable protection, maintenance and advocation of the archaeological sites. Through acknowledgement of these areas the kaitiakitanga and rangatiratanga rights and interests of the hapu and iwi will be supported.
Mangawhai village and Mangawhai Heads have their own distinct and unique characteristics, due to their close proximity they can share a rich selection of community facilities and amenities.
The natural environment allows for a range of recreational pursuits to take place, this draws many holiday makers and day-trippers, causing vast seasonal population fluctuations. The 2013 census indicates that both townships have also experienced notable permanent resident population growth over recent years. Factors such as improvements to state highway one, the reduction of commuting time and the ability to work remotely may have been considerations for those moving to Mangawhai. Kaipara District Council predicts the permanent resident population of Mangawhai will be close to 5000 by 2028.[5]

Built Environment

The remarkable landscapes of Mangawhai, combined with its rich history and reputation as a popular holiday destination have influenced the built environment within the two townships. Mangawhai village has a small commercial heart that has grown and developed to resource the expanding community. The built environment reflects the stages of this growth and is predominantly occupied by one storey utilitarian buildings servicing the needs of the surrounding rural community. A handful of colonial buildings remain on or close to the main road. The village community hall and a small number of early settler cottages line the main road, maintaining the old charm and history of the village.

The Mangawhai tavern, which overlooks the Mangawhai estuary, was built in 1862 and has a long history of entertainment and accommodation.

A selection of more modern buildings have developed along Molesworth Drive towards Mangawhai Heads and have introduced a more craft and boutique style to the retail and commercial sector. Such buildings include the Mangawhai museum, cafés, bowling club and impending Mangawhai Central development.

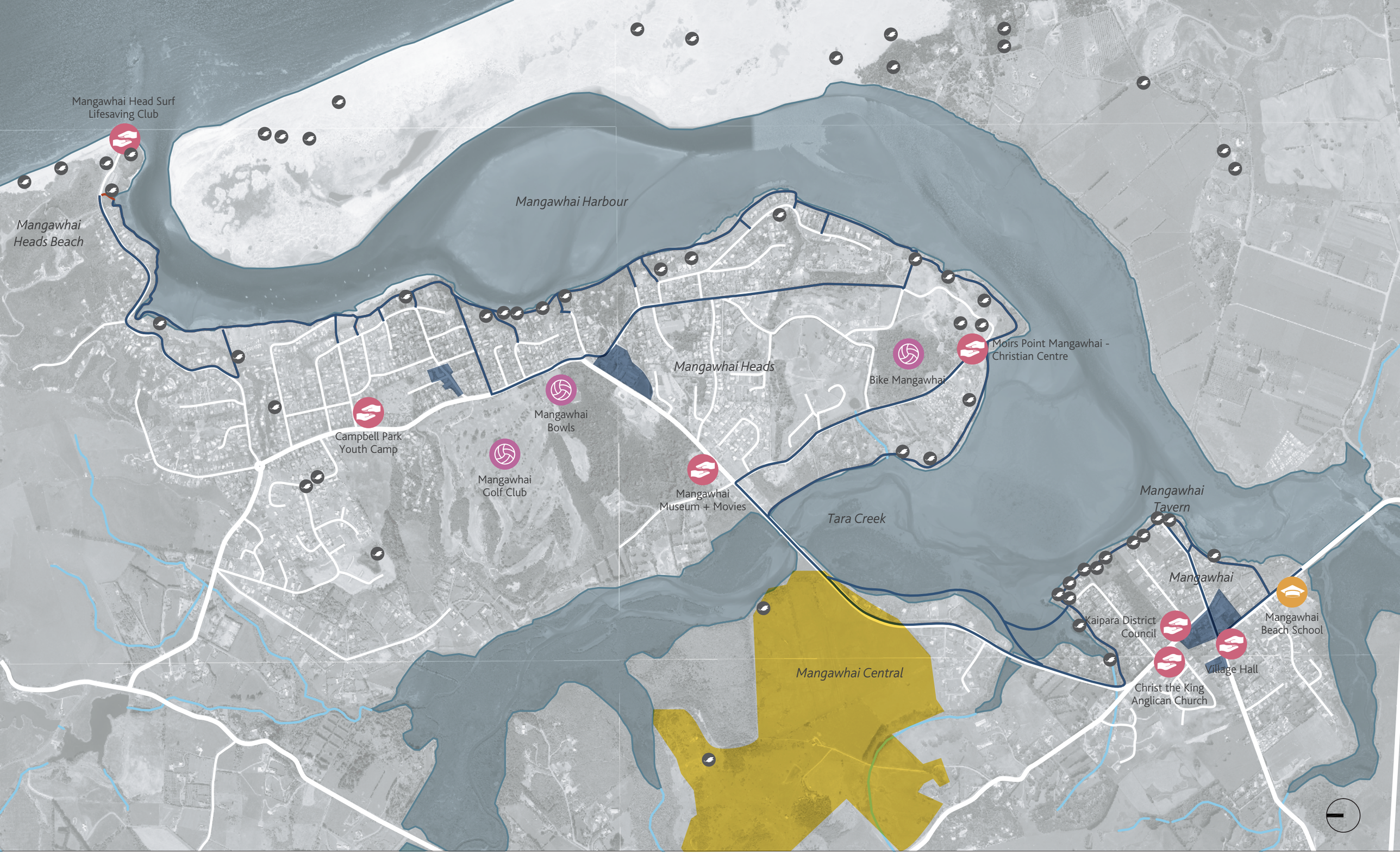
The surrounding residential neighbourhoods of Mangawhai are also experiencing change. New subdivisions are increasing density and introducing a more modern combination of single and two storey housing. This development is primarily occurring within the landscape between Mangawhai village and Mangawhai Heads which currently consists of rural production farms and smaller rural lifestyle blocks.

A small group of shops and cafés form the Mangawhai Heads township. This group of shops has traditionally served as the local shops servicing the beach-side settlement. The atmosphere and character of beach side living is clearly apparent within the natural and built environment at Mangawhai Heads. Small pockets of light-industry and retail buildings line the main entry road (Molesworth Drive) into Mangawhai Heads, however the area is primarily a combination of old and new residential neighbourhoods. The architectural style of the neighbourhoods vary in terms of era and modernity, though the essence of beach side living is fairly consistent throughout.

2 & 3 https://mangawhaipoint.co.nZ/history

4 www.kaipara.govt.nZ/site/kaiparadistrictcouncil/files/pdf/A-Z%20Documents/Mangawhai%20RMP%20FINAL%2023092009.pd

5 https://www.kaipara.govt.nZ/site/kaiparadistrictcouncil/files/pdf/Long%20Term%20Plan/LTP1828/Significant%20Forecasting%20Assumptions%20Draft%2023022018.pd



REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFOMRATION	29.09.2019

Key

- Mangawhai Harbour
- Education Facilities
- Community Facilities
- Sports and Recreation
- Town Centres
- Mangawhai Central
- Archaeological Sites
- Proposed Alignment

CONSULTANTS:

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Landscape Architecture / Architectural Design
Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
NETWORK, SOCIOCULTURAL, BUILT ENVIRONMENT

REVISION:
B

DRAWING NUMBER:
002

SCALE:
1:15000

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4.4_ Environment, Natural Hazards and Ecology

Environment

The Mangawhai area has a landscape characterised by a sequence of natural systems. The landscape is formed by an open dynamic coastal beach compromised of steep escarpments, broad dunes and a passive coastal harbour. There is a significant sand spit guarding the harbour, sandy beaches transitioning into an intertidal estuarine / saltmarsh system and then to streams from the upper catchment rural areas.[6]

The harbour has a steep coastal headland at its entrance, stretching into an extensive tidal channel with steep harbour bays expanding inland to a wide estuary. The coastal edge of the harbour and sandspit opposite, have been identified by the Northland Regional Council and the Department of Conservation as regionally significant and have been noted as a breeding ground for the Fairy Tern as well as other species such as NZ and Banded Dotterels, Caspian and White Fronted Terns, and Variable Oystercatchers. The extensive sandspit is an outstanding natural feature and is characterised by bare and mobile sands with areas of sea shells set amongst lightly vegetated areas, consisting predominantly of Spinifex (Spinifex sercus) and Pīngao (Desmoschoenus spiralis).

The naturalness of the harbour, uniqueness of the sandspit and gentle picturesque fertile rural landscapes are all highly valued by Mangawhai residents and visitors.

Natural Hazards

Flooding and other weather-related hazards are the most widespread and common natural hazards in Northland.

An assessment of coastal flood hazards in Mangawhai has been undertaken by Tonkin and Taylor for the Northland Regional Council. The effects of; storm tide levels, wave run-up and sea level rise were part of the assessment. These results are indicative of a 1-50 or 100 year event. Results can be seen overleaf. Long term impact of sea level rise is not indicated. [7]

Existing erosion around the coastline is visible and due to :

- Increased frequency of extreme weather events due to climate change and coastal inundation.
- Uncontrolled stormwater flows that cause concentrated run-off.
- Wind erosion of non-vegetated sand.
- Areas of high foot trafficking locally preventing vegetation growth, and slumping of over-steepened sand dunes/coastal cliffs due to gradual retreat.

The primary causes of existing coastal erosion and gradual shoreline retreat in the harbour/estuary is inferred to comprise:

- Waves generated by high winds/storms concurrent with high tide, and waves generated by boat wakes at high tide.

Erosion Pressures/Threats

- Uncontrolled stormwater flows that cause concentrated run-off
- Wind erosion of non-vegetated sand.
- Areas of high foot trafficking locally preventing vegetation growth, and slumping of over-steepened sand dunes/coastal cliffs due to gradual retreat.

Prevention of Erosion

- Vegetation plays a critical role in stabilising the banks against erosion.
- Blue/Green infrastructure eg. fusing natural and built environments to reduce impact from natural hazards.

Ecology

Vegetation

Original land cover in the Mangawhai Ecological District had been predominantly podocarp-broadleaf forest (incl kahikatea, tawa and tōtara) which would have merged with extensive swamp forests, wetlands and salt marshes located in the lower areas of the Mangawhai Estuary. Currently the Mangawhai coastal headland include habitats such as; saltmarshes, mangroves, intertidal flats and extensive channels and entrance sand spit. These habitats support diverse plant and animal communities that contribute to the ecological value in Mangawhai. The mangrove and salt marshes in the upper reaches of the estuary would benefit with increased restoration.

Pōhutukawa is the dominant canopy species of coastal forest at Mangawhai North Head, Mangawhai Harbour, sandspit and surrounds. This is the only Pōhutukawa forest on inland lowland hills in the Auckland and ecological districts (ED).

There are records of threatened plants at Mangawhai however there are 12 species classified 'at risk, declining'. One of the 'declining' species is sand tussock (Poa billardierei) which is found at Mangawhai harbour, sandspit and surrounds. Several other naturally uncommon species of plant are also located in these spaces.

Wildlife

Birds: The Mangawhai estuary and sandspit provide a crucial habitat for several species of threatened birds, most commonly NZ fairy tern, northern NZ dotterel, Caspian tern and variable Oyster-catcher. The NZ fairy tern are considered critically endangered with an estimated population of 40 (less than a dozen breeding females). Mangawhai estuary is one of five known breeding locations for the fairy tern.

Reptiles: There are several 'threatened' or 'at risk' species of lizards in the ED. The most notable example is the Moko Skink, which can be found at Mangawhai Heads. Other skink/gecko sightings within 10km of Mangawhai include the shore skink (Oligosoma smithi), forest gecko (Mokopirirakau granulatus), elegant gecko (Nauktinus elegans) and plague skink (Lampropholis delicata). The plague skink is the only introduced/naturalised species. Other lizards that could be inhabiting the ED include the ornate skink (Oligosoma ornatum), pacific gecko (Dactylocnemis pacificus) and copper skink (Oligosoma aeneum).

Marine life: There are several 'at risk, declining' species of fish present in Mangawhai Harbour such as whitebait (Galaxias maculatus) and redfinned bully (Gobiomorphus huttoni). The intertidal flats are also home to pipi (Paphies australis) and extensive cockle beds (Austrovenus stutchbury). These shellfish aid in purification of the estuary water and provide a nursery spaces for breeding fish as well as a food source for foraging birds.

Pressures/threats

- Habitat loss due to coastal development.
- Sand mining
- Overfishing
- Disturbance to nesting shorebirds by domestic animals, people and vehicles.
- Removal of epifauna and habitat homogenisation by mobile fishing gear.
- Invasive marine species
- Toxic algal blooms

Mangawhai has a diverse avifauna and has been identified in the Northland region as an outstanding coastal environment.

Habitat types along the Mangawhai coastline include:

- Mānawa/mangroves
- Intertidal sand and mudflats
- Estuarine sand
- Moderate beach
- Moderate rocky shore
- Moderate shallow sand
- Moderate shallow reef
- Deep sand
- Deep mud
- Deep reef
-

6 https://www.kaipara.govt.nZ/site/kaiparadistrictcouncil/files/pdf/A-Z%20Documents/Mangawhai%20RMP%20FINAL%2023092009.pd

7 https://www.nrc.govt.nz/media/9546/tonkintaylorcoastalfloodhazardzonesreport2017updatewebversion.pdf

Mangawhai Heads Beach

Mangawhai Harbour

Tara Creek

Mangawhai Central

Mangawhai

REVISION HISTORY:

A FOR INFORMATION 14.03.2019

B FOR INFORMATION 23.09.2019

Key

- Mangawhai Harbour
- Scrub Vegetation
- Native Vegetation
- Streams and Rivers
- Coastal Flood Zone 1 in 100 yr*
- Coastal Flood Zone 1 in 50 yr*
- Coastal Flood Zone 1 in 100 yr*
- Wave Run-up Zone 1 in 100 yr storm surge*
- Borehole Locations
- Proposed Alignment

*(*Measurements take into account predicted sea-level rise over the next 50-100 years)*

CONSULTANTS:

RESILIOSTUDIO Landscape Architecture / Architectural Design Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
ENVIRONMENT, NATURAL HAZARDS, ECOLOGY

REVISION:
B

DRAWING NUMBER:
003

SCALE:
1:15000

APPROVED JHW
For RESILIO LTD

DO NOT SCALE
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

4.5_ Route Alignment + Landscape Character Areas

Network Connectivity

The MCW from Mangawhai village to Mangawhai Heads presents a specific network of connections. There are three types of walkway accessibility:

- Low tide access - Accessible only at low tide
- High tide access - Accessible during all tides
- Alternative route access - Access for the majority of users during all tides (generally road accesses)

This is intended to increase and upgrade the current network that has missing sections and links. The proposed routes cross public, private and land earmarked for future development.

Mangawhai Heads Beach
Mangawhai Harbour
Mangawhai Heads
Tara Creek
Mangawhai Central
Mangawhai Village

SHEET 01
SHEET 02
SHEET 03
SHEET 04
SHEET 05
SHEET 06
SHEET 07
SHEET 08
SHEET 09
SHEET 10
SHEET 11
SHEET 12
SHEET 13
SHEET 14
SHEET 15
SHEET 16
SHEET 17

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	29.09.2019

KEY

- Mangawhai Harbour
- Existing Walkway
- Section 1
- Stage One
- Section 2
- Section 3
- Section 4
- Section 5
- Section 6
- Section 7
- Section 8
- Section 9
- Section 10
- Section 11
- Alternative Route
- Walkway Connections
- Tracks Trust Alignment

NB: Dashed line is where the proposed route currently crosses private property

CONSULTANTS:

RESILIOSTUDIO
Landscape Architecture / Architectural Design
Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
PROJECT LAYOUT

DRAWING NUMBER:
001

SCALE:
1:15000

REVISION:
B

APPROVED jHW
For RESILIO LTD

DO NOT SCALE
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

4.6_ Site Survey

The site survey investigates the existing conditions along the proposed MCW alignment through a visual essay. The MCW spans from Mangawhai Heads to Mangawhai village and will pass many different environments including new housing developments, a new township, protected environmental areas, wildlife habitats, erosion control areas, sandy beaches, cliffs and sand-flats. This page is intended to offer a sample of the types of environments experienced along the proposed route alignment.

Photo locations are indicative only


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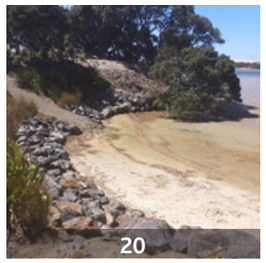
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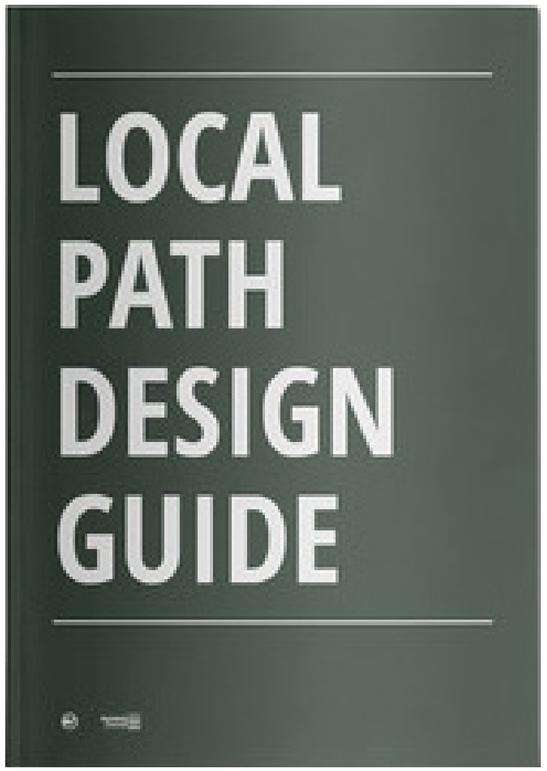
1. *Section 1_* Sandy beach, tide-line reaches edge of vegetation, overhanging pohutukawas
2. *Section 1_* Overhanging pohutukawas with rocky and sandy ground
3. *Section 1_* Rocky out crop with overhanging pohutukawa
4. *Stage One_* Sandy beach looking north -east across to the camp-ground and Wintle St Reserve
5. *Stage One_* Community built boat wharf at Alamar Crescent
6. *Stage One_* Drainage in Stellars Reserve with car parking and public toilet in the background
7. *Section 2_* Metal stair access up cliff from sand beach, stairs lead to grass walkway
8. *Section 2_* Grass walkway along cliff top
9. *Section 3_* View from rocky shoreline across the bay
10. *Section 3_* Sandy and shell line beach, limited beach at high tide
11. *Section 3_* Narrow wooden stairs leading to tracks
12. *Section 3_* Shelly beach, high tide reaches native vegetation
13. *Section 3_* Rocks and access point down to beach
14. *Section 4_* Lincoln Street carpark looking north towards Mangawhai Heads
15. *Section 4_* Open public land between sandflats and houses. Note ground level is below high-tide. Looking north
16. *Section 4_* Looking south past groynes to overhanging pohutukawa trees
17. *Section 5_* Sandflats with vegetation, sea grass and overhanging pohutukawa
18. *Section 5_* Bridge section down to sandflats with vegetation
19. *Section 6_* New gravel path implemented with new vegetation at the northern end of section six
20. *Section 6_* Small beach inlet - significant planting, retaining and erosion control
21. *Section 6_* Gravel path with more established coastal vegetation, mainly taupata
22. *Section 6_* Staircase to northern path and pa site
23. *Section 6_* Formal entrance from Estuary Drive with pou whenua and pohutukawa tree
24. *Section 7_* View across from Molesworth Drive, sandflats with native vegetation and private properties
25. *Section 8_* Gravel informal walkway along Molesworth Drive
26. *Section 8_* Gravel track narrows to a single track and sits approx 1m above the road level
27. *Section 9_* Small dock site within mangroves, edges of the coastline have been appropriated by neighbouring residents
28. *Section 9_* Erosion control along back with grass terracing
29. *Section 9_* New bridges implemented along the coastline, new housing development currently underway
30. *Section 9_* Overhanging pohutukawas holding bank, rocks have also been implemented along this section of coastline, this section sits approx 2-4m high above sea level
31. *Section 10 + 11_* Staircase down from section 9 to gravel boat ramp
32. *Section 10_* Open grass land looking across to private gate with overhanging pohutukawas and cliff, this section sits approx 2-4m high above sea level

4.7_ Design Principles

Core Design Principles

The following design principles have been formulated from principles adopted within the Local Path Design Guide (March 2017):



Safe

Safety and a stress-free environments are core tenets of achieving a successful walkway. Conflict points such as high vehicle numbers and high speeds should be minimised by providing a consistent level of experience across the walkway network. Crime prevention and enhanced social safety are also key outcomes of well-designed MCW.

Connected

The MCW should connect destinations such as residential neighbourhoods, schools, town centres, local attractions and amenities. The MCW should seamlessly connect to the wider walkway network within Mangawhai and broader regional trail networks. Additionally, these connections should be designed to be easily navigated. Where intuitive design is unachievable, clear and consistent wayfinding signage should be employed.

Accessible and Comfortable

The MCW should be accessible for all users (where possible), including children and people with disabilities. Considerations include ample width, gentle gradients, smooth transition in surfaces, and avoidance of high volumes of traffic that create fumes and noise. Where sections of the MCW cannot be made accessible, provision should be made for focused accessible nodes that afford all users to experience key aspects of any given alignment.

Enabling

Iwi, local community and stakeholders should be engaged early in the process to incorporate Te Aranga principles and community driven initiatives. The MCW should integrate with the existing walkway network and streetscape and celebrate Mangawhai's unique character by responding to and incorporating elements of the surrounding natural and built environment, heritage and culture. Opportunities to include ecological function through planting, water sensitive design, and low energy/low toxicity materials should be integral to the MCW.

Overview

The following design principles are proposed to guide the possible future development of the Mangawhai Coastal Walkway at a high level. The design principles are organised under two headings, Te Aranga Design Principles and Supplementary Principles.

Design Principles

Engagement

Work with the public throughout the Mangawhai Coastal Walkway process to ensure that public concerns and aspirations are consistently understood and considered.

Leisure + Recreation

The Mangawhai Coastal Walkway ensures that park users can access and enjoy the coastline for a range of informal leisure and recreational activities such as picnicking/BBQ, socialising with friends and whānau, walking, and other informal sports.

Connectivity

The Mangawhai Coastal Walkway aims to connect the community physically to the land and water through increased network connections. Desirable linkages include; the coastal margin between Mangawhai Heads and Mangawhai estuary, Mangawhai village to the future Mangawhai Central continuing to Mangawhai Heads.

Social connectivity would be a considerable benefit as a result of the Coastal Walkway. A natural, coastal walkway network teamed with a path along Molesworth Drive would provide additional infrastructure for walking and cycling. These activities create a space for recreational and social connectivity.

Accessibility

Mangawhai Coastal Walkway aims to be accessible to as wide a user group as possible, including children and people with disabilities.

