



Urban & Environmental



Mangawhai Cliffs Walkway

Prepared for Mangawhai Hills Ltd by:





Document date

March 2023

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1.0 Introduction

1.1 Purpose and Scope

This Design Statement for 'Mangawhai Hills' is one of a suite of technical reports which has been prepared in support of a proposed private plan change on behalf of Mangawhai Hills Ltd (MHL).

The purpose of this Design Statement is to provide background to the conceptual structure plan prepared to support the proposed private plan change.

This document aims to support the commitment of the private developer (MHL) to conservation and water sensitive design which has helped to define a vision for the site and ultimately support the growth of Mangawhai.

This document identifies design considerations relevant to Mangawhai Hills (the plan change area). These considerations have been informed by both national and local urban design policy and guidance.

- An understanding and highlevel analysis of the site within the Mangawhai context.
- An analysis of the existing landscape and open space character.
- An analysis of site issues, constraints and opportunities which will inform spatial outcomes.
- Integration of the key elements identified within other specialists' reports.
- A recommended Conceptual Structure Plan which illustrates spatial outcomes reflecting the above analysis.

O Kaipara Harbour

Figure 1 Scale 1 : 500,000 $(\mathbf{\Gamma})$

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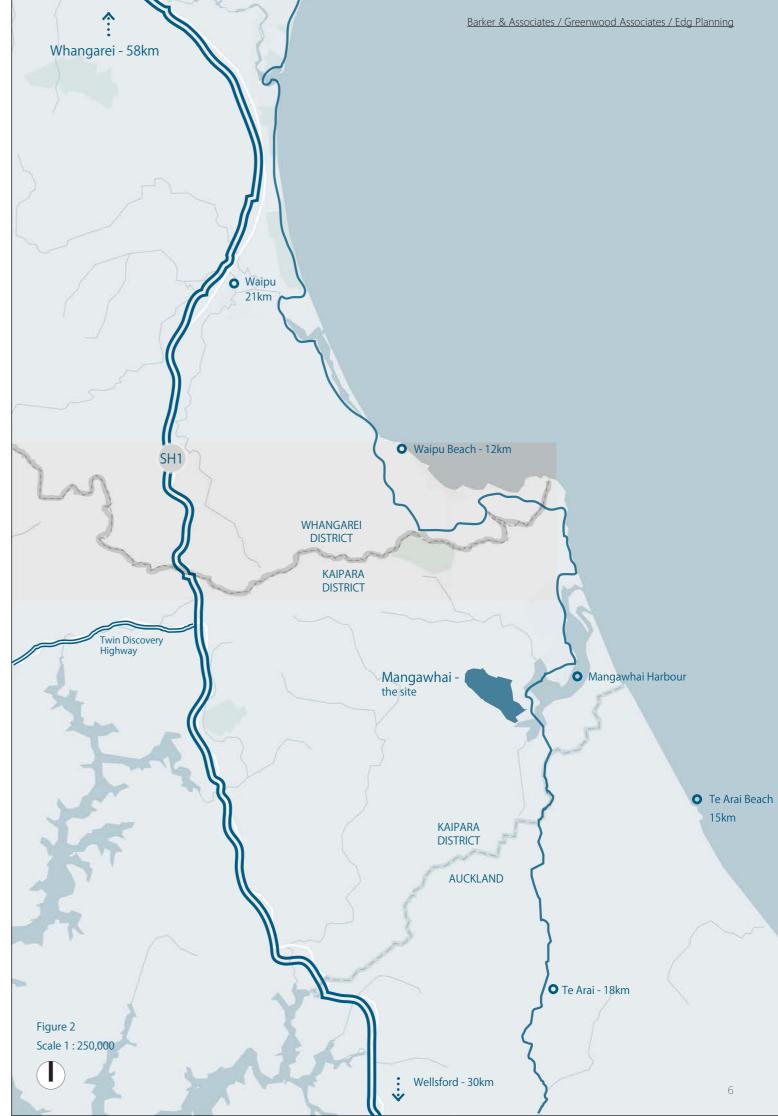


1.2 Site Location and Regional Context

Mangawhai Hills (the subject site / plan change area) is located approximately 100km north of Auckland CBD, 30km north of Wellsford, 45km north of Warkworth, 21km south of Waipu, 15km north of Te Arai Beach and adjacent to and south west of Mangawhai Central (refer to figure 2).

Mangawhai is located just north of the Northland / Auckland regional border and is a coastal town characterised by white sandy east coast beaches, the water inlet and Mangawhai Harbour.

Mangawhai village (town centre) provides essential services to the local population while Wellsford and Warkworth, provide a wider range of goods and services.



1.3 Heritage and Culture

Mangawhai is a land of historical and cultural significance to the district of Kaipara and the lower reaches of Northland. Mangawhai's geographical location to the Kaipara Harbour allowed Ngāti Whātua to drag their waka from Kaiwaka to Mangawhai via the Ōtamatea Portage. This portage is the shorter of two portage routes in Northland connecting the east and West coasts. Portages were vital to early Maori, and provided a crucial transport and trade link.

The Ōtamatea Portage allowed Ngapuhi to travel 12km inland towards Kaiwaka and fight against Kaipara hapu in 1825. The battle resulted in many casualties and is considered one of the greatest battles in Aotearoa. The pā site where Chief Te Whai and his people situated is known as Mangawhai Point. This pa site was significant because of its proximity to an abundance of fish and shellfish, whilst providing access to the Ōtamatea Portage.

Mangawhai got its name from Te Whai, a Ngati Whatua Chief who retired to Manga-Te-Whai. It can be translated into 'Stream of Stingray' due to a large amount of Short fin stingray in the harbour. 'Manga' refers to a watercourse (Mangawhai Harbour), and 'Wahi' refer to the short tail stingray that resides in the harbour.

Europeans settlers began to arrive in Mangawhai during the late 1850s. These settlers started shipping, logging, gum digging, kauri milling, and farming industries in the region. The original Mangawhai Tavern was constructed in the late 1850's, however burnt down in 1890. A new structure was rebuilt of which still operates as a bar and venue for the wider community.

During the early to mid 19th Century, Mangawhai harbour was a key access point for the Kaipara. Ngati whatua would drag their waka from Kaiwaka to Mangawhai. Nowadays, Mangawhai is known for its spectacular beaches, surfing and fishing spots, breath taking scenery and a creative local community.

Modern Mangawhai is a popular destination for Aucklanders trying to escape the city. Mangawhai is currently the fastest growing area in Northland. As of 2021, Mangawhai has a population of approximately 6,500 people with a projected population growth of circa 10% per annum. Mangawhai is transforming from a small seaside beach settlement into a fast growing town urban centre. Mangawhai's close proximity to Auckland, coupled with the near completion of the Puhoi to Warkworth motorway is contributing to increased growth.

MHL have commenced discussions with the local Ngati Whatua hapu, Te Uri o Hau, and will continue these, with the aim of achieving mutually beneficial outcomes for the project, the land and the Mangawhai area.

Kaipara Harbou

Mangawhai Harbour, provided access to the Ōtamatea Portage







Historic Mangawhai Tavern

1.4 Planning Context

The site is central to the Kaipara District Plan and Kaipara Spatial Plan 2020. The site is currently zoned 'Rural' under the Operative District Plan.

This site sits within the 'Harbour' overlay and is identified as part of the 'Growth area' catchment (as a result of the Mangawhai Structure Plan, adopted by Council in January 2005).

The Kaipara District Council are currently progressing through a plan review with a draft district plan having been released. The formal notification of the proposed Kaipara District Plan is still to commence.

The District Plan review is being guided /

informed by the Mangawhai Spatial Plan adopted in December 2020. This provides a high level guide as to how Mangawhai could grow in a manner that addresses social, environmental and economic needs of the community while responding to the local context and environment. The Spatial Plan recommends the creation of one (or more) rural residential zone(s) as a transition zone between the urban residential and the rural production zones.

