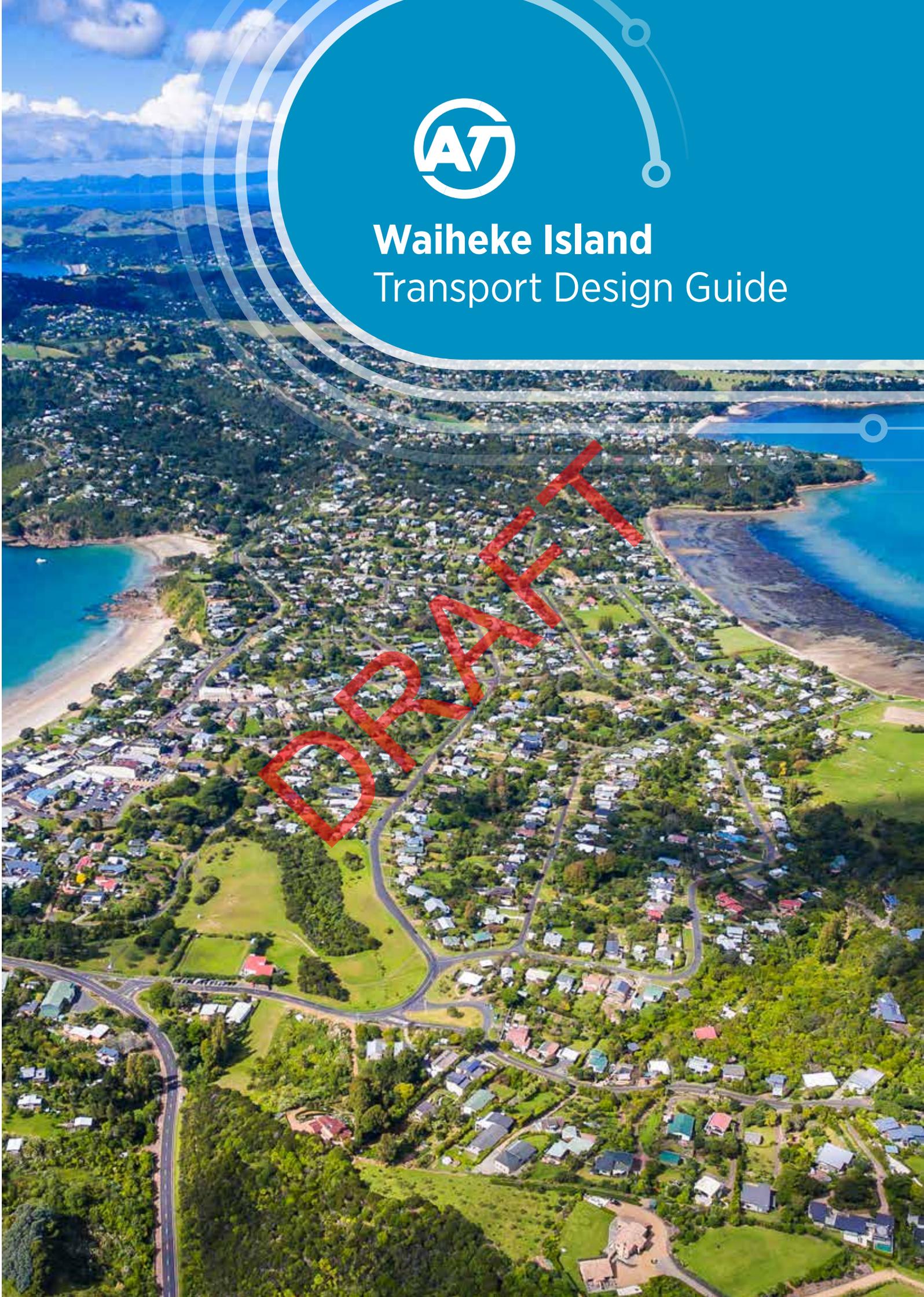




# Waiheke Island Transport Design Guide

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## Introduction

The Waiheke Island Transport Design Guide (the guide) was commissioned by Auckland Transport (AT) and the Waiheke Local Board to recognise Waiheke's unique character and the pressure on the transport system the island is facing now and into the future due to both tourism and population growth and to ensure resilience to climate change.

In 2017 AT and the Waiheke Local Board collaborated to establish a formal Memorandum of Understanding (MoU) to guide the relationship and enable greater alignment to achieve transport outcomes to meet Waiheke's changing needs. One of the key actions from the MoU was the development of Waiheke's first collaborative, multi-modal 10-year transport plan – Waiheke 10 Year Transport Plan, adopted in 2020.

The 10 Year Transport Plan contains a full, prioritised list of the 100 projects, plans, services and processes desired by the people of Waiheke to create a better transport system on the island. [The Waiheke 10 Year Transport Plan](#) is consistent with the [Waiheke Pathways Plan 2019](#), which promotes over 40 priority projects to improve walking, cycling and horse riding on Waiheke.

The development of a Waiheke specific design guide is identified within the 10 Year Transport Plan as a key priority and tool to create a greater degree of consistency and certainty, while reflecting the island's character, in the upgrade of roads, footpaths and other transport infrastructure.



# Background

Waiheke Island is the second largest island in the Hauraki Gulf and the most populous. In order to accommodate the current and future population and visitor numbers, it is recognised there is a need for major capital investment to improve the quality, safety and connectivity of the transport network on Waiheke, in particular the street/road network.

Census data used to create the Waiheke 10 Year Transport Plan indicates Waiheke has different travel behaviour to the rest of Auckland, with lower rates of private vehicle use and higher rates of walking or jogging and of cycling. Notably, over 70% of Waiheke’s children are driven to school with road safety concerns cited as the main reason for deferring walking and cycling.



Population and Travel behaviour (source: Auckland Council, NZ census 2013 and 2018 and Infometrics Economic Profile Waiheke 2020)

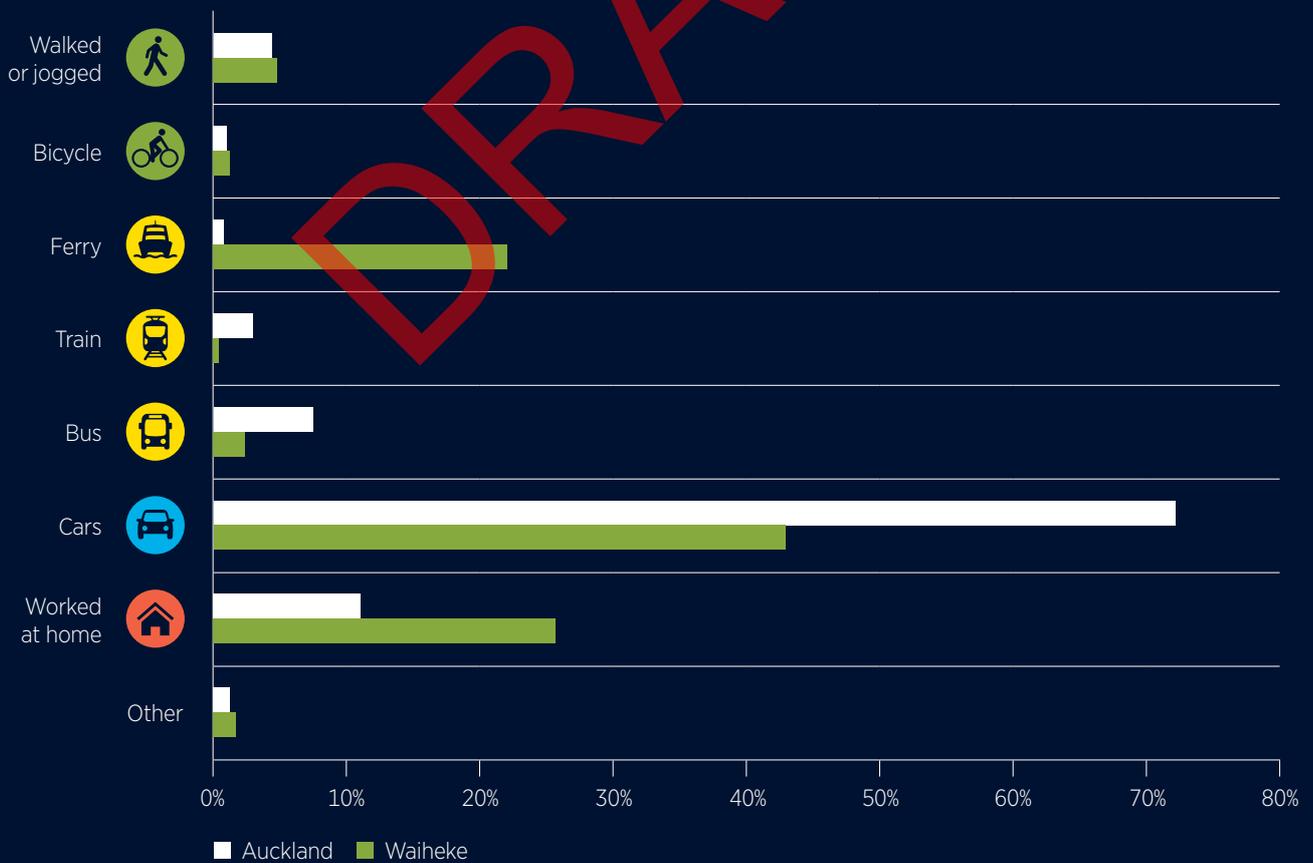
Note this data was prior to Covid-19 pandemic and is somewhat out of date

Road and street types and conditions in Waiheke have evolved differently to urban Auckland, in a piecemeal way due in part to topography and pace of development. As a consequence, there is a lack of consistent street design in type, character and condition. At present the footpath and cycle network is piecemeal and fragmented. In many locations it is constrained by the island's steep topography and roads.

Safe transport is a primary objective in street design throughout Auckland. Creating streets that protect and improve conditions

for walking, cycling, horse riding and public transport not only encourages greater use for these modes, but improves resilience to climate change, aids Waiheke's goal of becoming a low carbon community, and importantly contributes to the prevention of deaths and serious injuries for all road users as per AT's Vision Zero goals.

For these reasons it is imperative that the island has safe and effective pedestrian infrastructure, linking people to village centres, schools, ferries, places of employment and recreational destinations.



Travel habits in Waiheke compared with Auckland (source: census data as per Waiheke 10 Year Transport Plan)

## Character - urban versus rural

Waiheke has developed into two distinct areas with different characteristics, which has, and will continue to, influence the design of roads and streets. The western side of the island, with good access and connections to Auckland has become increasingly urbanised, with pockets of rural lifestyle/ vineyards, while the eastern side has remained largely rural characterised by large agricultural and viticultural landholdings.



### Western Waiheke - Urban

The urban settlements of Oneroa, Ostend, Surfdale and Onetangi and principal residential areas of Blackpool, Ōmiha (Rocky Bay), Palm Beach and Little Oneroa are predominantly located on the western half of Waiheke. The settlements are interspersed with rural residential lots and punctuated by large areas of regenerating native bush.

Western Waiheke benefits from a sealed arterial route connecting all the key settlements from Matiatia to Onetangi via Oneroa, Surfdale and Ostend, with a spur connecting through to Kennedy Point via two of the schools and the recreation centre.

The western side of the island is well served by public bus routes linking Onetangi, Ostend, Surfdale, Oneroa and the Matiatia Ferry Terminal every 15 minutes from 7am to 7pm seven days a week, and less frequently outside those hours.

It is acknowledged in the 10 Year Transport Plan that lack of provision for cyclists and adequate footpaths at many of the bus stops on Waiheke's current bus network hinders safe connections around the island. These are identified as priorities to improve transport safety.



