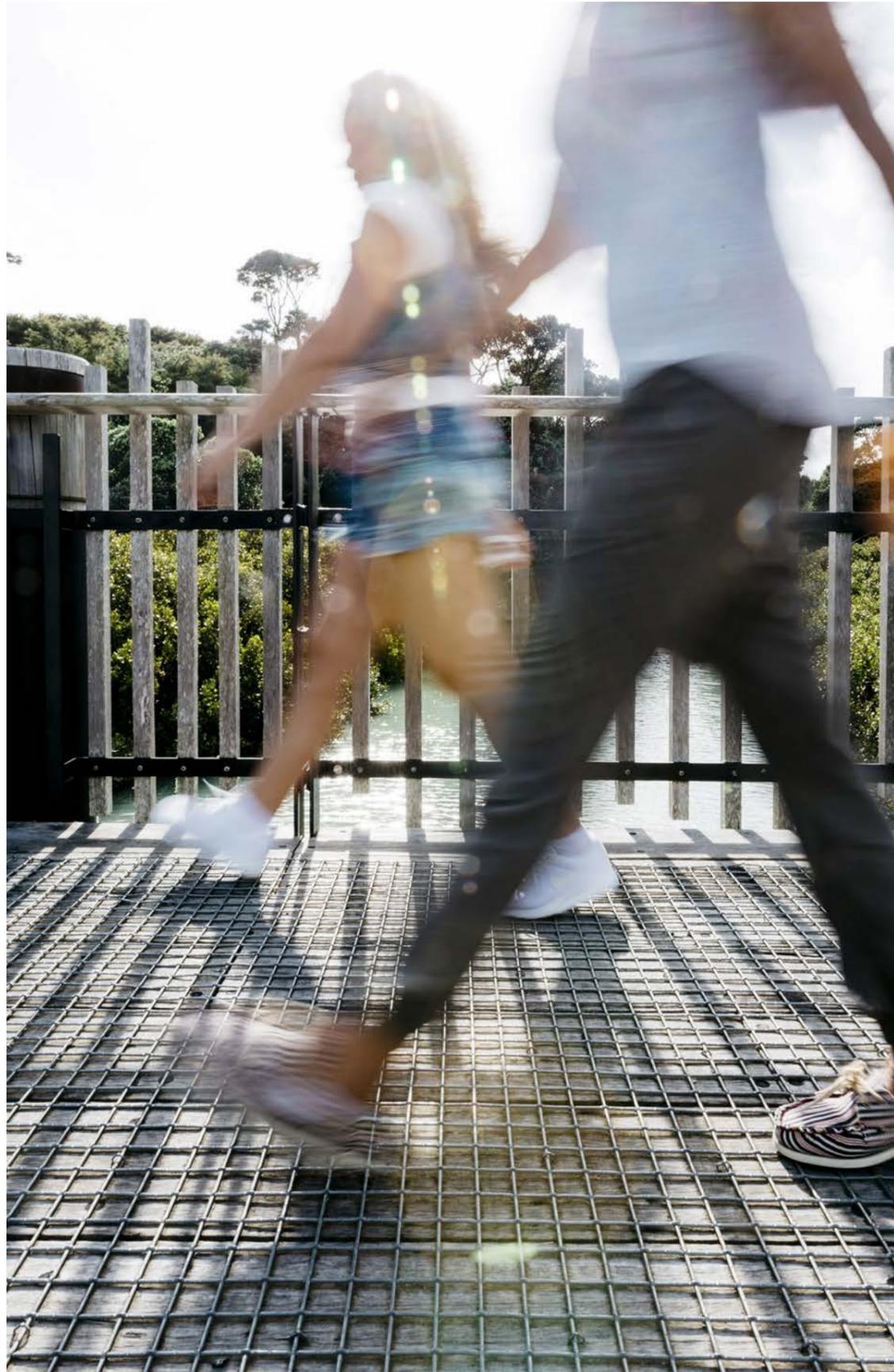


# HOWICK WALKING & CYCLING NETWORK

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Adopted Report, November 2018





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## 1.0 Introduction & Background

## 1.1 Purpose of the Document

### PURPOSE

This document defines the long-term walking and cycling network plan for the Howick Local Board area. It is a visionary and guiding document intended for use by elected members, Council and CCO officers, community and volunteer groups, private developers and other interested parties.

### VISIONARY DOCUMENT

Network plans similar to this have been successfully developed throughout the world. One of the most notable examples is in Portland, Oregon, where the local government and residents worked together to develop their network of cycleways, walkways and parkland. This was then extended further into the urban environment to include a wholesale retrofit of streets, parks and industrial developments to achieve a fully connected city.

Planning and delivery of an overall Auckland network called 'Local Paths' (formerly known as Greenways)\* is now well underway across the city, where plans are being developed in a ground-up manner by Local Boards with a shared vision; to greatly improve walking, cycling and ecological connections throughout the region.

### GUIDING DOCUMENT

Upon adoption of this walking and cycling network plan, the Howick Local Board will identify a series of priority projects and look for opportunities to fund and create these connections over the coming years. Auckland Council will continue to develop Open Space Network Plans under its Open Space Strategy for all Local Board areas, and Local Paths plans will ultimately become a chapter of these.

\*The Howick Local Board has opted to rename their Local Paths project as the Howick Walking and Cycling Network (HWCN), and will be referred to as such from here on in.

## 1.2 Strategic Fit

### LINKS TO THE AUCKLAND PLAN

The Auckland Plan sets Council's long-term strategic direction, and sets out a vision to create the world's most liveable city. It provides an opportunity for integrated planning to significantly improve transport, environmental protection, land uses, housing growth and economic development, with the benefits of one authority responsible for all coordination.

Implementation of the projects contained within the HWCN plan can deliver on a number of the aims of the Auckland Plan, including:

#### Chapter 5: Auckland's Recreation & Sport

Priority 1: *Encourage all Aucklanders, particularly children and young people to participate in recreation and sport*

#### Chapter 7: Auckland's Environment

Priority 1: *Value our natural heritage*  
Priority 2: *Sustainably manage natural resources*  
Priority 3: *Treasure our coastlines, harbours, islands and marine areas*

#### Chapter 12: Auckland's Physical & Social Infrastructure

Priority 2: *Protect, enable, align, integrate and provide social and community infrastructure for present and future generations.*  
Directive 12.8: *Maintain and extend the public open space network, sporting facilities, swimming pools, walkways and trails and recreational boating facilities in line with growth needs.*

#### Chapter 13: Auckland's Transport

Priority 3: *Prioritise and optimise investment across transport modes.*

### LINKS TO OTHER INITIATIVES

In developing this walking and cycling plan, a number of related Council and non-council initiatives have been investigated and, where possible, included in the network:

- Auckland Unitary Plan;
- Local Board future planning documents such as the Howick Heritage Plan, Howick Village Centre Plan, and Howick Local Board Plan (2017);
- The large number of Special Housing Areas (SHAs) within the region, including those currently progressing around Flatbush;
- Auckland Council or private development proposals such as the Greenmount Reserve and Ostrich Farm Concept Plans, Barry Curtis Park and Lloyd Elsmore Park Masterplans, and the Mangemangeroa Development Plan;
- Auckland Transport (AT) proposals such as the Auckland Cycle Network (ACN), AMETI Eastern Busway, East West Connections project, and the Half Moon Bay Ferry / Bus Interchange.

## LOCAL BOARD ASPIRATIONS

Each Local Board plan is a reflection of what elected members have heard from their community. Feedback gained both formally and informally is instrumental in shaping these plans, and they provide a touchstone for the aspirations of each area's community.