The Spatial Plan identifies the subject site as a 'rural-residential' area with Council. The mapping situates the site between a 'Lifestyle lot' zone (0.8ha lot size) to the

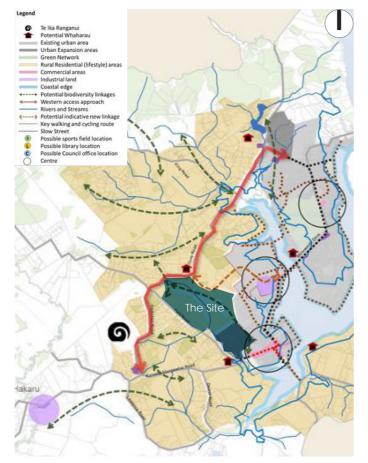


Figure 5 - Mangawhai Spatial Plan 2020

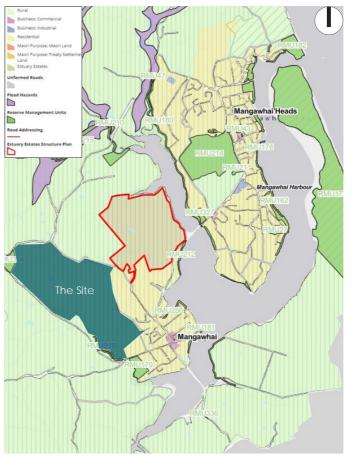


Figure 4 - Kaipara District Plan

north, a 'Large residential lot' zone (0.4-0.8ha lot sizes) to the south, an existing urban area to the east, and a 'lifestyle lot with opportunity for equestrian activity' (0.4ha-0.8ha lot sizes) to the west. As part of this plan change process, discussions and engagement with lwi and Hapū are on-going. A previous Cultural Impact Assessment undertaken May 2018, within the subject site / plan change area, did not identify any Wahi Tapu sites.

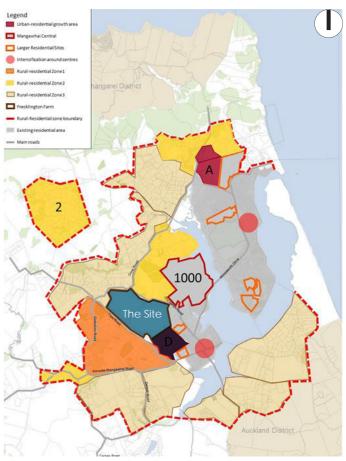
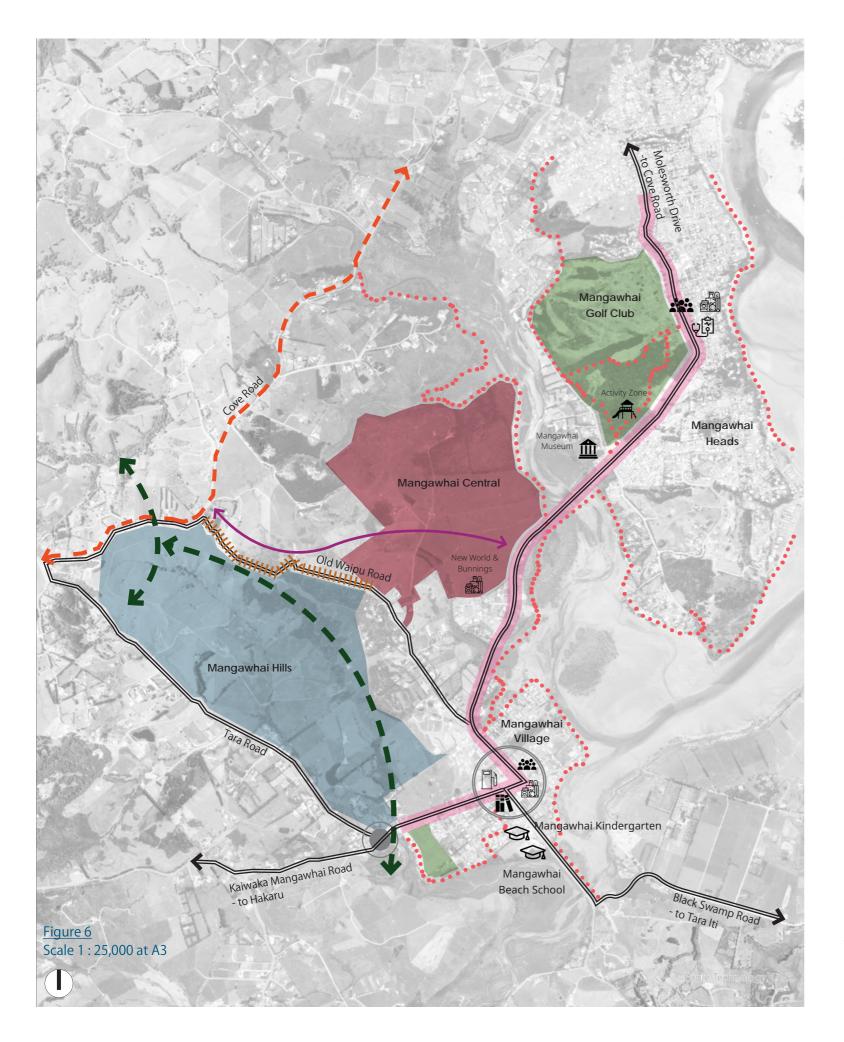


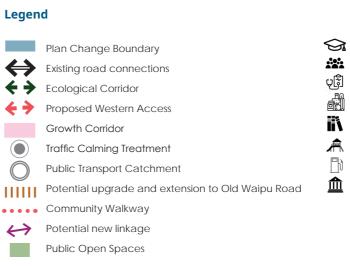
Figure 3 - Spatial Plan - Preferred Growth Option



1.5 Site Context

The Mangawhai Hills plan change area is approximately 220 hectares in size and has road frontage adjoining four site boundaries; Cove Road to the north, Tara Road to the west, Old Waipu Road to the east and Moir Street to the south. Vehicle access is possible from all common boundaries adjoining a public road reserve.

A number of existing amenities and social infrastructure are located in close proximity to the site. Mangawhai Central is located adjacent to and north east and Mangawhai Village to the south east of the site. These areas



comprises a number of amenities including Mangawhai Beach School, eateries / restaurants, supermarket and health care facilities.

With reference to Figure 6, the site abuts Old Waipu Road North which is a strategic growth corridor that connects Cove Road to Mangawhai Central to Mangawhai Heads. There are also a significant number of community walkways within close proximity to the site which extend around the existing coastline. The site presents an opportunity to tie into these recreational walkways to create a well connected circuit.

- School
 - Community Centre cluster of amenities/services
 - Medical Centre
 - Four Square/ Supermarket
 - Library
 - Playground
 - Petrol Station
 - Museum

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2.0 Analysis

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2.1 Understanding the Site

Mangawhai Hills adjoins Tara Road, Cove Road and Old Waipu Road North. The land is currently zoned 'Rural' under the Operative District Plan. It is proposed to re-zone the proposed plan change area to 'Residential'.

Most of the site is farm land, which currently comprises large pastoral areas for grazing purposes. There are a series of terrestrial (native and exotic bush) and freshwater features (streams and wetlands) throughout the site of varying quality. A large number of the freshwater features have been degraded as a result of stock and farm management.

A primary ridge line runs along the eastern boundary then curves around Old Waipu Road and Cove Road to the north. There is a smaller ridge line which runs through the middle of the site, with a valley that contains a stream between the two ridge lines.

The highest point within the site is to the north east along Old Waipu Road. Small gullies form an integral natural drainage pattern across the site. These gullies in combination with the existing vegetation patterns and ecology are key structural landscape elements.

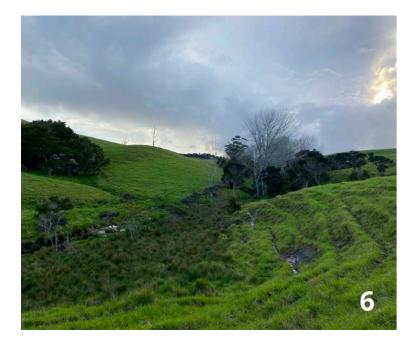
The site presents a unique opportunity to provide high quality residential dwellings in a natural landscape setting.

The site also presents development opportunities and constraints which have been identified and used to formulate a site strategy that responds to the existing context, enhances and protects the existing ecology, slope, vegetation, landscape character and hydrology.



Viewpoints



















2.2 Topography and Orientation

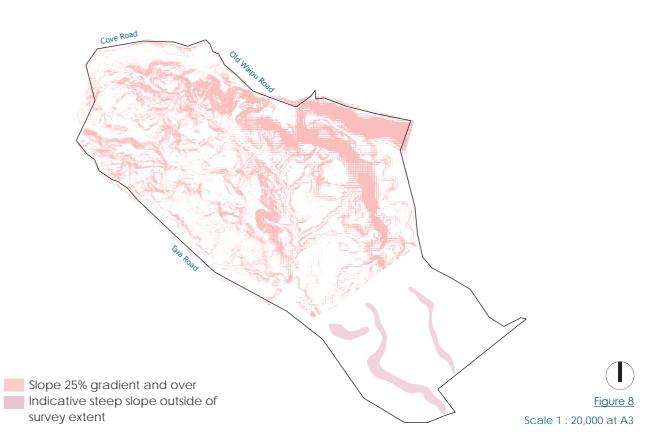
Slope gradients

The topography and solar orientation of the site (structure plan area) forms an integral part of the proposed Structure Plan.