Safety

Mangawhai Coastal Walkway provides a safe network of paths with clear sightlines and multiple routes to avoid issues during high tide and accessibility.

Activate

The Mangawhai Coastal Walkway provide places for community and cultural activation including activities such as community events, and cultural and seasonal celebrations.

Viability

The Mangawhai Coastal Walkway provides value for money outlining a wide range of realistic projects with multiple network connections and sections that can be implemented incrementally or in parallel with each other.

Resilience + Adaptation

The Mangawhai Coastal Walkway has strategies in place to adapt to the effects of climate change, particularly drought, flooding, sea level rise, inundation, erosion and extreme weather events.

Stewardship

Local residents and community groups are encouraged/ supported to lead walkway initiatives including but not limited to community planting groups, citizen science groups, cycle safety events etc.

7 http://www.aucklanddesignmanual.co.nz/design-thinking/māori-design/te_aranga_principles

Te Aranga Design Principles

The Auckland Design Manual (ADM)1 notes that the key objective of the Te Aranga Māori Design Values and Principles is to enhance the protection, reinstatement, development and articulation of Mana Whenua cultural landscapes and to enable all of us (Mana Whenua, mataawaka, tauiwi and manuhiri) to connect with and to deepen our collective appreciation of 'sense of place'. The following core Māori values have informed the development of the outcome-oriented Te Aranga Māori Design Principles:

Rangatiratanga
Kaitiakitanga
Manaakitanga
Wairuatanga
Kotahitanga
Whanaungatanga
Mātauranga

Application

While Te Aranga Design Principles are well recognised and formally adopted by Auckland Council it is important to note, that in keeping with the principle Mana Rangatiratanga, it should not be assumed that Mana Whenua want to use these principles to inform their contribution to the design and redevelopment of this site. Whether to use this framework or not will be confirmed with the relevant iwi authorities as part of the next engagement at concept design stage/s.

In the instance that Te Aranga Principles are adopted for this project, through further engagement and detailed discussion with Mana Whenua a range of opportunities will be identified, prioritised and refined, and the details of how Te Aranga Design Principles will be specifically applied to this project will emerge through that process.

In the instance that Te Aranga Principles are not the desired framework to use by Mana Whenua then local iwi/hapū will inform council how they want to participate in and contribute to the design of the site.

Te Aranga Māori Design Principles are outlined on the opposite page.

Te Aranga Design Principles Overview

Mana Rangatiratanga - Authority
The status of iwi and hapū as mana whenua is recognised and respected.

Whakapapa - Names and Naming
Māori names are celebrated.

Taiao - The Natural Environment
The natural environment is protected, restored and / or enhanced.

Mauri Tū - Environmental Health
Environmental health is protected, maintained and / or enhanced.

Mahi Toi - Creative Expression
Iwi / hapū narratives are captured and expressed creatively and appropriately.

Tohu - The Wider Cultural Landscape
Mana whenua significant sites and cultural landmarks are acknowledged.

Ahi Kā - The Living Presence
Iwi / hapū have a living and enduring presence and are secure and valued within their rohe.

5.0_ Design Overview

5.1_ Overview

This section outlines MCW parameters, arranging the MCW into a sequence of sections, each with their own constraints, opportunities and unique characteristics. The set of maps as outlined in Chapter six - Project Staging, identify the existing character of each area, the indicative alignment of the path and comment on the complexities and challenges associated with each alignment.

5.2_ Planning Considerations

Kaipara District Plan - Operative Version 2013

Relevant Land Use Features:
- Residential zone
- Rural zone
- Business Harbour Zone
- East Coast overlay
- Harbour overlay
- Road Reserve (formed and unformed)

Relevant Site features:
- Areas Significant to Māori (reference SM04 - Statutory Acknowledgement Area (Te Uri o Hau)
- Reserve Management Unit (reference RMU182, RM162)

Potential reasons for consent and activity status:

Transport – Chapter 11
- Construction and works on a public road undertaken by Council – Permitted activity

Rural Zone – Chapter 12
- Excavation and fill not meeting the Performance Standards (including the maximum volume of 300m³ and 300m², site located within an erosion, instability or flood hazard area) - Restricted Discretionary activity.

- Indigenous Vegetation clearance in the East Coast Overlay not meeting the Performance Standards (including 'it is not located within a continuous area of predominantly indigenous vegetation greater than 3m in height and greater than 500m²') - Restricted Discretionary activity.

Note: It is permitted to remove indigenous vegetation for the formation and maintenance of walking tracks less than 1.5m in width.

- Any Buildings (any structures such a boardwalk, steps and retaining that meets the definition of building in the District Plan) not meeting the Performance Standards, (including maximum height, height in relation to boundary, and setback (including any buildings set back 30m from the coast)) - Restricted Discretionary activity

- Impermeable surfaces not meeting the performance standards (including less than 10% in any one hectare on sites of 5ha or less) - Restricted Discretionary Activity.

Residential Zone – Chapter 13
- Excavation and fill not meeting the Performance Standards (including the maximum volume of 100m³, located within an erosion, instability or flood hazard area) - Restricted Discretionary activity.

- Indigenous Vegetation Removal in the East Coast Overlay not meeting the Performance Standards - Restricted Discretionary activity.

- Any Buildings (any structures such a boardwalk, steps and retaining that meets the definition of building in the District Plan) not meeting the Performance Standards, including maximum height, height in relation to boundary, building coverage and setback (including any buildings set back 30m from the coast) - Restricted Discretionary activity.

- Impermeable surfaces which exceed 40% of the net site area – Restricted Discretionary Activity.

Business Zone – Chapter 14
- Excavation and fill not meeting the Performance Standards (including the maximum volume of 300m³, site located within an erosion, instability or flood hazard area) - Restricted Discretionary activity.

- Indigenous Vegetation Removal in the Mangawhai Harbour Overlay not meeting the Performance Standards (including 'it is not located within a continuous area of predominantly indigenous vegetation greater than 3m in height and greater than 50m²) - Restricted Discretionary activity.

- Any Buildings (any structures such a boardwalk, steps and retaining that meets the definition of building in the District Plan) not meeting the Performance Standards, including maximum height, height in relation to boundary and setback (including any buildings set back 30m from the coast) - Restricted Discretionary activity.

Historic Heritage – Chapter 17
- Earthworks within an Area of Significance to Māori that does not comply with the performance standards (including compliance with other sections of the plan (including Land Use sections)) – Restricted Discretionary activity.

- Development of a site in an Area of Significance to Māori that does not comply with the performance standards that does not comply with the performance standards (including compliance with other sections of the plan (including Land Use sections)) – Restricted Discretionary activity.

Reserve Management Units – Chapter 20
- Development within Reserve Management Unit that complies with the criteria and provisions of the relevant Reserve Management Plan is a permitted activity.

Regional Coastal Plan for Northland – Operative 2004

Regional Coastal Plan – Map features:
- Marine 1 (Protection) Management Area
- Marine 4 (Controlled Mooring) Management Area
- Ski lane

Potential Reasons for Consent and activity status:

Section 31.3 Marine 1 (Protection) Management Area
- All recreational activity on foreshore areas, which is not otherwise a permitted activity by virtue of the fact that the activity requires associated structures (on the condition that the activity does not cause the permanent physical damage to the foreshore, or result in the destruction of indigenous vegetation, including mangroves; or disturb the roosting, feeding or breeding of indigenous or migratory bird species) – Discretionary.

- All recreational activity on foreshore areas, which is not otherwise a permitted activity or does not meet the conditions for discretionary activities is a Prohibited activity. Note a prohibited activity cannot be undertaken, i.e no opportunity to apply for resource consent).

- The erection of any new structure and the occupation of space for and use of any new structure (other than those structures provided for as permitted, controlled, discretionary or prohibited activities) – Non complying activity.

31.6 Marine 4 (Controlled Mooring) Management Area
- The erection of a new structure, and the occupation of space for any new structure – Discretionary activity.

Proposed Regional Plan – Appeals Version (29 July 2019)

Regional Coastal Plan – Map features:
- General Marine Zone
- Mooring Zone
- Significant Ecological Areas (part of Estuary and Harbour)
- Significant Bird Area (covers the full extent of the Estuary and Harbour)
- Significant Marine Mammal and Sea-bird Area (covers the full extent of the Estuary and Harbour)
- Enclosed Waters Area
- High Natural Character: Mangawhai Foredune seaward of low-moderate coastal cliffs (within CMA and Unit Spans CMA).
- High Natural Character: Mangawhai (lower to mid reaches of the Mangawhai Estuary) (within CMA and Unit Spans CMA).
- Note: the Mangawhai Spit (opposite side to the proposed walkway) is identified and an Outstanding Natural Feature on land

Potential reasons for consent and activity status:

Chapter C.1 Coastal activities
- The erection of a structure in a Mooring Zone or the General Marine Zone and any occupation of the common marine and coastal area by the structure that is not a permitted, controlled, restricted discretionary or non-complying activity in section C.1.1 of this Plan, and that the structure has a functional need to be located in the CMA – Discretionary*.

- The use, erection or placement of a structure with no functional need to occupy the common marine and coastal area, and any occupation of the common marine and coastal area by the structure - Non-complying activity*.
- Definition of function need = When an activity or network (including structures) is dependent on a particular location to operate, or is required to traverse, locate or operate in a particular environment due to its technical or operational requirements. Note: This excludes dwellings and guest houses, hotels, motels, cafés, restaurants and shops*.

*Subject to appeal.

Chapter C.8.1 Earthworks
- The permitted activity thresholds for regional earthworks includes:
  - Within 10m of a natural wetland, the bed of a continually or intermittently flowing river = 200 square metres of exposed earth at any time, and 50 cubic metres of moved or placed earth in any 12-month period.
  - High-risk flood hazard areas = 50 cubic metres of moved or placed earth in any 12-month period.
  - Coastal riparian and foredune management area = 200 square metres of exposed earth at any time.
  - Flood hazard area = 100 cubic metres of moved or placed earth in any 12-month period.
  - General performance standards in C.8.3.1 (2)-(10) including erosion and sediment control measures, earth stabilisation, the earthworks activity cannot reduce the height of a dune crest in a coastal riparian and foreshore management area).

Earthworks not meeting the standards will require consent as either a controlled or discretionary activity.

Chapter C.8.4 Vegetation clearance in riparian areas and foreshore management area
- The permitted activity thresholds for indigenous dune vegetation includes
- Indigenous dune vegetation is not removed or cleared, and excluding coastal dune restoration, the area of cleared vegetation does not exceed 200 square metres in any 12-month period, and there is no disturbance of indigenous or migratory bird nesting sites

Definition of foredune management area = *the land within a horizontal distance of 10 metres landward from the coastal marine area, or the land between the coastal marine area and the bottom of the landward side of the foredune, where the land adjacent to the coastal marine area is vegetated or unvegetated sand dunes*.
Vegetation clearance in the foreshore management area not meeting the standards will require consent as either a controlled or discretionary activity.
NES CS – contaminated land

5.3_ Proposed Route Options

The vision for the MCW within the MCP was for an all tide coastal walkway. The feasibility study has determined that providing an all tide access to the entirety of the MCW alignment will require significant structures in locations where the coast is currently inaccessible at high tide. Large structures in such locations are likely to be problematic for several reasons including; effects on natural character, effects on wildlife and ecology and cost. We propose splitting the MCW into three main types of walkway:

- All Tide Access - These are sections of the walkway that can be accessed at any time and are not restricted by tidal movements. A walkway can be provided without the requirement of significant structures whilst still being suitable for most walkway users. These walkways typically suit a gravel aggregate, concrete path, low boardwalk or grass walkway surface.

- Low Tide Access - These sections are inaccessible at high tide. They are suitable for able bodied users, not wheeled modes of transport as some areas cross sand and rock and are typically difficult to access. These walkway alignments typically suit a grass / sand walkway surface with wayfinding markers.

- Alternative Route - These walkways provide connections where any route is unavailable at high tide. These sections should be accessible for all users. These walkways will typically follow the road network and have space for pedestrians and cyclists. These sections will ensure a safe route connects Mangawhai Heads to Mangawhai village during all tide times. The aim of the alternative route will be to provide access for users with disabilities, prams, bikes and scooters. With the alternative route, a proposed shared path or separate bicycle and pedestrian path should be implemented where possible for safety and access.

Council ownership of the proposed Mangawhai Coastal Walkway land is interrupted at several points by private land ownership. The sections of private property have been highlighted using a dotted line in Chapter 6.0_ Project Staging. In these cases, permission will need to be sought for the walkway to use the land or another option / route alignment will need to be proposed.

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Mangawhai Harbour
- All Tide Access
- Low Tide Access Only
- Alternative Route

CONSULTANTS:

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STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
PROPOSED ROUTE OPTIONS

DRAWING NUMBER:
005

SCALE:
1:15000

REVISION:
B

APPROVED JHW
For RESILIO LTD

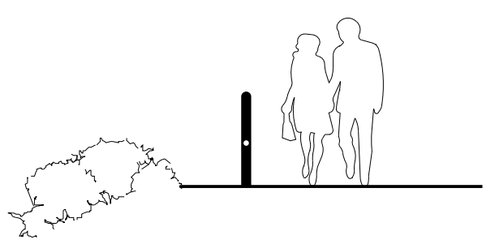
DO NOT SCALE
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

5.4_ Walkway Typologies

Different sections of walkway exhibit varying landscape conditions that may require one or more walkway types for the design of an effective path. We have assessed the varying conditions along the entire length of the proposed MCW alignment and have developed six options for path typologies to effectively respond to the conditions present along the coastal edge.

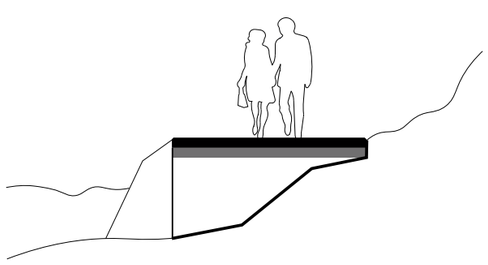
Do nothing (Improved Wayfinding)

Other than slight grading, opening of sight lines and ground condition improvements, the site is left untouched in its current condition, typically either sand or grass. Improved wayfinding signage will improve connectivity in these areas and help to communicate the direction of the MCW.



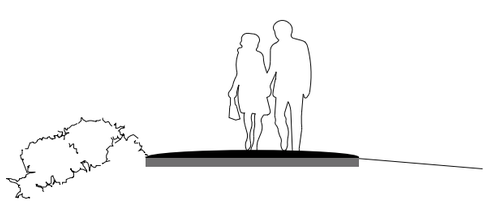
Retaining Wall

Where the walkway sits on the edge of the coastline, it may need retaining or reinforcing in order to prevent erosion. This is typically done with a rock armouring and concrete path. A retained walkway option may also be advantageous in locations where the path would benefit being bedded into the landscape / coastline.



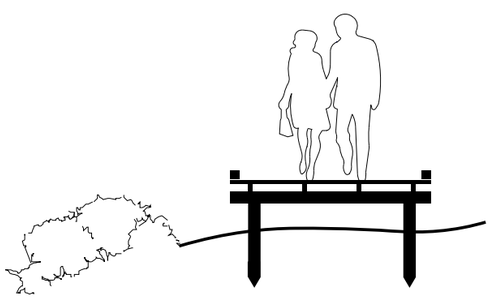
Compacted Aggregate

Compacted aggregate is a cheap option for a walkway. It can be made of locally sourced material.



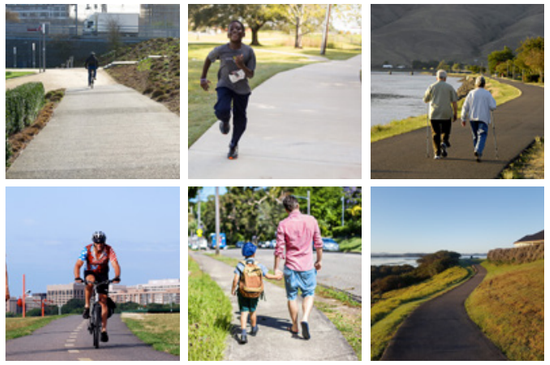
Boardwalk

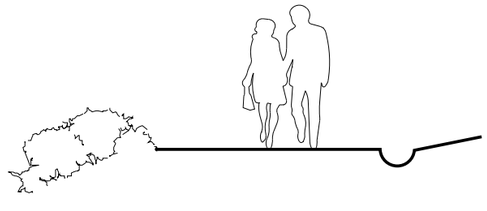
Constructed from primarily timber, boardwalks allow walkways to cross wetlands, rocky coast and estuary environments while minimising the impact on sensitive ecologies. Consideration should be made for the cost of implementation & maintenance of a boardwalk.



Concrete

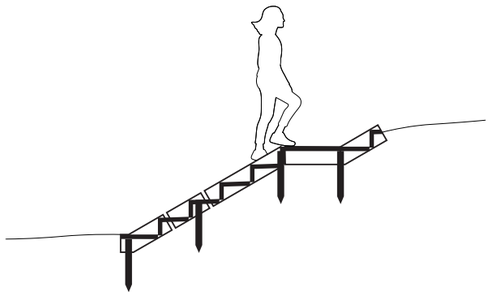
Concrete walkways provide a robust yet technically simple walkway solution.





Steps

Steep gradients and significant level changes may require steps to increase accessibility and provide a safe walkway solution. Note ramped / graded solutions will be provided where possible to ensure maximum accessibility.



6.0_ Project Staging

6.1_ Overview

The project staging explores how each section can be implemented as a stand alone pathway connection. As well as this, a detailed description of each section is outlined, alongside further opportunities and foreseen constraints. Each section is as follows:

Section 1 - Wintle St Beach Car park to Wintle St Reserve

Stage One - Wintle St Reserve to Sellars Reserve

Section 2 - Robert St Stairs to Findlay St

Section 3 - Findlay St to Lincoln Reserve

Section 4 - Lincoln St Coastal Walkway

Section 5 - Jordan St Coastal Walkway

Section 6 - Jordan St to Estuary Drive Coastal Walkway

Section 7 - Estuary Drive Coastal Walkway

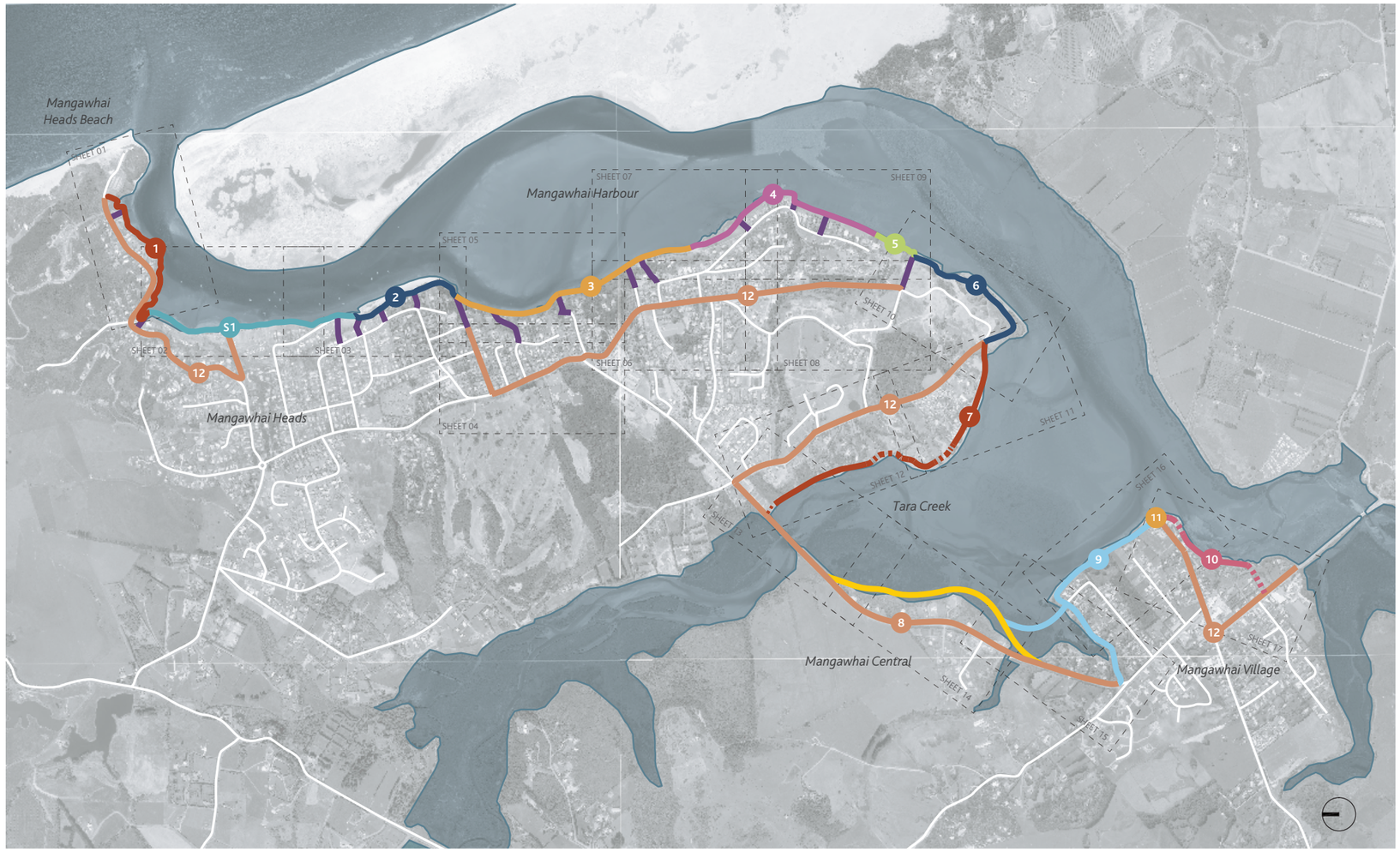
Section 8 - Molesworth Drive

Section 9 - Old Waipu Road to Moir St and Mangawhai Wharf Space

Section 10 - Moir St to Insley St

Section 11 - Mangawhai Wharf Space

Section 12 - Alternative Route



6.2_ Section 1 - Wintle St Beach Carpark to Wintle St Reserve

Executive Summary

This section of the proposed walkway runs the eastern length of Wintle Street, ending when the road intersects with Pearl Street. It includes 4-5m cliffs, sandy beaches, mud flats, rocky coastline and steep to gentle sloping beach access points. During high tide, the majority of the beach is covered in water, leaving a narrow strip of sand in places.

There is currently a sandy/partially gravelled access point at the western side of the car park (walkway route 6). This leads to the beach via track stairs and a steep wooden staircase. There is also another access to the beach at the eastern end of the car park that is currently under repair. The path has a large step / drop at the bottom of the walkway. Another access point exists as a grassed walkway at 75 Wintle Street. (See image 4).