Successful implementation of high-performing walking and cycling routes has the potential to fulfil a number of the outcome aspirations in the Howick Local Board Plan (2017):

### Outcome 1: Involved and connected communities

"We are proud of our area and participate in our community to make Howick a great place to live, work and play."

### Outcome 2: Our future growth is managed effectively

"We want to ensure future growth is well planned a with good quality design and transport connections that enable people to move easily around our area."

### Outcome 3: Valuing our cultural diversity

"We are culturally diverse and have great facilities for creative activities including music and dance, theatre and visual arts."

### Outcome 4: A treasured environment

"We will keep our wonderful environment and admired coastline clean and safe for all to use."

### Outcome 5: Our people are active and healthy

"Our extensive network of public places, and recreation and leisure facilities will be looked dafter so people of all ages and abilities can use them to remain healthy and active."

### Outcome 6: A prosperous local economy

"We will attract new businesses to support our economy and provide opportunities for training and skills development. We will also continue to attract tourism to our area."

Supporting this vision, the Board Plan sets out a number of more tangible objectives per outcome, to guide allocation of funding and advocacy over the Local Board term. Construction of the walking and cycling network, as detailed by this document, can help to deliver on a number of these objectives, specifically:

### Our future growth is managed effectively:

- A well integrated, well designed and efficient public transport system.
- Provide a quality network of better used parks and open spaces to meet existing and future growth needs.

Increasing the network of safe walkways and cycleways in Howick, and encouraging these modes of transport as practical, healthy options for community and regional connections is a main aim of any walking and cycling network plan.



### A treasured environment:

- Our natural and built environment is well managed with ongoing support for pest and weed control, and pollution prevention.

The HWCN plan is a tool which can be used to deliver this outcome, by providing re-vegetated riparian ecological corridors. Such corridors offer habitat for both flora and fauna in the area, as well as doubling as a movement corridor to allow animals to move between larger areas of habitat.



### Our people are active and healthy:

- Sport and recreation opportunities responds to the needs of our growing communities and offers a wide range of activities
- Planning and development of parks, walkways and cycleways and 'green fingers' are continued

The HWCN plan provides a connected recreational network, allowing residents to move safely through and between their existing open spaces. This has benefits for the health and well-being of those people actively using the network, as well as offering an opportunity for people to get out and meet others from their local community. It also has the potential to see a greater uptake of usage of existing recreational facilities in Howick.



## 1.3 What is a walking and cycling network?

### DEFINITION

The aim of a walking and cycling network is to provide connections which are safe and pleasant, while also improving local ecology and access to recreational opportunities. To achieve this, the HWCN may cross existing areas of parkland, and follow street connections between parks. This network will link together areas of housing and employment, open spaces, town centres, recreational facilities, places of interest and transport hubs.

Implementation of the HWCN plan will better connect Howick to the neighbouring Otago-Papatoetoe, Maungakiekie-Tamaki and Franklin Local Board areas, and will also connect to regional walking/cycling proposals for the greater Auckland area. The adjoining map shows routes either under development or adopted by other participating local boards. Each board sets their own 'Local Paths' definition for their respective areas, based around a common aim.

### BENEFITS OF A WALKING AND CYCLING NETWORK

There are many benefits from developing a network, including:

**Recreation** – Improving people's access to outdoor recreation and enjoyment close to their home;

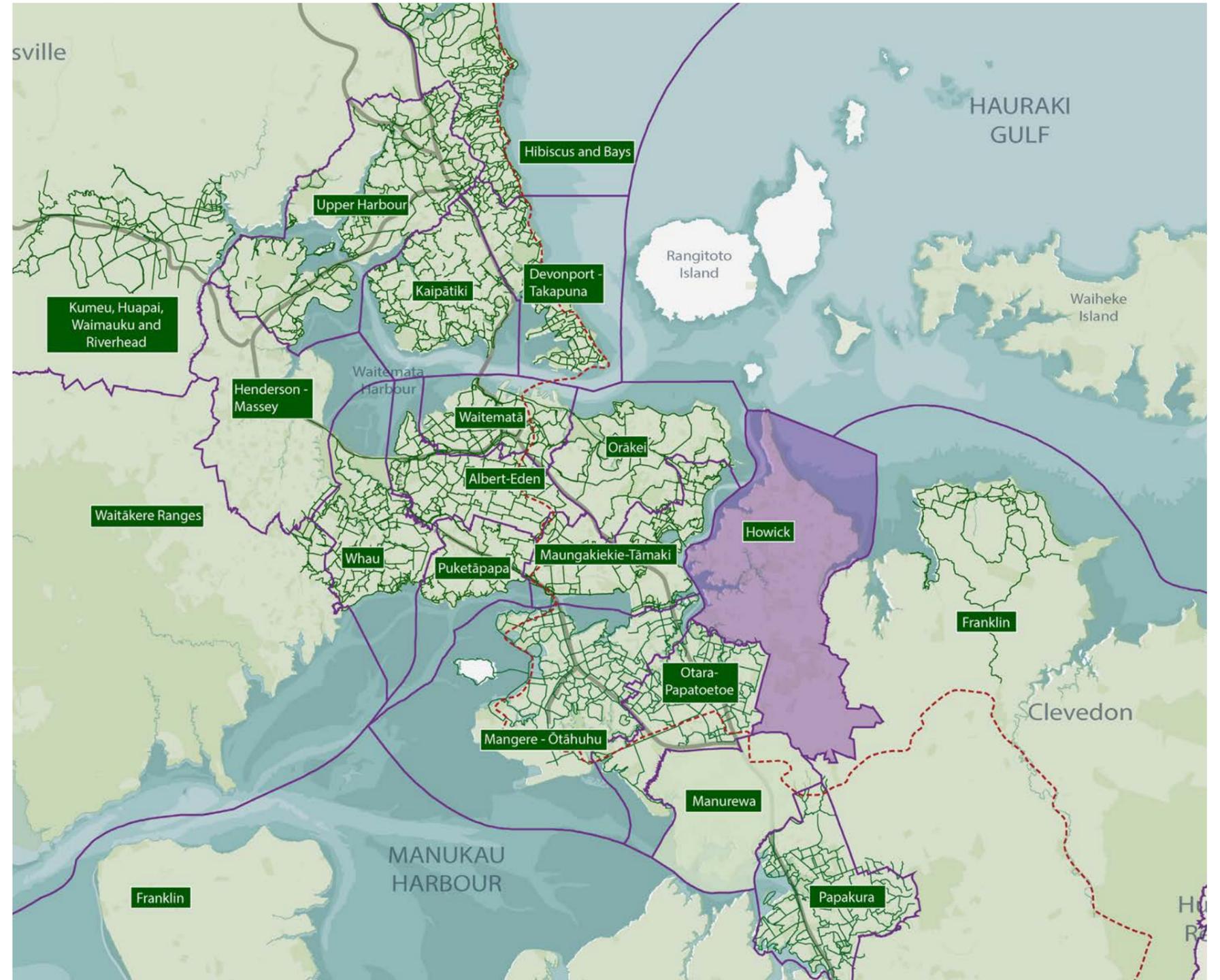
**Environmental** – reducing our reliance on fossil fuels by providing attractive and safe alternative transport choices, improving stormwater quality and reducing flooding events through low impact design measures, and by enhancing ecosystems, habitat sources and ecological niches;

**Social** – providing improved opportunities for people to get outside and meet their neighbours, to be engaged with a diverse range of communities and to be connected with local community facilities;

**Health** – providing improved opportunities for activity and fitness;

**Education** – Providing opportunities to learn about the vegetation, wildlife, ecology, history and people of the landscapes that they pass through; and

**Economic** – Increasing local employment as areas become more desirable for businesses and shoppers. Greenways can also provide a tourist destination for international and national visitors, and improve property values.