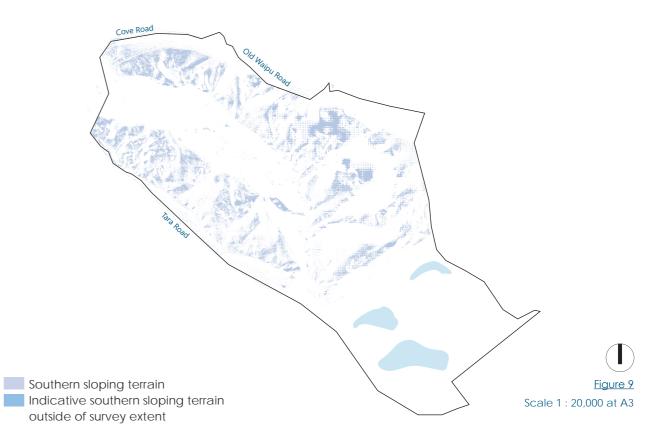
The extent and form of the topography associated with the plan change area creates a unique sense of place and plays a strong role in determining street alignments, housing typologies and the types and quantum of open space areas.

Whilst topography of this nature can often result in development constraints, particularly from a connectivity perspective, it can also result in the following design opportunities and considerations:

- Larger allotments can be provided in those areas with slightly more challenging topography;
- Steeper areas can be included within riparian margins to enhance ecology and amenity;
- The more level areas within the plan change area can facilitate greater levels of density and more formalised recreation / open space areas;
- The higher areas within the site can provide unique opportunities for public viewpoints and outlook; and
- The alignment of streets should respond to and work with the existing land-form in a sympathetic manner.



Solar Orientation

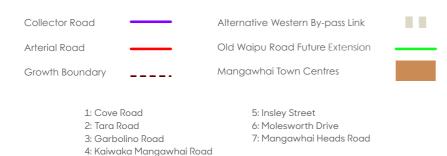


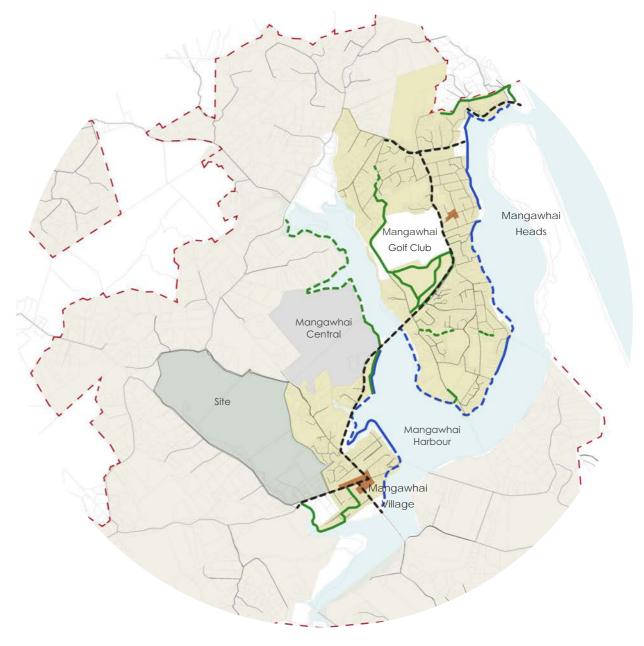
2.3 Movement Network



Existing & Proposed Road Hierarchy Network

As Per the Kaipara District Plan 2017 & Mangawhai Spatial Plan





Existing & Proposed Pedestrian Network

As Per the Kaipara Walking and Cycling Strategy 2017 & Mangawhai Spatial Plan

Proposed All Tide Coastal Access Existing All Tide Pedestrian Access Existing Community Walkway Proposed Community Walkway Proposed Shared Path, Walking & Cycling

Existing Urban Areas in Mangawhai



2.4 Open Space and Environmental Network



Surrounding Open Space

- 1. Mangawhai Domain 2. Pearson Street Reserve
- 3. Existing Coastal Walkway 4. Mangawhai Golf Club
- 6. Dons Landing 7. Mangawhai Heads Holiday Park 8. Mangawhai Heads Beach

5. Mangawhai Sand Dunes

Mangawhai Town Centres

800m/ 10 Min Walking Zone

Existing Urban Area in Mangawhai

Open Recreational Areas





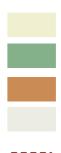
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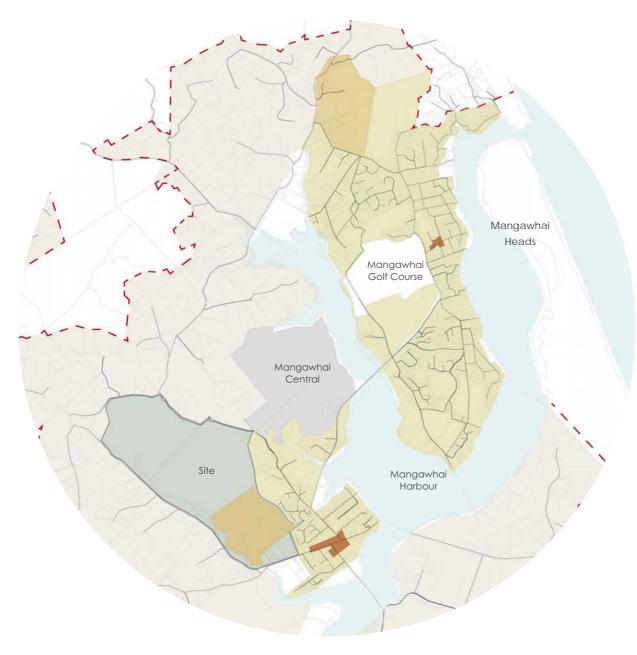
Surrounding Native Vegetation & Stream Network

Existing Urban Areas in Mangawhai Native Vegetation Land Cover Mangawhai Town Centres Existing Rural Residential Lifestyle Area

Growth Area



2.5 Built Form



Wider Built Form & Urban Realm

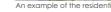
As Per the Kaipara District Plan 2017 & Mangawhai Spatial Plan





An example of the built form within Mangawhai village. this is a properties rather than stand alone residential dwellings.









Mangawhai characterised by large residential plots comprising of original and modern architecture.

An example image of the architectural style of a modern Mangawhai bach

2.6 Site Ecology

A preliminary, high level ecological investigation has been undertaken and will be developed in further detail in subsequent development related plans.

The proposed plan change area has a rich underlying ecological layer largely based on its distinctive topography. Throughout the site analysis, a number of wetlands, stream networks and native vegetation areas were identified.

There are two primary streams, located between ridge lines, which converge toward the south eastern portion of the site and continue further south along Tara Road.

Wetlands have been identified and mapped. These are typically located in close proximity to the stream network and a planted riparian buffer will be applied around these wetland areas.

Large clusters of native vegetation have also been identified. The largest clusters are located toward the northern portion of the site. These areas will be retained and form a significant amenity and positive outlook for future residents and the local community within the proposed plan change area.

Conservation and water sensitive design are fundamental drivers within this design process. The intent is to retain and enhance the aforementioned natural features and integrate them as fundamental structuring elements within the proposal.

The above ecological elements can result in development constraints, however, further considerations and opportunities include:

- Riparian setbacks from waterways and wetlands planted with eco-sourced native species;
- Preservation of the native bush areas;
- Public open spaces that provide for the treatment, drainage and retention of stormwater;
- A well connected green network including a legible and safe pedestrian and cycle network; and
- Strengthen and enhance the biodiversity of the site.



Figure 12 Scale 1 : 12,500 at A3

2.7 Opportunities and Constraints



- Ecological Area including streams, wetlands and 10m riparian setbacks
- Forest / Native Bush Area opportunity for walking/biking trails through native manuka / kanuka forest
- Potential revegetation & re-wilding areas (facilitate ecological
- Indicative ridgeline
 - Indicative stream locations
- Main site circulation could follow higher ground and existing farm tracks / roads. Least resistance against slopes and follow contours where possible
- ← Proposed Western Access
- → Connection to town centre (Mangawhai village & Mangawhai
- Opportunity for upgrade of Old Waipu Road and connection to the eastern area of the site.
- Areas of higher density higher and less topography to centralise development and local shops / centre
- \leftrightarrow Potential site access points
 - Potential common amenity areas
 - Location of existing Church



3.1 Vision

"To create a legacy community around conservation principles and environmental technologies that will accommodate growth and benefit the community and region.

To contribute to Mangawhai's sense of community and appreciation of native landscapes through environmentally conscious and innovative design techniques.

Mangawhai Hills will foster connectivity and shared amenities that will benefit wider Mangawhai and the Kaipara region"



3.2 Design Principles

The principles are shaped by the opportunities and constraints of the site and its surrounding context. The principles provide guidance to achieve the vision of Mangawhai Hills and frame the key moves and structure plan response in line with Appendix 25A - Mangawhai Design Guidelines



Integrated and Connected

Create interconnected transportation, ecological, and hydrological networks within the site and with the surrounding area. Integrate this new community, socially and spatially, with Mangawhai village, Mangawhai Central and Mangawhai Heads.