### Eastern Waiheke - Rural

The eastern side of Waiheke is less developed. It is characterised by large scale agricultural and horticultural activities with vistas to white sandy beaches and the Hauraki Gulf. This side is largely serviced by unsealed roads.

The main route around the eastern side of the island is comprised of Man O' War Road, Cowes Bay Road and Orapiu Road. Of these, only Orapiu Road is sealed. With a growing population these roads are experiencing increasing vehicular and freight movements that in turn put pressure on the maintenance and safety of these roads.

Progressive upgrade of the eastern loop road to improve safety and stormwater management is identified as a priority in the 10 Year Transport Plan.

## Purpose of the guide

The purpose of the guide is to ensure the character of Waiheke is maintained and enhanced as the island adapts to its current levels of population and/or visitors, or contemplates changes either to reduce numbers or grow further, requiring the design of streets and places in a way that is safe for people who live, work or visit Waiheke.

The guide establishes a vision and set of guiding principles, developed collaboratively between AT and the Waiheke Local Board, for all transport designs on the island which recognise the specific character of Waiheke; who the expected users of the island's roads, streets and pathways are; and how the various transport activities on the island's

various transport corridors can fit together.

The guide sets out how to design future streets and retrofit existing ones on Waiheke in a way that is safe and convenient for all users, while retaining Waiheke's special character. The guidance within this document establishes best practice. It does not provide the detail of engineering codes as these are set out in separate documentation.

Rules related to site access, parking and loading, helipads and airstrips are not included within this guide. These are addressed within the Auckland Council District Plan - Hauraki Gulf Islands Section, Part 13: Transport.



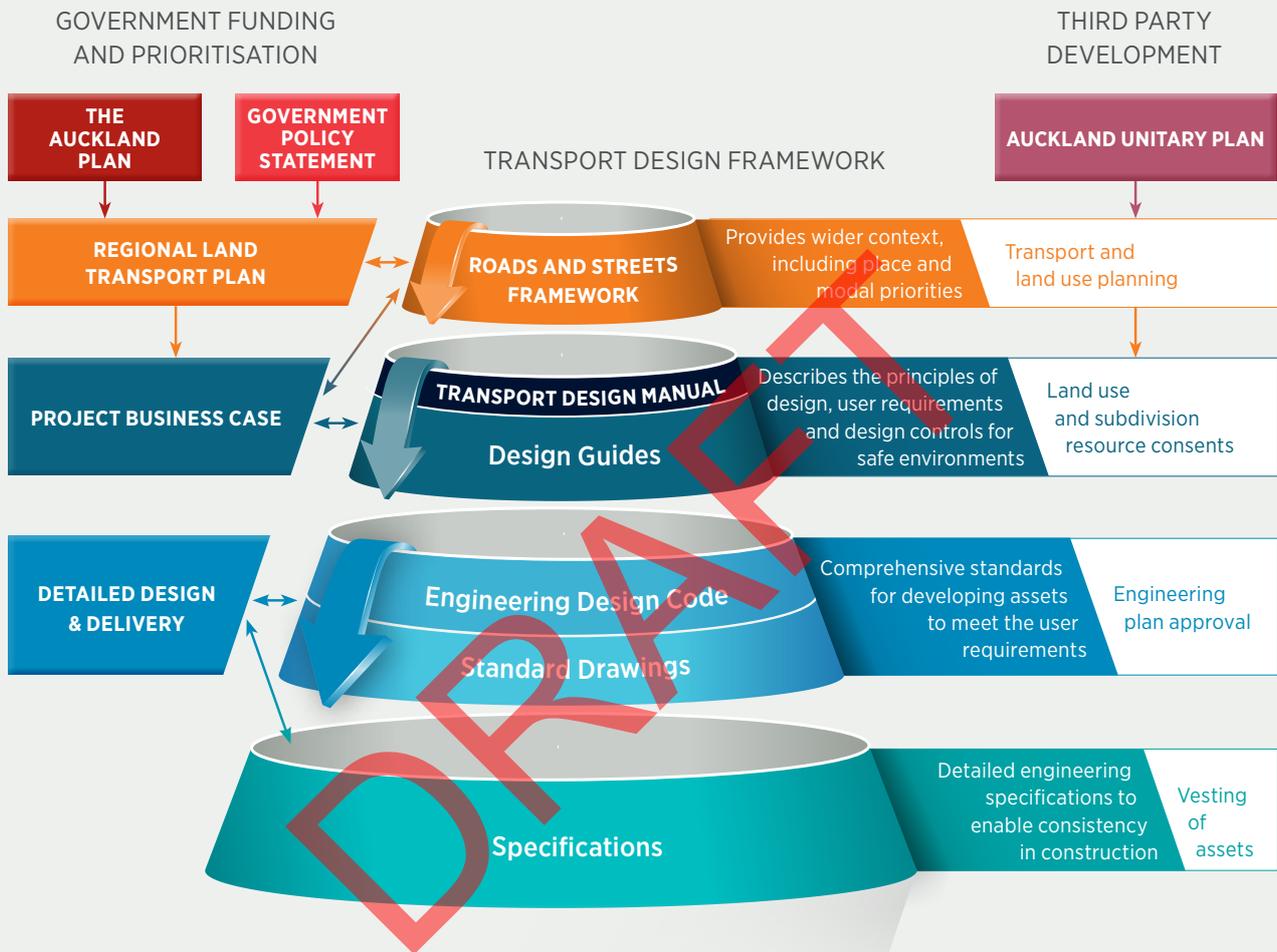


## Application

The Transport Design Manual is a set of guides, codes and specifications that are specifically created for the Auckland region based on integrating best practice and robust common engineering theory.

The Waiheke Transport Design Guide is a supplement to the Urban Street and Road Design Guide (USRDG) and other documents that sit within the Transport Design Manual. The purpose of this guide is to provide guidance on how to design changes to Waiheke's transport infrastructure from the perspective of all road users, in particular the very young and the very old and therefore ensuring safe and people-friendly design. This guide does not replace this USRDG, but rather is intended to be used in conjunction with it to define and enhance the character of Waiheke when undertaking transport related works.

As stated in purpose above, this guide describes the environment, the principles of design, the needs of different road users and guidance for achieving safe environments while retaining or enhancing the character of Waiheke. Any solutions for the detailed design and delivery of transport infrastructure will be worked through collaboratively through the appropriate design phases.



Better incorporation of high-level policy and strategic guidance from central government and Auckland Council, applied through the RASF, enables greater realisation of the vision for the city as set out in the Auckland Plan.

- |   |   |
|---|---|
| <b>GPS</b>  Government Policy Statement        | <b>RASF</b>  Roads and Streets Framework |
| <b>NLTP</b>  National Land Transport Programme | <b>TDM</b>  Transport Design Manual      |
| <b>RLTP</b>  Regional Land Transport Plan      | <b>OPS</b> Operations   |

Transport Design Manual and Waiheke Transport Design Guide within the wider Transport Design Framework (from Urban Streets and Roads Design Guide)

# Structure

## VISION AND PRINCIPLES

understand the vision and principles as the basis for decisions on transport projects

## MOVEMENT TO AND AROUND WAIHEKE

understand who we are designing for, their travel movements and needs

## STREET AND ROADS - TYPES AND CHARACTER

understand existing street types and guidance to ensure retention of character while improving streets for people

## ELEMENTS OF THE TRANSPORT NETWORK

specific guidance on all the elements within the street

## Implementation - are improvements required?

Auckland Transport recognises that incremental minor alterations within Waiheke can cumulatively alter the character of the island. At the inception of any project very careful consideration will be given as to why the potential works are required. This will include consideration of:



- Whether the works are necessary for the safety of all road users. The Safe System approach of promoting choice while planning for mistakes, designing for human vulnerability, strengthening all parts of the road transport system and shared responsibility must be used to inform design.
- Whether the works are necessary to improve the comfort of all road users.
- Whether the works will retain or enhance the existing character of the immediate environment.
- Whether the works could have a positive, neutral or negative impact upon the principles set out in section 2 of this guide.





# Vision and principles

The vision and principles for the guide summarises the aspirations of the local community for the future of the island. This long-term vision will ensure that the desired future for Waiheke is embedded in the principles that drive this transport guide.





## Vision

The guide seeks to preserve what makes Waiheke a unique place: its natural beauty combined with the island's rural and village settings. The vision is for a self-sustainable island that caters for the local community and becomes a destination for its unique environment, combining natural features and a relaxed lifestyle. A place with opportunities accessed equitably by all its people, with a transport system that caters for visitors and the local community, particularly for the young, the elderly and those with mobility issues. Waiheke is about vibrant places connected by a safe and sustainable transport system fit for our inclusive and eco-conscious community.

# Principles

These principles supplement those within the USRDG, to ensure transport projects maintain the character and sense of place that is intrinsic to Waiheke.



## Protect & enhance

Transport works and operations should be designed to protect and enhance the island's natural beauty and biodiversity, as well as to ensure effects on ecological systems are minimised. Use water sensitive design to avoid negative impact of stormwater over the environment on beaches, water and marine biodiversity of Tikapa Moana.



## Te Tiriti o Waitangi

Include Māori in transport decision-making as agreed under Te Tiriti o Waitangi. Demonstrate respect for mana whenua values and Te Tiriti principles (tino rangatiratanga, reciprocity/ kaitiakitanga, partnership/ pātuitanga, active protection/ whakamarumarutia, options/ kōwhiringa, mutual benefit, right of development and redress).



## Support economy

Support the Island's economy with transport systems accessible to both residents and visitors that attract them to the Island's natural endowments, leisure and hospitality offerings and peaceful atmosphere. Give equal priority to managing commuter, freight and delivery services to and from the Island, to retail trade and parking.



## Accessibility

Regardless of age and/or ability, everyone should expect easy use of transport corridors, safe and free movement on footpaths, road ways and road crossings even in constrained environments, particularly within the four major villages and in the vicinity of schools.



## Future

Design and implement infrastructure (wharves, route networks, bus stops and art/cultural considerations) that is low carbon and resilient to changes in travel demand and mode and to sea-level rise.



## Preserve

Transport projects should preserve and highlight the aesthetic and scenic attributes and natural values of Waiheke, as well as its historic and cultural heritage with a context-sensitive design.



## Respect

Respect the island's history, cultural and natural heritage and mana whenua. Ensure that any transport works retain the Island's rural/ semi-rural character and the Hauraki Gulf Marine Park surrounds and enhance the coastal character of villages while preserving semi-rural, bush areas, and seascapes.



## Harmonise

Consider and implement adaptations to standard practices and design considerations in response to the island's topography, character, existing transport network (including footpaths, pedestrian crossings and signage) and desirable speeds.



## Use local

Where practicable use low carbon footprint/ locally sourced high quality and natural materials for transport infrastructure, including locally sourced plants and materials for street furniture, while ensuring these are durable and long-lasting.



## Maintain

Design street lighting to minimise upward spill of light to avoid, where possible, negative effects on Waiheke's desired 'Dark Sky' status and the island's fauna.



## Connect

Enable walking, cycling and other outdoor activities in safe, accessible and natural settings, to connect people with schools, reserves and sport fields, and beaches.



## Safety

Prioritise safety provisions for all transport modes, in particular safe routes to school.

## Te Aranga Māori design principles

Auckland Transport and Waiheke Local Board are committed to the principles of Te Tiriti o Waitangi and working in partnership with mana whenua of Tāmaki Makaurau. Positively working with Māori culture and embedding mana whenua values into design creates opportunities that can benefit all, reflecting the unique identity of Waiheke in our roads, streets and the transport network across the motu and offering the potential to align transport infrastructure with traditional ara (pathways), where practicable.