#### LEGEND

- Planned network routes (partially constructed)
- Local Board boundaries
- Te Araroa Walkway (National Walkway)

Boards with planning underway

Local Paths Network, Auckland



## WHAT THE ROUTES MIGHT LOOK LIKE

The appearance of the network will vary dependent on its location. For instance, a connection that runs through parkland may look and function quite differently to a connection adjacent to a road or in a built-up urban environment. The adjacent images show what the network could look like in a variety of settings, including:

- parks, reserves, and connecting to bush areas
- alongside streams or ecological areas
- alongside industrial land or residential properties
- slow-speed traffic environments and major transport corridors.

The surface treatment will vary depending on site-specific aspects such as the location of the path, slope gradient and the existing character of an area. It is also important that the network is connected through appropriate wayfinding signage and/or other forms of markers.

These aspects have been considered by Auckland's 'Local Path Design Guide', which will see the construction of each individual project following a consistent set of 'rules' to allow the projects to work together consistently as part of the overall network. See over the page for examples from the Local Path Design Guide.



CONNECTIONS IN OPEN SPACES



CONNECTIONS IN STREETS & TRANSPORT CORRIDORS

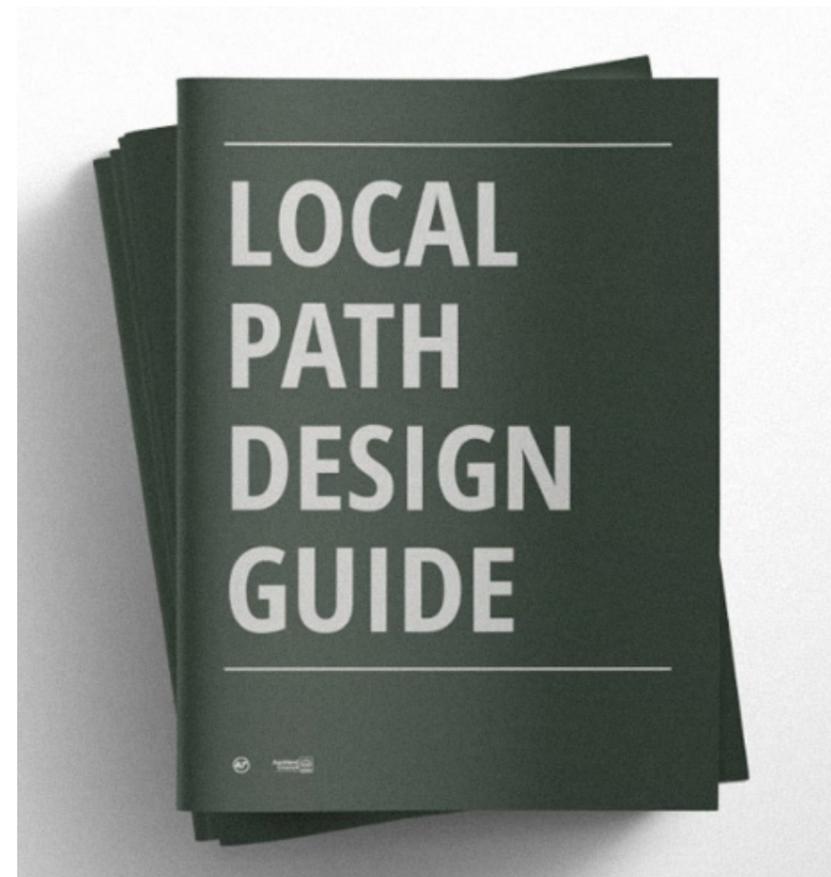


ECOLOGICAL OPPORTUNITIES

## 1.4 Local Path Design Guide

### POSITIONING HOWICK'S WALKING & CYCLING ROUTES WITHIN THE WIDER AUCKLAND NETWORK

Over the last few years, Auckland Transport and Auckland Council have worked to produce a 'Local Path Design Guide' (March, 2017) for shared walking and cycling routes across all of Auckland. The purpose of this network planning document is to detail where the routes are to go, while the design guide describes their look and feel. It details the desirable width of connections, the materials to be used, methods of crossing roads, of calming traffic, and it also spells out the minimum ecological aspects of the routes. Together, these two documents will form the backbone of the ongoing delivery of these projects for the Howick area, and ensure that the routes connect up in a logical manner to those in surrounding areas.



### WHAT ARE LOCAL PATHS?

#### Local Path - Street

An on-street Local Path had pedestrians accommodated on footpaths with streets that are safe enough to cycle on without the need for separated cycle lanes. Traffic calming tools, pavement markings and signage are used to improve safety for all street users.

#### Local Path - Open Space

Off-road Local Paths run through parks and open spaces and accommodate both cyclists and pedestrians. Together with on-street Paths, they are designed to create linkages to local centres, parks, schools and transport links including Express Paths.

#### Express Path

Express Paths are major cycleways on busy streets or off-road paths. They connect people to major centres and form the base structure of the cycleway network.

#### Trail

A trail is distinct from a Local Path in that it is found in rural or bush settings and is primarily for recreation. Many trails will connect to Local or Express Paths, but may also allow for horse riding alongside walking and cycling. A trail can also be a bush walk, which due to topography would not be shared by cyclists. Trails are not generally intended to form a connection between destinations, and often run in loops.



1 Sandringham, Auckland



2 Beach Road Cycleway



3 Grafton Gully Cycleway



4 Mount Roskill War Memorial Reserve



5 Mahurangi East Track



6 Henderson Creek / Opanuku Stream

## 1.5 Auckland Context

This map shows the Board area within its wider regional context, sitting approximately 20km east of Auckland's CBD. It is bound by the Huraki Gulf in the North, Tamaki River and the Mangakiekie-Tamaki and Otara-Papatoetoe local boards to the West, and the Manurewa and Franklin local boards to the South and East.

The Howick Local Board area takes in the established suburbs of Howick, Pakuranga, Bucklands Beach and Botany, as well as the industrial East Tamaki sector and the more recently developed Flatbush area. A significant increase in the residential population is forecast over the coming years, with a Special Housing Area (SHA) located within the board's boundary. This makes it uniquely positioned to take advantage of a pre-planned walking and cycling network, as these can be incorporated into new residential areas as they are constructed.

### BROADER TRANSPORT CONNECTIONS

The Southern Motorway and railway line both sit outside of the Howick Local Board area, presenting a challenge of how to get people to these important corridors, or the transport hubs that link up to them (i.e Panmure and Manukau Transfer Stations). This is where planned walking and cycling routes may help to fill those gaps. From a safety perspective, the fact the area is not bisected by rail or motorway corridors means there is more opportunity to provide a safe and fully connected walking and cycling network. In terms of public transport access directly into the CBD, Howick has access to a number of ferry services running from Half Moon Bay, as well as a comprehensive bus network.

### BROADER WALKING AND CYCLING CONNECTIONS

The walking trail 'Te Araroa' is a continuous 3,000 km track spanning the length of New Zealand, and will connect the greater Auckland area with Northland and Waikato. While this route doesn't currently feature within the Howick area (instead running just beyond the southern boundary), there may be future potential to link other routes in with the national trail or out towards Hunua.