The coastline along Wintle Street is ecologically significant as it has an established colony of nesting pied shags and kingfishers. Herons, gulls, gannets and fairy terns all use the estuary for nesting, foraging or both. At the eastern end of the proposed walkway (1A), the dense low growing shrub provides an ideal habitat for the Moko skink which potentially inhabits the area. A pā site exists on Mangawhai Heads hill east of the car park.

While there are private residences that border Wintle Street, between the private property and coastline lies a strip of council owned land. The land is currently mown grass (assumed maintenance by private residences). Private residences have appropriated some of the land to individual use including boat sheds, boat ramps, BBQ and seating areas.

The chosen path typology for section 1 is directly affected by the path typologies chosen for the individual sections (1A - 1E). For example, if a boardwalk is deemed the best walkway option for section 1C, but no walkway with wayfinding chosen to be the best option for section 1D, there is no point constructing a boardwalk solely for section 1C. However, if 1B, 1D and 1E find that a constructed walkway is the best solution and 1C could be left with no walkway, a constructed walkway would run the length of section 1 to provide a continuous walkway. Section 1 consequently needs to take into consideration the entirety of the section to find the best walkway outcome.

Alternative Route

Wintle Street is the alternative high tide route option if wayfinding markers and no formal pathway is determined to be most appropriate for section one. Wintle St is very narrow in places with tight corners and suffers from over-crowing, especially during peak times. Wintle St will need to be made safe for pedestrians, cyclists and vehicles. Traffic calming interventions are one way to achieve this.

See 6.13_ Alternative Route | Section 12A - Wintle Street Road for more information.

Walkway Connections

The surrounding walkway connections include 6, 7 and 10.

Walkway 6 - begins at Wintle St road as a gravel track with a gentle gradient before becoming steeper employing the use of track stairs. The track ends with a steep, narrow (approx 600 - 800mm) wooden staircase and leads to the beach. This section of the beach is underwater at high tide. The track sits between dense vegetation to the west and open grass to the east at the top, vegetation on both sides as it travels down the hillside. The entrance to the track has two wooden barriers / speed reducing elements that block a clear view of the track.

Walkway 7 - is a mown grass track approx 1 - 2m in width from Wintle St to Picnic Bay beach. The track has a marker located to the east, guiding users along the residents fence line instead of over the grass (private property). The walkway ends in a steep stone / grass bank.

Walkway 10 - is a narrow concrete path (approx 1.5m) between private properties lined by high fences and vegetation. The walkway marker sits in the middle of the path, restricting easy access by prams, wheelchairs, scooters, bikes etc. The concrete path opens up to the estuary and directs users along to the Mangawhai Campground.

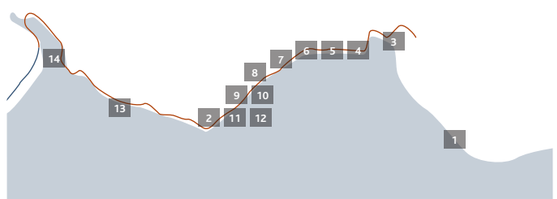


Photo locations are indicative only

1. Mangawhai Heads Hill
2. Looking from the beach below Mangawhai Heads hill across to 50 Wintle Street
3. Beach access alongside 78 Wintle Street from the road
4. Environment under pōhutukawa trees along coastline
5. Mature vegetation meeting beach
6. Pōhutukawas overhanging the beach
7. Under overhanging pōhutukawas
8. Open grass area of public land
9. View back to Mangawhai Heads hill
10. Saltmarsh rush and flax band between grass bank and beach
11. Access to overlooking properties
12. From public grass area looking across to Mangawhai Heads sand dunes
13. Rocky outcrops shelters by pōhutukawas (pied shag nesting site)
14. View of retaining Wintle Street amongst vegetation

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.9.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Wintle to Pearl St
- Stage One
- Archaeological Sites
- Walkway Connections
- Significant Ecological Area
- Fairy Tern Foraging
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO Landscape Architecture / Architectural Design Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
01 WINTLE ST BEACH CAR PARK TO WINTLE ST RESERVE ALTERNATIVE ROUTE 12A

DRAWING NUMBER:
01

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

DO NOT SCALE

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

6.2_ Section 1 - Wintle St Beach Carpark to Wintle St Reserve

Ecological Values and Constraints

- 1A - Natural Character Area - Mainly mature indigenous vegetation. Walkway alignment does not impact on Natural Character Area. Potential to impact on Moko skink habitat. Opportunity to add a formal species information board.
- 1B - Natural Character Area - Mainly mature indigenous forest with pōhutukawa trees overhanging a sandy beach, a stormwater outlet and low tide channel crossing. A formal walkway would have short term construction effects, occupy the foreshore and seabed area and result in habitat modification (potential impacts on moko skinks). Low tide access will largely avoid impacts. Opportunity to repair stormwater outlet and integrate stormwater treatment / water sensitive design options.
- 1C - Private land use extends to coast. Mix of exotic and native vegetation with a salt-marsh rush and flax band at the edge of the sandy beach. A formal walkway would have short term construction effects (terrestrial), small scale vegetation clearance and habitat modification (potential impacts on moko skinks). Low tide access only has potential to cause impacts to benthic invertebrates.
- 1D - Natural Character Area - Mainly mature indigenous forest with a steep gradient, narrow intertidal rock platform with overhanging pōhutukawa that provide roosting habitat for the pied shag. Supports a high diversity and abundance of benthic fauna and foraging habitat for marine and estuarine fish and higher-level predators. The close proximity to the main channel allows for potential marine animals to be present. A formal walkway would have short and long term impacts through disruption of habitats,occupation effects and clearance of vegetation (including pōhutukawa and shag roosting disturbance). Low tide access with no structure would only remove construction effects. Upgrading Wintle street pedestrian access would largely avoid impacts.
- 1E - Low gradient intertidal mud/rock flats and stream mouth crossing. A formal walkway would have short and long term impacts through disruption of habitats, occupation effects and clearance of vegetation (including pōhutukawa, shag roosting and moko skink habitat disturbance). Upgrading Wintle street pedestrian access would largely avoid impacts.

Community Considerations*

- Bird habitats to be maintained and protected - especially the shag colony.
- The Wintle Street reserve inlet supports many of the bird species including ducks, herons, shags, fairy terns and gannets.
- Keep integrity of the sites natural character as intact as possible.
- Opportunity to employ a slower speed limit along Wintle street.
- Opportunity for bike prioritisation, adding bike racks to the Mangawhai Heads car park could potentially reduce the number of cars.

* Note - Community considerations are being primarily addressed by employing a slower speed limit along Wintle St and prioritising cyclists.

Culture and History

- A pā site exists on the tip of Mangawhai Heads hill east of the car park.
- Five main deposits of midden run the length of 1A to 1E.
- There is the possibility that more archaeological sites may be uncovered during the construction of a walkway.

Technical Complexity

- This area covers a section with steep cliffs at the northern extent of the harbour.
- Must traverse the intertidal shore platform which will require boardwalk foundations to be socketed into the rock.
- Properties are located on this section of coastline, which may conflict with the provision of public access in this area.

Cost Considerations

- Will require excessive structures and design.
- A section of boxed steps at the entrance location (1A) and then boardwalk through sections B to E.
- Long sections of structure are required to create coastal connections.

Geology and Natural Hazards

- 1A - 1C - Coastal Cliff - variable sand cover over dacite rock. Potential for a formal walkway and walkway connections.
- 1D - Rocky Coastline - No sand cover and overhanging coastal Pōhutukawa branches. Potential for a formal walkway but too steep for walkway connections. Hazards include overhanging trees and unstable slope.
- 1E - Weathered rock/residual soils adjacent to tidal sand-flats - Potential for a formal walkway but too steep and unstable for walkway connections. Hazards include overhanging coastal Pōhutukawa branches and unstable slopes.

Resource Consenting Requirements

- Resource consent is likely to be required under the Kaipara District Plan for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the performance standards for buildings in the Residential and Rural Zones subject to the East Coast Overlay. Consent may also be required for earthworks and development within an Area of Significance to Māori. The consent is likely to be a restricted discretionary activity.
- Under the Operative Regional Coastal Plan for Northland resource consent will be required for a boardwalk in the Coastal Marine Area (CMA), Marine 1 (Protection) Management Area. The consent will either be a discretionary or non-complying activity.

Note - recreational activities in the foreshore area, that involve structures and result in the destruction of indigenous vegetation, or disturb the roosting, feeding or breeding of indigenous vegetation, is a prohibited activity. A resource consent cannot be obtained for a prohibited activity.

- Under the proposed Regional Plan for Northland resource consent will be required for the erection of a structure and the occupation of the CMA in the Mooring zone and General Marine Area. The activity status of the consent is likely to be a discretionary activity, or non-complying if there isn't a function needed for the structure in the CMA.
- Regional consents may also be required for earthworks and for clearance of vegetation in the CMA or foredune management area.

Walkway Options

*See 5.4_ Walking Typologies

1A

1B

1C

1D

1E

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Community Preferred Options
Feasible Options

Low High

Low High

Design Considerations

The choice of walkway should be suitable for a range of different environments e.g sandflats, overhanging pōhutukawa, rocky cliffs along section one.

Access to the beach should be clearly visible and safe.

Effects including habitat loss and disturbance should be considered; notably the pied shag (declining), kingfisher and pōhutukawa (threatened). The pied shag nest in the pōhutukawa trees and any movement will disturb their habitat.

There is mixed community support for a coastal walkway and what the potential walkway will look like.

Possible enhancement of vegetation between beach and grass area along 1C to increase habitat area and potentially slow erosion rate.

Next Steps

Feasibility of moving the formal walkway to Wintle St. Is the current road suitable for a formal walkway? Is it safe during peak times, especially summer? Are vehicles re-routed to other areas and a shuttle or bus service employed for a pedestrian and bike priority walkway?

Investigations into the feasibility of wayfinding markers along the coast.

Investigations into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

6.3_ Stage One - Wintle St Reserve to Sellars Reserve

Executive Summary

Stage one runs from Wintle Street Reserve to Sellars Reserve. It includes mudflats, sandy beaches, low-lying grassed areas and 2-4m cliff banks with grassed areas.

The walkway crosses the area around the community boat wharf, Alamar Crescent and North Ave boat ramp, Mangawhai Road Car park and Mangawhai Camp-ground. There is a need for formal direction regarding pedestrian movement around the boat ramps.

There is grassed access to Wintle Street Reserve from Wintle Street (adjacent to Pearl Street). Other public access points include Mangawhai Road car park, the community boat wharf, Alamar Crescent and a connection down from Robert Street to Sellars Reserve via a grass walkway and stairs.

The existing vegetation and dunes are important for erosion control and the local wildlife. The vegetation provides an opportunity to encourage more bird-life including fairy terns.

Two middens have been identified along this length of walkway, the proposed alignment of the walkway will not impact the Wintle Street Reserve midden. Any development around the camp-ground/Mangawhai Road car park should be aware of the midden on the camp-ground.

Alternative Route

Wintle Street and Mangawhai Heads Road is the proposed alternative route. Wintle St is very narrow in places with tight corners and suffers from over-crowing, especially during peak times. Wintle St will need to be made safe for pedestrians, cyclists and vehicles. Traffic calming interventions are one way to achieve this. Mangawhai Heads Road currently has no formal footpath on either side.. The existing car park is gravel with no formalised parking or edging.

See 6.13_ Alternative Route | Section 12A - Wintle Street Road for more information.

Walkway Connections

The surrounding walkway connections include 13 / 14.

Walkways 13 / 14 - are two connected walkway tracks that lead to Alamar Crescent. 13 starts at Harbourview St and includes a wayfinding marker and a grass walkway. As the walkway moves between properties, it narrows and steepens, becoming a gravel track. 14 begins on Wharfedale Crescent where the road curves. A wayfinding marker is recessed back off the road to where the track begins and is surrounded by vegetation. The track runs relatively straight downhill before connecting with 13. The walkway continues as a gravel track with occasional track stairs until reaching Alamar Crescent.

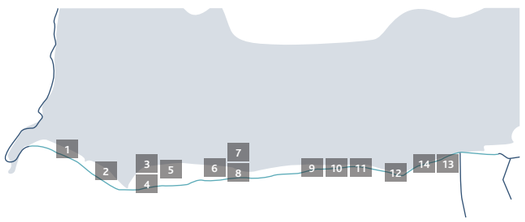


Photo locations are indicative only

1. Pearl Street inlet with Mangawhai Camp-ground to the left
2. Bridge over stream between camp-ground and playground
3. Significant salt-mash and dune low lying vegetation
4. Salt-mash reeds with poor condition sand dunes and waka ama storage
5. Mangawhai Heads Road carpark
6. Public land between inlet and camp-ground with seat in the foreground
7. Boat wharf on Alamar Crescent with boat and trailer car parking
8. Boat wharf
9. Eastern side of Alamar Crescent
10. Alamar Crescent with seating and pōhutukawa on public land and perpendicular gravel parking
11. Alamar Crescent public land
12. North Ave and Alamar Crescent boat ramp with information boards
13. End of Stage One with staircase leading up to Robert St
14. North Ave carpark with seating

1. Boat ramp car parking
2. Mangawhai Boating and Fishing Club
3. Boat wharf
4. Opportunity for public toilets (general area)
5. No public access through campground
6. Mangawhai Heads Holiday Park
7. Car park
8. Sandy beach
9. Existing bridge
10. Mangawhai Heads Holiday Park
11. Potential walkway would need a bridge
12. Low tide option only (over sandy area)
13. Wintle Street Reserve
14. Drain / Stormwater outlet
15. Look out / road reinforcing
16. Low tide option only
17. Traffic calming interventions along sections of Wintle Street

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Wintle to Pearl St
- Stage One
- Archaeological Site
- Walkway Connections
- Significant Ecological Area
- Fairy Tern Foraging
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
02 WINTLE ST RESERVE TO SELLARS RESERVE ALTERNATIVE ROUTE 12A

DRAWING NUMBER:
02

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.3_ Stage One - Wintle St Reserve to Stellar's Reserve

Community Considerations

- Walkway left as a short grass strip/keep as natural as possible.
- Do not put a raised pedestrian crossing across the boat ramp unless pedestrians are instructed to give way to boats launching.
- The Wintle Street reserve inlet supports many of the bird species including ducks, herons, shags, fairy terns and gannets.
- Wintle Street reserve is used for family sports, gatherings and visitors.
- Keep integrity of the natural character of the site as intact as possible.
- A formal path will disrupt/break up the recreational spaces.
- Protect the wildlife, possibility to enhance area for terns and gannets.
- Create a formal path along the western side of Alamar Crescent through to camp-ground.
- Suitable walkway surface for pushchairs, bikes, scooters and elderly.
- Pedestrian pathway design needs a wide berth around boat ramp for safety reasons. Reversing boats need speed and have impaired line of sight. No pedestrian crossing there.
- Need for new toilet block next to or near the boat club.
- Reduce traffic speed along Alamar Crescent.

Geology and Natural Hazards

- Portions of the foreshore have erosion prevention structures created from rocks and concrete.
- Beach areas are formed by tidal sand-flats.
- Parts of the section have 2-4m elevated grass banks which form an unofficial pathway / recreation area.

Ecological Values and Constraints

- The proposed walkway crosses a section of sandy beach in front of the camp-ground that have small patches of salt-marsh and dunes that extends to the community boat wharf at Alamar Crescent and Wintle Street Reserve.
- Tidal flats adjacent to the area described above have been identified as a Significant Ecological Area due to the high quality shellfish beds and ecosystem services, habitat and foraging resources they provide.
- The walkway crosses mown grass on the upper banks between the community boat wharf and Alamar Crescent and North Avenue corner.
- There were high numbers of community engagement surrounding this length of the walkway due to the presence of the camp-ground and the boat wharf.
- A bridge at the camp-ground to cross the existing stream would have short term construction effects and have an impact on the habitat - potential disruption of moko skinks.
- An informal, wayfinding marked walkway gives the opportunity to formalise access in a minimal way and enhance the dunes for a positive effect.

Culture and History

- Midden sites exist at the northern end of Mangawhai camp-ground by Wintle Street Reserve and to the south of Mangawhai Road car park.

Technical Complexity

- This area covers a section of relatively low coastline with grassed backshore being used by the Mangawhai Heads Holiday Park and has a sandy fronting beach. An on grade walkway (aggregate or concrete) could be provided through this section which will require limited design and will provide a simple solution.

Cost Considerations

- Flat terrain with limited variation.

Resource Consenting Requirements

- Under the Kaipara District Plan resource consent is likely to be required for earthworks, indigenous vegetation removal and for a boardwalk not meeting the building performance standards for the Residential Zone subject to Overlays (East Coast and Harbour). Consent may also be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- No Coastal Consents will be required if there are no works in the CMA.
- Regional consents may be required for earthworks and clearance of vegetation in the foredune management area.

Walkway Options

▲ ▲ ▲ Community preferred options
● ● ● Feasible Options

Community Preferred Options
Feasible Options
Low ▲ ▲ ▲ ● ● ● High

Alignment Overview

Community Support ● ● ○ ○ ○

Geotechnical Complexity ● ○ ○ ○ ○

Ecological Complexity ● ● ● ○ ○

Cultural and Historical Significance ● ○ ○ ○ ○

Technical Complexity ● ○ ○ ○ ○

Resource Consenting Complexity ● ● ● ○ ○

Cost Considerations ● ○ ○ ○ ○

Low ⟷ High

Design Considerations

Grass areas may need to be graded in places to serve as a suitable walkway.

Access to the beach should be clearly visible and safe.

There is strong community agreement to keep the grass areas free of a constructed formal walkway and enhance pedestrian accessibility along Alamar Crescent (creating a formal walkway to the boat ramp from walkway number 13 / 14).

Wayfinding markers should be consistent and clearly visible.

Walkway accessibility for prams, bikes, scooters, elderly etc.

Protection of existing flora and fauna with investigations into enhancing nesting and natural areas.

Next Steps

Consideration of constructed areas being accessible for all current and future users.

Redesigning the community boat wharf area suitable for both boaties and pedestrians.

Lift and fill in holes around picnic areas, especially around Sellars Reserve.

Investigate moving walkway to the western (residential) side of Alamar Crescent to retain integrity of eastern side.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

6.4_ Section 2 - Robert St Stairs to Findlay St

Executive Summary

Section two starts from the southern end of Sellars Reserve where the walkway connection leads up to Robert Street to the walkway connection to Findlay Street. North to south, this section significantly increases in height to 20m and is covered in scrub and native vegetation that includes pōhutukawa and kānuka. The tip of the coast between walkways 17 and 19 has been identified as a Natural Character Area.

This section has four existing walkway connections. Currently, a mown grass walkway runs the length between the top of the cliff and private properties connecting the existing walkways. The connections and walkway along the cliff tops offers users the ability to access parts of the beach / reserve at high tide. Access around the tip of the coast is limited to low tide use only. The coastline consists of sandy beach and smooth rock with a worn and pitted surface.

There is a seam of a midden sites next to the walkway number 17.

Walkway Connections

The surrounding walkway connections include 15, 16, 17 and 18.

Walkways 15 - is a grass path approximately 2m wide between two residences with high fences and vegetation. The entrance to the walkway has two metal barriers to slow movement, however they are placed less than 300mm apart leaving it impossible for bikes, prams, wheelchairs etc to enter or exit. There is a small wayfinding marker to the left of the walkway entrance.

Walkway 16 - is very similar to walkway 15 in characteristics, however it is bordered by high fences on each side. It has narrow access barriers and is of similar width. There is a small wayfinding marker to the left of the walkway entrance.

Walkway 17 - travels through Robert St Reserve on the corner of Robert St and Wood St. The street side is uninviting with 'no camping' signs posted. There is an informal single lane gravel path to informal parking with low wooden fencing. The reserve is relatively small, approx 10m in width and has a rugged feel to it.

Walkway 18 - is a short sandy walkway that connects to walkway 19. It is situated at the end of Robert St and is not well sign posted.

Walkways 15, 16, 17, 18 and 19 are connected by a mown grass accessway along the top of the cliff in front of private properties. The grass walkway ranges from a narrow path with dense exotic vegetation to a wide open reserve with no property boundaries. Local residents, with no physical barriers along their property boundaries, struggle with walkway users crossing private properties and have erected large signs to mitigate this.

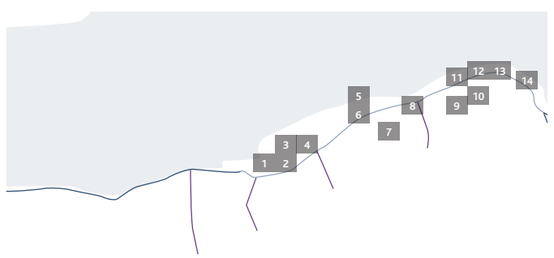


Photo locations are indicative only

1. Grass walkway splitting into two paths to Robert St looking south west
2. Steep grass walkway to Robert St to the north west
3. Wooden track stairs with handrail looking north down to Stellars Reserve and car park
4. View of wooden track stairs from beach with native vegetation and housing on top of the cliff
5. Metal and wooden stairs from beach to cliff through bush the
6. Grass with sand on beach
7. Seat sitting on cliff top looking north
8. Sandy beach looking at headland
9. Approx 1-2m wide grass walkway with vegetation, this walkway runs the length of the coast and fluctuates in width and vegetation density
10. Bench on top of cliff overlooking the sandspit
11. View south from sandy beach with vegetation
12. Photo from base of cliff looking at existing vegetation
13. View south west at rocky headland
14. Rock formations at headland

Wood Street
Pinewood Place
Holiday Crescent
North Ave
Wharfedale Crescent
Alamar Crescent
Robert Street
SHEET 04
SHEET 05
SHEET 02
S1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

1. Connections to walkway 19
2. Robert Street Reserve
3. Metal stairs from Robert St to beach
4. Low tide option only
5. Existing undulating grassy walkway, narrow in some areas
6. Two metal barriers forms a very narrow entrance tot his connection (approx 300mm wide)
7. Alleyway is approx 2-3m wide
8. Sandy beach
9. Water outlet
10. Existing public toilet block
11. Sellars Reserve
12. Mangawhai Wildlife Refuge Reserve
13. Sandy beach
14. Existing undulating grass area

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Stage One
- Robert Stairs to Findlay St
- Walkway Connections
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
03
ROBERT ST STAIRS TO FINDLAY ST

DRAWING NUMBER:
03

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.4_ Section 2 - Robert St Stairs to Findlay St

Community Considerations

- A walkway would be a good way to mitigate erosion effects and slipping.
- A surface other than the current grass would help with slipping and the instability of the current walkway.
- Connections leading to the walkway need repair, especially the stairs.
- Need better connection to the beach.
- Reduce traffic speed.