The Te Aranga Māori Design Principles are a set of outcome-based principles founded on intrinsic Māori cultural values and designed to provide practical guidance for enhancing outcomes for the built environment. These can provide a starting point for a three-way conversation between mana whenua, the Waiheke Local Board and Auckland Transport to ensure that iwi and hapū as mana whenua who whakapapa to Waiheke are able to express their values and incorporate cultural heritage in transport projects in a way that is meaningful to them.



# Infrastructure sustainability principles

In addition to the above principles, Auckland Transport is developing policies and tools to ensure its assets are built and operated contributing to restoring or enhancing the environment. These policies and tools will take some time to develop; in the interim, the following principles should be applied to any new transport project on Waiheke:



Reduce greenhouse gas (GHG) emissions throughout the lifecycle of assets



Understand and have measures in place to address the predicted impacts of climate change



Actively minimise any sedimentation from entering waterways



Adopt a green infrastructure/ water sensitive urban design approach



Reduce the amount of waste produced and divert any waste from landfill



Reduce amounts of materials used and look for opportunities to substitute with recycled materials



Provide opportunities for Māori and Pasifika businesses, social enterprises and socially innovative businesses



Provide opportunities for Māori and Pasifika peoples and other targeted groups experiencing barriers to employment



For more information on these sustainability principles, please refer to Auckland Transport's Infrastructure Sustainability Guidelines.



# Movement to and around Waiheke

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## Wharves and ferry services

Access to and from Waiheke Island for people and goods is primarily via sea services and therefore reliable ferry services are essential for Waiheke. Wharves are crucial to enable safe and efficient movement between sea and land. The island has three main public wharves. These and the associated ferry infrastructure are owned, operated and maintained by AT, but the ferry services are privately operated.

- Matiatia—the predominant point of access for passengers by foot to and from downtown Auckland, known as the gateway to Waiheke for most visitors to the island as well as commuters. This wharf is well integrated with other transport modes as a transport interchange including a terminal bus stop, a park and ride facility, cycling parking, and planned improvements for the road to Oneroa to further encourage active modes and public transport patronage.
- Kennedy Point—the vehicle ferry terminal providing the predominant point of access for freight as well as private vehicles and passengers to and from Half Moon Bay and Wynyard Wharf
- Orapiu – public wharf, with limited passenger ferry sailings between Auckland and Waiheke and onto Rotorua Island and the Coromandel

Waiheke’s wharves act as important local transport interchanges between sea and land travel for residents and visitors alike. It is important that these provide appropriate infrastructure for arrival, and for visual and textural cues on the landward side to support safety and accessibility for Waiheke’s transport infrastructure.

# Land transport

Movement around the island includes a variety of means of transport infrastructure including local streets and roads, cycleways, walkways and bridle paths.



## People on foot

Walking should be the most accessible means of transport and the intent on Waiheke is to encourage active travel. However, Waiheke's footpath network is fragmented and the hilly topography places constraints on space available to provide suitable, safe and accessible walking infrastructure. In order to enable more people to safely walk to local destinations, every endeavour needs to be made to retrofit the existing road network and/or to provide for safe shared use.



## People on bicycles

Like the footpath network, Waiheke's cycle infrastructure is fragmented and includes lengths of separated cycleway along the main arterial and off-road paths shared with pedestrians. There are large areas with little to no cycle infrastructure, this includes cycle parking and storage as well as cycleways catering for both locals and tourists. The island is hilly, but distances are short, and bike rider numbers are growing. Greater attention to the local infrastructure is required to make cycling a safe and more viable option, particularly for shorter trips.



## People with accessibility needs

Waiheke is becoming increasingly responsive to people with accessibility needs and other disabilities. Matiatia (and the Downtown) ferry terminal is wheelchair accessible. Waiheke's new electric bus fleet is also fully accessible. However, the disconnected footpath network is problematic for people with disabilities. The lack of pedestrian crossings and the absence of audio and digital real-time information at bus stops does not support universal access, in particular people with low or no vision. To cater for people with mobility impairment, footpaths must have a minimum clear path width of 1.8m. This will also increase mobility for people using other modes such as bicycles and micro-mobility devices and people with prams.



## Freight

The main freight route runs between Kennedy Point and Matiatia wharf. Freight movements include trips to the Waiheke quarry, water tanker deliveries, waste collection trucks, deliveries to construction sites, shops (including the supermarkets) and seasonal trips to wineries. Freight trips would be expected to increase with a growing population. Additional freight movement places increased pressure on the existing road network.



## People on horses

Horse riding is popular on Waiheke. The island has a well-established pony club based at Te Huruhi Bay Reserve and the Adult Riding Club at Rangihoua Reserve as well as various other commercial horse trek operations throughout the island.

Horses can legally be ridden on the road, in any park (provided they do not damage the park or represent a safety risk to other users) or on the beaches. Horse riding is considered a mode of transport on Waiheke to be provided for within the guide, recognising that paths may be on or off the road network.



## School children

A number of school bus services operate on Waiheke between key residential destinations and Waiheke Primary, Te Huruhi Primary and Waiheke High School. However, with the lack of dedicated footpaths, road safety is a key concern for children travelling to and from school. As a consequence, 70% of children are driven to school. Safe routes to school are a priority on Waiheke.



## People on buses

The number of locals and visitors travelling by bus on Waiheke has been steadily growing. In response Auckland Transport redesigned the bus network to offer more frequent services, connecting the residential areas with the ferries. Since February 2020, integrated public transport fares have made it simpler and cheaper for customers using HOP card to use public transport. Auckland Transport is seeking to encourage more people to use public transport by making it more convenient in order to reduce traffic congestion and carbon emissions.

The western, more populous, side of Waiheke is relatively well served by public bus routes, with the exception of some streets within Ostend and Oneroa that are no longer directly served by buses. Bus routes are located on the arterial roads and some of the collector roads on the island. These routes provide access to public walkways, major destinations such as schools, retail/town centres and local holiday destinations such as wineries and the beach,

Buses need to be able to safely use the road network and people travelling by bus need to be safe alighting and walking to their ultimate destinations. The bus fleet is increasingly electric in line with Waiheke's ambition to reduce carbon emissions.



**WAIHEKE ISLAND BUS ROUTES**

Legend	
	Bus route
	Direction of route
	Ferry Terminal
	Marae
	Vineyard



Thompsons Point

Waiheke Bay

Opopoto Bay

Repo Bay

ana Bay

Palm Beach

Needle Rocks

Onetangi Bay

Piemelon Bay

Onetangi Beach

Onetangi

Ostend

50A  
50B  
502

50A  
50B

Selected peak trips on route 50A will extend to Waiheke Rd

Anzac Bay

O'Brien Rd

Onetangi Sports Park

Ōmiha (Rocky Bay)