Scale 1:500,000 @ A3



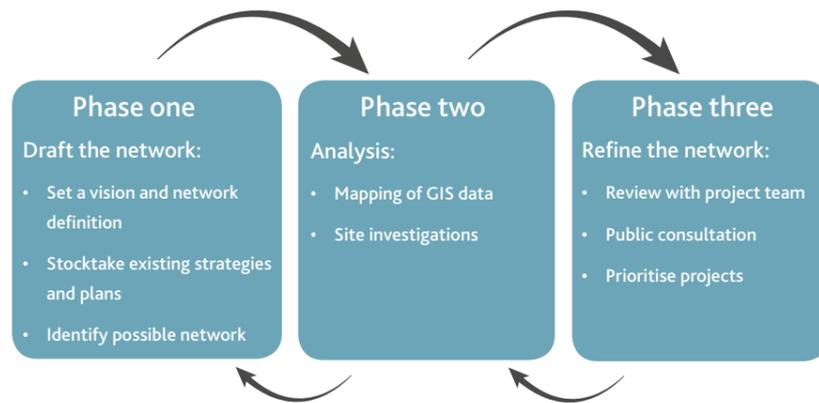
Picton Street, Howick Village



## 2.0 Methodology

## 2.1 The Process

The Howick Walking and Cycling Network was developed using a three-stage process as outlined below:



### PHASE ONE - DRAFT THE NETWORK

As a first step, previous studies and planning documents relevant to the area were collected and reviewed. The Howick Local Board Plan (2017) was reviewed to gain an understanding of both the strategic vision of the community and also the projects planned for implementation over the coming years. After this, a definition for the Howick Walking and Cycling Network (HWCN) was discussed and agreed upon with the Local Board, and a 'working party' was set up, which met regularly to review the plan as it developed.

Next, a desktop study was carried out to map a high-level plan of walking and cycling connections as per the agreed components set out in the local network definition. Ecological improvements were also given consideration, to improve links between existing vegetated areas, including significant areas of bush, wetlands, coastal edges and streams. These desktop studies gave an understanding of the broad landscape patterns within the Howick area, and were used to guide phase two of the process, where the network was investigated on site.

This stage of the draft network plan was taken to the working party for review prior to undertaking site investigations, to ensure that it was aligned with the Board's aspirations and objectives for the project.

During this phase, discussions were held with Auckland Transport and other Council officers to inform them of the project, and to understand linked policies or projects that would affect the HWCN.

### PHASE TWO - ANALYSIS

Following the desktop mapping, the draft route was overlaid with GIS data (in Appendix - Section A) to ensure that the network made appropriate connections to local destinations such as schools, community facilities, town centres and transport nodes.

The draft network plan was then assessed on-site to ensure that it provided logical, practical and safe connections. This process involved analysis of a number of aspects that could influence the suitability of the route, such as topography, vegetation cover, utility service locations, the condition of existing paths, slope stability, Crime Prevention through Environmental Design (CPTED) principles, and the layout of any roading corridors identified as greenway routes.

All proposed connections were sighted and evaluated, and photo-record taken. Some connections were found to be inappropriate (where there wasn't enough space for a connection, the connection was unsafe, the terrain was too steep, or a higher amenity alternative was found) and the draft network was updated accordingly.

### PHASE THREE - REFINE THE NETWORK

Following the analysis phase, the Howick Local Board and Council officers from Parks Sports and Recreation, Community Facilities and Local Board Services reviewed the proposed HWCN routes in detail, and a two-phase community consultation process was then carried out.

The first phase of community engagement / consultation was carried out as follows:

- Botany Community Day, 3rd March 2018
- Howick Village Market, 10th March 2018
- Digital communications via Shape Auckland, and Howick Local Board websites such as Facebook. Online consultation closed on the 8th April 2018.

Feedback was received from local organisations, members of the local community and residents of the wider Auckland area, and was generally supportive of the proposed routes.

The second phase was a targeted stakeholder session held mid May, which sought to gain feedback from groups with an active interest in this type of work. Invitees to this session included:

- Local recreational and interest groups, such as members from Bike East Auckland, and Fisher & Paykel Healthcare
- Auckland Transport
- Schools and Local Sports Clubs
- Local Business Association

Feedback from both phases of community consultation was then incorporated into the plans. This feedback helped to modify the draft routes based on real community needs, and was also very valuable in determining the priority routes described below.

Following consultations, routes were identified that could be prioritised for delivery and/or advocacy. The HWCN is a long-term project, to be developed over the next ten-twenty years, and project prioritisation helps the board focus on achieving sections of the plan within its three year term. Prioritisation is based on a number of factors including costs, benefits, constraints and opportunities, often driven by other local projects - including those by Auckland Council, Council Controlled Organisations and external stakeholders, such as NZTA.

The priority sections can be viewed in Appendix - Section C of this document.