Regeneration

Restore, replant and 're-wild' identified conservation areas, eliminate grazing and restore stormwater quality.

Quality Public Realm

Ensure a high standard of development, public space, design amenity and public access.





Community

Build a strong sense of community through shared amenities, public trails, access to nature, and places to meet and interact.

Native Landscapes

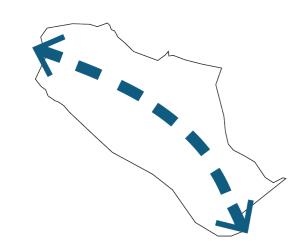
Conserve and expand riparian areas, native vegetation. Protect conservation areas through covenants on title and common management.



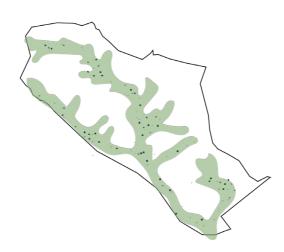
Self Sufficiency and Longevity

Showcase best practices and environmental technologies including low-impact water, stormwater, wastewater, and energy systems. Establish long-term, governance and conservation.

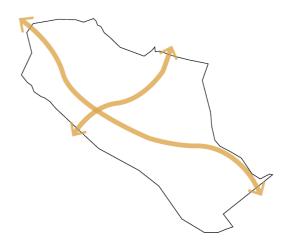
3.3 Key Moves



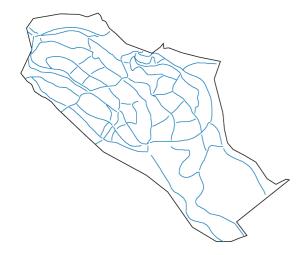
Protect and enhance the ecological corridor set out by the Mangawhai Spatial Plan. Complete the ecological corridor within the site through re-vegetation.



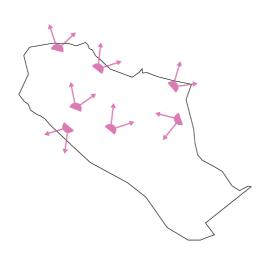
Develop existing vegetated gullies/valleys for a range of functions including drainage, amenity, ecology, recreation, landscape and cultural use. This will create interconnected open spaces and parks.



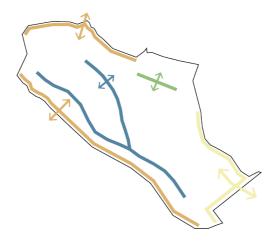
Design road alignments with the contours of the landscape. Allow for larger development blocks to offer flexibility in site design to absorb slopes and minimise possible retaining.



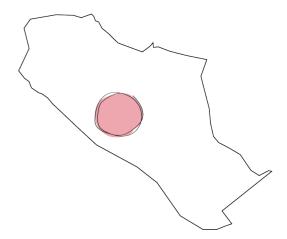
Create a network of trails to offer an off-road walking and cycling network. These serve as transportation and recreational trails which reduce vehicle and pedestrian/ cyclist conflicts.



Optimise views of surrounding landscape through orientation of dwellings and aligning block arrangements.



Enable a sympathetic transition between the site and the existing urban form and open space in Mangawhai. Provide appropriate interface solutions on edges requiring specific treatments.



Create a neighbourhood centre with amenities that will serve future residents and the wider community.



Sustainable drainage strategies and low impact design to manage the quality of existing natural streams and restore stormwater quality.



4.1 Conservation Design

The Kaipara Spatial Plan (2020) and District Plan Review (2021) identified the need for improved rural residential development and subdivision practices. These both called for a fresh approach to accommodating growth while protecting the features of the area. These and other plans and policies highlight the importance of integrated stormwater management, protecting environmentally sensitive areas, fitting development into the landscape, and creating high-quality built form.

Detailed site analysis (as outlined in Section 2) further identified the need for a fresh, alternative approach to planning the Mangawhai Hills site. A multi-disciplinary team was assembled; and relevant international best practices were investigated.

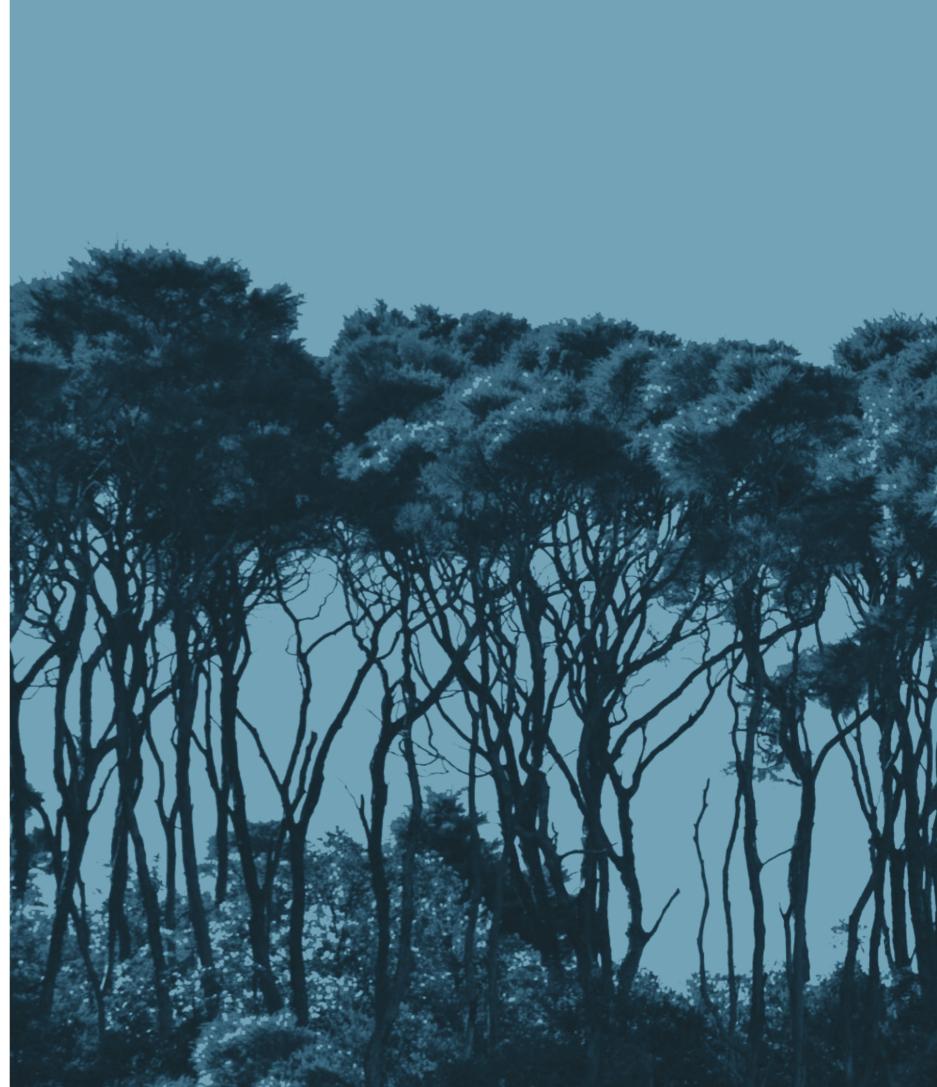
This led the MHL team to adopt a 'Conservation Design' approach to the planning of this site. The team's approach went, however, beyond conservation to environmental restoration, revegetation and 'rewilding'. A decision was made to also incorporate low impact (or watersensitive) design and slope-adaptive development principles.

Conservation Design ('CD') is an alternative to conventional rural residential development. Now common practice in North America, this approach has also been used in various forms and to different extents in New Zealand.

The approach dates to landscape architect lan McHarg's famous book Design With Nature (1992) and planner Randall Arendt's books Conservation Design for Subdivisions (1996), Growing Greener (1999) and Rural by Design (2015). This design approach is highly aligned with the objectives of the RMA as well as Kaipara District Council planning policies.

Conservation Design involves protecting site and ecological features and clustering development, so as to create "an interconnected network of conservation lands" (Randall Arendt – 1996). While focused on environmental objectives, it also generates positive economic, social, and cultural outcomes.