Geology and Natural Hazards

- The tidal flats are connected by 20m high Pleistocene age sand dunes with intermediate slopes of loose sand.
- Steeper dune faces mostly vegetated by intermediate slopes of unvegetated loose sand.
- Steep dune slopes are prone to shallow erosion and slumping with a build up of loose sand.
- Face of dunes are prone to frittering and shallow slumping, generally following heavy or prolonged rainfall.

Ecological Values and Constraints

- Mixed coastal broad-leaf shrub-land and kānuka dominant shrub-land on high banks/cliff. Gives an opportunity to enhance vegetation and mitigate weeds.
- Sandy beach and dune at the foot of bank identified as a Natural Character Area.
- Towards the southern end of Robert Street the coastal margin grades to a more established coastal broad-leaf pōhutukawa forest,identified as a Natural Character Area due to both the quality of vegetation and minimal human mediated changes or structures.
- Rocky shore at headland at base of cliff.
- Pathway to follow upper bank on mown grass area behind scrub with connection through coastal forest to Findlay St.
- Proposed walkway currently goes through a Natural Character Area between 13E and 13F. Recommendation to realign walkway to streets.

Culture and History

- Seam of midden located by the walkway connection 13E.

Technical Complexity

- This section can be split into two separate segments with the first being an unvegetated / mobile sand dune area on an easterly orientated coastline where a simple walkway solution is possible. However, the existing informal track already provides adequate access.
- The second segment is on steeper terrain which will require a combination of staircases, boardwalk and box steps adding complexity.

Cost Considerations

- The first segment could be done for a relatively low cost being a walkway with limited design required.
- However, the second segment on steeper terrain will require more intensive design.

Resource Consenting Requirements

- Under the Kaipara District Plan resource consent is likely to be required for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the building performance standards for the Residential zones subject to the Harbour overlay. Consent may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be a restricted discretionary.
- Under the Operative Regional Coastal Plan for Northland consent will be required if a boardwalk is required in the CMA Marine 4 (Controlled Mooring) Management Area. This is a discretionary activity.
- Under the proposed Regional Plan for Northland consent will be required for the erection of a structure and the occupation of the CMA, in the Mooring zone and General Marine Area. The activity status of the consent is likely to be a discretionary activity, or it will be a non-complying activity if there is not a function needed for the structure to be in the CMA.
- Regional consents may be required for earthworks and clearance of vegetation in the CMA or foredune management area.

Walkway Options

▲ ▲ ▲ Community preferred options
● ● ● Feasible Options

Community Preferred Options
Feasible Options
Low ▲ ▲ ▲ ● ● ● High

Alignment Overview

Community Support ● ● ● ○ ○

Geotechnical Complexity ● ● ● ○ ○

Ecological Complexity ● ● ● ○ ○

Cultural and Historical Significance ● ○ ○ ○ ○

Technical Complexity ● ● ● ○ ○

Resource Consenting Complexity ● ● ● ● ○

Cost Considerations ● ● ● ○ ○

Design Considerations

Grass areas will need to be maintained to be suitable as walkways.

Access to the beach should be clearly visible and safe through the existing connections. Clear distinctions between private and public property needs to be made.

Wayfinding markers should be consistent and clearly visible with notices / information about low tide only access.

Next Steps

Consideration of constructed areas surrounding access of all current and future users.

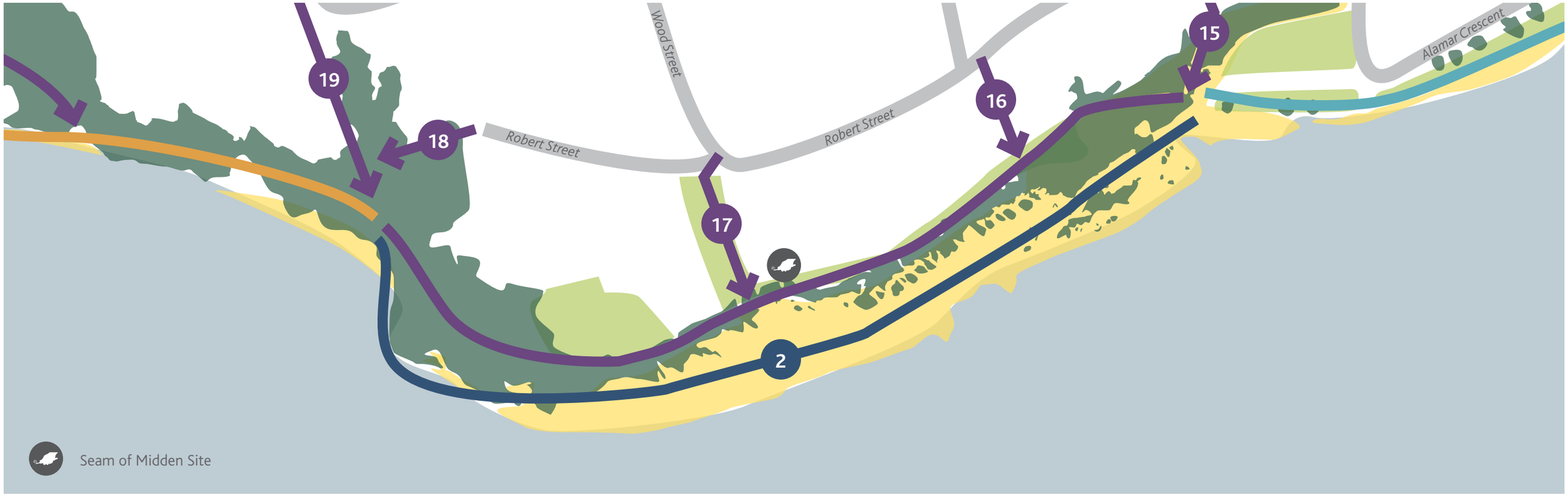
Detailed investigation into the existing connections.

Opportunity to enhance the existing connections and cliff top walkway.

Section 2 route leaning towards low tide access only with wayfinding markers.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Low ◄——► High



6.5_ Section 3 - Findlay St to Lincoln Reserve

Executive Summary

Section 3 runs from Findlay Street walkway connection to the northern end of Lincoln Street. The beach is a combination of sandy, shelly and muddy sections. The beach is only accessible during low tide and has been appropriated as private boat and kayak storage. A wooden ramp has been installed at the base of the walkway connection 23.

The area includes a range of 2-20m high sandstone cliffs with Natural Character Areas. Pōhutukawa, kānuka and shrub-land creates the majority of vegetation in this area. The vegetation extends up until the coastline and in most places hangs over the water during high tide. The adjacent sand-flats are classified as a Significant Ecological Area.

There is poor visual and physical connections between the coastline and road network.

Several midden sites have been identified along section 3A of the proposed coastal walkway.

Alternative Route

A proposed alternative route begins at Findlay St, connecting to walkway 19 and follows Findlay St to Molesworth Drive, turning off at Moir Point Road. The alternative route continues until turning off at Devon St and ending at the existing cul- de-sac.
Currently the route has a mix of formed pathways and informal road edges. There are no cycle routes.

See 6.14_ Alternative Walkway | Section 12B - Findlay St to Devon St.

Walkway Connections

The surrounding walkways that connect the beach to the streets include 19, 20, 21, 22 and 23. Some of these are currently under observation and are in various states of quality.

Walkway 19 - has a small wayfinding marker that is recessed back from the road that is just visible along Findlay St. It is a steep gravel track with poor drainage that traverses through existing coastal vegetation. The track employs the use of stairs which connects to a narrow (approx 500mm wide) wooden staircase at the base of the cliff before joining the beach.

Walkway 20 - access to the walkway begins off Eveline St with a paved private driveway leading down to a small look out area. The walkway starts with relatively new wooden stairs and ramp with handrail before becoming a steep grass track cut into the hillside. The walkway has drainage in the form of plastic pipes and sandbags failing in some places. The walkway finishes in another steep wooden ramp with handrails.

Walkway 21 - off Heather St, the walkway begins at the end of the cul-de-sac and is a formal walkway constructed form a concrete stairs. The walkway has a metal handrail and vegetation on both sides. The vegetation on the west side, opposite the handrail overhangs the walkway and encroaches on walking space. A lot of dropped vegetation is swept to this side of the walkway.

Walkway 22 - is at the end of Breve St and is tucked in behind existing vegetation. There is a small wayfinding marker. The walkway consists of a dirt / gravel track with track stairs and large rocks along the edge, the track becomes muddy during winter. Gabion retaining has been employed to help with track erosion.

Walkway 23 - sits on the corner of Cheviot Street between two properties. A wayfinding marker sits back from the road and users have to cross driveways to access the walkway. The walkway is a grass / dirt / sandy track that is bordered by high fences at the Cheviot St end before widening with a water outlet and is bordered by dense vegetation that narrows again into a steep track.

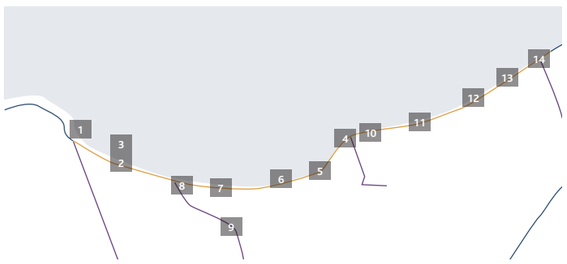
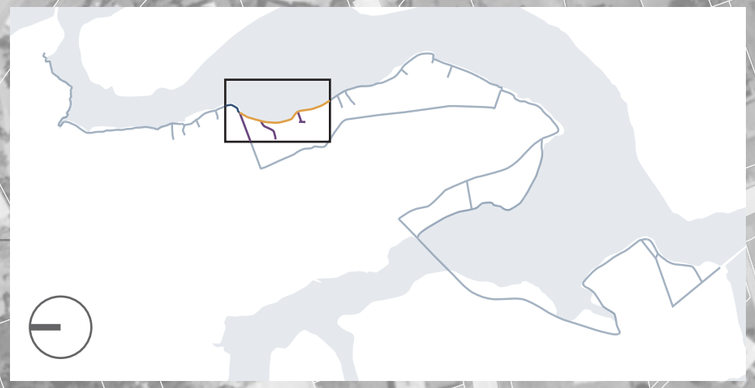


Photo locations are indicative only

1. View from headland across to the beach
2. Narrow wooden staircase going up hill to track staircase with overhanging pōhutukawa
3. View from under overhanging pōhutukawas across to sand-spit
4. Rocks and pōhutukawa around base of a walkway connection
5. Shelly beach with overhanging pōhutukawas
6. Sandy beach with native vegetation looking north
7. See 6, looking south
8. Recently constructed steep wooden ramp, boat stored along the length of the coast with native vegetation
9. View across the sandflats from cliff top
10. Sandy beach with native vegetation looking north
11. Sand flats looking south to Lincoln St with overhanging pōhutukawas
12. Sand flats looking south east to sand spit
13. Rock groynes with native vegetation
14. Kayak storage along the coastline with rock groynes and access down to the sand flat



Eveline Street

SHEET 04

Findlay Street

12B

Albert Street

Robert Street

20

21

19

18

3A

3B

2

SHEET 06

SHEET 07

SHEET 03

1. Low tide access only
2. Concrete stairs with metal handrail, wide footpath, overhanging vegetation
3. Shelly beach
4. Paved access road
5. Wooden steps and steep ramp with hand rail
6. Low tide access only
7. Steep wooden ramp with hand rails leading to steep grass path
8. Steep Gravel walkway, used to be sandy, poor drainage
9. Steep, narrow wooden stairs with hand rail, leads to track stairs (gravel, no hand rail)
10. Rocky headland
11. Low tide access only

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Robert Stairs to Findlay St
- Walkway Connections
- Findlay St to Lincoln Reserve
- Alternative Route
- Archaeological Site
- Significant Ecological Area

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
05
FINDLAY ST TO LINCOLN RESERVE

DRAWING NUMBER:
05

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.5_ Section 3 - Findlay St to Lincoln Reserve

Community Considerations

- Major concern for erosion.
- Keep the natural character of this section.
- Access from Eveline Street needs maintenance.
- Potential for a boardwalk.

Geology and Natural Hazards

- Wave cut foreshore platforms of sandstone backed by 2-4m cliffs. The sandstone has high erosion resistance.
- Walkway structures are required to cross typically uneven rocky platforms.
- The sandy foreshore has a limited beach at high tide.
- There are a few notable overhanging and large trees.
- Large pōhutukawa extend approximately 10m over the tidal zone.
- Tidal sand-flats with adjoining typically lower lying grass areas with residential permanent and holiday home housing.

Ecological Values and Constraints

- The area between Eveline St and Breve Street are identified as a Natural Character Area due to the mature pōhutukawa forest including some pines and shrub-land.
- The base of the cliffs are dominated by intertidal sand-flats. The sand-flats on both sides of the channel have been identified as Significant Ecological Areas, although both areas are underutilised by foraging birds.
- The cliff bases have also been reinforced with large rock rip-rap and rock groynes for erosion protection. The adjacent sandflats have been identified as a Significant Ecological Area.
- The proposed walkway is to be low/most tide access with a high tide walkway to follow Moir Point Road.

Culture and History

- There are currently six identified midden sites along section 3. They are grouped between Findlay and Heather Street.

Technical Complexity

- This section is made up of embayed coastline where the backshore is readily available for access. However, this is at a low elevation and will likely be lost during high tide, to the extent that to have an all tide access route the only solution would be a large length of boardwalk extending out into the water.

Cost Considerations

- High cost associated with boardwalk structures.

Resource Consenting Requirements

- Under the Kaipara District Plan consent is likely to be required for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the building performance standards for the Residential Zone subject to the Harbour overlays. Consents may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- No coastal consents will be required if there are no works in the CMA.
- Regional Consents may be required for earthworks and clearance of vegetation in the CMA or foredune management area.

Walkway Options

Community preferred options
Feasible Options

3A

3B

Community Preferred Options
Feasible Options

Low High

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Design Considerations

Access to the beach should be clearly visible and safe through the existing connections. Clear distinctions between private and public property needs to be made.

Wayfinding markers should be consistent and clearly visible with notices / information about low tide only access.

Section 2 route recommended to be low tide access only with wayfinding markers.

Protection of existing flora and fauna with investigations into enhancing natural areas.

Next Steps

Existing infrastructure is significant and will need to be investigated in concept design.

Consideration of constructed areas surrounding access for all current and future users.

Detailed investigation into the existing connections.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Low ⟷ High

6.6_ Section 4 - Lincoln St Coastal Walkway

Executive Summary

Section four is parallel to Lincoln Street, running the length of the street and is predominantly flat, formed by mown grass verges and sand-flats. The land is relatively low with some places falling under the high-tide mark. This has allowed for saltwater and rainwater to encroach on the grass verge and pool in high tide / storm / rainfall events.

Being susceptible to erosion, this area has had extensive work when compared to other sections of the walkway. The majority of sea walls in this section are significantly degraded and are needing repair. Groynes from rock formations are helping to reduce erosion impacts. Housing in this area will be at risk of rising sea levels if not already impacted.

There are two public boat ramps along Lincoln Street. Both of these connect to the proposed walkway. The Lincoln Street Reserve boat ramp has a significant car park, a shallow sloped boat ramp, local fairy tern information boards and a small bridge over the small river to the south of the car park. The boat ramp and car park to the south are smaller, the boat ramp is steeper and has been dug into the bank. (See photo 8).

The grass verge that runs between residential properties and the sand-flats is council land. 10 Breve St property boundary extends out into the estuary.

Alternative Route

There is a paper road that connects Devon St to Jordan St. Currently, Devon St finishes in a cul-de-sac with a steep walking track connecting Devon St to Moir Point Road. Jordan St and the surrounding development is under construction with new footpaths and connections. The alternative route 12C currently crosses swamp land / dense vegetation / ponds.

See 6.15_ Alternative Walkway | Section 12C - Devon St to Jordan St Paper Road.

Walkway Connections

The surrounding walkways that connect the beach to the streets include 24, 25, 26 and 27.

Walkway 24 - is a very informal grass walking track between two residents off Devon St and includes a small wayfinding marker. The walkway exists onto Cheviot St and is easily missed as the wayfinding marker is recessed from the road and the entrance visually obstructed by vegetation.

Walkway 25 - connects Cheviot Street to Lincoln Street and begins from Cheviot Street with a wayfinding marker at the end of a gravel driveway. The track continues through to Lincoln Street exiting via wooden stairs with handrails traversing the hill face.

Walkway 26 - is an extremely narrow, visually and physically obstructed walkway that begins at Cheviot Street cul-de-sac. The walkway winds behind the existing properties and through the vegetation. The wayfinding maker is located at the base of the hill and is recessed approximately 50m from the road behind property fences. Users then use a gravel driveway to reach Lincoln Street.

Walkway 27 - starts at Lincoln Street and is a straight, narrow, concrete walkway between residences that finishes along the grass walkway of section 4.

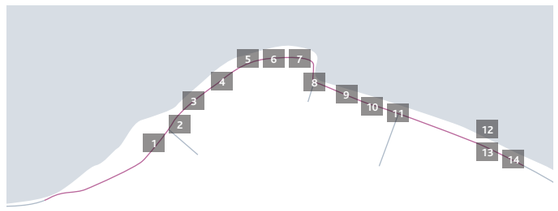


Photo locations are indicative only

1. Lincoln Street carpark looking north towards Mangawhai Heads
2. The existing condition of the stream with bridge
3. Current boat ramp from Lincoln Street carpark
4. Erosion control with groynes
5. Failed erosion control with netted barrier
6. Open public land between sandflats and houses. Note ground level is below high-tide. Looking north
7. Looking south from photo 6
8. Boat ramp condition at 13K. Has access for vehicles to drive onto the sandflats
9. Benches with existing vegetation
10. Looking north to 13K boat ramp and carpark
11. 13L connection to Lincoln Street
12. Grasses growing by groynes
13. Current vegetation before houses begin along section four
14. Looking south past groynes to overhanging pōhutukawa trees

1. Car parking with informal boat ramps to sand flats, potential enhancement of access and car park / formalising entry
2. Wooden bridge across small stream
3. Fairy tern and wildlife signage
4. Lincoln St Reserve
5. Potential new playground and toilet block (general area)
6. Gravel access to private properties
7. Grass walkway between properties, informal entrance, connects to SW outlet / stream, narrow track
8. Private property extends past the coastline
9. Wooden track stairs with wooden hand rail, gabion retaining, muddy and rocky
10. Sandy beach

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Walkway Connections
- Findlay St to Lincoln Reserve
- Lincoln St
- Car Park
- Archaeological Site
- Identified entry / connection spaces
- Significant Ecological Area

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
07
JORDAN ST COASTAL WALKWAY

DRAWING NUMBER:
07

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.6_ Section 4 - Lincoln St Coastal Walkway

Community Considerations

- No written feedback submitted

Geology and Natural Hazards (Same as section three)

- Wave cut foreshore platforms of sandstone backed by 2-4m cliffs. The sandstone has high erosion resistance.
- Walkway structures are required to cross typically uneven rocky platforms.
- The sandy foreshore has a limited beach at high tide.
- Tidal sand-flats with adjoining typically lower lying grass areas with permanent residential and holiday home housing.

Ecological Values and Constraints

- The walkway passes through dense vegetation to mown grass.
- A stream runs along the boundary of the Lincoln St Reserve car park.
- Between the two boat ramps, the riparian margin is currently within coastal inundation zones with high tide debris to the property boundary.
- The grass area is predominantly halophytic herbfield.
- The coastal margin is vegetated by salt-marsh rushes and sedges and is prone to erosion. Broken concrete and debris has been used for erosion control.
- Between the small boat ramp and the beginning of section five, the riparian margin is a grass verge with small sandy beaches formed by rock groynes and small sections of sea walls.
- A grassed pathway with no physical structures would have minimal effect.
- Enhancing the bridge over the car park stream would have short term effects and potential moko skink habitat modification.

Culture and History

- There are no significant cultural sites in this section.

Technical Complexity

- Wayfinding being the most appropriate solution due to coastal inundation during high tides.
- Relatively flat site with the section being made up of the same appropriate solutions throughout.

Cost Considerations

- Limited structural design required with majority of work being anything from simple wayfinding posts through to full concrete pathways.

Resource Consenting Requirements

- Consent is likely to be required under the District Plan for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the building performance standards for the Residential Zone subject to the Harbour. Consent may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- No coastal consents will be required if there are no works in the CMA.
- Regional Consents may be required for earthworks and stream crossings (if required).

Walkway Options

▲ ▲ ▲ Community preferred options
● ● ● Feasible Options

Community Preferred Options
Feasible Options
Low ▲ ▲ ▲ ● ● ● High

Alignment Overview

Community Support ● ● ● ● ○

Geotechnical Complexity ● ○ ○ ○ ○

Ecological Complexity ● ● ○ ○ ○

Cultural and Historical Significance ● ● ○ ○ ○

Technical Complexity ● ○ ○ ○ ○

Resource Consenting Complexity ● ● ● ○ ○

Cost Considerations ● ○ ○ ○ ○

Design Considerations

Creating a physical connection between Lincoln St Reserve and section 3B that does not encroach on private property (low tide access).

Wayfinding markers along the existing grass walkway.

Integration with existing environment and fauna nesting and foraging.

Next Steps

Further investigations into Fairy tern nesting sites and foraging areas before undertaking Concept Design.

Investigate herb fields, flooding and erosion issues along grass area.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Low ⟷ High

6.7_ Section 5 - Jordan St Coastal Walkway

Executive Summary

The Jordan Street coastal connection section is a short section of walkway that is already significantly developed. This section continues from the last property in section four where the grass verge finishes and becomes sand-flat. From here, the proposed walkway would wrap along the coast before joining with an existing walkway.

From the north, the existing walkway starts with a short, steep concrete pad, connecting the sand-flat to a boardwalk / bridge section that is elevated into the cliff. The boardwalk connects to a path that has been cut into the bank and has a gravel surface. (See picture 3).