502

Kuakarau Bay

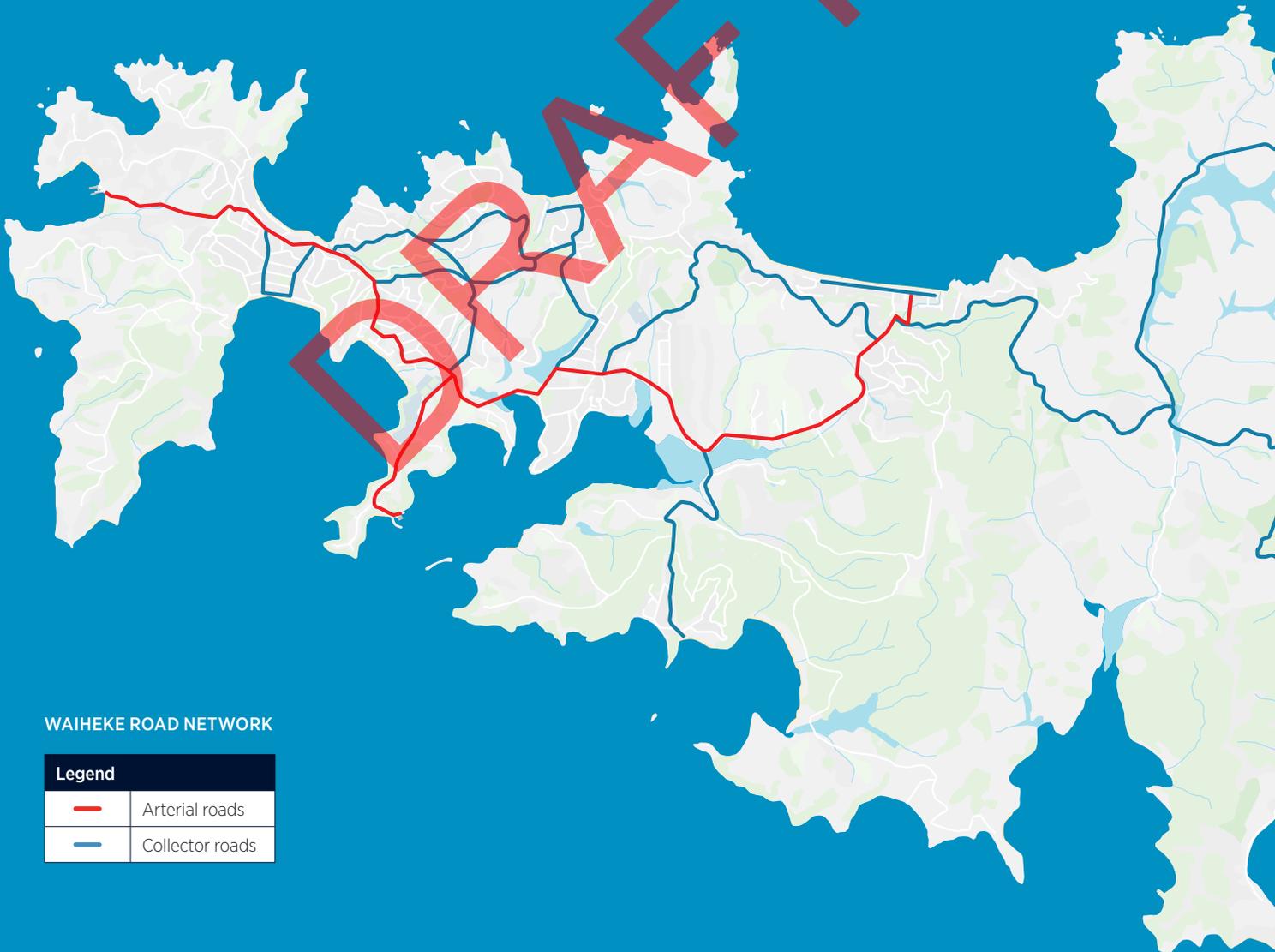
Ōmiha Bay

Rocky Bay

Awaaroa Bay



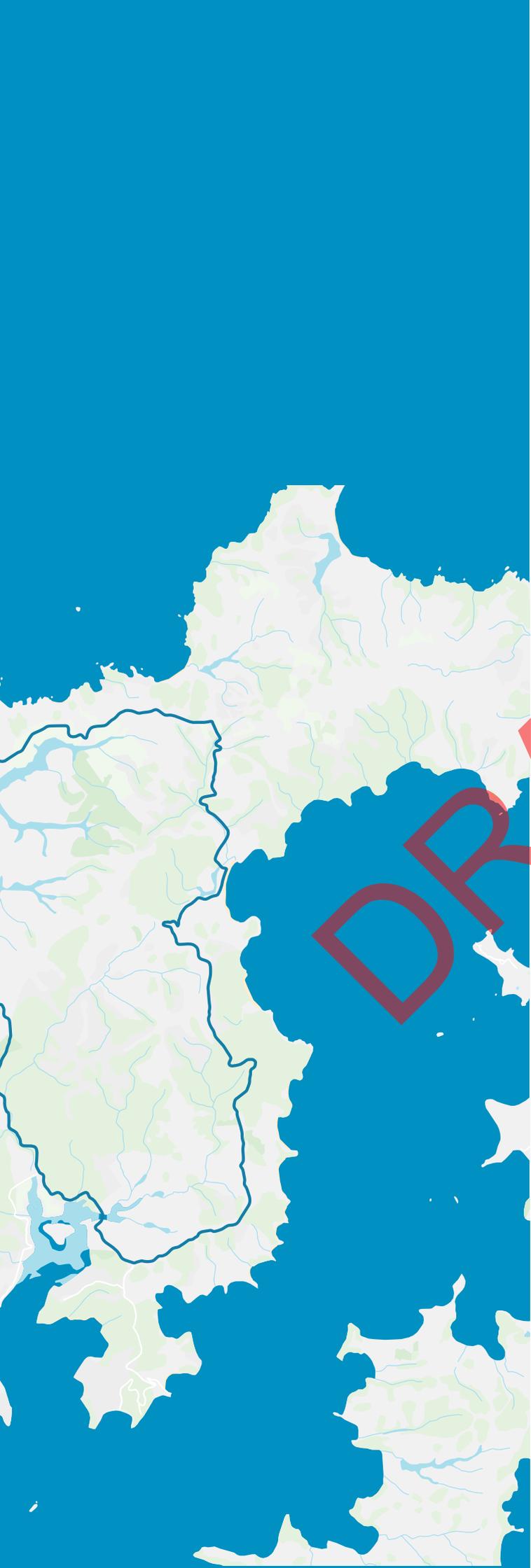
# Streets and roads - types and character



WAIHEKE ROAD NETWORK

Legend

	Arterial roads
	Collector roads



The following section sets out the existing street types and character as articulated in the Waiheke Island Pathways Plan with the addition of streets exhibiting particular characteristics such as the village centres or beachfront streets.

The map below depicts the road hierarchy within the Waiheke road network as articulated in the Waiheke 10 Year Transport Plan.

Village centres and beachfront streets are locations that have higher volumes of pedestrians than the typical typology (arterial and/or collector road) and may warrant different treatment as a result.

As with any locality, a variety of street types must work together in a local context to create lively and thriving places, balancing the various and competing needs of movement and place as one type intersects or merges with another.

# Roads and Streets Framework

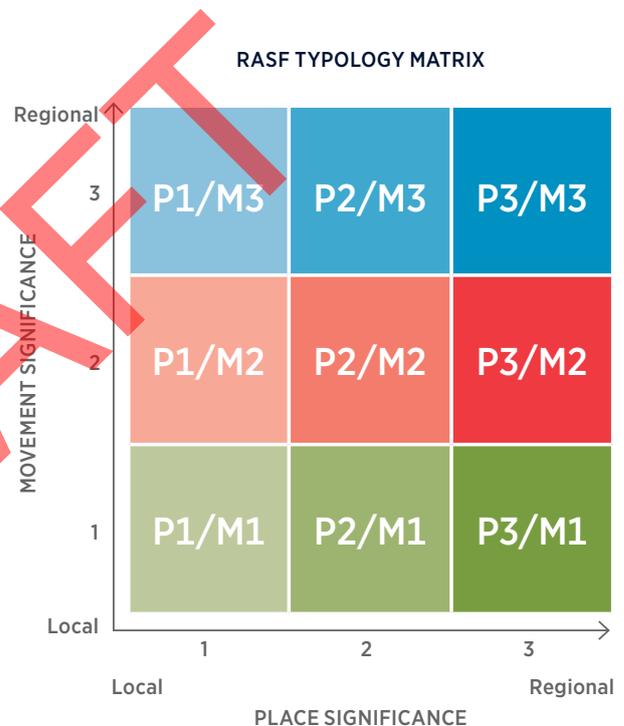
The Auckland Transport Roads and Streets Framework (RASf) provides a consistent methodology for identifying the place and movement functions of roads and streets. It is designed for use on both existing and new roads and streets to determine the function of roads and establish modal priorities. It is aligned with Waka Kotahi NZ Transport Agency’s One Network Framework (ONF).

This new approach to place and movement outlines the regional significance of the street in terms of its role in the wider Auckland transport network.

Through the RASf, all roads and streets in Auckland will eventually be classified as one of nine typologies based on the strategic significance of their Place or Movement functions.

Place function is defined as “the catchment of a road or street and its adjacent land use as a destination in its own right i.e. how far people are prepared to travel to go there”. For the purposes of the RASf, place is assessed according to its strategic significance from P1: a predominantly local function with a small catchment of users to P3: attracting activity from across the region and further.

Movement function is the level of strategic importance of a road or street within the transport network, measured in terms of moving people, goods and service safely and efficiently between locations and accessing key destinations. For the purposes of the RASf, movement is assessed according to strategic significance from M1: predominantly local access (local streets in Waiheke), M2 (collectors) through to M3: high volume roads with high strategic significance (arterial routes). The values are then combined to produce a typology matrix.



A detailed RASf assessment has not yet been undertaken for Waiheke. While the RASf informs the prioritisation of uses of a road or street, the design guidance for how to ensure new projects on the island’s roads and streets reflects the natural and built characteristics of the local environment and transport network is contained within this document.

# Existing village centres

The village centres of Oneroa, Ostend, Surfdale and Onetangi are all located on the principal arterial route at Ocean View Road, Oneroa; Hamilton Road/Miami Avenue, Surfdale; Belgium Street, Ostend and Onetangi Road. These localities are key destinations for locals and visitors, sustaining a high volume of people on foot, public transport and a requirement for parking to support local businesses, especially during the busy summer months.

The streets that bisect the first three centres in particular, have a dual role as a Main Street as well as part of the arterial network.

## Existing issues ⚠️

- Footpaths not continuous, varying widths and often on different levels to the street, impacting on accessibility for those less able
- Lack of safe, well-located crossings connecting both sides of the street, particularly around bus stops
- Traffic speed variation which can impact on pedestrian safety
- Inconsistent provision or lack of dedicated cycle facilities



## Design guidelines for village centres

The villages of Oneroa and Ostend, and to a lesser extent Surfdale and Onetangi, are the hub of community life. The main streets through these villages need to prioritise safety and accessibility for people walking to local shops, services, cafés and restaurants and those using public transport. As key destinations these also need to provide areas for vehicular and cycle parking to support local businesses.

The following roads, or sections of road, are identified as village centre:

- Ocean View Road, Oneroa
- Belgium Street, Ostend
- Miami Avenue, Surfdale
- Onetangi Road (junction of Sea View Rd / Eden Terrace)

Design guidance for the streetscape of Oneroa village centre should be read in conjunction with the Oneroa village design [guidelines](#) and, similarly for the other villages, any future village design guidelines produced by the Waiheke Local Board with respect to built form, materials, colours and planting.



Illustrative village centre design guidance (based on Oneroa), including thresholds, crossings, active frontage, parking areas behind shops with pedestrian connections to the main street, street trees and mobility access.



Surfdale village centre – raised table to slow traffic, highlighting the village centre as a walking environment and enabling safe pedestrian crossing proximate to bus stops, wide footpaths with outdoor dining and access for all.

## Village centre design guidance



1. Incorporate a Waiheke specific threshold treatment to mark a slow zone on approach/entrance to village centre including a combination of raised crossing with a place name and speed sign marking the appropriate speed for the village
2. Include signage and wayfinding for destinations and places of interest
3. Bus stops, including shelters, should be located within close walking distance to shops and services
4. Formal pedestrian crossings on raised tables should be located in key areas of high demand – proximate to shops and services and adjacent to bus stops to foster safe connections
5. Narrow the traffic lanes, and increase the widths of footpaths to greater than 1.8m, to support slower speeds through centre of village
6. Continuous footpaths should be provided on both sides of street with step-free footpath design, and tactile pavers should be installed at crossing points for those with low or no-vision, to enable walking comfortable for people of all ages and abilities.
7. Street furniture should be located where space is available to provide opportunities for rest and respite and integrated into the local setting
8. Illuminate the village centres with pedestrian scale lighting to enhance the quality of the environment and perception of safety for all users, particularly pedestrians
9. Street trees should support local biodiversity and provide shade and shelter while reinforcing the coastal character of the village centres
10. Where practicable, develop a safe cycle network around the village centre
11. Provide easy access to cycle parking within the village centre, in locations that does not impede safe pedestrian movement
12. Manage parking so that it does not dominate the streetscape:
  - a. Provide mobility parking spaces in convenient locations with access to step-free footpath
  - b. Service and delivery parking ideally located to the rear of businesses
  - c. Manage parking by timing
  - d. Locate new parking areas to rear of businesses, with pedestrian linkages to the mainstreet, to minimise disruption to the streetscape

## Existing arterial roads

Waiheke has a single arterial route that connects Matiatia with Onetangi via Oneroa, Surfdale and Ostend; connecting the centres and destinations. The arterial has a spur along Donald Bruce Road which connects through to Kennedy Point wharf as well as Waiheke High School, Te Huruhi Primary School and Waiheke Recreation Centre.

The main arterial route links Matiatia to Oneroa along Ocean View Road. Ocean View Road continues past Little Oneroa and becomes Surfdale Road at the junction with Pacific Parade.

Surfdale Road then continues through to Surfdale village where it becomes Hamilton Road. Beyond the extent of Surfdale Village the road changes to Miami Avenue, then Mitchell Road before merging with Alison Road.

At the roundabout junction with Donald Bruce Road, the arterial becomes Causeway Road, connecting to Ostend across the causeway. On the eastern side of the causeway the road becomes Wharf Road.

The arterial veers onto Belgium Street through the centre of Ostend village, then merges with Ostend Road at the eastern end of the village. It continues along Ostend Road to the junction with O'Brien Road, where the arterial becomes Onetangi Road right through to just before Onetangi beach where it becomes Fourth Avenue.

The arterial route has a high movement function. It also supports the major frequent service public transport services, particularly busy between the passenger ferry terminal at Matiatia and Onetangi. As a consequence, there are a large number of people on foot around some of the bus stops.

### Existing issues

- Pedestrian and cycle safety on high(er) speed roads, in particular safe crossing locations connected to bus stops
- Unconnected footpaths (often absent or only on one side of road)
- Intermittent and unconnected cycleways (also poorly maintained)



## Design guidelines for arterial roads

Waiheke's arterial route connects all the major settlements and destinations throughout the island. As well as being a key connector the arterial supports the major frequent service bus services and freight movements. This route has a high movement function and requires journey reliability for buses, freight and commuter traffic.

Exceptions to the high movement function need to be made where the arterial passes through the centres or other destinations such as around parks or schools.



Indicative arterial road on Waiheke: bus stop, clearly delineated pedestrian and cycleway protected from the carriageway by separators. Two lane carriageway at 50kmph.