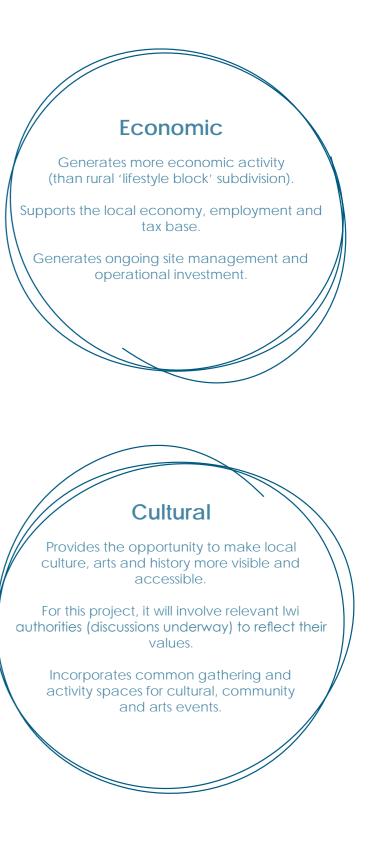
Discussions with Te Uri o Hau are underway to seek input and reflect cultural values in the planning and design of the site. This may include cultural wayfinding (Environs Toi), monitoring (Kaitaki), native planting (through Nga Uri O Hau nursery) or other actions to be included in future planning applications.





Environmental Conserves more land in a natural state and better allows revegetation and re-wilding. Protects and connects environmentally sensitive areas and habitats. Allows ongoing management through conservation covenants and easements. Supports integrated stormwater management and Water Sensitive (or 'Low Impact') Design. Social Expands trail and pathway networks for local residents and the larger community. Supports outdoor recreation, access to nature and community wellness. Creates social interaction and sense of community through common amenities and spaces. Provides safe walking, cycling and active transport options.

In short, Conservation Design offers an "alternative to traditional development that local **governments may offer to balance the potential influx of new residents, with conservation** of open space, scenic vistas, and agricultural lands". Community Planning and Land-Use Community of Practice – (2019) (https://community-planning.extension.org/).



The diagrams to the right illustrate the planning and design process used to generate the Conceptual Structure Plan.

The MHL team has gone further than past conservation 'subdivision' practices through:

- A strong focus on hydrology and water sensitive / low-impact design;
- Moving beyond conserving native vegetation to re-vegetation and 're-wilding'; and
- Proposing a hierarchy and network of trails and muti-use pathways supporting recreation and active transportation.

The conservation and revegetation areas will be protected by covenants registered on all property titles. These areas will be managed and maintained by a Homeowners' Association, or potentially a different ownership structure to manage the preservation, maintenance and conservation status in perpetuity.

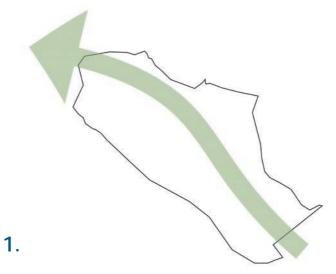
Finally, the proposed Structure Plan will help to achieve the objectives of the Mangawhai Spatial Plan, including:

- Enhance and protect ecological corridors from the hills to the sea
- Improve connectivity and public access to the local natural environment
- Provide blue green infrastructure to enhance biodiversity, environmental health, and stormwater management

The resulting Structure Plan area of circa 220 Hectares proposes that approximately:

- 25% of the site are Primary Conservation Areas (including 20 Ha of existing native bush).
- 15% be identified as Secondary Conservation Areas through revegetation / rewilding.
- 10% be set aside as open space for community and public use.
- All existing wetlands will be preserved and enhanced with planting.
- Target of 15km of paved pathways, gravel paths and native bush trails be provided for public use.

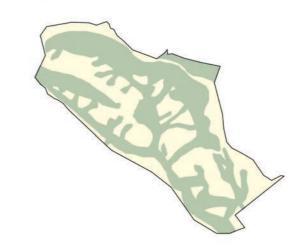
Conservation Design Process:



Regional analysis - building on the Kaipara Spatial Plan (e.g. context, connections and character)

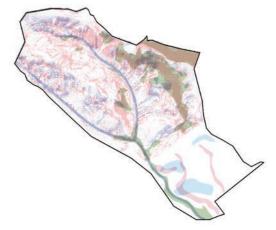


Identifying / mapping primary and secondary conservation areas (proposed 'green network').

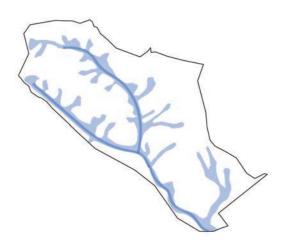


Mapping of residual lands for potential development, common amenity and recreational areas.

5.



Detailed site mapping and analysis (e.g. topography, orientation, ecology, hydrology).



4.

2.

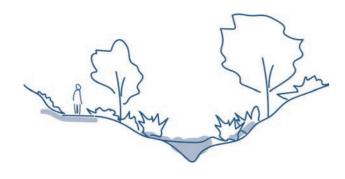
Identifying / mapping intermittent streams, streams and wetlands (proposed ' blue network).



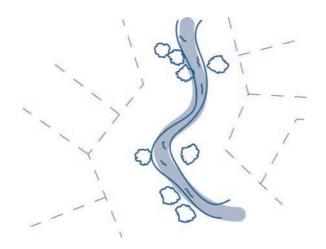
6.

Delineating vehicular, pedestrian and cycle networks and connections (proposed 'grey' network)

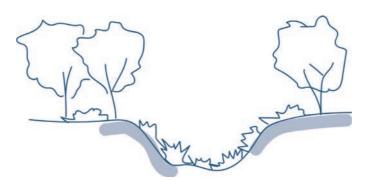
4.2 Conservation Design Principles



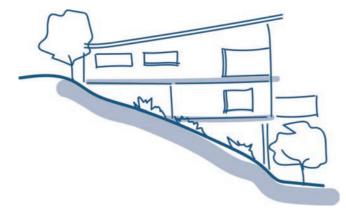
Re-vegetation and implementation of riparian planting along water courses



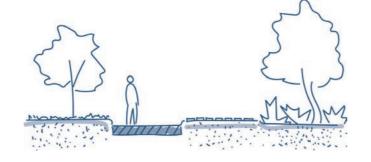
Flexibility in lot sizes and arrangements to respond to natural environment - consideration of building platforms



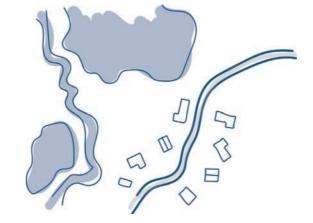
Creating new drainage systems through rain gardens, swales and wetlands



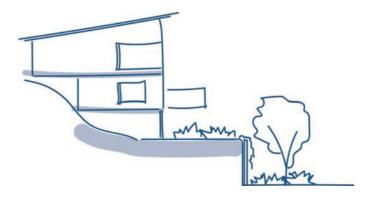
Specific lot and road design that respond to the contours of the site



Reducing impervious surfaces



Centralising development in areas with fewer ecological constraints



Street interfaces - fencing / retaining treatments

Water retention and recycling

4.3 Water Sensitive Design

Water Sensitive Design is an outcome-focused approach to planning and development which aims to reduce the effects urban development has on the environment. It should protect existing natural features and ecological processes to retain natural behaviours of water catchments. Combined with the ecological benefits is the best practice urban design and community values of Water Sensitive Design.

Mangawhai Hills directs development to appropriate locations which provides for clustered development in these locations to minimise land and ecological disturbance resulting in a balance of protected and enhanced environments and ecosystems.

The objectives of Water Sensitive Design is to seek positive environmental, economic and social outcomes. Some of these which are reflected in the principles of Mangawhai Hills are:



Protect water quality of surface and ground waters







Integrate water into the landscape to enhance visual, social, cultural and ecological values

Better supports integrated stormwater management

Protect natural creeks and other waterways on site



Manage water through retention at times of heavy rainfall

4.4 Slope Adaptive Housing

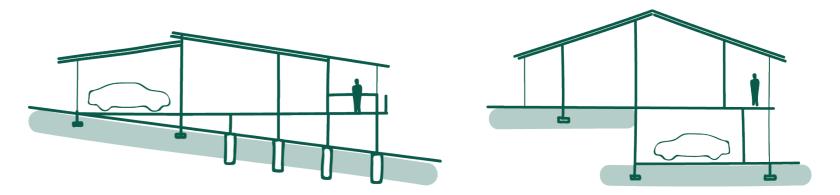
Slope adaptive housing is encapsulated within the Conservation Design approach. Mangawhai Hills has a large portion of sloping terrain which some is heavily vegetated and of significance to the site. Protection of these areas requires housing which is adaptive across the site to preserve the ecological features through sympathetic housing.

Slope Adaptive Housing can benefit Mangawhai Hills in a number of ways being:

- Ensure the layout of new development positively responds to the undulating topography
- To minimise disturbance to the natural topography through excessive earthworks and associated retaining structures
- To minimise cut and fill on sloping sites through site responsive house design
- To avoid impacts from storm water run-off on neighbouring properties, streets and public spaces.