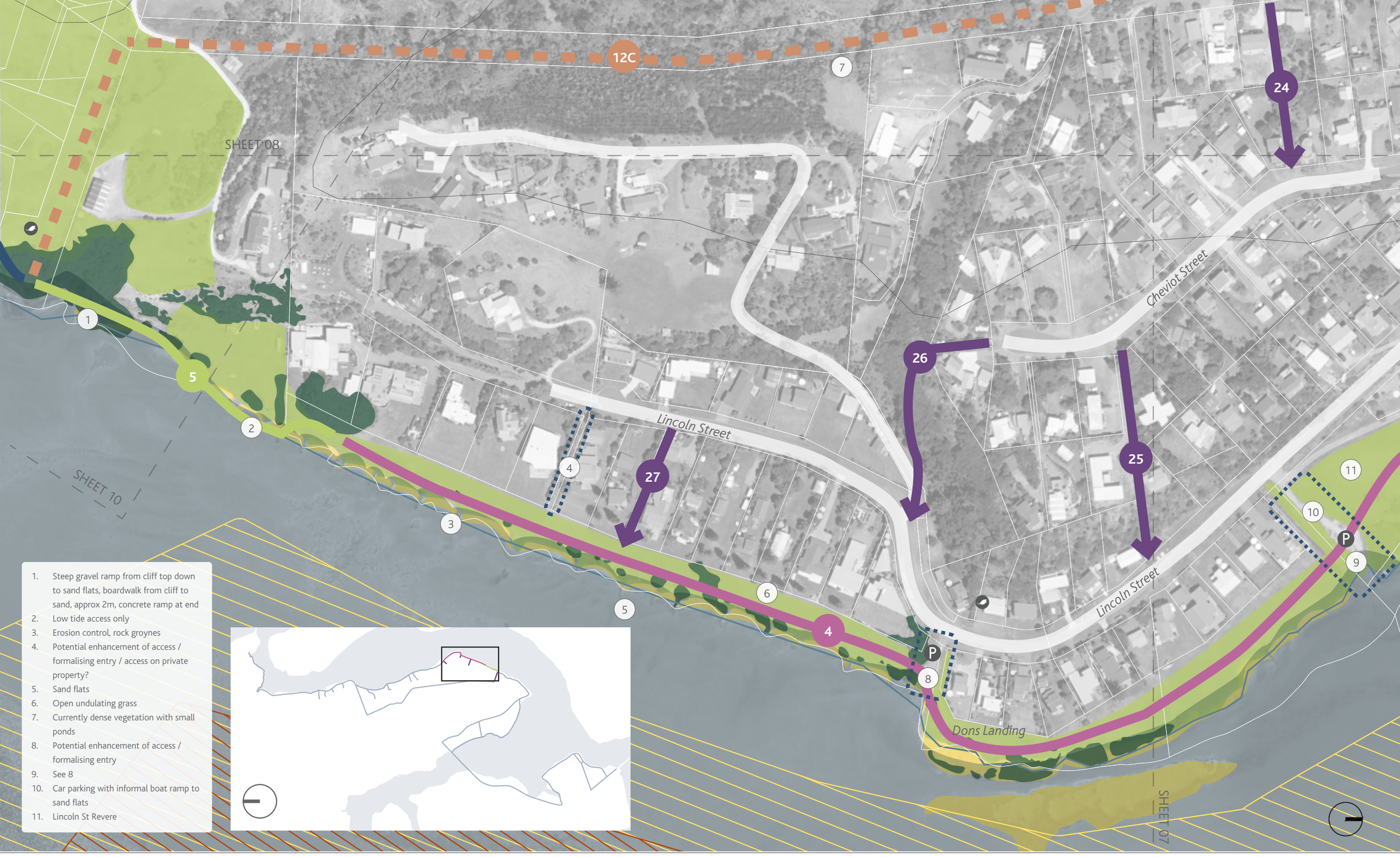
Land to the south of section five is under development for a new housing section. This is currently under construction. The majority of roads and footpaths have been constructed.

Alternative Route

See 6.15_ Alternative Walkway | Section 12C - Devon St to Jordan St Paper Road and 6.6_ Section 4 - Lincoln St Coastal Walkway

Photo locations are indicative only

1. Existing vegetation
2. View from top of cliff across to sand dunes and houses
3. Constructed walkway down to sandflats
4. Bridge section down to sandflats
5. Sandflats with vegetation
6. View back up boardwalk bridge with vegetation
7. Concrete connection from bridge to sandflats
8. View from sandflats of walkway and cliff
9. Sandflats with overhanging pōhutukawas facing north
10. Photo further north of sandflats and overhanging pōhutukawas
11. Same as photo 9, looking south
12. Sandflats in the foreground with narrow stream outlet. A few mangroves are established here
13. Under-story of overhanging pōhutukawas
14. Root and trunk structure of pōhutukawas, provides a good roosting habitat



1. Steep gravel ramp from cliff top down to sand flats, boardwalk from cliff to sand, approx 2m, concrete ramp at end
2. Low tide access only
3. Erosion control, rock groynes
4. Potential enhancement of access / formalising entry / access on private property?
5. Sand flats
6. Open undulating grass
7. Currently dense vegetation with small ponds
8. Potential enhancement of access / formalising entry
9. See 8
10. Car parking with informal boat ramp to sand flats
11. Lincoln St Revere

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Walkway Connections
- Alternative Route
- Lincoln St
- Jordan St
- Jordan St to Estuary Dr
- Car Park
- Archaeological Site
- Significant Ecological Area
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
09 Jordan St Coastal Walkway Alternative Route 12C

DRAWING NUMBER:
09

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.7_ Section 5 - Jordan St Coastal Walkway

Community Considerations

- No written feedback submitted

Geology and Natural Hazards (Same as section three)

- Wave cut foreshore platforms of sandstone backed by 2-4m cliffs. The sandstone has high erosion resistance.
- Walkway structures are required to cross typically uneven rocky platforms.
- The sandy foreshore has a limited beach at high tide.
- There are a few notable overhanging and large trees.
- Large pōhutukawa extend approximately 10m over the tidal zone.
- Tidal sand-flats with adjoining typically lower lying grass areas with residential permanent and holiday home housing.
- Southern section has 5-18m high slopes with Pakiri formation sandstone weathered to varying degrees. There is no beach here at high tide.

Ecological Values and Constraints

- Low-lying intertidal sand-flats .
- The edge of the coastal cliff is dominated by mature pōhutukawa that most likely provide a roosting habitat.
- The existing stream mouth is gravel bottomed with a few established mangroves.

Culture and History

- There are no significant cultural sites in this section.

Technical Complexity

- Steep terrain with vegetated cliffs.
- No landward esplanade or access to this section which adds complexity making boardwalk the only appropriate solution.
- Standard boardwalk design required with easy low tide access for construction.

Cost Considerations

- Coast associated with boardwalk structures in a CMA environment with limited access.

Resource Consenting Requirements

- Consent likely to be required under the District Plan for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the building performance standards for the Residential Zone subject to the Harbour Overlay. Consent may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- Regional Consent may be required for earthworks.

Walkway Options

Community preferred options
Feasible Options

Community Preferred Options
Feasible Options

Low — High

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Design Considerations

Impacts a formal walkway would have on the existing environment, especially the pōhutukawa trees and saltmarsh.

How to suitably integrate a walkway into the existing structures.

Next Steps

Before Concept Design commences, a detailed investigation will need to be made into the safety of the current existing walkway and ramp down the cliff face.

Feasibility of a boardwalk that will connect Section 4 to section 6. An all tide access will allow for the new development to have access to Lincoln Reserve.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

6.8_ Section 6 - Jordan St to Estuary Drive Coastal Walkway

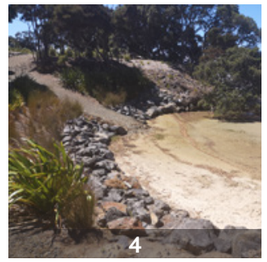
Executive Summary

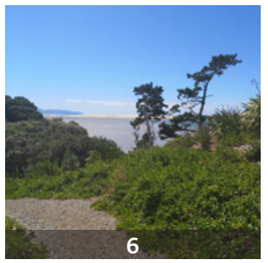
The proposed coastal walkway will feed into this section as a walkway has been recently designed and constructed. The new walkway follows the cliff edge around a proposed housing development. The majority of surrounding vegetation has been cleared for the new development with the exception of significant pōhutukawa trees. These trees overshadow large areas of the coast and provide vital habitat areas. New coastal vegetation has been planted alongside the walkway and frames both sides of the path. The walkway is constructed from a gravel aggregate.

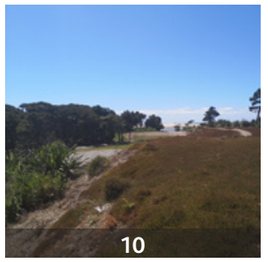
The walkway passes by a pā site acknowledged through sculptural design and planting.

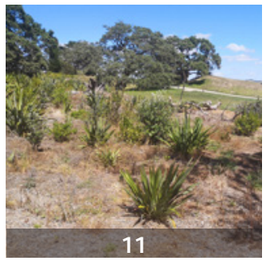
The entrance to this section off Estuary Drive is a gravel / shell walkway with a pou whenua to guide the user. After the pou whenua, the walkway passes under a pōhutukawa tree that blocks the rest of the walkway from view. (See photo 13).

This section between Jordan Street and Estuary Drive is a new housing development site. The majority of roads and footpaths have been constructed and a few houses are currently under construction.









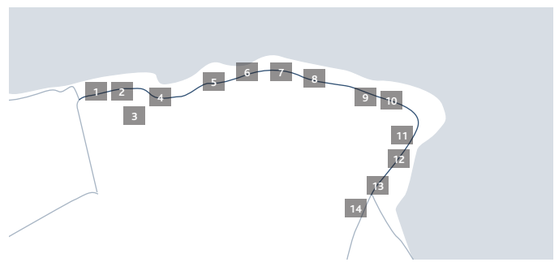
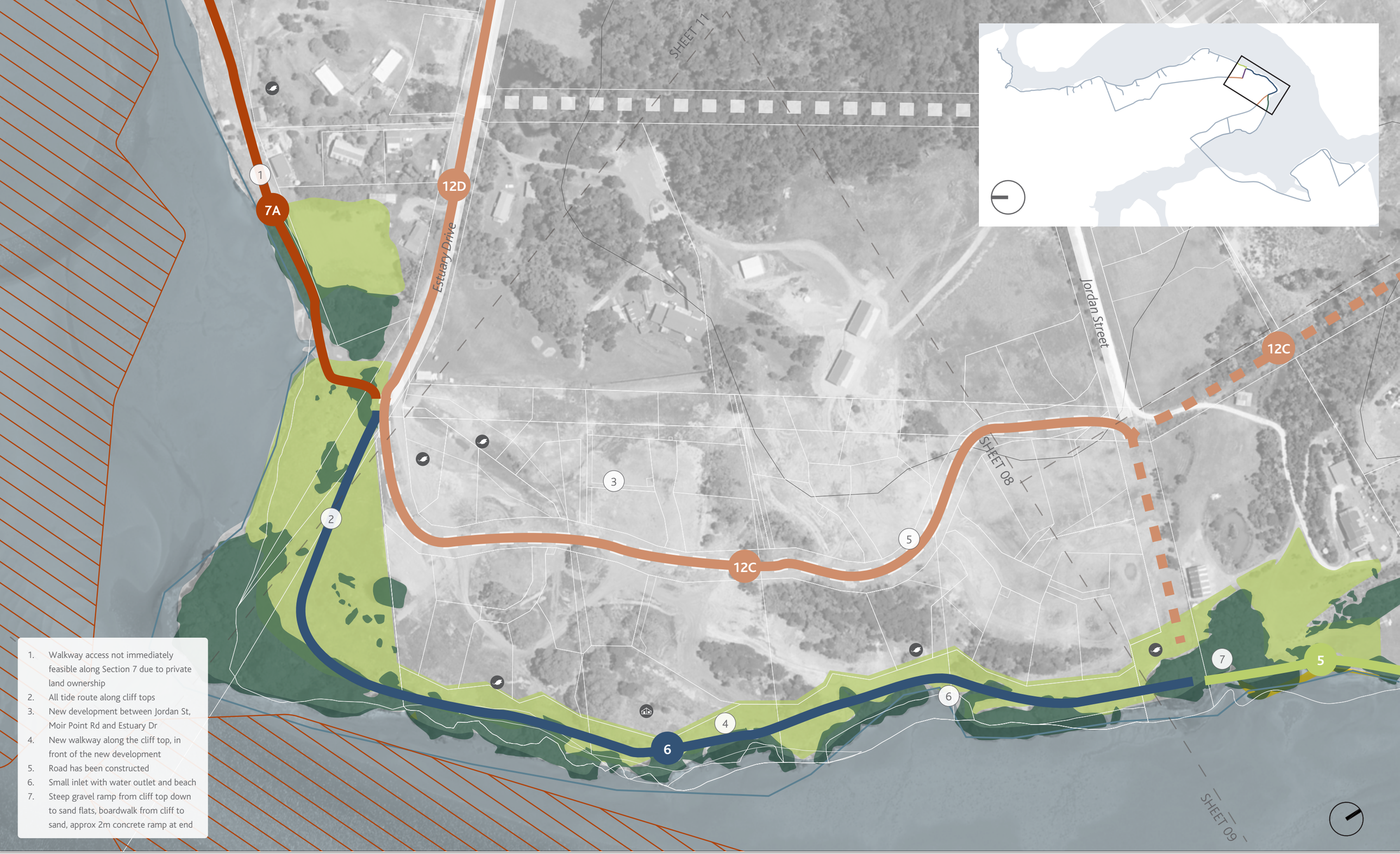


Photo locations are indicative only

1. New gravel path implemented with new vegetation at the northern end of section six
2. New gravel and coastal vegetation looking north
3. Looking south from photo 2 with open grass area to the right of the walkway - potentially part of housing development
4. Small beach inlet - significant planting, retaining and erosion control
5. Gravel path to photo 4
6. Gravel path with more established coastal vegetation, mainly taupata
7. Gravel path along top of cliff with low-lying vegetation
8. Staircase to northern path and pa site
9. Walkway looking south
10. Walkway looking north
11. Coastal vegetation
12. Start of walkway by Estuary Drive with pou whenua
13. Formal entrance from Estuary Drive with pou whenua and pōhutukawa tree
14. Coastal walkway signpost and new road with footpath



1. Walkway access not immediately feasible along Section 7 due to private land ownership
2. All tide route along cliff tops
3. New development between Jordan St, Moir Point Rd and Estuary Dr
4. New walkway along the cliff top, in front of the new development
5. Road has been constructed
6. Small inlet with water outlet and beach
7. Steep gravel ramp from cliff top down to sand flats, boardwalk from cliff to sand, approx 2m concrete ramp at end

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Walkway Connections
- Alternative Route
- Private Property/ Undeveloped
- Jordan St
- Jordan St to Estuary Dr
- Estuary Dr
- Pa Site
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
10
JORDAN ST TO EASTUARY DRIVE COASTAL WALKWAY

DRAWING NUMBER:
10

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.8_ Section 6 - Jordan St to Estuary Drive Coastal Walkway

Community Considerations

- No written feedback submitted

Geology and Natural Hazards

- This section has 5-18m high slopes with Pakiri formation sandstone weathered to varying degrees. There is no beach here at high tide.

Ecological Values and Constraints

- This section of the walkway is mainly coastal forest cliff headland. There are remnants of coastal forest that are identified as natural character areas however, the majority of the vegetation has been felled for a new development block.
- Pōhutukawa trees along the cliff edge have remained.
- There is a formed walkway along the cliff top to Estuary Drive.
- As extensive vegetation clearance has already been undertaken, efforts should be made to preserve remaining vegetation.

Culture and History

- As a prominent, elevated headland, two pā sites and four middens with possible terracing have been located along the coastline.

Technical Complexity

- Walkway is newly formed around recent subdivision.
- Aggregate track renewal limiting complexity.
- Follows cliff edge.

Cost Considerations

- Long section of track.

Resource Consenting Requirements

- Resource Consent is likely to be required under the District Plan for earthworks and indigenous vegetation removal, in the Residential Zone subject to the Harbour Overlay. Consent may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- Regional Consents may be required for earthworks.

Walkway Options

▲ ▲ ▲ Community preferred options
● ● ● Feasible Options

Community Preferred Options
Feasible Options
Low ▲ ▲ ▲ ● ● ● High

Alignment Overview

Community Support
● ○ ○ ○ ○

Geotechnical Complexity
● ○ ○ ○ ○

Ecological Complexity
● ○ ○ ○ ○

Cultural and Historical Significance
● ● ○ ○ ○

Technical Complexity
● ○ ○ ○ ○

Resource Consenting Complexity
● ● ○ ○ ○

Cost Considerations
● ● ○ ○ ○

Design Considerations

Does the existing walkway need additional design / features?

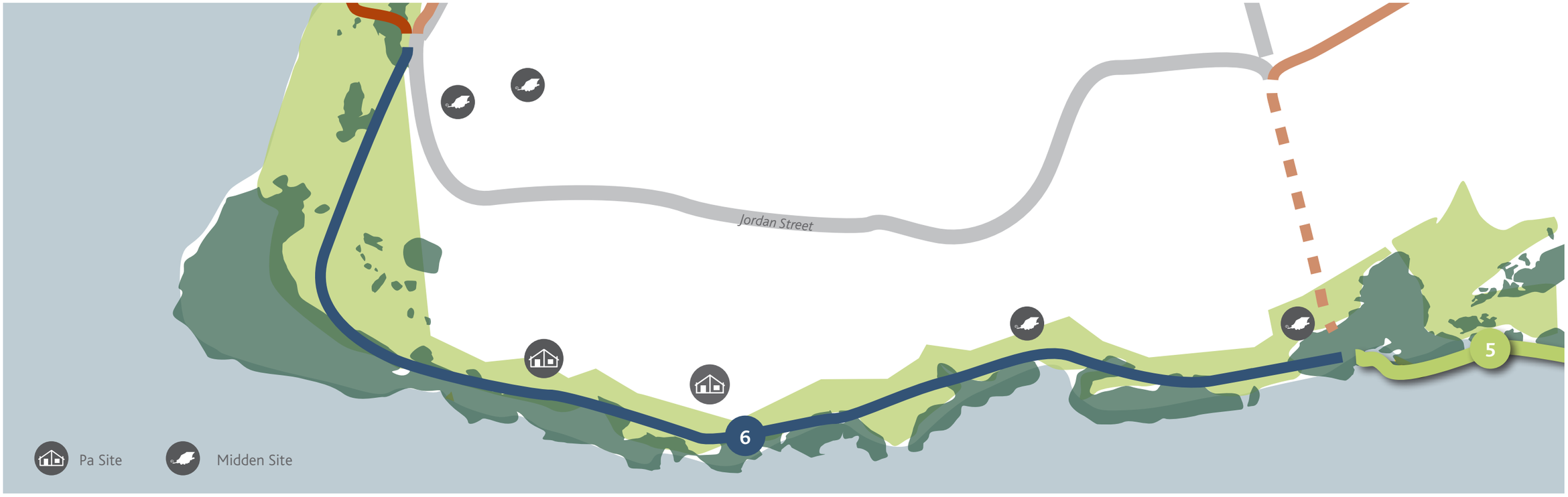
The opportunity to enhance the entrance from Jordan St (recently constructed section) to the walkway (this currently has a plastic sign tied to post).

Next Steps

Investigate existing walkway and wayfinding features around the site.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Low ⟷ High



6.9_ Section 7 - Estuary Drive Coastal Walkway

Executive Summary

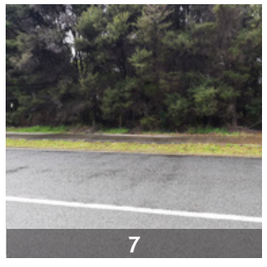
This section of the proposed walkway crosses both private and public land. (Dotted line represents private land). Due to property ownership, the coastal walkway will run along Estuary Drive instead. Photos 1 - 11 represent where the walkway could connect along Estuary Drive. A walkway currently exists on the northern side of Estuary Drive however, it does not run the entire length of the road.

The land is relatively flat and has significant native vegetation growth. Exotics also populate this area. A grass area runs along from 7A-7C and 7F. 7D and 7E are predominantly dense vegetation.

Alternative Route

The alternative route travels along Estuary Drive from Jordan St to Molesworth Drive. The road is a mix of informal road edges with no footpath, new roading with footpaths and old road with concrete footpaths. The footpath begins from the new Jordan St road on the coastal side, finishes at the Estuary Road then begins again at the Estuary Road and Moir Point Road intersection, on the inland side of the road.

See 6.16_ Alternative Walkway | Section 12D - Estuary Drive Road.



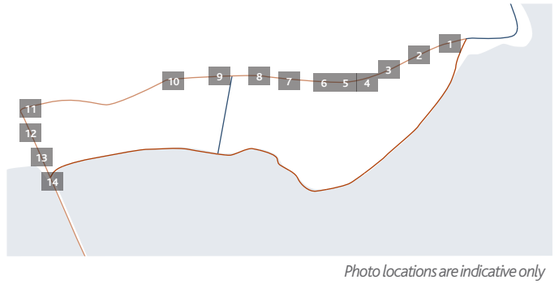


Photo locations are indicative only

1. New roading from Jordan St joining Estuary Dr, narrow walkway on the coastal side of the road
2. View down a driveway to the water
3. Obstructed view to the water with hedging
4. Native vegetation section along Estuary Road
5. Estuary Road Reserve, no footpath
6. View along Estuary Dr with no footpath
7. View along Estuary Dr with footpath
8. See 7
9. Road with formalised edges and grass berm between road and footpath along Estuary Dr
10. View along Estuary Dr to new development
11. View from Molesworth Dr looking down Estuary Dr with footpath on left hand side only
12. View from Molesworth Dr across to section 7 walkway with existing vegetation, residences and sandflats
13. See 12
14. Showing coastal environment and threshold with existing vegetation

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1. Walkway access not immediately feasible along Section 7 due to private land ownership (dotted line)

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Alternative Route
- Estuary Dr
- Estuary Dr Private Property
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
11 ESTUARY DRIVE COASTAL WALKWAY ALTERNATIVE ROUTE 12D

DRAWING NUMBER:
11

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

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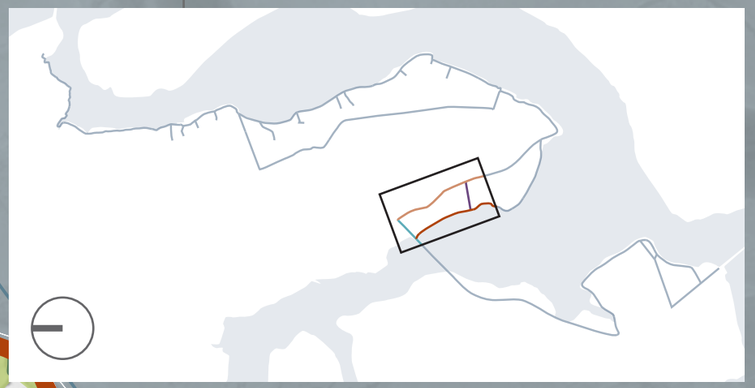


SHEET 11

7D

7E

7F

2

3

8

Molesworth Drive

Estuary Drive

12D

SHEET 13

2. Walkway access not immediately feasible along Section 7 due to private land ownership (dotted line)
3. 80 km/h along Molesworth Drive, speed limit to drop with new Mangawhai Central development

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Walkway Connections
- Alternative Route
- Estuary Dr
- Estuary Dr Private Property
- Molesworth Dr

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
12 ESTUARY DRIVE COASTAL WALKWAY ALTERNATIVE ROUTE 12D

DRAWING NUMBER:
12

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.9_ Section 7 - Estuary Drive Coastal Walkway

Community Considerations

- A waterfront path is a good idea.
- There is concern about the riparian rights of properties and difficulties getting consent/easements from private land owners.