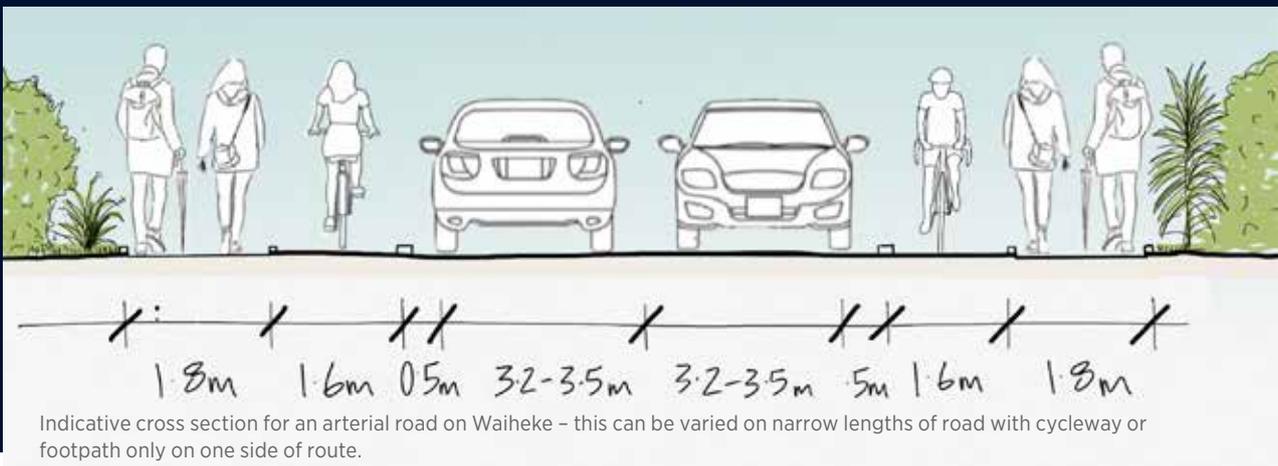
### **The following roads, or sections of road, are identified as arterial:**

- Alison Road, Surfdale
- Belgium Street, Ostend
- Causeway Road
- Donald Bruce Road, Te Huruhi/ Kennedy Point
- Fourth Avenue, Onetangi
- Hamilton Road, Surfdale
- Miami Avenue, Surfdale
- Mitchell Road, Surfdale
- Ocean View Road, Oneroa
- Onetangi Road
- Ostend Road
- Surfdale Road, Surfdale
- Wharf Road, Ostend (part of)
- Tetley Road (part of)

## Arterial route design guidance



1. Install street name plates
2. Install speed limit repeater signs and driver feedback signs on stretches of arterial road outside the main centres (including on Causeway Road and Onetangi Road)
3. Bus stops should be located at regular intervals along the arterial route and proximate to local residential streets
4. Bus stop locations require a sufficient flat surface and a footpath or accessible path leading to the bus stop
5. Pedestrian crossings should be located close to bus stops for safe movement of pedestrians/public transport users to destinations on both sides of the arterial route
6. Footpaths should be a sufficient width to allow for micro-mobility (minimum 1.8m), protected and continuous on at least one side of the road. Where space allows provide footpaths on both sides of the road
7. Wherever possible bus stops to include Waiheke specific shelter
8. Where space for a footpath is not available, consider provision of a boardwalk.
9. Footpaths are to be lit for pedestrian safety, and connect bus stops with surrounding residential streets (collector and local roads) while balancing the need to maintain natural beauty.
10. Use red-brown colour for footpath surface in keeping with character, while ensuring the material surface can be recognised by people with low or no vision
11. A continuous cycleway should be provided along the full length of the arterial route, on both sides of the road where space allows, clearly defined from pedestrian paths/footpaths and separated from vehicular traffic with separators to ensure safety while reflecting the local environment. Further work including future planning and design initiatives is required to accommodate cycleways safely in arterials where space is insufficient to allow separation.
12. Plant street trees and vegetation to reinforce a green corridor, enhance local biodiversity and increase permeable surfaces for stormwater management



# Existing beachfront roads

Beachfront Roads in Waiheke have unique characteristics as they often exhibit a mix of a formed carriageway, with a mix of formal and informal footpaths adjacent to the island’s popular beach locations. In the less formal situations, sleepers are often used to separate vehicles from pedestrians.

These are a mix of collector roads such as The Strand in Onetangi and local roads including Beach Parade in Oneroa, the spur off Goodwin Avenue in Little Oneroa, and the Esplanade linking the southern beaches of Huruhi Bay (Blackpool and Surfdale). These are generally high-volume pedestrian areas due to their proximity to the relatively accessible western beaches, particularly in the summer months. Most have good connections to the public transport network.

Traffic movements are relatively slow, but could be further reduced to ensure pedestrian priority and safety.

## Existing issues

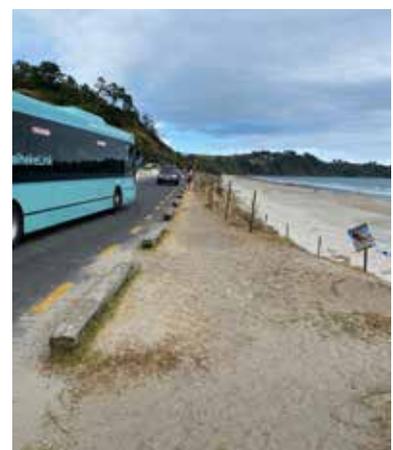
- Narrow or no footpath adjacent to road (in formal road locations)
- Sleepers used as wheel stops in informal situations to protect pedestrians with mixed results – left – poor condition and centre – better condition for pedestrians
- Vehicles parked on pedestrian areas



The Esplanade, Huruhi Bay (Blackpool)



Beach Parade, Oneroa

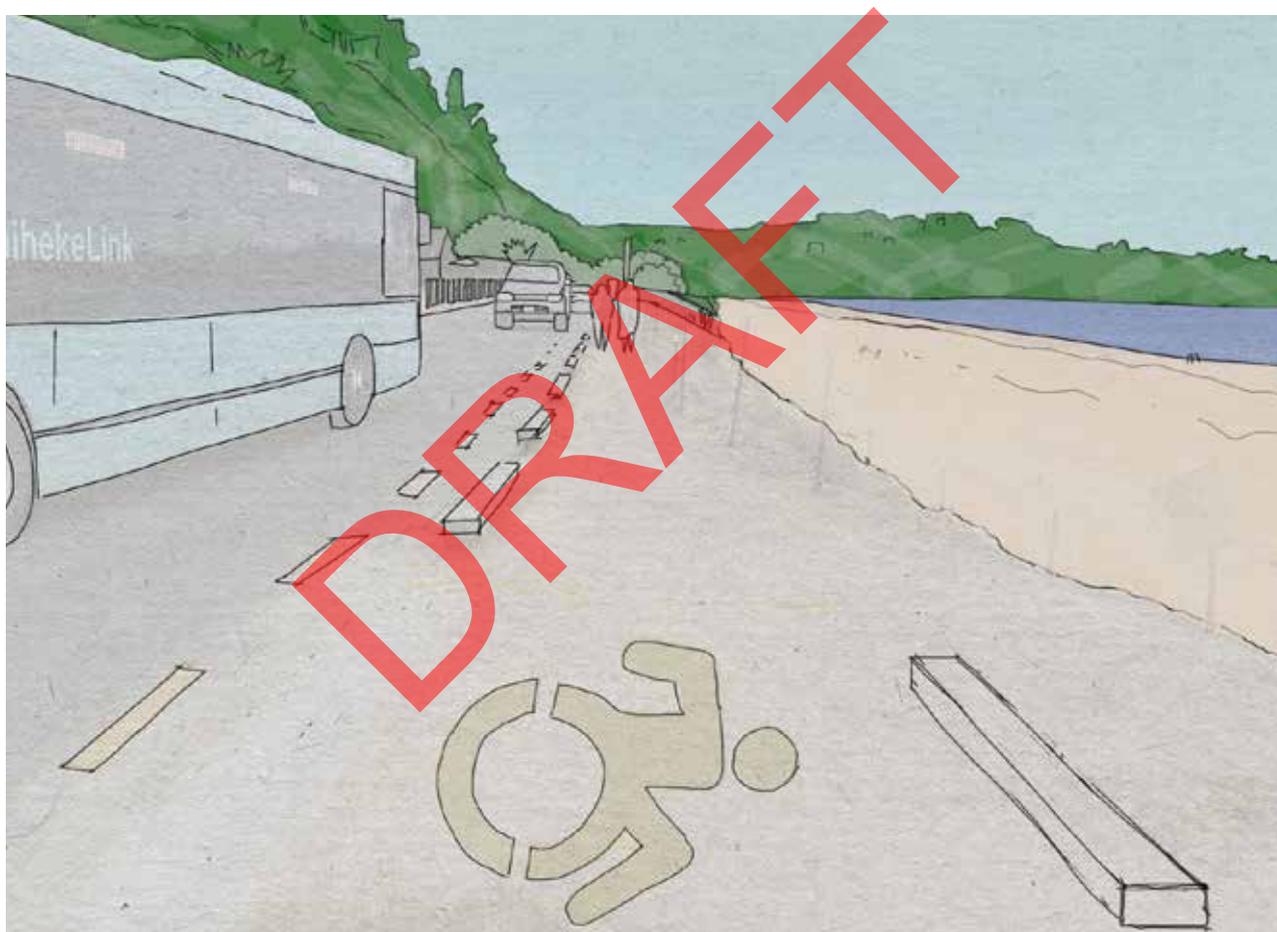


The Strand, Onetangi

## Design guidelines for beachfront roads

Beaches are used for many forms of passive and active recreation by all ages and abilities. Access to the beach is an inherent part of life on Waiheke. Conflicts arise where motorists and vehicles impede on safe access for pedestrians to and from the beach.

Traffic movements are relatively slow, but could be further reduced to ensure pedestrian safety and priority access and also provide safe passage for people on bicycles and horses. Where possible, cycling infrastructure should be provided, avoiding potential conflicts with buses, parking, other traffic, and pedestrian crossings to the beach.



Indicative beachfront street, with an informal demarcated footpath between the road and the beach, narrow carriageway to encourage slow speeds, no parking lines except for mobility parking

### The following roads, or sections of road, are identified as beachfront:

- Beach Parade, Oneroa
- The Strand, Onetangi
- The Esplanade, Blackpool and Surfdale
- Man O' War Bay Road, Man O' War Bay
- The spur off Goodwin Avenue, Little Oneroa

## Beachfront road design guidance



1. Pedestrian access and safety must be given priority to and along beachfront roads as these are locations with high volume of people on foot
2. Establish Waiheke specific threshold treatment to mark a slow zone on approach/entrance to the beachfront including a place name and speed sign marking the appropriate speed
3. Ensure all beachfront streets are slow speed environments with narrow carriageways
4. Informal footpaths adjacent to the carriageway should be demarcated by separators to protect pedestrians with a view to these streets becoming safe shared spaces in the future
5. Wherever practicable yellow no parking lines should be provided along the beach side of road to protect pedestrians, dunes and foreshore. To be decided on a case by case basis.
6. Clearly defined parking areas, particularly for mobility parking, should be located proximate to main connector streets, adjacent to accessible beach access paths/ramps
7. Provide cycle parking conveniently located to beach access
8. Bus stops, including shelters, should be located within 400-500m of principal point of universally accessible beach access
9. Allow safe turn around areas for buses and other vehicles



## Existing collector roads

Collector roads on Waiheke are the connecting roads around the island, connecting residential areas with the main roads and centres. These are termed collector roads because they collect traffic from local streets to connect with arterials.

A number of bus routes connect various locations with Matiatia Ferry Terminal via a number of collector roads, in addition to the arterial route. Due to the frequent bus network, collector roads can have large numbers of pedestrians, particularly around bus stops. These streets have relatively low place significance, and moderate movement significance.

### Existing issues

- Most streets lacking defined / continuous footpaths, where footpaths exist, narrow red chip with kerbs, otherwise informal grass verges adjacent to the road
- Limited or no dedicated cycle infrastructure



## Design guidelines for collector roads

Collector roads are significant for locals and visitors as they provide connections between key destinations and residential locations. In many places, the undulating topography has given rise to a built form where dwellings are either above or below the street with limited space to retrofit footpaths or cycleways in the current road design. Measures should be taken to ensure improved pedestrian safety, particularly within the vicinity of bus stops.