Stepped floor levels approximate 10% slope (north facing slope)



Down slope site approximate 20% slope (driveway from above)



Stepped floor levels approximate 15% slope (south facing slope)

Up slope site approximate 20% slope (driveway from below)

4.5 Topographical Strategy

The existing topography will be treated in a sensitive manner. Roads and key connections have been designed sympathetically with the existing land form to minimise the extent of retaining required.

Low level retaining walls will be required in certain areas, however, these will be minimised along public realm frontages where possible and be layered with soft landscaping and terraced to minimise potential adverse visual effects.

In certain areas, the proposed housing typologies may also be able to integrate some of the existing slope (if required) within the dwelling structure itself which will also assist in reducing the need for any significant retaining walls.



4.6 Open Space Precedent Imagery



Re-vegetation and active open space around existing ecological areas



Nature walking/cycling trail within areas of re-vegetated amenity planting



Low impact walkway and bridge within the proposed nature trail



An example of active open spaces within the site



Wider hard and fast walking/cycling route within native bush



Formed footpaths of varied width meandering within the road reserves



Retention ponds and stormwater management as a ecological feature of the site



Proposed walking/cycling trail within the native vegetation in the north western area of the site

4.7 Built Form Precedent Imagery



Minimise excavations where possible. Once complete, the buildings should look tucked into the natural landscape



Aim for low-lying buildings - the proportion should be much wider than high to relate to the ground



Buildings to have a generous setback from the road to allow for landscaping and stormwater treatments such as swales



Use a minimum of number of materials on one building and material which belong to the landscape



Building should hug the sweep of the ground and follow contour where practical to shape the lie of the land



Build near a change in landform - on a plain part way up a hillside to optimise views and minimise retaining



Building viewed amongst the trees. Vegetation should be at a scale which relates to the size of the building so the building does not dominate the landscape



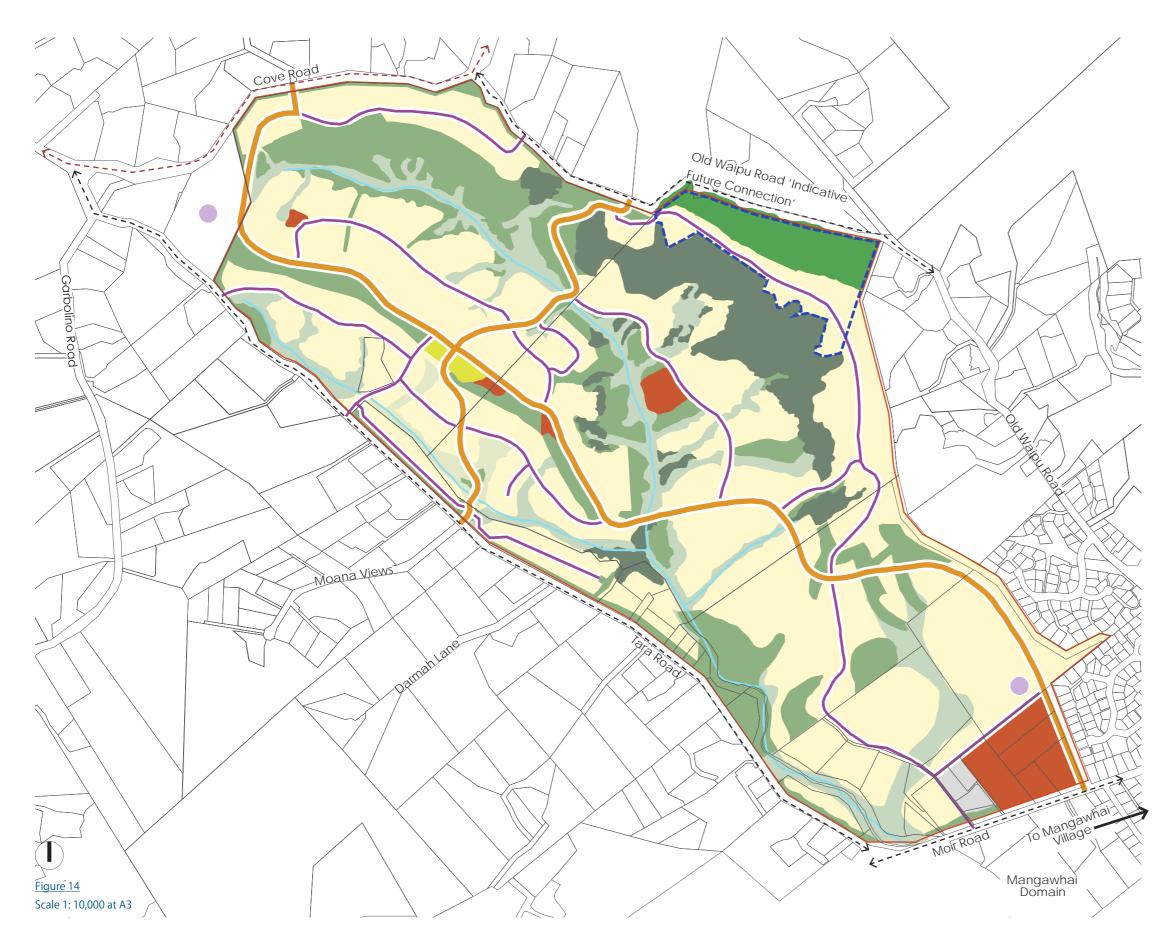
Ground with other buildings. Where on sloping land, refer to slope adaptive housing design principles



Barker & Associates / Greenwood Associates / Edg Planning

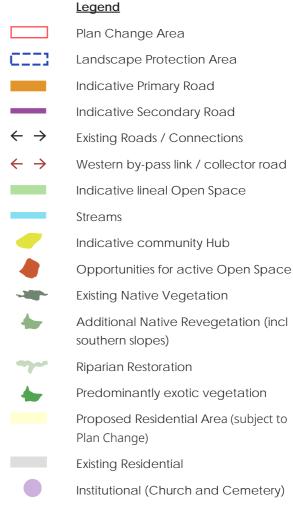


5.1 Structure Plan



A collaborative urban design approach with planning, ecology, landscape and engineering has driven the development of the conceptual structure plan to guide future development within the site.

A comprehensive analysis of the existing environmental qualities, features and characteristics informed the identification of appropriate opportunities and constraints. This has subsequently informed the development of the conceptual structure plan which indicates key structural elements of movement and land use as well as specific open space and other place making recommendations.



5.2 Open Space Network



The proposed open space network is largely driven by natural and proposed native vegetation, existing hydrology (including streams and wetlands) and topography.

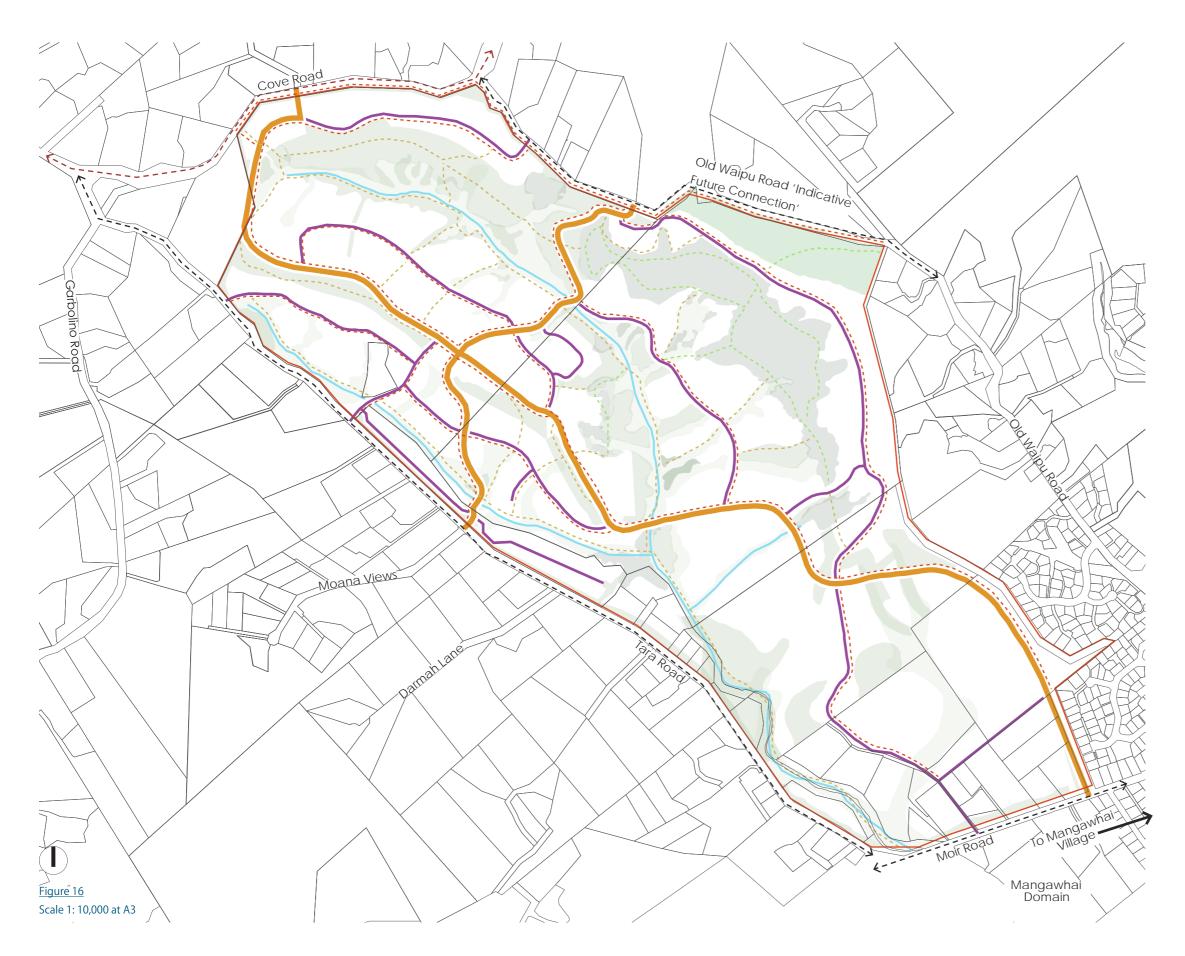
The open space network is a primary structuring element on site in terms of the location of primary and secondary roads, walking and cycling connections, the community hub location and the overall density distribution.