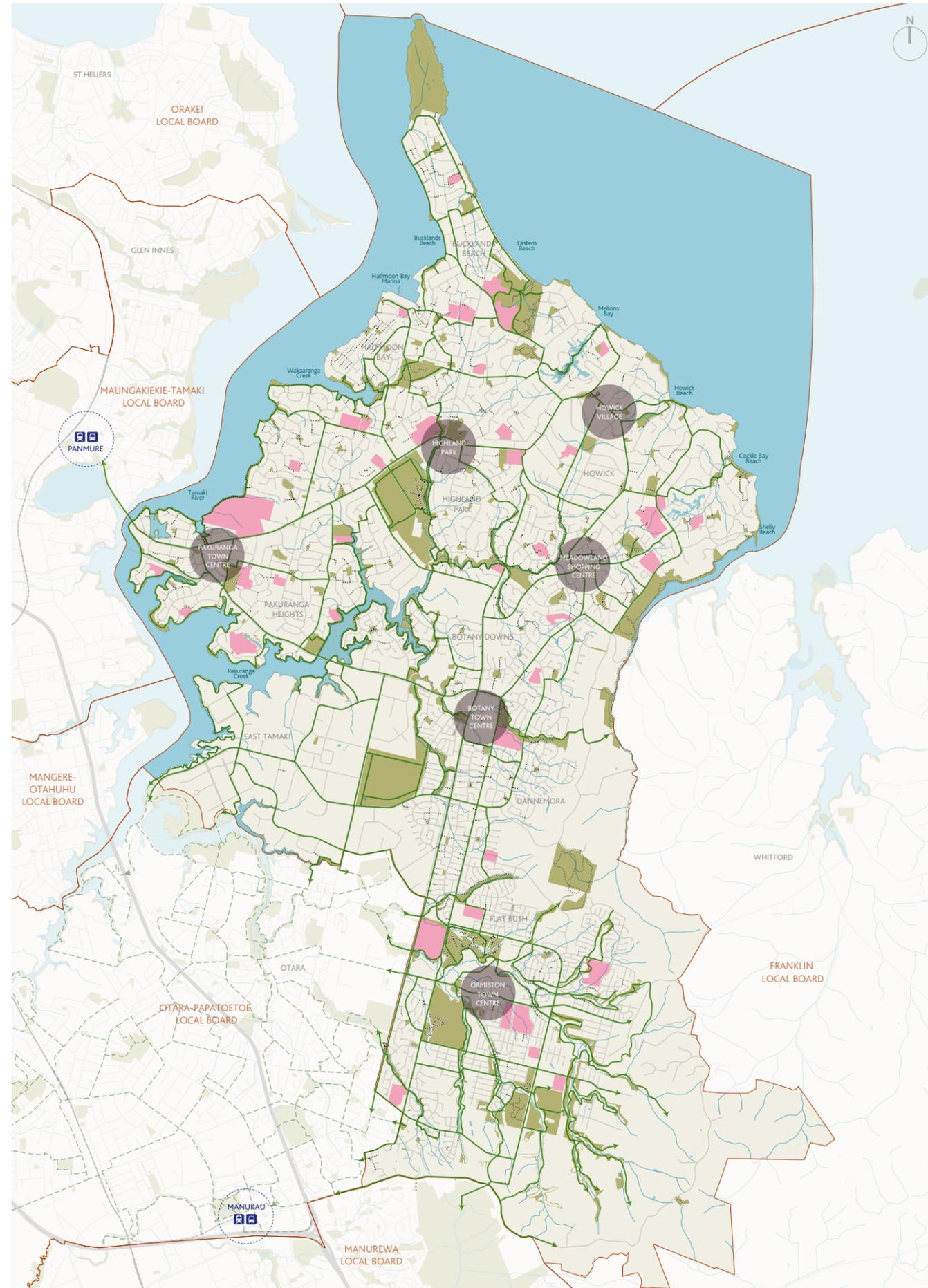




## 3.0 Network Mapping

### 3.1 Long-term Aspirational Routes

This map shows the completed Howick walking and cycling vision identified by the Local Board, including both the priority sections as well as longer term routes. This vision is aspirational, and will be reviewed on a regular basis as priority sections are completed, and as other related projects are completed.



**LEGEND:**

Base information

- Schools
- Parks & reserve land
- Streams & River
- Roads

HWCN connections

- Proposed route
- Existing paths
- Transport Interchange hub
- Neighbouring local board routes

## 3.2 Long-term Aspirational Routes with Additional Future Planning Overlays

This map shows the walking and cycling network as it relates to the draft Auckland Cycle Network (ACN), and other long term planning overlays. The other planning overlays shown here include:

- AMETI Eastern Busway

It is worth noting that the routes do not often overlap with the ACN's 'highway' or 'connector' routes, as these are predominantly on busy roads where opportunities for amenity, recreational and ecological improvements are very difficult to achieve. Routes tend to overlap with the ACN's 'feeder' routes much more closely, and are included in AT's definition of a feeder route. These routes are usually on low traffic volume, 'minor' streets where improvements to the streetscape are more practical to achieve.

It is also of note that the ACN is currently in draft form, and a process to better align the 'feeder' routes with the various Local Board Local Paths plans is currently underway. It is intended that both the ACN and the HWCN plans are 'live' documents, which will be updated at regular intervals. ACN routes shown on this map were current as of November 2017.

### LEGEND:

#### Base information

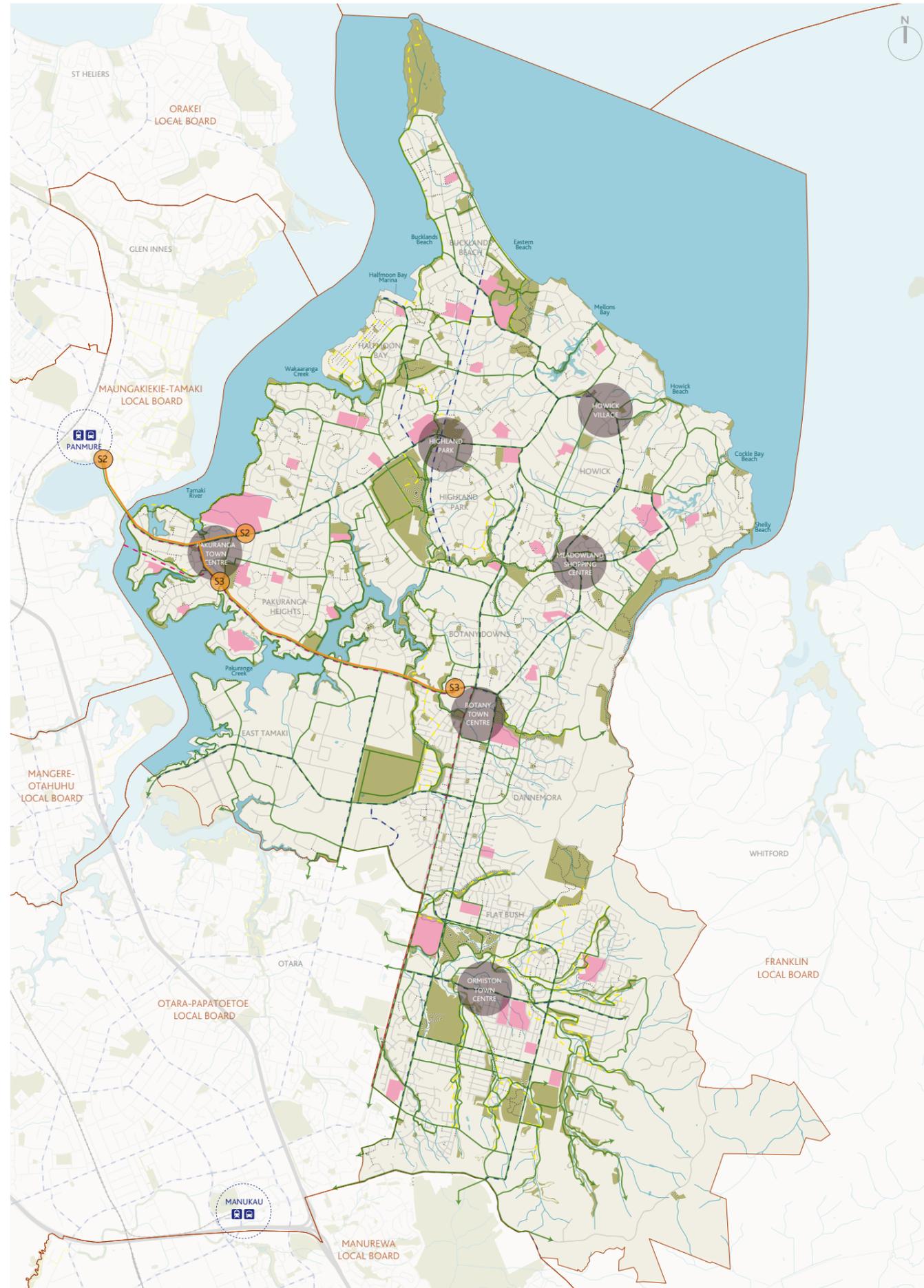
- Schools
- Parks & reserve land
- Streams & Rivers
- Roads