**The following roads, or sections of road, are identified as collector roads, in some cases due to being part of the bus network:**

- Bay Road, Ostend
- Beatty Parade/Hamilton Road, Surfdale
- Church Bay Road, Oneroa
- Cory Road, Palm Beach
- Erua Road, Ostend
- Goodwin Avenue, Little Oneroa
- Hauraki Road, Enclosure Bay
- Hill Road, Palm Beach (to Palm Road)
- Jellicoe Parade, Surfdale
- Mako Street, Oneroa
- Moa Avenue, Oneroa
- O'Brien Road, Ōmiha/Rocky Bay
- Ostend Road, Ostend
- Orapiu Road, Orapiu
- Pacific Parade, Surfdale
- Palm Road, Palm Beach
- Queens Drive, Hekerua Bay (Hekerua to Hauraki)
- Rata Street, Oneroa (Moa to Tui)
- Sea View Road, Onetangi
- Tahatai Road/Nikau Road (to Tiu), Oneroa
- Te Toki Road, Ostend
- Te Whau Drive, Ōmiha/Rocky Bay
- Tui Street, Oneroa
- Waiheke Road, Onetangi
- Wharf Road, Ostend (Belgium to Te Toki)



Indicative hilly collector road. 1.8m wide footpath on downhill side of road, 6m carriageway (up to 6.4m carriageway width on bus routes). 30kmph speed limit and sharrows for bicycles

## Collector road design guidance

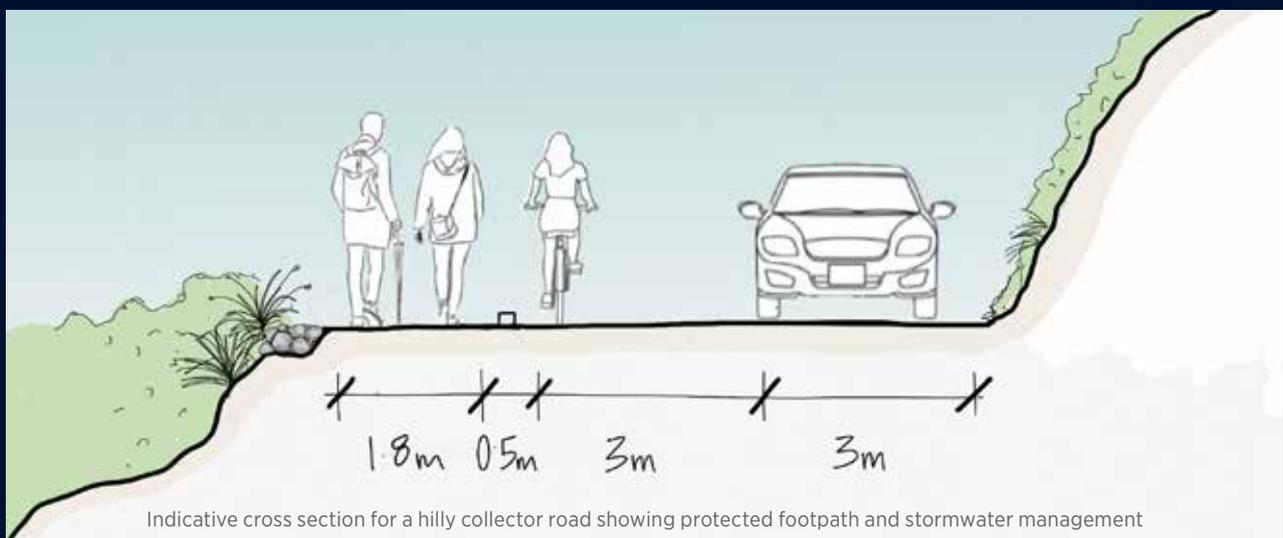


1. Ensure road design reflects the Safe Speeds for Waiheke on all collector roads to promote road safety for all users, in particular pedestrians and cyclists
2. On bus routes, bus stops should be located at regular intervals and include Waiheke specific shelter wherever practicable, places to sit and rubbish bins
3. Pedestrian crossings should be located close to bus stops for safe movement of pedestrians/public transport users to destinations on both sides of the road
4. Where there is no currently no footpath, on streets that are not on the bus routes, narrow the carriageway to 6m, and reclaim a portion of the road for a continuous protected pedestrian path on at least one side of the road
5. On hilly terrain locate the footpath on the downhill side of the road, install separators that delineate the footpath without impeding overland flow
6. Use a combination of silt fence, rocks and planting to manage run off and drainage, while maintaining flow paths<sup>1</sup>
7. Use red/brown colour for footpath surface, to reflect existing character and materials
8. Where the space is insufficient for a dedicated and/or separated cycling facility, and traffic volumes are low, use sharrows<sup>2</sup> or agreed use of local signs, to show that people riding bicycles and those driving cars must share the road.
9. Require off-street parking for dwellings. Encourage the construction of timber parking decks accessed from the road where the topography does not allow appropriate gradient for driveways<sup>3</sup>, while ensuring these do not encroach on carriageways, footpaths or preclude the provision of footpaths

<sup>1</sup> Design will need to look at flow magnitude and reference Code of Practice for Overland Flow Paths

<sup>2</sup> A sign showing a bicycle between two arrows

<sup>3</sup> It is acknowledged that such measures are likely to require an encroachment license, but the priority should be improving the street for pedestrian safety.

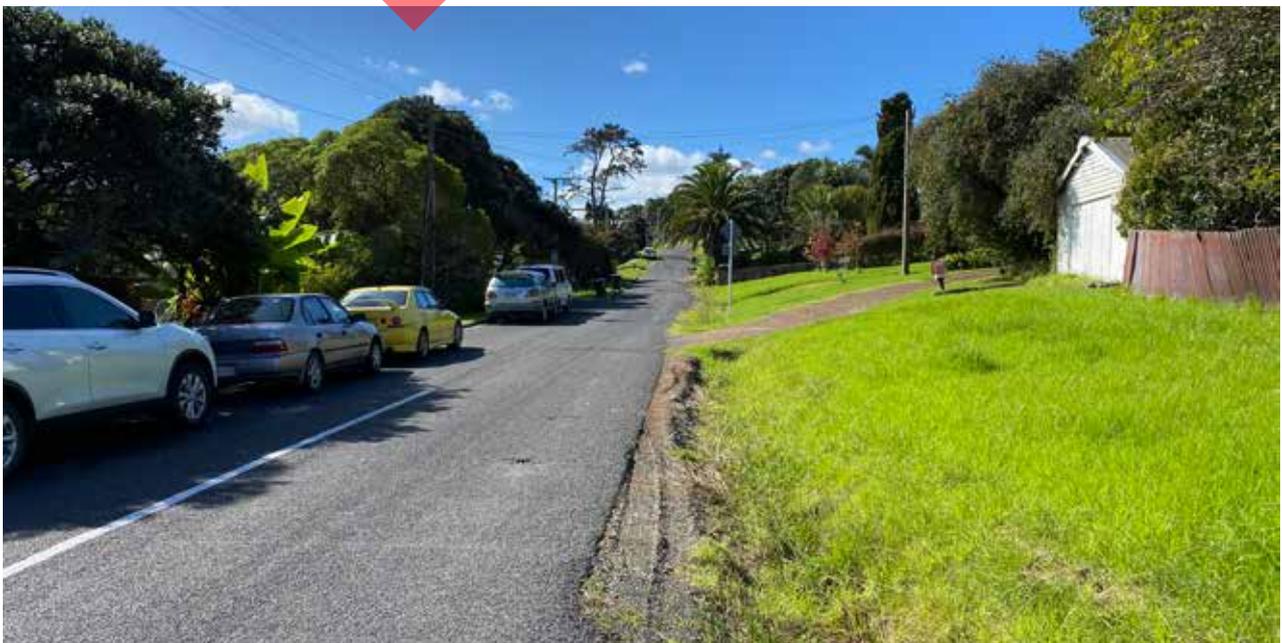


## Existing local roads

Much of Waiheke has a relatively low density, residential character. All roads that are not identified as arterial, collector, or rural roads are local roads. These are predominantly low-speed environments with relatively low volumes of local traffic.

Local streets and roads possibly demonstrate the greatest variance in width and treatment. Some have two lanes while others are narrow, single lane roads. Some of the local streets have wide grass verges, while others have little or no verges requiring pedestrians, cyclists and horse riders to share the road with motorists. Some streets have capacity for off-street parking, while others have very little.

The current layout encourages all users to slow down, proceed with caution and “share with care”.



# Design guidelines for local roads

The key message for local streets and roads is 'share with care'. These are predominantly low speed environments (currently 30km per hour) providing access to residential properties and that enable sharing of the carriageway. The emphasis should be on safe routes for pedestrians, cyclists and horse riders.

These roads require minimal intervention; however, the guide needs to recognise there are differing types of local streets:

## **Wider suburban local streets close to the centres and/or beaches, often with verges, for example:**

- Korora Road, Oneroa
- Manuka Road, Blackpool
- Nikau Road, Blackpool
- Ocean Road, Surfdale

## **Narrow, winding lanes with no road markings and no verge, some unsealed, for example:**

- Belle Terrace, Onetangi
- Belle View Place, Onetangi
- Brown Road, Onetangi
- Garratt Road, Onetangi
- Hekerua Road, Hekerua Bay
- Bella Vista Road, Omiha



## Local road design guidance

1. Adopt a 'share with care' principle for all local roads with signage to raise consciousness of pedestrians. Signage should be defined with an agreed Waiheke specific design (see also Section 6: Signage and Road Markings)
2. Threshold treatments of planting or different texture and or colour associated with the local neighbourhood could be used to calm traffic
3. Slower speeds are encouraged on all local roads to reflect that these are residential locations where people using all modes share the street
4. Require off-street parking for dwellings.

### SUBURBAN LOCAL STREETS

5. Ensure slow speed environments with narrow lane widths of 2.7m each side on the two-way streets
6. On the suburban local streets with verges, where possible, these should have a maintained, level, all-weather strip of minimum 1.5m on at least one side of the road to enable people to safely and comfortably walk along them

### SINGLE LANE ROADS

7. On single lane roads, adopt a 'people first' principle
8. Low impact solutions are encouraged for road surface and stormwater treatment to reflect these are shared streets with low volumes of residential traffic.

## Existing off-road pathways

The lack of formalised roads with footpaths and cycleways has led to a number of off-road routes through parks and open space throughout Waiheke. These connect streets to streets, often on generous and safe paths, as they are free of conflict with vehicular traffic and generally providing all-weather surfaces.

In some locations these are separated from the road by gradient and accessed by stairs. Other paths are less formal, connecting residential streets with the local beaches and bays.



## Design guidelines for off-road pathways

Off-road pathways need to be safe for all users. Off road pathways should increase permeability and connectivity between locations by foot, and, where practicable cycle, micro-mobility device and horse.

These need to be accessible, with clear lines of sight and, in high volume locations, include lighting for safety that clearly lights faces.