Some of the key drivers include: enhancing and protecting ecological corridors, improving connectivity and public access to local natural environment and to provide blue / green infrastructure to enhance biodiversity, environmental health and stormwater management.

Legend

| ← → Indicative Primary & Secondary Roads ← → Indicative Lineal Open Space Indicative Primary & Secondary Roads Indicative Lineal Open Space Streams Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Plan Change Area |
|---|--------------------------|--------------------------------------|
| ← → Indicative Lineal Open Space Indicative Primary & Secondary Roads Indicative Lineal Open Space Streams Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | CZZ3 | Landscape Protection Area |
| Indicative Primary & Secondary Roads Indicative Lineal Open Space Streams Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | \leftrightarrow | Indicative Primary & Secondary Roads |
| Indicative Lineal Open Space Streams Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | $\leftarrow \rightarrow$ | Indicative Lineal Open Space |
| Streams Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Indicative Primary & Secondary Roads |
| Indicative Social Open Space Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Indicative Lineal Open Space |
| Opportunities for Active Open Space Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Streams |
| Existing Native Vegetation Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Indicative Social Open Space |
| Additional Native Revegetation (incl southern slopes) Riparian Restoration | | Opportunities for Active Open Space |
| slopes) Riparian Restoration | | Existing Native Vegetation |
| | - | |
| Predominantly exotic vegetation | - | Riparian Restoration |
| | - | Predominantly exotic vegetation |

5.3 Access and Movement Network



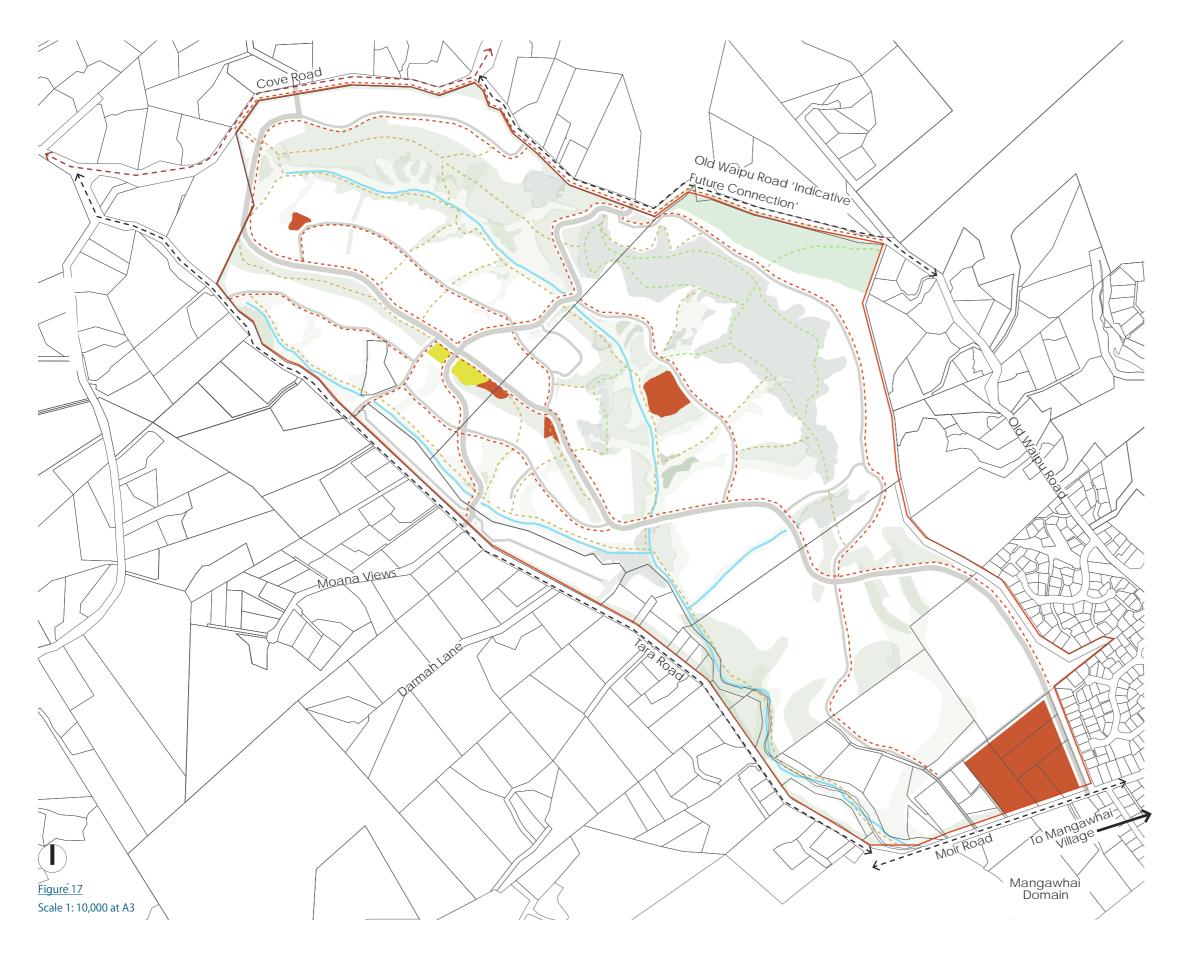
The access and movement network has been informed by the open space and ecological network of the site. The primary and secondary roads follow the contours, utilising the most favourable terrain for vehicular movement and minimising impact on the existing ecology and natural features.

Two key objectives are to enhance the level of connectivity achieved throughout the site and promote active modes of transport. This has been achieved through the clear and legible primary and secondary road connections along with the intricate network of pedestrian / cycle connections.

Legend

| | Plan Change Area |
|--------------------------|---|
| $\leftarrow \rightarrow$ | Existing Roads / Connections |
| $\leftarrow \rightarrow$ | Western by-pass link / collector road |
| | Indicative Primary Road |
| | Indicative Secondary Road |
| | Indicative gravel pathways |
| | Indicative local pathways |
| | Indicative nature trails |
| | Indicative Lineal Open Space |
| | Streams |
| - | Indicative Ecological / Vegetated Areas |
| | |

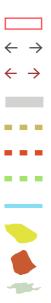
5.4 Walking and Cycling Network



Promoting active modes of transport is a key objective associated with this proposal. In order to achieve this, an intricate network of pedestrian and cycle trails has been provided, creating a range of movement choices for the future community.

These trails will serve a variety of purposes and are typically collocated with open space and amenity areas, proposed road / vehicle access connections and existing natural features associated with the site such as streams and wet areas.

Legend



Plan Change Area Existing Roads / Connections Western by-pass link / collector road Indicative Primary & Secondary Roads Indicative gravel pathways Indicative firm pathways Indicative nature trails Streams Indicative Social Open Space Indicative Active Open Space Indicative Ecological / Vegetated Areas

5.5 Boundary Interfaces

Appropriate management of specific interfaces is required to ensure future development will integrate with the existing surrounding context and mitigate potential adverse effects in relation to neighbouring properties. Four key interfaces have been identified below with respect to implications for potential future development.