Geology and Natural Hazards

- Wave cut foreshore platforms of sandstone backed by 2-4m cliffs. The sandstone has high erosion resistance.
- Walkway structures are required to cross typically uneven rocky platforms.
- The sandy foreshore has a limited beach at high tide.
- There are a few notable overhanging and large trees.
- Large pōhutukawas extend approximately 10m over the tidal zone.
- Tidal sand-flats with adjoining typically lower lying grass areas with permanent residential and holiday home housing.
- Approximately 10m high steep sand slope with recent slumping present. Mainly exotic vegetation, including pines.
- Sand-flats adjacent to low-lying (approx 20m) vegetated coastal strip with moderate slopes behind.

Ecological Values and Constraints

- 7A- Moirs Point and Mangawhai Beach Hideaway Park are important tourist attractions. Vegetation includes mown grass with a strip of coastal sedges interspersed with pōhutukawas. Grassed walkway with no physical structures will have little to no ecological impacts.
- 7B- Mown grass with riparian strip and large pōhutukawa trees. Low density residential area that a walkway will have low impact around. Avoid native vegetation removal.
- 7C- Mown areas with lawn up to sandy tidal beach and some coastal sedges. Residential developments reach down to the shoreline.
- 7D- Private land extends to the coast with variable amenity planting including predominantly mature natives. Dense salt-marsh is growing in a 1-2m band on edge grading to sandy beach. Avoid native vegetation removal.
- 7E- Mānuka scrub grading to salt-marsh. Potential vegetation clearance for sightlines and access. Habitat modification can cause and issue with existing fauna.
- 7F- Salt-marsh and mangroves.

Culture and History

- There are two middens along this section of walkway.

Technical Complexity

- Section would comprise of many different components from aggregate pathway on relatively flat grassed backshore through to boardwalk structures extending out into the estuary to navigate around steep terrain and private properties.

Cost Considerations

- Boardwalk structures involved in CMA with access difficulties.
- Overall long section.

Resource Consenting Requirements

- Resource Consent is likely be required under the District Plan for earthworks and indigenous vegetation removal, in the Residential Zone subject to the Harbour Overlay. Consents may be required for earthworks and development within an Area of Significance to Māori. The activity status of the consent is likely to be restricted discretionary.
- Regional Consents may be required for earthworks and a stream crossing (if required).

Walkway Options

Community preferred options
Feasible Options

7A

7B

7C

7D

7E

7F

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Design Considerations

Due to the technical, ecological and private property requirements and constraints, section 7 would most likely be removed and section 12D would become the main walkway.

Next Steps

Investigation into whether section 7 is possible to have a walkway.

Investigate section 12D for pedestrian and cycle walkways.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Community Preferred Options
Feasible Options
Low High

Low High

Walkway across private property (dotted)

6.10_ Section 8 - Molesworth Drive

Executive Summary

The proposed Molesworth Drive coastal walkway runs alongside Molesworth Drive on an existing track. The walkway is currently a gravel, single lane track on a steep bank with coastal vegetation on the seaward side and grass between track and road.

The speed limit on Molesworth Drive is currently 80km/h for the majority of the road. The speed limit and road layout will be changing when the new Mangawhai Central development is established.

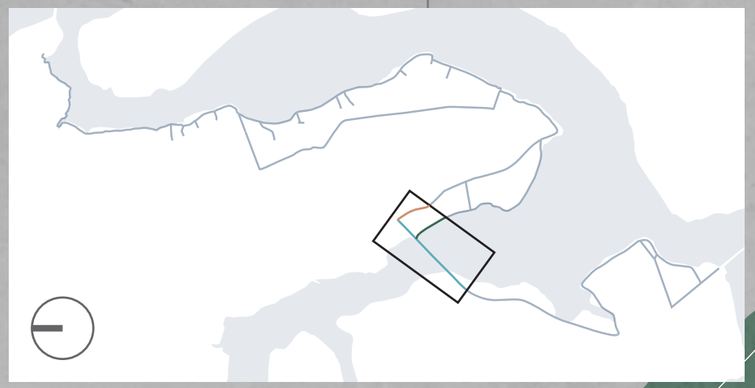
Any proposal will likely be encompassed as a roading network project.

Walkway Connections

An existing walkway runs along the coastal edge of Molesworth Drive with private residences between the walkway and the road. The walkway currently finishes at the existing jetty. A proposed boardwalk follows the property boundary up through existing mangroves and joins back along Molesworth Drive. (See dotted yellow line).

Photo locations are indicative only

1. Looking south east down Molesworth Dr from Estuary Dr intersection, no walkway on either side of road
2. Looking south east down Molesworth Dr with informal gravel path along 80km / h road
3. Looking north west from bridge up Molesworth Dr
4. Current bridge condition, narrow wooden walkway
5. View from bridge across to mangroves
6. Current condition along Molesworth Dr with vegetation and single gravel track, path sits approx 0.5 -1m above road
7. See 6
8. See 6
9. Track narrows to a very thin track with road barriers and vegetation
10. Track opens up, still narrow, road barriers end
11. Track is wider and sits at the same general level as the road, separated by grass and dirt berm
12. Track is wider and more formalised, still gravel with mainly grass berm
13. Gravel track begins to head into Mangawhai Village
14. Track becomes an approx 1.8m concrete walkway



Molesworth Drive

8

1

2

3

7F

7E

12D

Estuary Drive

SHEET 12

SHEET 14

1. Gravel track alongside road, no formal walkway, sits approx 1m above the road level, narrows to single track
2. Narrow pedestrian access over bridge on east side only
3. Gravel track alongside road, no formal walkway, feels very unsafe, no physical barrier between track and road

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Alternative Route
- Estuary Dr
- Estuary Dr Private Property
- Molesworth Dr
- Archaeological Site

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
13
MOLESWORTH DRIVE

DRAWING NUMBER:
13

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

DO NOT SCALE
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Kathu Drive
Old Waipu Road
Molesworth Drive
Sunlea Lane
SHEET 16
SHEET 14
8
5
7
6
9C
1
9D
2
3
9B
4
P
9A

1. Currently opened - walkway to be tidied for public use
2. Small wooden bridge, no hand rail
3. Undulating grass space
4. Steep gravel and concrete boat ramp
5. Gravel track alongside road, no formal walkway, sits approx 1m above the road level, narrow to single track
6. Potential opportunity for walkway through mangroves, all tides access
7. Proposed Back Bay boardwalk

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Molesworth Dr
- Old Waipu Dr to Moir St
- Archaeological Site
- Proposed Back Bay Boardwalk

CONSULTANTS:

RESILIOSTUDIO
Landscape Architecture / Architectural Design
Permaculture / Social Innovation

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALIST
MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
15
MOLESWORTH DRIVE

DRAWING NUMBER:
15

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

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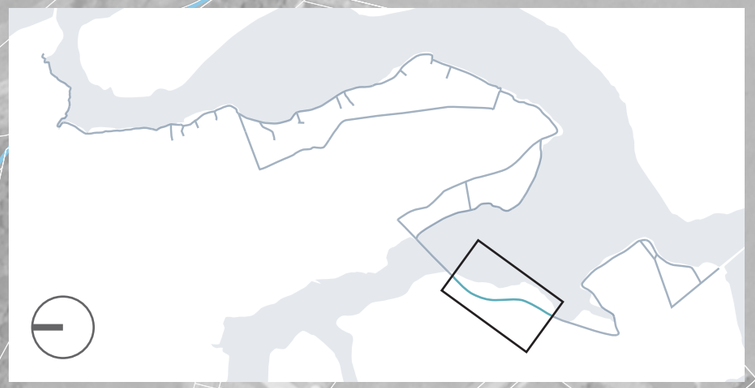


Molesworth Drive

Sunlea Lane

8

9

9C

10

11

SHEET 15

SHEET 13

8. Proposed Back Bay boardwalk
9. Existing jetty
10. Existing Back Bay walkway
11. Gravel track alongside road, no formal walkway, sits approx 1m above the road level, narrows to single track

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Molesworth Dr
- Old Waipu Dr to Moir St
- Existing Back Bay Walkway
- Proposed Back Bay Boardwalk

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
14
MOLESWORTH DRIVE

DRAWING NUMBER:
14

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

DO NOT SCALE
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

6.10_ Section 8 - Molesworth Drive

Community Considerations

- The path should be concreted from the Mangawhai Activity Zone (MAZ) through to Pearson Street.
- The road between the village and the heads is not safe and is too narrow for cyclists and prams.

Ecological Values and Constraints

- Molesworth Drive and the crossing of Tara Creek is likely to be confined to the existing roading network.
- While there is an existing track through the mangroves called the 'goat track', there are limited opportunities for continuing along the waters edge.
- This section has not been ecologically assessed as there is already and existing walkway.

Geology and Natural Hazards

- Sand-flats with mangroves are backed by 3-4m high sand cliffs. Lower portions of cliff are weakly supported and uncemented. The upper, approx 1m, is well cemented.
- Cliff remains mostly intact with variable erosion protection measures. The cliffs typically have trees, often pōhutukawa which have fallen down in some places.
- There are grassed areas at an elevation less than 3m adjacent to muddy sand-flats with mangroves.
- Underlying soils are muddier due to their location in inlet.

Cost Considerations

- Involvement with roadway so will require more intensive design.
- Structure across main arm of the estuary will be expensive.

Technical Complexity

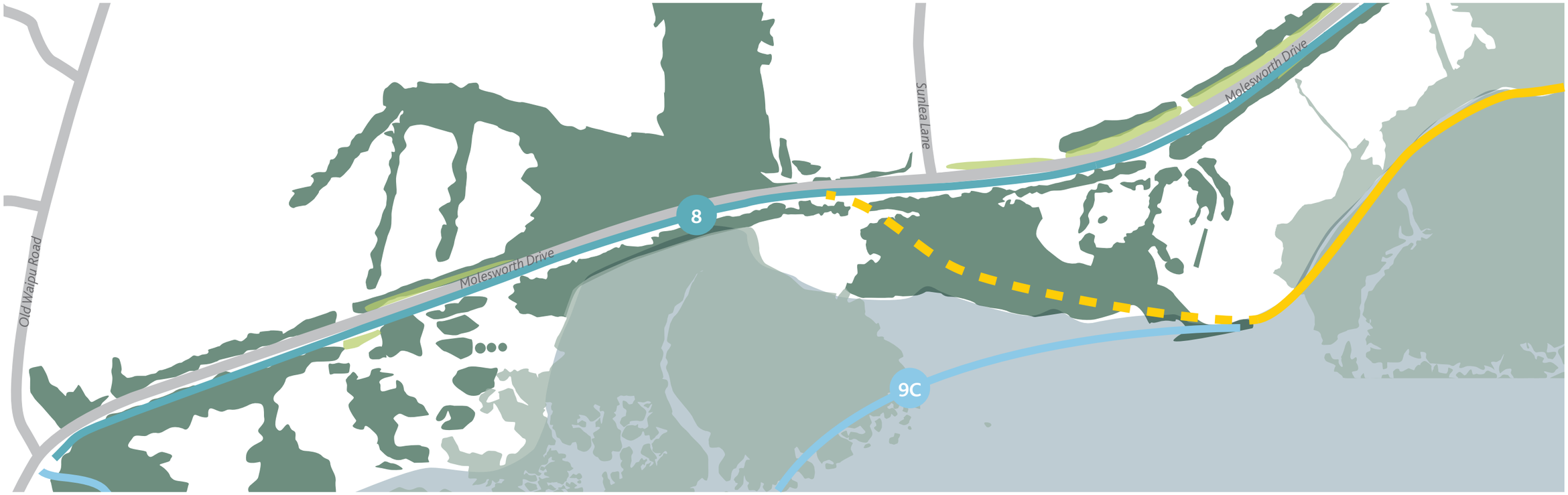
- Concrete or aggregate walkway alongside roadway adds complexity due to safety considerations such as buffer zones, safety barriers between pedestrians and vehicles on a main arterial road.
- Connection of a structure to bridge or widening of road bridge required to achieve a consistent level of service for this section of the walkway.
- Retrofitting of road bridge may be required.

Culture and History

- There are no recorded significant cultural sites in this section.

Resource Consenting Requirements

- Resource Consent may be required under the District Plan for earthworks and indigenous vegetation removal in road reserve (that takes on the zoning of the adjacent Zone). The activity status of the consent is likely to be restricted discretionary.
- Regional Consents may be required for earthworks.



Walkway Options

▲ ▲ ▲ Community preferred options
● ● ● Feasible Options

Community Preferred Options
Feasible Options
Low ▲ ▲ ▲ ● ● ● High

Alignment Overview

Community Support ● ● ○ ○ ○

Geotechnical Complexity ● ● ○ ○ ○

Ecological Complexity ● ● ● ● ○

Cultural and Historical Significance ● ○ ○ ○ ○

Technical Complexity ● ● ● ● ●

Resource Consenting Complexity ● ● ○ ○ ○

Cost Considerations ● ● ● ● ●

Design Considerations

There is limited space across the bridge.

Mangawhai Central is in the planning phase and will be constructed in the near future. This will increase traffic. Speed limit set to decrease to 50km / h.

Increase traffic, pedestrians and cyclists with Mangawhai's projected population growth and popularity as a holiday destination.

Possible extension of the Molesworth Drive walkway continuing in both directions to the village and to the heads.

Next Steps

Investigations into whether it is possible to have separate cycle and pedestrian paths.

Detailed investigations in the narrow sections of Molesworth Drive such as the bridge area.

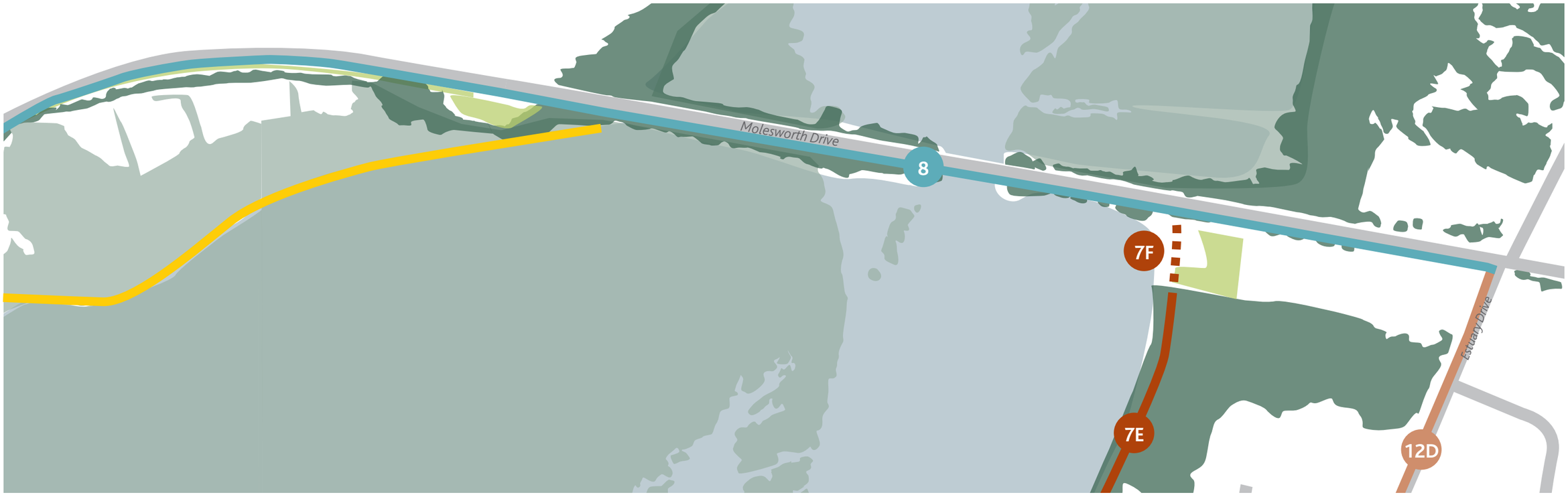
Investigations into providing Mangawhai a cycling network.

Assess the wide range of current users of Molesworth Drive.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

Low ◄——► High

■ ■ ■ ■ Walkway across private property (dotted)



6.11_ Section 9 - Old Waipu Dr to Moir St

Executive Summary

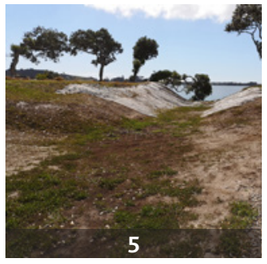
This section of the proposed walkway crosses both private and public land. (Dotted line represents private land). The proposed walkway runs along the top of the coastline and has established pockets of activity and reserves but has limited inviting connections between these points of engagement.

9A runs from the Mangawhai Tavern to Kainui Street. This section of the coastal walkway is relatively well established and is highly used especially during summer. The walkway predominantly sits on top of the cliff and narrows around the Mangawhai Tavern, before widening significantly. There are multiple stormwater outlets along this section that now have wooden bridges with handrails over them. Pearson St Reserve has water pipes running out to the coast. This is currently causing the reserve to sink in places, exacerbated by vehicular movement which have free movement along the northern end of section 9A.

9B is less traversed as there is currently no thoroughfare. The grass walkway continues but narrows and is more privatised with surrounding residences appropriating the coastal edge. Fruit trees have been planted along this section for the public to help themselves.

9C gives an opportunity to create a boardwalk through the mangroves to connect to Molesworth Drive.

9D is currently on private land. At the time of writing this document, this section of the walkway is under construction to link 9B to Molesworth Drive.



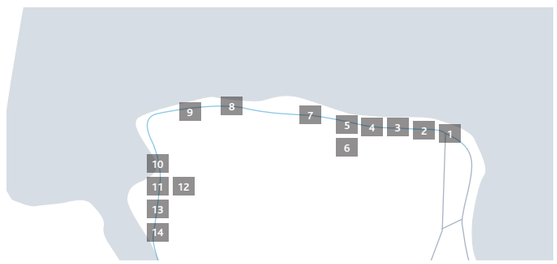
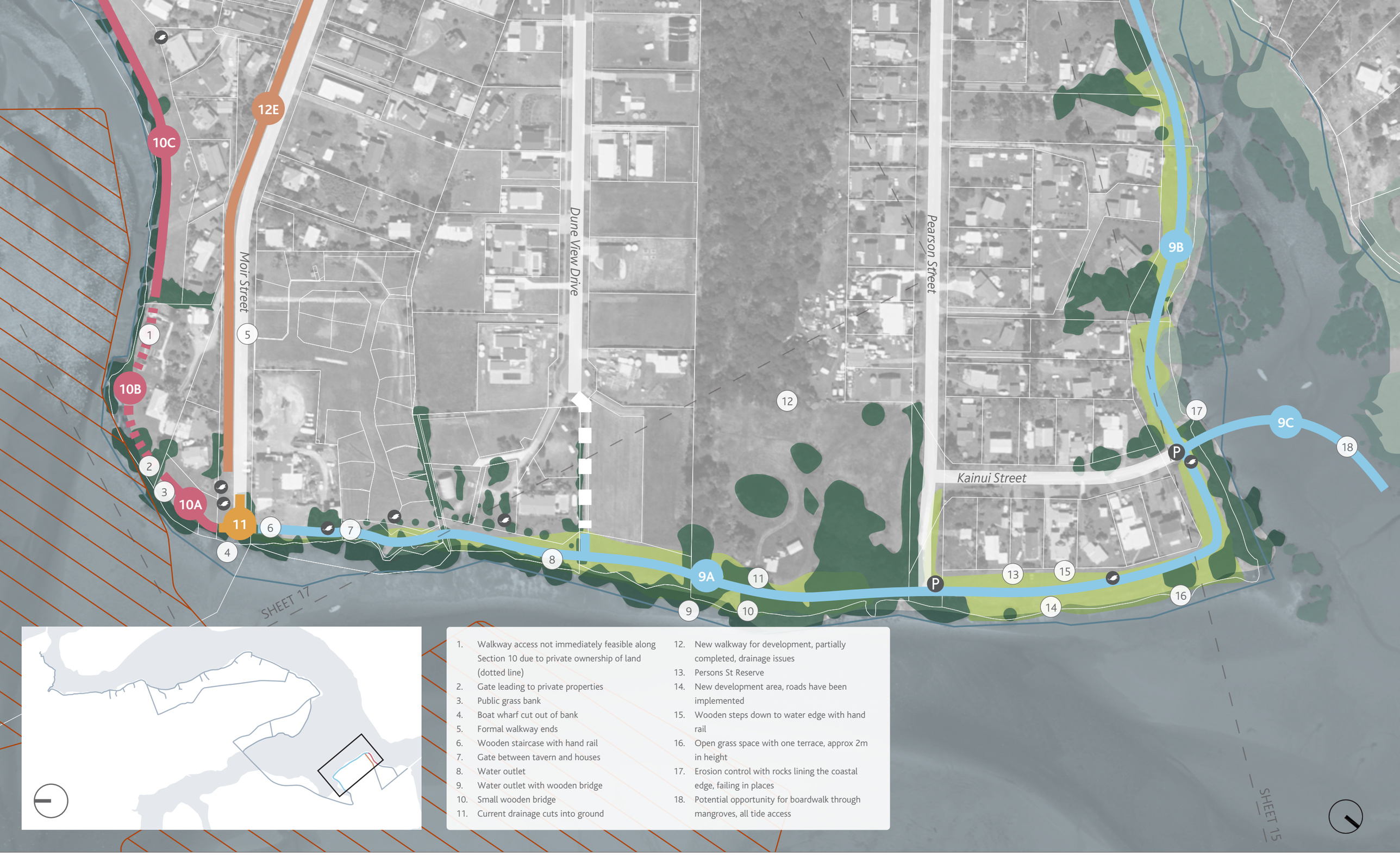


Photo locations are indicative only

1. Stair access only to walkway in front of tavern
2. Boat ramp access to inlet from Moir Street
3. Existing wooden bridge over outlet
4. Erosion and undercutting of bank
5. Temporary drainage from new development site
6. New development site, currently grass
7. Existing bank with erosion and undercutting, bank help by tree roots and rocks
8. Erosion control along bank, failing in places
9. Undulating grass area on top of bank
10. Existing wooden bridge over small stream
11. Inlet with mangrove growth
12. Small dock site within mangroves
13. Private appropriation of mangrove area
14. Potential future extension for walkway (currently private property)



1. Walkway access not immediately feasible along Section 10 due to private ownership of land (dotted line)
2. Gate leading to private properties
3. Public grass bank
4. Boat wharf cut out of bank
5. Formal walkway ends
6. Wooden staircase with hand rail
7. Gate between tavern and houses
8. Water outlet
9. Water outlet with wooden bridge
10. Small wooden bridge
11. Current drainage cuts into ground
12. New walkway for development, partially completed, drainage issues
13. Persons St Reserve
14. New development area, roads have been implemented
15. Wooden steps down to water edge with hand rail
16. Open grass space with one terrace, approx 2m in height
17. Erosion control with rocks lining the coastal edge, failing in places
18. Potential opportunity for boardwalk through mangroves, all tide access

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Alternative Route
- Old Waipu Dr to Moir St
- Moir St to Insley St
- Private Property
- Mangawhai Wharf Space
- Car Park
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
16
OLD WAIPU DR TO MOIR ST AND MANGAWHAI WHARF SPACE

REVISION: B

DRAWING NUMBER:
16

APPROVED JHW
For RESILIO LTD

SCALE:
1:2000 @ A3

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6.11_ Section 9 - Old Waipu Dr to Moir St

Community Considerations

- Pearson St Reserve is good for walking but is currently very rough.
- It would be good as a connection from the heads to the village.