### Off road pathways design guidance

1. Public pathways connecting streets, roads to school, or coast and centres, through green space along beaches or unformed roads should be preserved and enhanced to become Traffic Free Routes (TFRs) as safer alternatives to routes located within road reserves
2. Clearly signpost off-road pathways and indicate on the sign whether these are universally accessible
3. Opportunities to formalise tracks should be taken where these would connect to, or expand the wider transport network
4. Where practicable, upgrade paths to 3m wide and surface with all-weather surface that reflects the Waiheke pathway colour of red/brown
5. Manage vegetation to keep a clear, accessible and visible 3m wide path to contribute to better access by all users
6. Where possible, provide a separate path along the route for cycles and horses

## Existing rural roads

Approximately 30km of Waiheke's roads are unsealed. These are predominantly in the rural areas of Waiheke around the eastern side of the island including Man O' War Bay Road, Cowes Bay Road and Stony Batter Road and also includes some roads around Onetangi, Surfdale, Church Bay and Whakanewha Regional Park.

Rural roads throughout the island are predominantly used for accessing rural property or by farm vehicles as well as scenic routes and venue access. Land uses on these rural roads include agriculture (such as Waiheke Station), viticulture (the many vineyards throughout Waiheke) and associated visitor venues and rural lifestyle. The eastern loop road also provides public access to Stony Batter historic reserve and some of the eastern beaches such as Man O' War Bay by car and walking track to Waikopou Bay.

A number of public benches are located on ridgelines and above bays the island to take in views, some without any means for people to safely access them.

At present there are no public buses serving the rural locations within Waiheke, however that may change if the eastern loop road is sealed. Charter buses can be hired to visit vineyards and other destinations.

### Existing issues

- Heavy farm traffic conflicting with visitor traffic on unsealed roads
- Increase in freight and construction traffic impacting on the quality of the road surface and ability to absorb heavy rainfall
- Lack of walking infrastructure on or adjoining rural roads
- Lack of safe parking for scenic lookout locations



Typical scenic view from rural road of vineyard, coastal headlands and sea

## Design guidelines for rural roads

Rural roads provide access to rural properties and rural production as well as routes to many of Waiheke's visitor destinations. The roads support a mix of traffic types including farm vehicles, freight and construction, local and visiting motorists, cyclists and the occasional pedestrian. The roads require regular seasonal grading and maintenance, particularly during the busy summer months, to ensure they are roadworthy for all vehicles. These rural roads offer some noteworthy views over the landscape and to the coast/Hauraki Gulf, acknowledged by the bench seats that denote scenic lookout locations, that attract people to park on the roadside to take in the view.

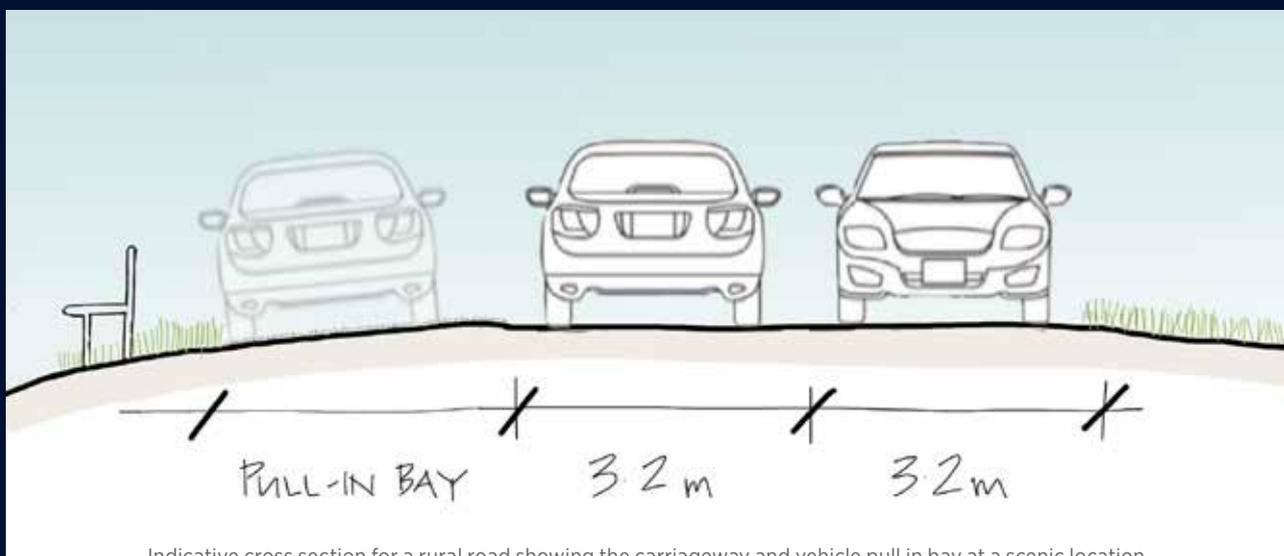
**The following roads, or sections of road, are identified as rural roads:**

- Awaawaroa Road
- Stonybattery Road
- Cowes Bay Road
- Woodside Bay Road
- Man O'War Bay Road

### Rural road design guidance



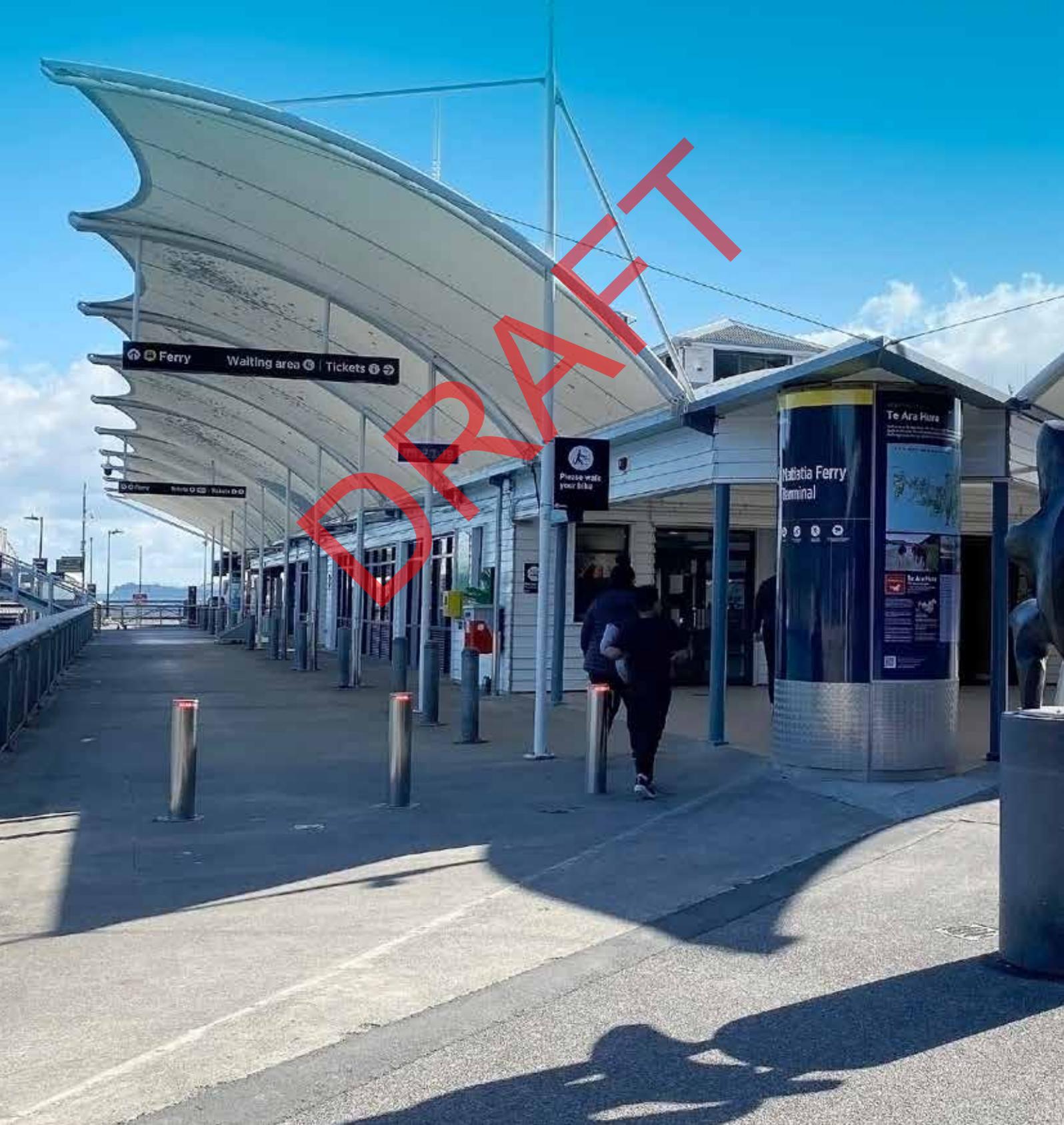
1. Where it is determined a road has the traffic volumes or environmental need to warrant sealing, retain a carriageway width of a Collector road (between 6 – 6.4 m) and maintain the informal edge treatment to rural roads, with swales or a similar water sensitive design (WSD) treatment for retention and treatment of stormwater
2. Establish wide grass verges with level terrain for walkers and to enable cyclists to get off the road when heavy vehicles pass
3. Where scenic locations have been identified, create low impact (gravel) pull-in parking bays to enable cyclists, motorists and tour buses to safely exit the road and enjoy the view



Indicative cross section for a rural road showing the carriageway and vehicle pull in bay at a scenic location



# Elements of the transport network





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# Design guidelines for wharves – transport Hubs

Waiheke’s wharves provide important local transport interchanges between sea and land travel for residents and visitors alike. Ideally these interchanges enable people to move easily between modes of transport. The needs of people travelling to and from Waiheke, in particular the mode of travel within and around the island, safety and accessibility should inform the provision of services and facilities on the island’s wharves.

Matiatia provides dedicated bus stops, a taxi rank, cycle parking and a high level of service for ferry passengers. In the future it must enable more active transport mode shifts and the best public transport access feasible, along with seamless visitor or local transit options.



## Wharves as transport hubs design guidance



1. Ensure clear wayfinding signage for foot passengers arriving by ferry, including tactile pavers for those with low or no-vision, to indicate location of footpaths, buses, secure cycle parking, taxis and parking areas
2. Provide bus stops and mobility drop-off points adjacent to the wharf, easily accessible and visible to connect land and water travel (local destinations with ferry passengers) with high frequency services timed to ferry arrivals and departures
3. Provide sheltered waiting areas
4. Provide waiting facilities such as toilets, rubbish bins, seating, ticketing, and commercial facilities for the comfort of travellers
5. Use open plan design to improve visibility
6. Maintain safe, universally accessible and unimpeded footpaths between the area of disembarkation to any shelter or ferry terminal on the wharf and between the shelter and other modes of transport (in particular bus stops)
7. Where space allows, provide short-term parking proximate to the wharf, while prioritising safe movement for pedestrians and access to buses. Emphasis should be on park-n-ride facilities provided close to centres in locations where residents can easily board buses to ferry terminals
8. The surface treatment of parking areas should be low impact, low maintenance such as gravel or suitable permeable surface treatment. If paved, incorporate WSD solutions.
9. Design should reflect the destinations's core values and reflect the importance of the location for Ngati Paoa



# Design guidelines for street furniture

## Bus Shelters

Bus shelters provide protection from wind, rain and sun, while people wait for the bus. Waiheke's distinctive, eclectic and quirky bus shelters are part of the character of the island. Although a variety of styles, the bus stops tend to all be painted a deep olive green with red trim on the roof of the shelter, making them clearly legible as operational bus shelters. These typically provide not only shelter but seating within and sometimes adjacent to the shelter along with rubbish bins and bus timetable information.

While newer shelters have used the same colour scheme, they often lack the rustic charm of the wooden shelters. In 2019/2020 Auckland Transport together with Waiheke Local Board and mana whenua developed a new, specifically designed bus shelter with designs by local artist Sally Smith and Ngāti Paoa artist Michael Paki, in tandem with new bus routes.