These include:

- 1. Tara Road, Cove Road and Old Waipu Road North: A densely vegetated landscape bund and buffer will be incorporated between any future development and the existing Tara Road, Cove Road and Old Waipu Road North. This is proposed to create a visual buffer between the residential development and the adjoining road corridors, create a high quality landscaped entrance to the site, retain a high degree of privacy and amenity for the proposed dwellings and absorb slope if / where necessary.
- 2. Northern ridge line: This interface detail is yet to be determined and will largely be informed by the future LVA prepared by Greenwoods.
- 3. Existing residential development: Where the rear of existing residential lots are located adjacent to the rear of proposed lots, privacy fencing and a landscaped buffer will be incorporated to mitigate any potential adverse privacy and amenity effects. Where the rear of existing dwellings are located directly adjacent to a proposed road connection, a densely vegetated landscaped buffer is anticipated to mitigate potential adverse privacy and amenity effects on existing neighbouring properties.
- 4. Stream corridors: Dwellings should front stream corridors where possible to provide activation and surveillance over the green network. Dwellings should be sufficiently setback from stream corridors and incorporate low level planting within the relevant yards to create an appropriate 'transition' zone between the private and public realms.



Legend

Tara Road, Cove Road and Old Waipu Road North

- Northern ridge line
- Existing residential development
- Stream corridors

Figure 18 Scale 1:12,500 at A3

5.6 Precedent Development - Jacks Point

Jack's Point is a precedent development which aligns with the vision and principles of Mangawhai Hills. It minimises its environmental footprint and 'steps lightly' on the land. Jack's Point is similar to Mangawhai Hills in its natural setting and landscapes. The purpose of providing Jack's Point as a precedent development shows the intentional vision, principles and possible outcomes of Mangawhai Hills.

Principles from the Jack's Point Design Guidelines include:

- Integration of landuse activities and built form into a wider strong framework of green and blue open space;
- A well connected trail network;
- A pedestrian and bicycle focused environment, with safe and attractive walking and cycling routes which connect to open spaces and the wider Wakatipu Basin;
- Placement of buildings, siting of open spaces and alignment of roads, protect key view shafts to the wider landscape;
- Vehicular movement through the Village is provided for in an efficient manner that does not affect the quality of the pedestrian environment; and
- The appearance of buildings and open spaces in the Village enhances a unique sense of place and responds to the natural and cultural values of Jack's Point.
- The project's sewerage is fully managed on site. Mangawhai Hills will use a similar system.



Built form within Jack's Point



Developing within natural terrain of the site



Building placement for optimal views



Jack's Point rural style roads



Road design and separation of footpaths



Intersection walking/cycling path with road

5.7 Structure Plan Response

Movement

| Issue | Implications for Structure Plan | Recommendations |
|--|--|---|
| Access off Tara Road | Tara Road is a relatively straight road which does not restrict the location of access. Existing farm tracks are currently located off Tara Road. | Access proposed along Tara Road should use existin further investigation by a traffic expert and upgrade Structure Plan. |
| Access off Cove Road | The curvature and corners on Cove Road and limited sight-lines make access more difficult. This access could provide a more efficient route for people traveling from the north into Mangawhai village. This would require careful design with consideration of vehicle volumes and the existing streetscape environment. | faster route. Design considerations for these would be |
| Access off Old Waipu Road | Old Waipu Road requires an extension and upgrade to facilitate a connection to the site. | MHL work closely with NTA to assist it to provide acce Spatial Plan sets out a potential new linkage to Mang |
| Primary Connector Roads navio terrain | gating The centre of the site has many constraints such as ecological functions and native vegetation. There are implications when aligning roads to minimise the effects on natural systems. | Align roads to follow the natural topography of the s least topographical constraints. Aim to only position crossings. |
| Walking / Cycling Trails | Disruption to existing vegetation and ecological areas. Maintenance of trails and pedestrian cyclist safety within the site. | Indicative pedestrian and cycle trails included on the movement around the site away from roads to avoid lighting within the most commonly used trails to minir with roads when possible to increase connectivity wi |

Public realm and open space

| lssue | Implications for Structure Plan | Recommendations |
|------------------------|--|---|
| Open Space Amenities | Implications on the spatial arrangement of residential landuse, road alignments and trail alignments. Limits the spatial arrangement of residential land-use and road trail alignments. Can influence the aspect and orientation of residential development. | Opportunities to create a cohesive, well-connected a high ecological and cultural values. Integration within for greater use. Opportunity to apply Water-Sensitive I considerations. Opportunities to define active vs socia |
| Steep slopes | Impacts access, movement networks and the overall spatial arrangement of land uses. Also impacts storm-water management, soil erosion and potential loss of existing vegetation. Retaining walls may be required and will need to be managed carefully. Steep south facing slopes are undesirable to develop on due to sunlight access. | Movement networks, block orientations and open spa the existing landform. Design and location of allotmer slopes to respond to natural landform. Integrate steep ecological areas. Manage and minimise retaining wal too steep to develop or are south facing, re-vegetate |
| Native vegetation | Retaining mature trees and areas of manuka, kanuka and Totara provide immediate amenity, sense of scale and connection to the rural heritage of the site. Can result in potential loss of yield. Restricts the movement network. Compatibility of some of the mature trees with residential landuse such as shelter belts restricting sight-lines, shading and limb fall. Ongoing ownership and management of large exotic tree species. | Manage the masterplanning around high value trees of trees to be located within public open space areas as they are not beneficial to the long-term master pla riparian margins and larger mature exotic trees to imp maintenance outcomes and overall ecological value corridors and fingers into the development layout for l ecological, landscape and amenity benefits. |
| Waterways and wetlands | Limits the spatial arrangement of residential land-use and movement networks. Set backs and riparian margins associated with these areas are required for protection. Can influence aspect and solar orientation of developments. | Opportunity to create a cohesive, well-connected an high ecological values. Apply Water Sensitive Urban D to ecology, culture, landscape amenity, recreation ar |

ting formed farm tracks. These will require de due to increased traffic volumes by the

e a road type which does not promote a d be traffic calming, narrower road reserve, ed requirement.

ccess to Old Waipu Road as the Mangawhai angawhai Central.

e site and position them on areas with the on roads where there are already wetland

the structure plan provide for safe active oid vehicle/pedestrian conflicts. Provide inimise CPTED related issues and intersection with residential areas.

d and extensive open space network with thin the walking and cycling trail network ve Design and Conservation Design ocial open space areas.

pace to respond in a sensitive manner to nents to be managed in areas with steeper eeper slopes into riparian edges and wall heights and materials. Where areas are ate to reconnect the ecological corridor.

ees to encourage their retention. Groupings eas. Removal of some trees (shelter belts) plan. Select removal of undergrowth, improve CPTED related outcomes, lue. Promote the incorporation of green for linkages to provide recreational,

and extensive open space network with n Design principles including values related and drainage.

5.7 Structure Plan Response

Boundary Interfaces

| Issue | Implications for Structure Plan | Recommendations |
|------------------------------|--|--|
| Neighbouring Properties | Neighbouring property owners may be sensitive to effects arising from future residential development. The structure plan to be responsive to this existing environment, it could also be used to drive change to the existing environment. | Work closely with all neighbouring properties and aim outcomes for all parties |
| Ecological Areas and Streams | Limits connectivity within the centre of the structure plan site. Maintain the natural interfaces of these areas with residential development. | Opportunity to incorporate the walking and cycling t active modes through these areas and celebrate the of the site. Include a landscape buffer and take adva numerous high points along the ridge lines. |
| Western Rural boundary | Visual change in landscape. | Achieve transition with road setbacks, retention of ex planting and landscaped bund on the street edges a the new residential area. |
| Streams and Riparian Edges | Potential loss of the existing natural environment and the impact of residential interfaces. | Landscape buffer and riparian plantings along stream edges, through planting and tiered vegetation to imp |
| | | |

Residential Neighbourhoods

| lssue | Implications for Structure Plan | Recommendations |
|-------|---------------------------------|--|
| - | Residential land-use | Each building pad location very carefully and strateg conservation design and infrastructure optimisation. E privacy, adequate screening and buffers to adjoining objectives means each lot will be 1000m ² +. |
| - | Non-Residential land-use | Provision for a cafe and local facilities within a small a neighbourhood. |
| - | Open space / ecological areas | Open space and ecological areas to ensure retention riparian ecosystems. Neighbourhood parks to provide Multi-functional spaces to accommodate storm-wate recreational opportunities, cultural and ecological va |

aim to achieve mutually beneficial

ng trails to increase the connectivity by the ecological and cultural significance dvantage of the potential views from

existing vegetation, providing increased as as a buffer between rural landscape and

eams. Enhance the streams and riparian improve the stream and riparian edge.

tegically located for ecological n. Each building pad aims to optimise ning properties. To achieve these multiple

all area of the site to promote a walkable

tion / protection of mature trees and de local recreational opportunities. ater attenuation areas as well as informal values.



Urban & Environmental

09 375 0900 | admin@barker.co.nz | barker.co.nz PO Box 1986, Shortland Street, Auckland 1140 Whangarei | Napier | Christchurch | Auckland | Wellington | Queenstown | Hamilton | Kerikeri