Geology and Natural Hazards

- Cliff has been battered with the toe protected by rock.
- Cliff is mostly intact with variable erosion protection measures.
- Typically has cliff top trees, predominantly pōhutukawa.
- In some places, trees have fallen down.

Ecological Values and Constraints

- 9A - Walkway alignment is principally through mown grass on upper coastal edge. 9A around Pearson St is reinforced by rock riprap. From Dune View Dr to Moir St the eroding cliffs have been reinforced with large boulders and is protected by overhanging pōhutukawa trees that are identified as natural character areas. There are multiple stormwater discharge areas along this section.
- 9B - Access from Molesworth Drive to follow the true right bank of the stream. The upper intertidal inlet is dominated by mangroves. Other vegetation includes terrestrial vegetation mixed with mature exotic trees and amenity plantings.

Culture and History

- There are multiple middens located around section 9.

Technical Complexity

- A new walkway link required and formalisation of existing grass verge into a walkway.
- Potential to create connections to coast for amenity value along this section.

Cost Considerations

- Long section with easy access.
- Segments of new walkway alignment required.

Resource Consenting Requirements

- Resource consent is likely to be required under the Kaipara District Plan for earthworks, indigenous vegetation removal, and for a boardwalk not meeting the performance standards for buildings in the Residential zone and the Business Zone, subject to the Harbour Overlay. Consent may also be required for earthworks and development within an Area of Significance to Māori. The consent is likely to be a restricted discretionary activity.
- Under the Operative Regional Coastal Plan for Northland consent will be required if a boardwalk is required in the CMA, Marine 1 (Protection) Management Area. The consent will either be a discretionary or non-complying activity.

Note - recreational activities in the foreshore area that involve structure and results in the destruction of indigenous vegetation, or disturb the roosting, feeding or breeding of indigenous vegetation is a prohibited activity. A resource consent cannot be obtained for a prohibited activity.

- Under the proposed Regional Plan for Northland consent will be required for the erection of a structure and the occupation of the CMA in the General Marine Area. The activity status of the consent is likely to be a discretionary activity, or non-complying if there is not a function needed for the structure in the CMA.
- Regional Consents may also be required for earthworks and for and clearance of vegetation in the CMA (including mangroves) or foredune management area.

Walkway Options

Community preferred options
Feasible Options

9A

9B

9C

9D

Community Preferred Options
Feasible Options

Low — High

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Low ⟷ High

Design Considerations

Creating a succinct and accessible walkway that connects to Molesworth Drive and Moir St.

Mitigating effect of erosion along the coastline.

Protection of existing flora and fauna with investigations into enhancing natural areas.

Next Steps

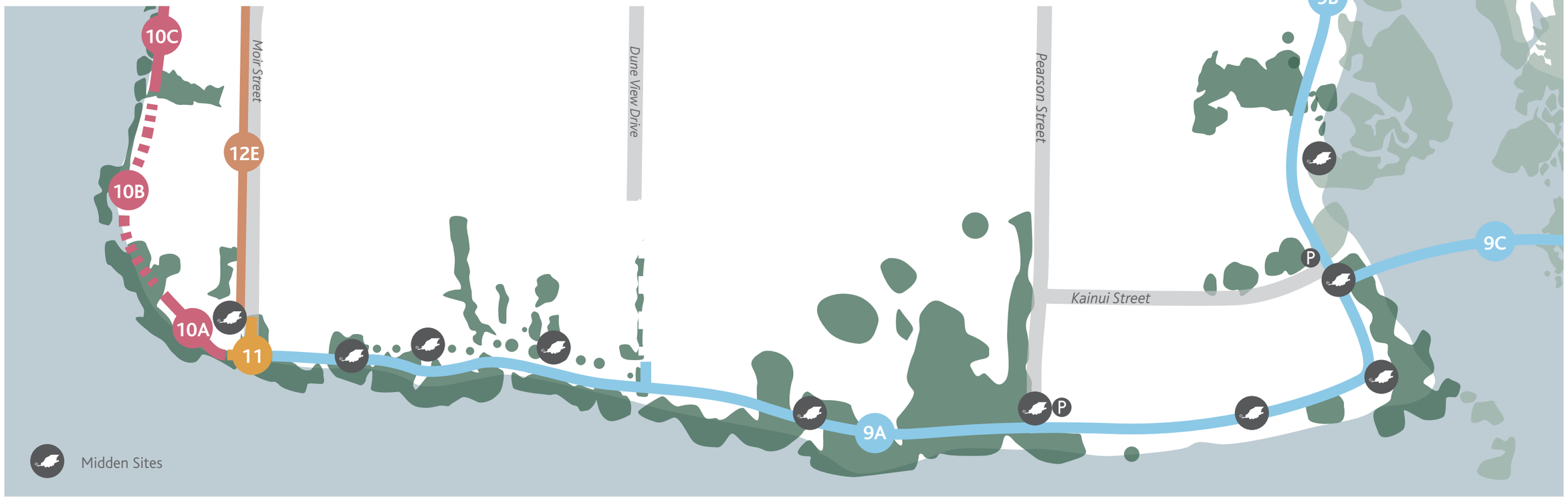
9A - Investigations in levelling the grass and erosion control along the coastal edge.
Removal of vehicles and installing permanent barriers to protect coastline.

9B - Enhancement of public presence through walkway.

9C - Ecology report on the disruption of fauna with users walking through mangroves and effects of removing existing mangroves.

9D - Ecology report for new walkway to go through existing vegetation.
Possible arboreal report needed for trees.

Walkway across private property (dotted)



6.12_ Section 10 + 11 - Moir St to Insley St and Mangawhai Wharf Space

Executive Summary

This section of the proposed walkway crosses both private and public land. (Dotted line represents private land). There is no access during high tide and the coastline is heavily vegetated. The coastal walkway will be better suited enhancing pedestrian and cycle access along Moir St and Insley Street.

Alternative Route

The alternative route runs along Moir St to the Insley St intersection and continues along Insley St, past the school, finishing before the causeway.

See 6.17_ Alternative Walkway | Section 12E - Moir St to Insley St.

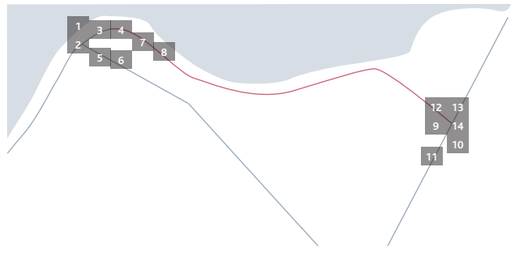


Photo locations are indicative only

1. View from top of small cliff across gravel boat ramp
2. Looking across to beginning of sand spit, vegetation and houses
3. Pōhutukawa with grass
4. Grass space on top of coastal cliff with private gate in distance and native vegetation
5. Native vegetation lining boat ramp
6. View up Moir St to car parking
7. Coastal edge condition by boat ramp
8. Fence-line dividing public and private land with public space on left
9. View down from stormwater outlet with rocks
10. Drain with water flow speed reducing intervention
11. Existing walkway along Insley St by school
12. View from Insley St across to section 10 with pōhutukawas
13. Vegetation overhanging coastal edge
14. View from section 10 by Insley St across to the opposite side of the estuary

Insley Street
12E
Moir Street
Molesworth Drive
Dune View Drive
10D
10C
10B
10A
11
9A
1
2
3
4
5
6
L SHEET 16

1. Walkway access not immediately feasible along Section 10 due to private ownership of land (dotted line)
2. Gate leading to private properties (no public access)
3. Public grass bank
4. Boat wharf cut out of bank
5. Wooden staircase with hand rail
6. Gate between tavern and houses

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Alternative Route
- Old Waipu Dr to Moir St
- Moir St to Insley St
- Private Property
- Mangawhai Wharf Space
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
17 MOIR ST TO INSLEY ST ALTERNATIVE ROUTE 12E

DRAWING NUMBER:
17

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

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6.12_ Section 10 + 11 - Moir St to Insley St and Mangawhai Wharf Space

Community Considerations

- No written feedback submitted

Geology and Natural Hazards

- Sand-flats with mangroves are backed by 3-4m high sand cliffs. Lower portions of cliff are weakly supported and uncemented. The upper ,approx 1m, is well cemented.
- Cliff is mostly intact with variable erosion protection measures.
- Typically has cliff top trees, predominantly pōhutukawa.
- In some places, trees have fallen down.

Ecological Values and Constraints

- 10A - Walkway is through mown grass with mature pōhutukawa.
- 10B - Private property with no access and appears to be primarily mown grass with mixes of scrub vegetation.
- 10C - No access and appears to be primarily mown grass with pōhutukawa coastal margin and some areas of mangrove and salt-marsh on the coastal fringe.
- 10D - Private property (Olive orchard).

Culture and History

- There are multiple middens located around section 10 + 11.

Technical Complexity

Section 10
- A walkway is a simple and effective solution for this section but some difficulty may be associated with the necessity for it to go through private property at 10A. Alternatively, boardwalk segments could be used to avoid areas with restricted access.

Section 11
- Complexity due to boxed step design, sloping terrain, and potential coastal erosion.

Cost Considerations

Section 10
- Limited cost associated with walkway solution however, if boardwalk sections are required cost will increase.

Section 11
- Short section of box steps.

Resource Consenting Requirements

- Resource consent may be required under the Kaipara District Plan for earthworks, indigenous vegetation removal, Rural zones subject to the Harbour overlay. Consent may also be required for earthworks and development within an Area of Significance to Māori. The consent is likely to be a restricted discretionary activity.
- Regional Consents may also be required for earthworks and clearance in the foredune management area.

Walkway Options

Community preferred options
Feasible Options

10A

10B

10C

10D

11

Community Preferred Options
Feasible Options

Low High

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Low High

Alignment Overview

Community Support

Geotechnical Complexity

Ecological Complexity

Cultural and Historical Significance

Technical Complexity

Resource Consenting Complexity

Cost Considerations

Walkway across private property (dotted)

Design Considerations

Due to the technical, ecological and private property requirements and constraints, section 10 would most likely be removed and section 12E would become the main walkway.

The community have suggested they want a boardwalk along section 11, however the existing area will be ill-suited for this.

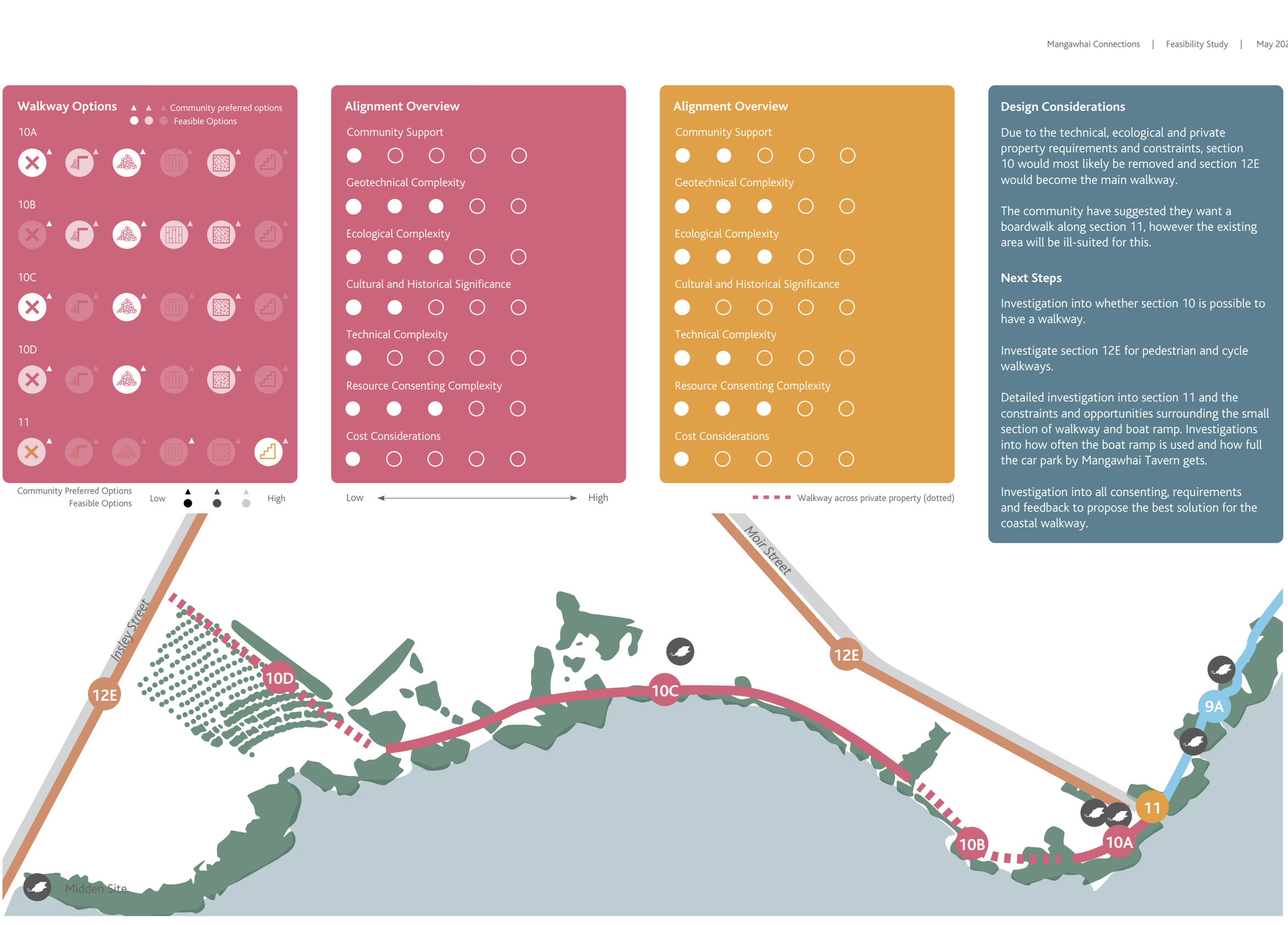
Next Steps

Investigation into whether section 10 is possible to have a walkway.

Investigate section 12E for pedestrian and cycle walkways.

Detailed investigation into section 11 and the constraints and opportunities surrounding the small section of walkway and boat ramp. Investigations into how often the boat ramp is used and how full the car park by Mangawhai Tavern gets.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.



6.13_ Alternative Walkway | Section 12A - Wintle Street Road

Executive Summary

Wintle St is the only road connecting Mangawhai to the surf club. It wraps around the hillside and is relatively narrow and includes some points of narrow road reserve and blind corners. Currently there is a narrow, approx 1.5m, walkway on the coastal side of the road with broken yellow lines that extend the length of Wintle St until Mangawhai Heads Road.

The broken yellow lines limits the parking along Wintle St to private driveways only. This provides an opportunity to reduce vehicle movement along Wintle St by employing a park'n'ride system for visitors to park elsewhere and bus / shuttle up Wintle St to the beach car park. Currently visitors would have to walk from Mangawhai Heads Road (being the closest area to park aside from the limited spaces available in the beach car park).

Due to the ecological effects a formal walkway will have on the existing environment around the coastline (section 1) and feedback from the community strongly opposing a walkway long section 1, the primary walkway would be better suited along Wintle St where a walkway already exists. The existing walkway is a concrete path approx 1.5m and gets narrower in places, only suitable for single file pedestrians. A new walkway along Wintle St Road would need to be wider to accommodate pedestrians, prams, groups etc with either a separate cycle lane or an integrated shared path.

Design Considerations

Look at enhancing the existing walkway to accommodate pedestrians, cyclists and other modes of light transport including scooters, prams, ebikes etc.

Reduce vehicular movement in Wintle St, keeping roads clear and prioritising pedestrians and cyclists (also keeping clear for emergency vehicles due to the high numbers of tourists and locals Mangawhai Heads Beach attracts).

Clear, concise and consistent wayfinding markers to be implemented.

Next Steps

Detailed investigations into existing street environment.

Further Geotec and ecology reports to provide more detail on options for a coastal route.

Investigation into road reserve areas, width of road and footpath and potential constraints and opportunities.

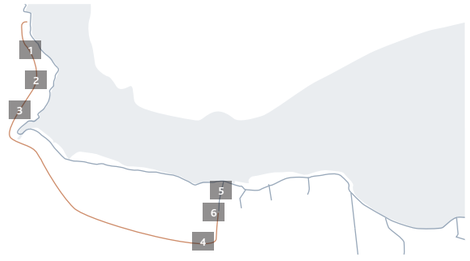


Photo locations are indicative only

1. View down Wintle St away from Wintle St car park, walkway on left hand side only
2. Footpath heading to Wintle St car park with dotted yellow lines
3. New retaining and erosion control above section 1E with walkway widening to a viewing platform
4. Walkway ends just before the intersection to Mangawhai Heads Road
5. View from car parking by stage one looking at Mangawhai Heads road, camp-ground on left and right
6. View to motor-home camp-ground

REVISION HISTORY:

A	FOR INFORMATION 14.03.2019
B	FOR INFORMATION 23.9.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Wintle to Pearl St
- Stage One
- Archaeological Sites
- Walkway Connections
- Significant Ecological Area
- Fairy Tern Foraging
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
01 WINTLE ST BEACH CAR PARK TO WINTLE ST RESERVE ALTERNATIVE ROUTE 12A

DRAWING NUMBER:
01

SCALE:
1:2000 @ A3

REVISION:
B

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For RESILIO LTD

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6.14_ Alternative Walkway | Section 12B - Findlay St to Devon St

Executive Summary

The alternative route is proposed from Findlay St and Albert St corner, along Moir Point Road until Devon St. The alternative route then follows Devon St until it terminates at the end of the cul-de-sac (to be continued along a paper road at a future date see 6.15_ Alternative Route | Section 12C). Walkway connection number 24 connects Devon St to Cheviot St.

Findlay St is a small, quiet residential street with no formal edges. At the Findlay St and Molesworth Drive intersection, a footpath (approx 1.8m) begins on the coastal side of Molesworth Drive and terminates before the Moir Point Road intersection. The Molesworth Drive end of Moir Point Road has informal gravel edges with no footpath. An approx 1.5m concrete path joins Moir Point Road at Pōhutukawa Place on the eastern side, while the western side road remains an informal grass berm. The existing path switches sides at Quail Way and continues on the eastern side before terminating at Suffolk Street. From Suffolk St to Devon St there is no footpath, only grass berms intersected by driveways. The berms are used for private parking and boat storage. Devon St has a concrete footpath that travels along the western side intersected with grass berms and driveways. Devon St narrows and finished in a cul-de-sac with a mix of original houses and ones built within the last 10 years.

There is significant community support to implement a concrete walkway that travels the length of section 12B and offers an alternative route to the coastline (see 6.18_ Walkway Connections for walkway connection 24 to Cheviot St).

Design Considerations

Look at enhancing the existing walkway to accommodate pedestrians, cyclists and other modes of light transport including scooters, prams, ebikes etc and to create a continuous walkway on both sides of the road with safe crossings.

Clear, concise and consistent wayfinding markers to be implemented.

Next Steps

Detailed investigations into existing street environment.

Geotechnical and ecology reports to assess the current situation.

Investigation into road reserve areas, width of road and footpath and potential constraints and opportunities.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

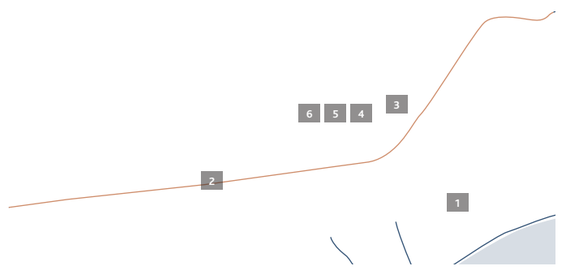

Photo locations are indicative only

1. View down Moir Point Road from Molesworth Dr
2. View down Moir Point Road with footpath on right hand side by Quail St
3. Left hand side of intersection from Moir Point Road to Devon St with no walkway
4. Right hand side of intersection, view carrying on to Moir Point Road with footpath on left hand side in distance
5. View down Devon St with new housing
6. Current cul-de-sac of Devon St, the paper road continues over crest of hill

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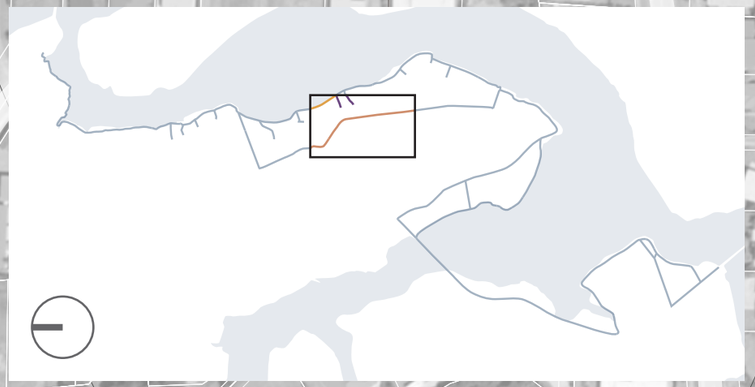

1. 50 km/h road with approx 1.5m walkway on east side of road
2. Grass walkway between properties, informal entrance, connection to SW outlet / stream, narrow track
3. Wooden track stairs with wooden hand rail, gabion retaining, muddy and rocky

Molesworth Drive
Moir Point Road
Seabreeze Road
Quail Way
Breve Street
Suffolk Street
Devon Street
Cheviot Street
SHEET 04
SHEET 05
SHEET 07
SHEET 08
SHEET 09
12B
3B
1
2
3
22
23
24

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Opens Space - Sand
- Walkway Connections
- Findlay St to Lincoln Reserve
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
06
ALTERNATIVE ROUTE 12B

DRAWING NUMBER:
06

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
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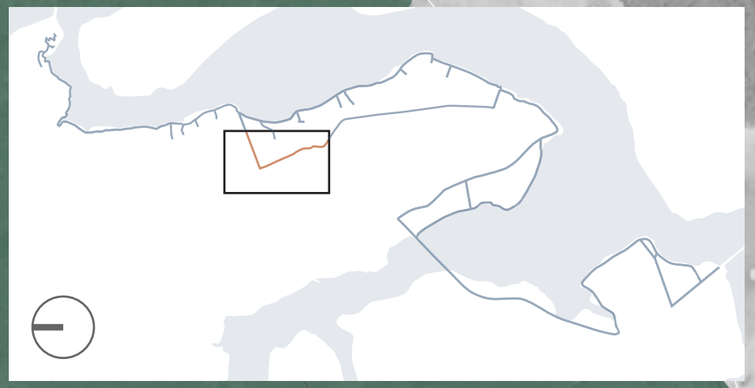

Molesworth Drive

12B

Moir Point Road

SHEET 05

Heather Street

SHEET 06

Eveline Street

Awatea Street

Findlay Street

Molesworth Drive

Wood Street

Fagan Place

Ellen Street

SHEET 03

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Walkway Connections
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
04
ALTERNATIVE ROUTE 12B

DRAWING NUMBER:
04

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

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6.15_ Alternative Walkway | Section 12C - Devon St to Jordan St Paper Road

Executive Summary

The alternative route section 12C is currently a paper road connecting Devon St to Jordan St. The existing site consists of dense vegetation and ponds / swamp land. The alternative route continues across to Estuary Road along another paper road (at the time of writing this report the road and footpaths have been constructed). There is a walkway that connects the paper road to Moir Point Road and Devon St. It is fenced and grassy with a steep narrow dirt track with stairs at the Devon St end. There is a connection from the paper road at Jordan St that goes to the coast between Sections 5 and 6.