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## Bus shelter design guidance



1. Retain Waiheke's unique and often bespoke bus shelters, where practicable
2. Before installing a shelter, determine if a bus shelter is required. The decision to provide a shelter will vary according to the function of the bus stop, demand to board/alight and availability of space to fit a shelter
3. Where bus shelters are provided, ensure these are well signposted, visible and accessible to all, including a ramp and space for a wheelchair, with seating and rubbish bins provided and, where practicable, cycle parking.
4. At new bus stop locations, ideally use the new bus shelter design as this better conforms to principles of Universal Design, including the provision of tactile ground surface indicators
5. In more constrained locations, relocate and reuse unused shelters, wherever possible to provide some degree of shelter
6. At the shelter provide information about the bus stop, the routes and timetable, either attached, or immediately adjacent, to the shelter
7. Retrofit shelters with digital real-time information, wherever practicable, on frequent service routes. Retrofit should be discrete, to be in accordance with the quiet and often natural settings of the island
8. Shelters should be free of external advertising material
9. Where a bus stop is located adjacent to the cycle lane network, the bus stop layout and cycle lane need to be designed to mitigate the potential risk of a collision



Waiheke specific bus shelter design approved in 2019/2020

## Seating

Public seating provides opportunities for rest and respite, and enjoyment of views. Like bus shelters, Waiheke also has a distinctive style of public seating, often with quirky local inscriptions by the resident craftsman. Primarily these are two types of wooden seating – either a plain bench (middle image) or with a back (with or without arm rests). These have a rustic, local, coastal appearance. The seats are located throughout the island, on the edge of roads, within parks, at bus stops and viewpoints.



### Seating design guidance

1. Retain Waiheke's distinctive public seating
2. Where new seating is needed, replace using Waiheke's rustic benches with back support and arm rests as these are better features for Universal Design
3. Locate seating in safe, visible locations to provide rest and respite and/or take advantage of views
4. Wherever practicable, secure seating over grass or planting



## Lighting

AT recognises the unique character of Waiheke Island. In particular the eastern half which is currently semi-rural in nature and is part of the International Dark-Sky movement (IDA) which safeguards the night skies for present and future generations. AT supports the Dark Sky Park on the eastern half of Waiheke<sup>3</sup>. While the dark sky status would apply only to the eastern part of Waiheke, AT has changed LED streetlights throughout the island to a warmer colour temperature to support the dark skies status and minimise impacts of light on wildlife.

It is recognised that some roads and streets need to be lit for safety of all road users, particularly on the more populous western side of the Island. Lighting on pedestrian paths provides a sense of safety for walkers and lighting at bus stops provides a better sense of security for those waiting as well as visibility to the driver. A balance needs to be struck between protecting the dark skies and maintaining safety, particularly for pedestrians who need to be able to see people's faces.



### Lighting design guidance

1. Before installing or replacing a light, determine if a light is needed
2. All road lighting should be designed to minimise any light spill or up-lighting impacts
3. Where lighting is required for pedestrian safety install pedestrian scaled lighting, with shielding to target the direction of the light beam downwards and minimise light spill
4. For lighting around bus stops, wherever possible, use motion detectors to ensure that light is available when needed and turned off when not needed
5. Use the lowest light level required for safety
6. Use warmer colour LED lights ideally yellow/orange, with a colour temperature of no greater than 3,000 Kelvins (warm white), wherever possible, as opposed to blue or white light, to protect the health of humans and wildlife
7. On local streets within rural-residential parts of the western side of the island, consider the use of reflective paints or self-luminous markers for signs and kerbs, rather than street lights, to minimise impacts on wildlife and the night sky

<sup>3</sup> If in the future the semi-rural nature of the island changes through development, AT would provide lighting for safety in accordance with the lighting standard current at the time

# Signage and road markings

Too many signs create clutter, cause distraction and detract from sense of place and can impact on views. Conversely reducing road signs and markings can passively calm traffic by encouraging road users to take their cues from the design of the environment to determine appropriate travel speeds.



## Signage and road markings design guidance



1. Auckland Transport and Waiheke Local Board to agree a Waiheke specific design for road signs for use on the island, including appropriate colours and materials that reflect the coastal island character of Waiheke, such as the wayfinding signage for the Te Ara Hura walkway
2. Where new signs are required, the agreed signage will be used
3. Use local materials such as sleepers and posts for signage posts, which are sensitive to the local character, or attach to light poles or telegraph poles
4. Minimise visual clutter by co-locating road signs with information signs wherever possible
5. In residential areas incorporate community-led art elements into signage to reflect local flavour and contribute to the character and identity of the area as well as to demarcate these are shared spaces, for example the “share with care” signs
6. Changes in road surface treatment may be considered as an alternative to markings painted on the roads, particularly on low-speed local streets and lanes and around Waiheke’s schools, to indicate to drivers these are slow zones



# Stormwater management

There is little in the way of reticulated stormwater management on Waiheke, creating a reliance on overland flow paths to take water away using the road network as part of the primary drainage system. The topography causes rapid run-off to flood prone lower areas such as Blackpool, the steepness of the terrain and narrowness of many of the ridgeline roads means the transport infrastructure is susceptible to erosion. Sedimentation is a significant contributor to the decline in water and habitat quality in the Hauraki Gulf, and ineffective management of storm water from roads is a contributor to this.

AT is committed to water sensitive design principles when roads and footpaths are designed in collaboration with Healthy Waters, particularly within the urban environments of Waiheke.

## Stormwater management design guidance



1. Wherever possible, adopt a 'design with nature' or Water Sensitive Design (WSD) approach to stormwater management within the road corridor to preserve or restore natural overland flow paths
2. Use street trees and low vegetation such as flaxes, grasses and groundcover to intercept stormwater and slow its flow
3. Where practicable, use swales, rain gardens, and shaping of verges to provide a 'swale' effect or vegetated filter strips to provide bioretention and cleansing of stormwater before it is discharged onto land or waterways
4. Avoid increasing impervious surface area by not increasing road widths
5. Use permeable materials for informal footpaths and parking areas, wherever practicable
6. Minimise mowing of road verges to just that required for pedestrian safety and encourage community planting of verges beyond a pedestrian safety strip (either by individual landowners or community) to reduce run off and help to control weeds
7. In the village centres and other areas where raised kerbs or barriers to flow need to be used, create multiple run-off points to minimise, disperse or buffer impacts<sup>4</sup>
8. Design driveways so that they maintain natural flowpaths and encourage on-site stormwater management by requiring permeable surfaces such as permeable paving or decking for private parking pads and silt traps or fences on driveways for erosion control.



<sup>4</sup> Noting these locations are serviced by Healthy Waters

# Planting and vegetation management

Waiheke Island has several areas of regenerating coastal forest. The aim of planting within the road reserve should be to recreate that sense of a coastal forest and support biodiversity on the island. This aligns with Auckland Council's Urban Ngahere Strategy, which aims to increase canopy cover across Auckland's urban area, improve links between green spaces by establishing ecological corridors and increase the network of green infrastructure on public land.

## The nine principles of the Urban Ngahere Strategy are:

- Right tree in the right place
- Preference for native species
- Ensure urban forest diversity
- Protect mature, healthy trees
- Create ecological corridors and connections
- Access for all residents
- Manage urban forest on public and private land
- Deploy regulatory and non-regulatory tools
- Manage the whole lifecycle of urban trees



## Planting and vegetation management design guidance

1. In order to ensure that street tree planting supports biodiversity and an urban-coastal forest, suitable indigenous species should be selected from the tables<sup>5</sup>
2. Vegetation within the road reserve should be managed to ensure it maintains a safe route for pedestrians and sightlines between pedestrians, cyclists and motorists
3. To support local biodiversity, invasive weeds and pest plants need to be removed. For management of pest plant species within the road reserve refer to the Waiheke Ecological Restoration Works Programme

<sup>5</sup> Note that not all of these will be suitable for the specific conditions of each location. Advice should be sought at a more detailed design phase to determine appropriate species and size for the situation and the ongoing maintenance requirements

Botanical name	Maori name (or common name)
<b>TREES</b>	
<i>Agathis australis</i>	Kauri
<i>Alectryon excelsa</i>	Titoki
<i>Beilschmiedia taraira</i>	Taraira
<i>Corynocarpus laevigatus</i>	Karaka
<i>Dacrycarpus dacrydiodes</i>	Kahikatea
<i>Dysoxylum spectabile</i>	Kohekohe
<i>Kunzea ericoides</i>	Kanuka
<i>Leptospermum scoparium</i>	Manuka
<i>Meryta sinclairii</i>	Puka
<i>Metrosideros excelsa</i>	Pohutukawa
<i>Planchonella costata</i>	Tawapou
<i>Podocarpus totara</i>	Totara
<i>Prumnopitys ferruginea</i>	Miro
<i>Sophora chathamica</i>	Kowhai
<i>Vitex lucens</i>	Puriri
<i>Pennantia corymbosa</i>	Kaikomako
<i>Phyllocladus trichomanoides</i>	Tanekaha / Celery Pine
<i>Plagianthus divaricatus</i>	Makaka / Ribbonwood
<i>Pseudopanax crassifolius</i>	Horoeka / Lancewood
<b>PALMS, TREE FERNS</b>	
<i>Cordyline australis</i>	Ti Kouka / Cabbage Tree
<i>Cyathea dealbata</i>	Ponga
<i>Cyathea medullaris</i>	Mamaku
<i>Rhopalostylis sapida</i>	Nikau
<b>FERNS</b>	
<i>Asplenium bulbiferum</i>	Pikopiko / Hen and Chickens Fern
<i>Doodia media</i>	Pukupuku
<i>Marattia salicina</i>	Para / King Fern

Botanical name	Maori name (or common name)
<b>SHRUBS</b>	
<i>Coprosma arborea</i>	Mamangi
<i>Coprosma repens</i>	Taupata
<i>Coprosma robusta</i>	Karamu
<i>Corokia cotoneaster</i>	Korokio
<i>Dodonea viscosa</i>	Akeake
<i>Griselinia lucida</i>	Akepuka
<i>Hebe</i> spp.	
<i>Hebe stricta</i>	Koromiko
<i>Macropiper excelsum</i>	Kawakawa
<i>Melicope ternata</i>	Wharangi
<i>Melicytus ramiflorus</i>	Mahoe
<i>Myoporum laetum</i>	Ngaio
<i>Myrsine australis</i>	Mapou
<i>Olearia albida</i>	Tanguru
<i>Olearia paniculata</i>	Akiraho
<i>Pittosporum crassifolium</i>	Karo
<i>Pittosporum eugenioides</i>	Tarata
<i>Pittosporum tenuifolium</i>	Kohuhu
<b>FLAXES, GRASSES &amp; GROUNDCOVERS</b>	
<i>Arthropodium cirratum</i>	Rengarenga
<i>Carex flagellifera</i>	Manaia
<i>Carex secta</i>	Purei
<i>Carex testacea</i>	
<i>Carex virgata</i>	Pukio
<i>Coprosma repens</i> 'Poor Knights'	Taupata
<i>Leptocarpus similis</i>	Oioi
<i>Libertia peregrinans</i>	Mikoikoi
<i>Phormium cookianum</i>	Wharariki
<i>Phormium tenax</i>	Harakeke
<b>CLIMBING/ CREEPING PLANTS</b>	
<i>Clematis paniculata</i>	Puawhananga
<i>Muehlenbeckia axillaris</i>	Pohuehue
<i>Muehlenbeckia complexa</i>	Pohuehue