#### HWCN connections

- Proposed route

#### Future Planning Overlays

- ACN Metro
- ACN Connector
- ACN Feeder
- AMETI project stages



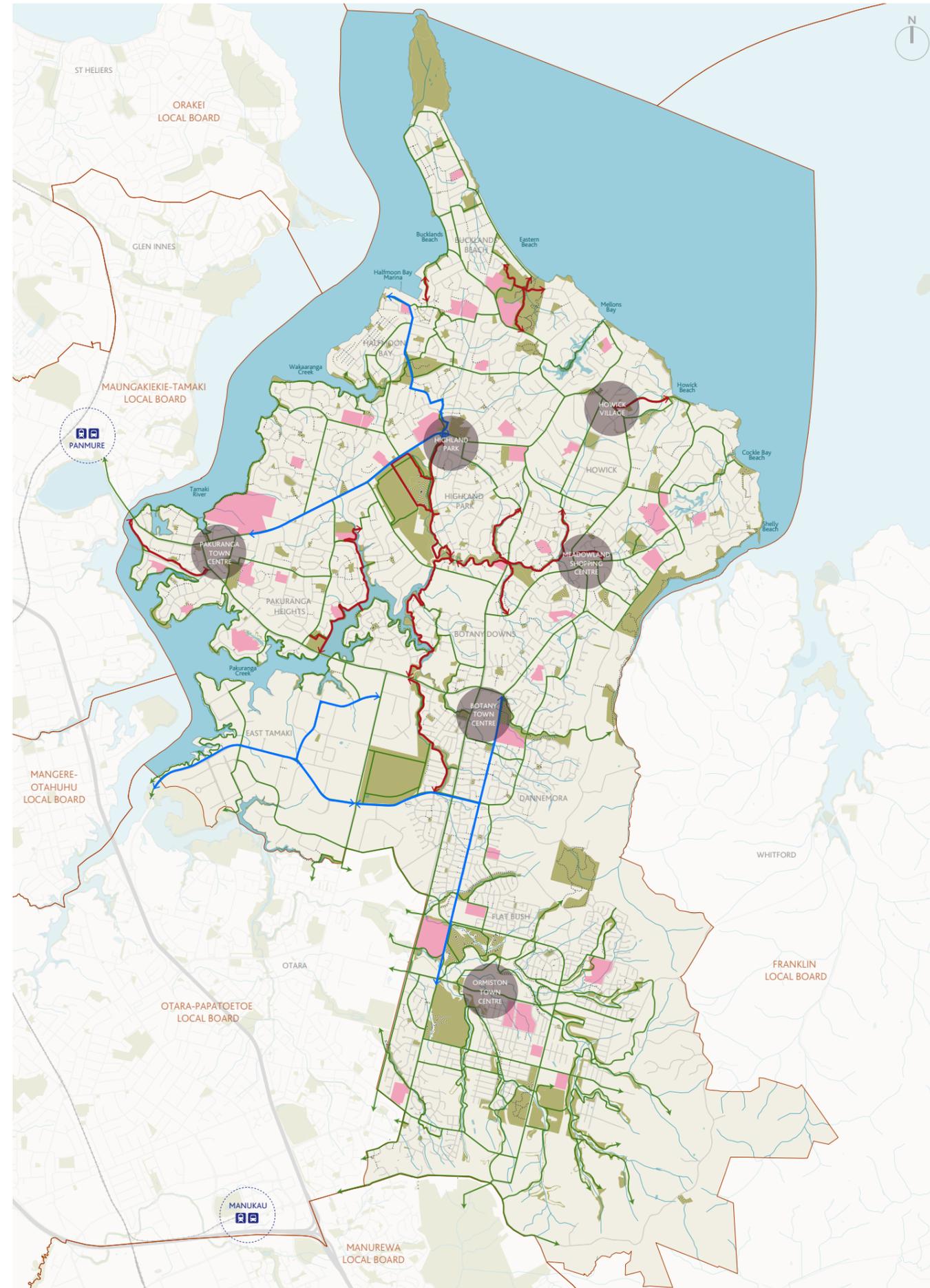
### 3.3 Proposed Priority Routes

As noted earlier, the HWCN plan is a long term vision, and in order to deliver a tangible result, a number of routes have been prioritised for delivery and/or advocacy over the next 3-5 years. Not all of these routes will be delivered, due to financial constraints - but these routes give an indication of where attention will be focused in the short term.

The routes have been split into recreational and commuter routes, as there are clear distinctions between them in terms of context and location.

- Recreational routes are typically on council-owned park land and may follow existing paths (i.e upgrading the Cascades Walkway to shared path standard).
- Commuter routes are typically on-road, and will require strategic design and implementation working alongside Auckland Transport.

Further detail on these routes is contained within Appendix C.



LEGEND:

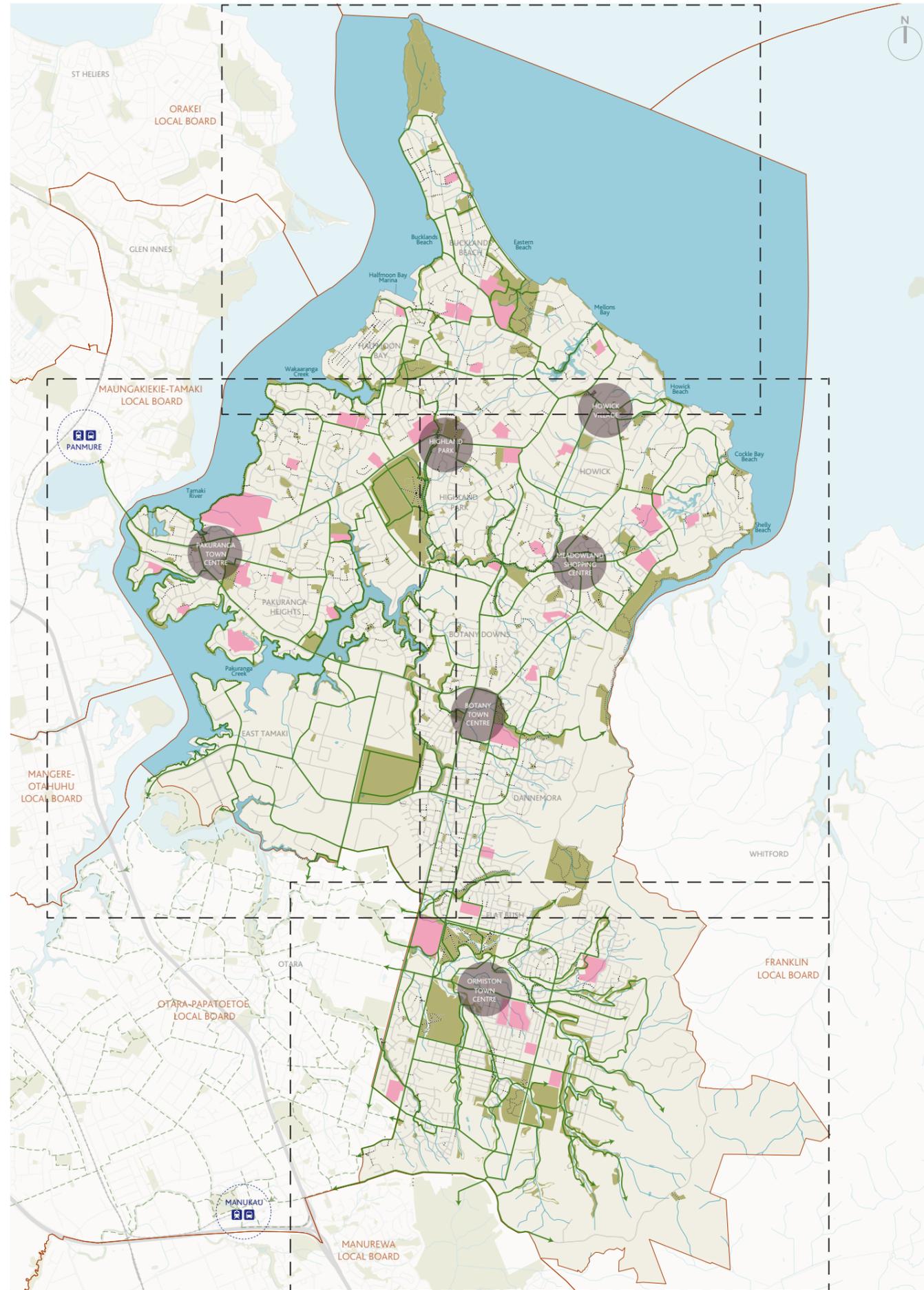
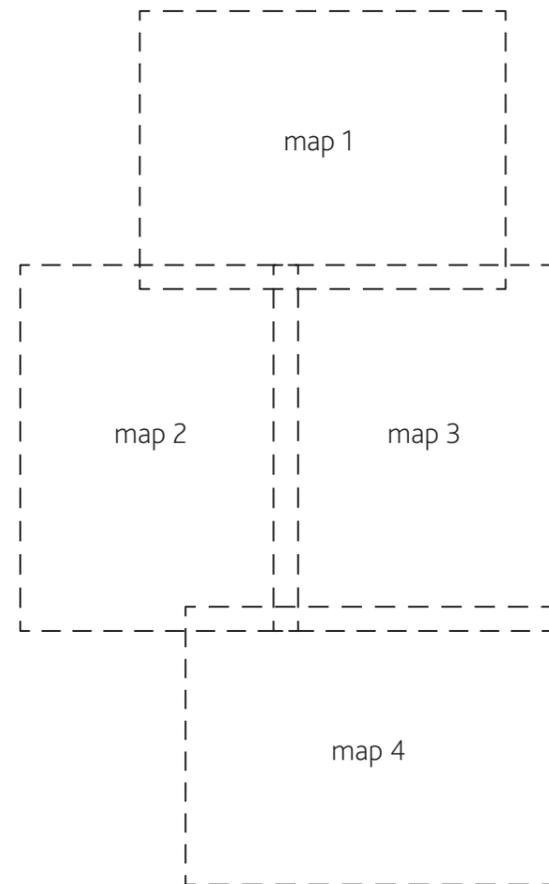
Base information