The area around section 12C has been subdivided and allocated for housing development, some of which is currently under construction with roads and footpaths implemented.

Design Considerations

Implementing a road that focuses on pedestrian and cycle links and connects into the existing and future network.

Clear, concise and consistent wayfinding markers to be implemented.

Next Steps

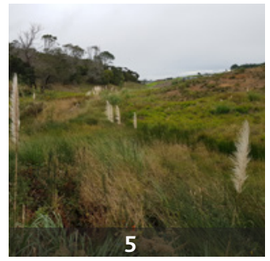
Conversations with the relevant roading parties for road implementation timeline.

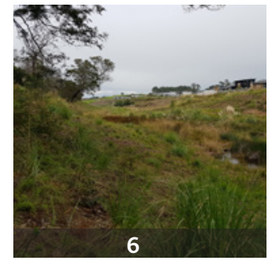
Detailed investigations into existing environment, how the existing vegetation and water will be mitigated.

Geotechnical and ecology reports to assess the current situation.

Investigation into road reserve areas, width of road and footpath and potential constraints and opportunities.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.





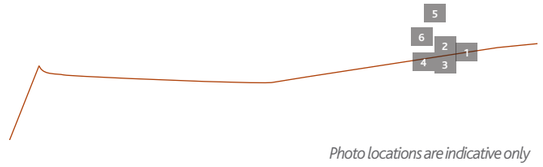
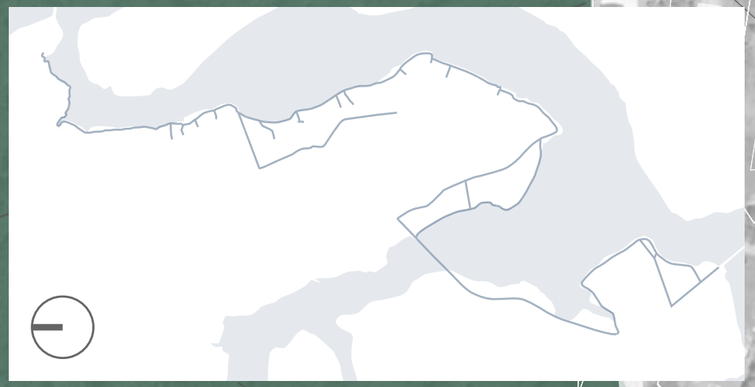


Photo locations are indicative only

1. Beginning of track from Devon St along the paper road
2. Opening track with track steps
3. The track narrows single track cut into the steep hill
4. Track steps cut into hill side
5. View across to Jordan St housing development and to water across paper road
6. See 5, looking inland



1. New development between Jordan St, Moir Point Road and Estuary Dr
2. Currently dense vegetation with small ponds
3. Existing track connections Devon St to Moir Point Rd, grass track with steep stairs, no hand rail
4. Existing road currently leading to cul-de-sac

Jordan Street

Moir Point Road

Grove Road

Devon Street

SHEET 10

SHEET 09

SHEET 06

1

2

3

4

12C

24

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Walkway Connections
- Alternative Route

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
08
ALTERNATIVE ROUTE 12C

DRAWING NUMBER:
08

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

DO NOT SCALE
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK

6.16_ Alternative Walkway | Section 12D - Estuary Drive Road

Executive Summary

Estuary Dr runs from Moir Point Road Christian Centre to Molesworth Road and now connects to Jordan St with the new housing development (southern end of Estuary Drive).

The southern end of Estuary Drive has a footpath on the coastal side of the road that continues until 44 Estuary Dr where it terminates. This section of the road is narrow with informal edges and has no centre line or parking restrictions. Estuary Dr continues as a vehicle only road until it intersects with Moir Point Rd. Here the road widens with road markings and a concrete path on the western side of Estuary Dr separated by a thin grass berm and continues until Molesworth Dr.

Currently, this alternative route is the favoured walkway along this area of coast as Section 7 crosses private land.

Design Considerations

Look at enhancing the existing walkway to accommodate pedestrians, cyclists and other modes of light transport including scooters, prams, ebikes etc and to create a continuous walkway on both sides of the road with safe crossings.

Clear, concise and consistent wayfinding markers to be implemented.

Next Steps

Detailed investigations into existing street environment.

Geotechnical and ecology reports to assess the current situation.

Investigation into road reserve areas, width of road and footpath and potential constraints and opportunities.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

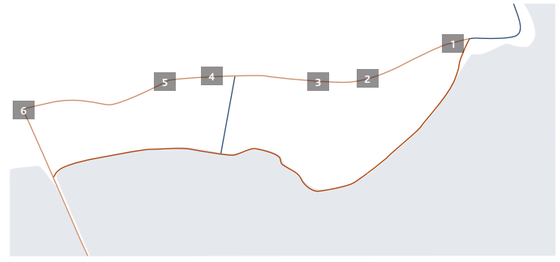


Photo locations are indicative only

1. New roading from Jordan St joining Estuary Dr, narrow walkway on the coastal side of the road
2. Estuary Road Reserve, no footpath
3. View along Estuary Dr with footpath
4. Road with formalised edges and grass berm between road and footpath along Estuary Dr
5. View along Estuary Dr to new development
6. View from Molesworth Dr looking down Estuary Dr with footpath on left hand side only

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1. Walkway access not immediately feasible along Section 7 due to private land ownership (dotted line)

REVISION HISTORY:

A	FOR INFORMATION	14.03.2019
B	FOR INFORMATION	23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Opens Space - Sand
- Alternative Route
- Estuary Dr
- Estuary Dr Private Property
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
11 ESTUARY DRIVE COASTAL WALKWAY ALTERNATIVE ROUTE 12D

DRAWING NUMBER:
11

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED HW
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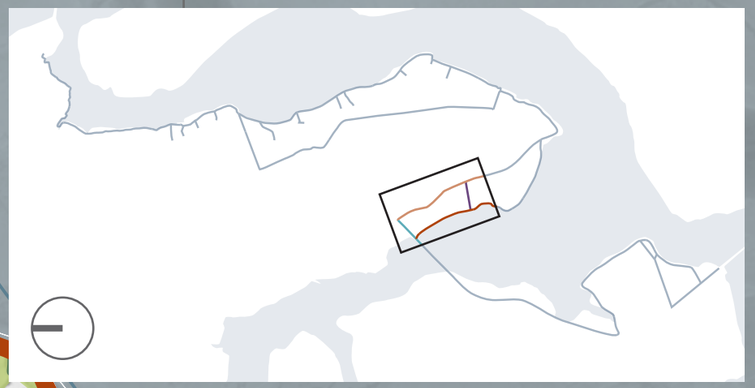

SHEET 11

7D

7E

7F

2

3

8

Molesworth Drive

Estuary Drive

12D

SHEET 13

2. Walkway access not immediately feasible along Section 7 due to private land ownership (dotted line)
3. 80 km/h along Molesworth Drive, speed limit to drop with new Mangawhai Central development

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Walkway Connections
- Alternative Route
- Estuary Dr
- Estuary Dr Private Property
- Molesworth Dr

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS

MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
12 ESTUARY DRIVE COASTAL WALKWAY ALTERNATIVE ROUTE 12D

DRAWING NUMBER:
12

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

6.17_ Alternative Walkway | Section 12E - Moir St to Insley St

Executive Summary

Moir Street is one of the main roads in Mangawhai and connects to Kaiwaka-Mangawhai Road and to the Mangawhai Tavern. From the north east, Moir Street ends in a gravel boat ramp and car park for the Mangawhai Tavern with no footpath on either side. Next to the tavern, a new development has been built along Citrus Place. Double yellow lines run the length of both Moir and Insley streets restricting car parking to designated formal / informal areas.

There is a primary school on Insley St that has high levels of traffic during pick up / drop off hours and where the informal parking is utilised. The corner of Insley St and Moir St travelling east down Moir Street is the main section of the township that has dedicated parking for the local businesses and the Four Square. The intersection at Insley and Moir street gets busy and backed up with poor visibility around larger vehicles.

Design Considerations

Look at enhancing the existing walkway to accommodate pedestrians, cyclists and other modes of light transport including scooters, prams, ebikes etc and to create a continuous walkway on both sides of the road with safe crossings.

Engagement around the school and methods of reducing vehicular traffic around the school crossing.

Clear, concise and consistent wayfinding markers to be implemented.

Next Steps

Detailed investigations into existing street environment.

Geotechnical and ecology reports to assess the current situation.

Investigation into the current school and township area.

Investigation into road reserve areas, width of road and footpath and potential constraints and opportunities.

Investigation into all consenting, requirements and feedback to propose the best solution for the coastal walkway.

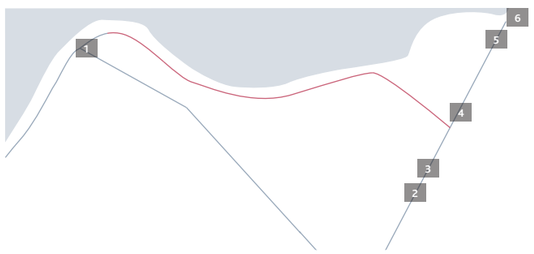

Photo locations are indicative only

1. View from Mangawhai Tavern along Moir St
2. View along Insley St looking towards Moir St intersection
3. Footpath and grass berm close to Mangawhai Beach School
4. Fencing around school crossing
5. Informal car parking around school
6. Insley St with vehicle only access across estuary

Insley Street
12E
Moir Street
Molesworth Drive
Dune View Drive
10D
10C
10B
10A
11
9A
1
2
3
4
5
6
L SHEET 16

1. Walkway access not immediately feasible along Section 10 due to private ownership of land (dotted line)
2. Gate leading to private properties (no public access)
3. Public grass bank
4. Boat wharf cut out of bank
5. Wooden staircase with hand rail
6. Gate between tavern and houses

REVISION HISTORY:

A FOR INFORMATION 14.03.2019
B FOR INFORMATION 23.09.2019

Key

- Vegetation
- Open Space - Lawn
- Alternative Route
- Old Waipu Dr to Moir St
- Moir St to Insley St
- Private Property
- Mangawhai Wharf Space
- Archaeological Site
- Fairy Tern Foraging

CONSULTANTS:

RESILIOSTUDIO *Landscape Architecture / Architectural Design Permaculture / Social Innovation*

IN ASSOCIATION WITH:

STELLAR PROJECT DELIVERY SPECIALISTS
MORPHUM ENVIRONMENTAL LTD

CLIENT:

KAIPARA DISTRICT

PROJECT:
MANGAWHAI COASTAL WALKWAY PROJECT - FEASIBILITY STUDY

PROJECT NUMBER:
18068

SHEET:
17 MOIR ST TO INSLEY ST ALTERNATIVE ROUTE 12E

DRAWING NUMBER:
17

SCALE:
1:2000 @ A3

REVISION:
B

APPROVED JHW
For RESILIO LTD

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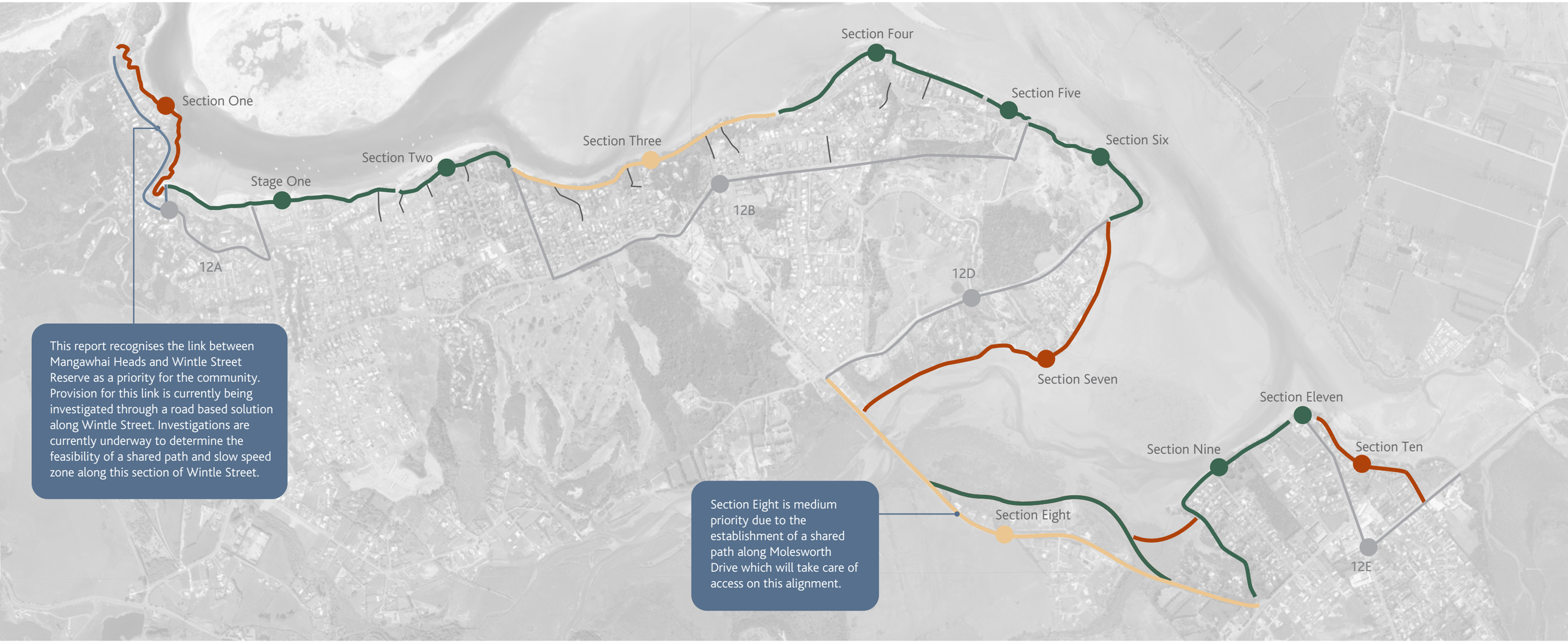
7.0_ Route Prioritisation

Route Prioritisation Matrix



High Priority

Section One
Stage One
Section Two
Section Four
Section Five
Section Six
Section Nine
Section Eleven

Medium Priority

Section Three
Section Eight

Low Priority

Section Seven
Section Ten

Alternative Route

Section Twelve

Shared Path on Wintle Street

Walkway Connections

Next Steps

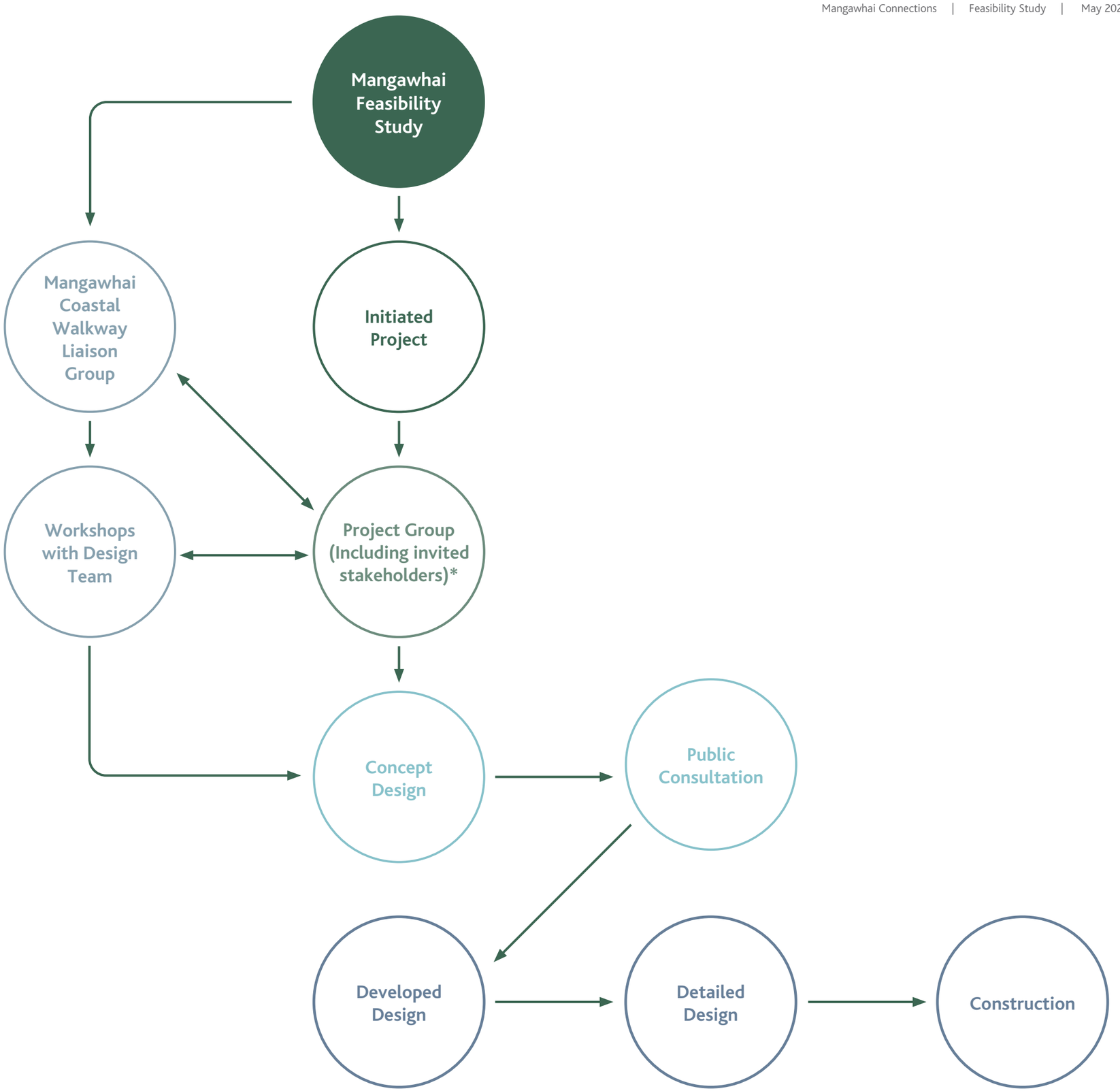
It is recommended that the Mangawhai Coastal Walkway is to proceed to the design and consenting phases subject to Council approval. Each section identified will become an initiated project and go through the process shown in the following diagram. These next steps, after the feasibility study, include detailed site investigations, and regulatory or consenting requirements before physical work can commence.

- Further investigations required
  - Site surveys
  - Arboricultural
  - Funding considerations

- Design and Consent phase
  - Analysis of all feedback, requirements and consenting
  - Concept design
  - Developed design
  - Assessment of environmental effects
  - Resource and building consents
  - Construction documentation

- Construction Considerations
  - Staging options
  - Construction time-frames and seasonal considerations

- Continue to work closely with community and council



* The Project Group could include a representative selection of local residents within the group who are immediate stakeholders (i.e. people who are directly affected or impacted by the section implemented).

8.0_ Appendices

8.1_ Pathway Type Recommendations

Mangawhai coastal walkway options spreadsheet																														
		1					2	3		4	5	6	7						8	9		10				11	12	13		
		a	b	c	d	e		a	b				a	b	c	d	e	f		a	b	a	b	c	d		a-d	a,o	b-n,p
1	No work																													
2	Aggregate walkway																													
3	Concrete pathway																													
4	Retaining wall																													
5	Boardwalk																													
6	Steps																													

Not an option	
Option	
May be an option	

8.2_ Reports

TE URI O HAU
ENVIRONS HOLDINGS LTD

CULTURAL EFFECTS ASSESSMENT

KAIPARA DISTRICT COUNCIL

"ALL TIDES COASTAL WALKWAY PROJECT"

MANGAWHAI HEADS TO MANGAWHAI VILLAGE

MANGAWHAI

APRIL 2019

Environs Holdings Limited
Tai Tokerau Maori Trust Board Building
Level 2 3-5 Hunt Street
Whangarei
Phone F/P 0800 438 894, P: 09 459 7001
Email rma@uriohau.o.nz
Website: www.uriohau.com

ecogecko CONSULTANTS

Herpetofauna desktop assessment:
Mangawhai Heads

Trent Bell
EcoGecko Consultants

April 2019

MORPHUM ENVIRONMENTAL LTD
Engineers & Consultants

Ecological Values and Constraints and Opportunities Assessment

Mangawhai Coastal Walkway

Final Draft

Prepared for Resilio by Morphum Environmental Ltd
2019

09 377 9779 | info@morphum.com | www.morphum.com

NGS
Northland Geotechnical Specialists

GEOTECHNICAL REPORT FOR MANGAWHAI COASTAL WALKWAY – FEASIBILTY STUDY STAGE

Location	Mangawhai, Northland
Client	Stellar Projects Limited
NGS Ref	0007
Date	26 May 2019
Report Status	Draft for Client Review
Report prepared by	David Buxton
Report reviewed by	Rebekah Buxton
Authorised for NGS by	David Buxton

Northland Geotechnical Specialists Limited
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Mangawhai Coastal Walkway
for
Kaipara District Council

Coastal Hazard Investigation

DAVIS COASTAL CONSULTANTS

August 2019
Job Ref: 1902

P.O. Box 185
Orewa
P: 09 428 0040
M:021 627 193
E:coastal@daviscoastal.co.nz

Mangawhai Coastal & Harbour Reserves
Management Plan

(23 September 2009)

Kaipara District Council

KAIPARA DISTRICT