- Schools
- Parks & reserve land
- Streams & Rivers
- Roads

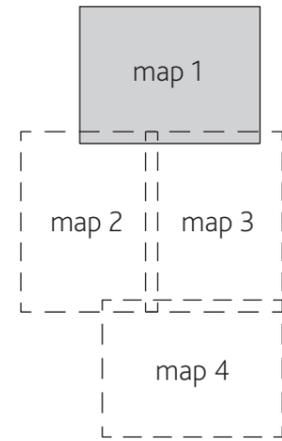
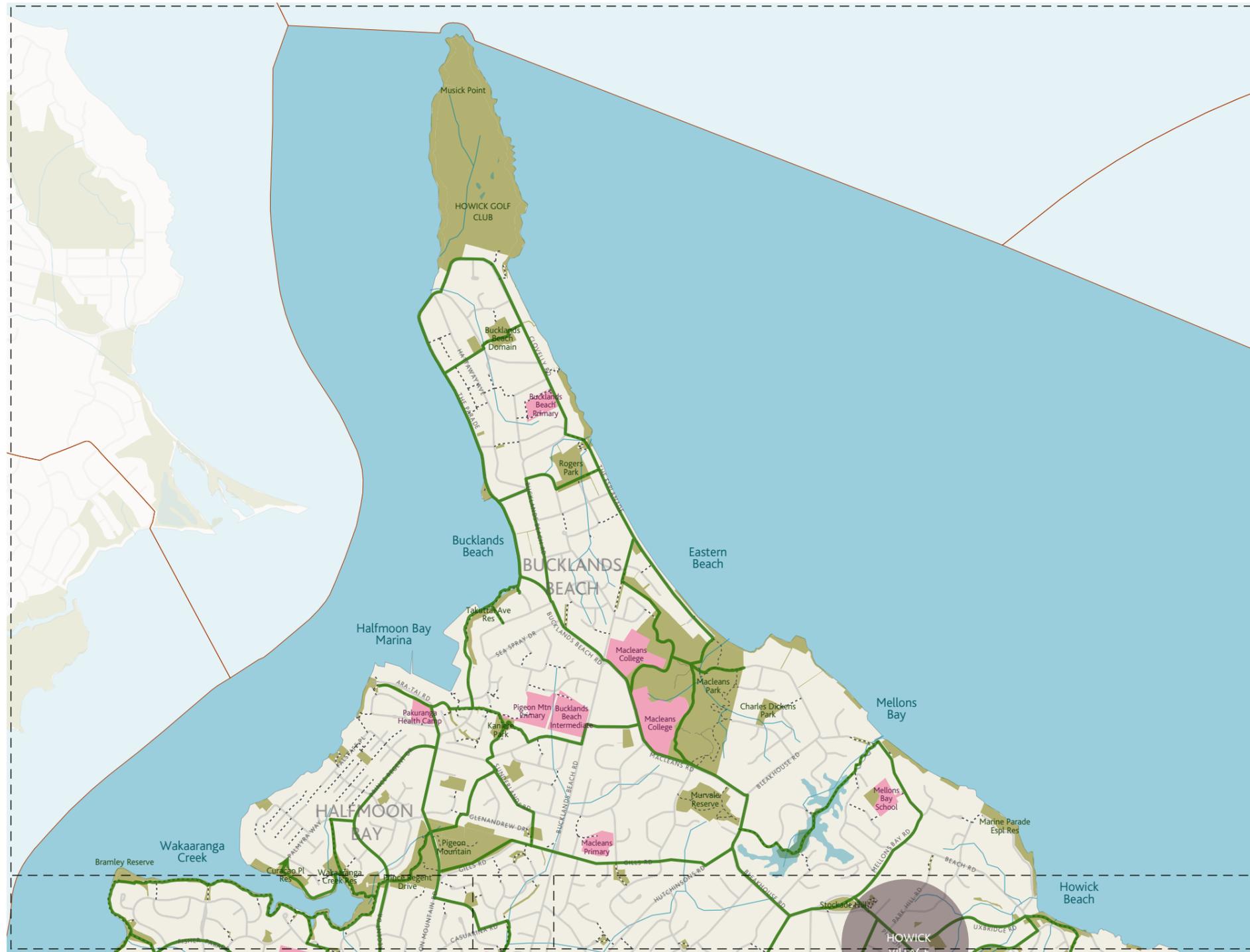
HWCN connections

- Proposed route
- Existing paths
- Priority Routes (Recreational)
- Priority Routes (Commuter)

### 3.4 Proposed HWCN Reference Plan



### 3.5 Proposed HWCN Plan MAP 1 OF 4



LEGEND: Base information

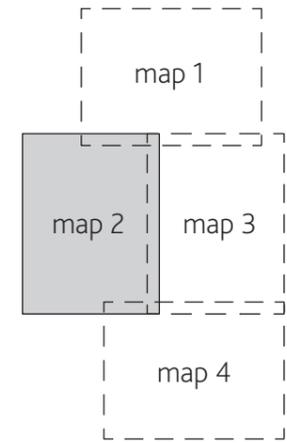
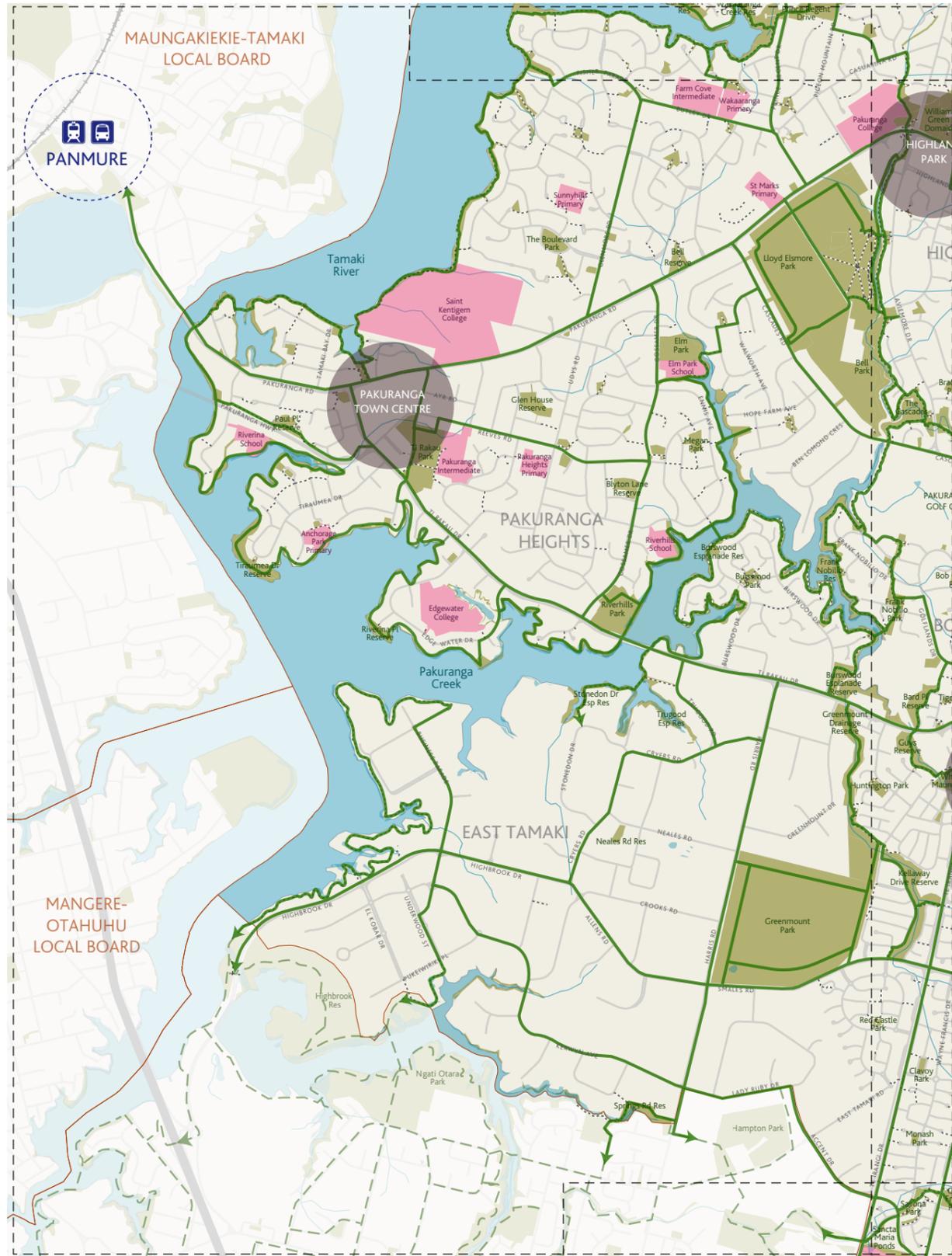
- Schools
- Parks & reserve land
- Streams & Rivers
- Roads

HWCN connections

- Proposed route
- Existing paths
- Neighbouring Local Board routes



### 3.5 Proposed HWCN Plan MAP 2 OF 4

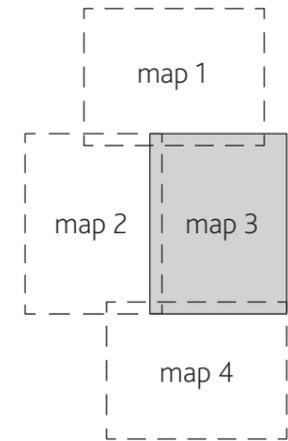
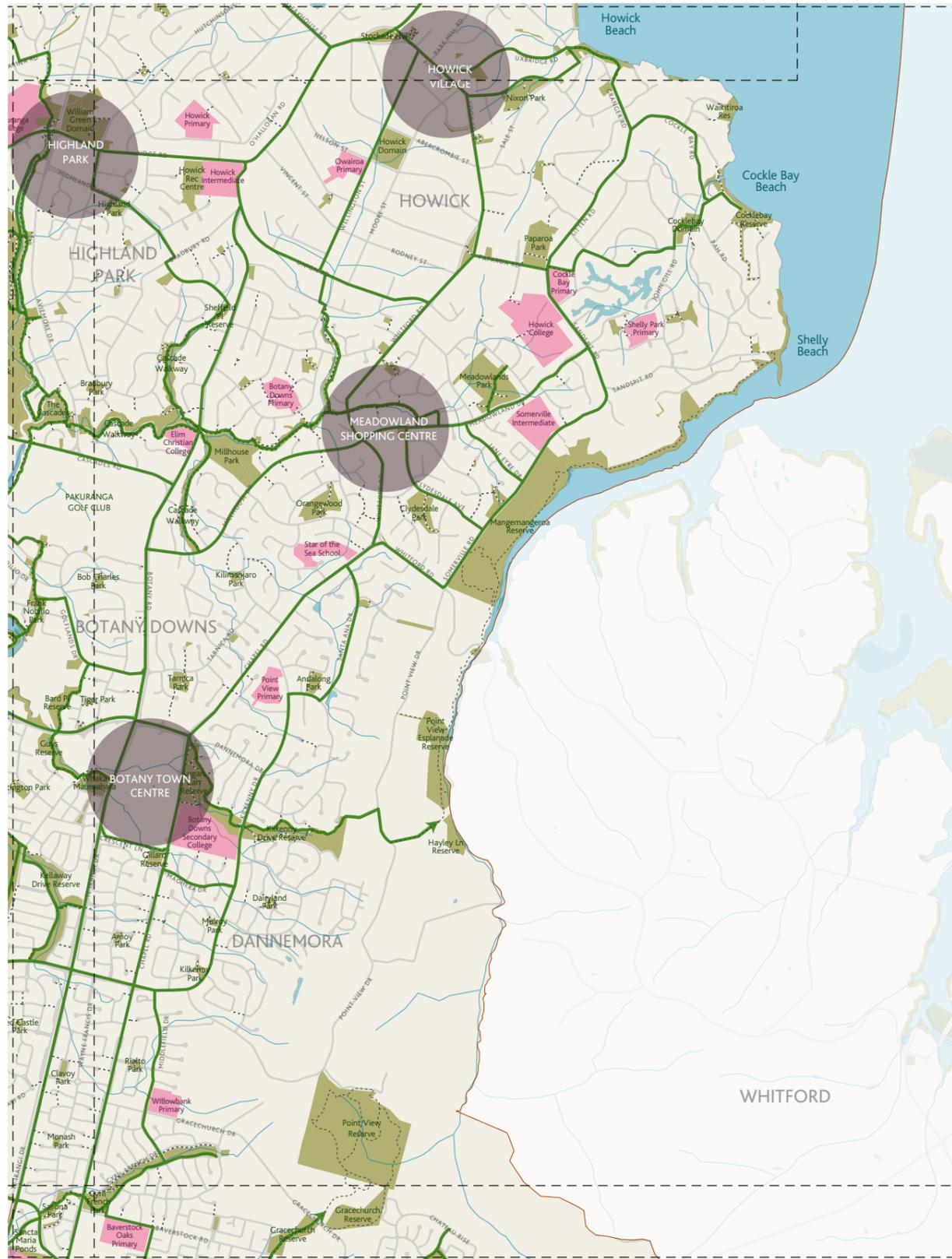


LEGEND:

<u>Base information</u>		
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<span style="display:inline-block; width:15px; height:15px; background-color: #c8e6c9; border: 1px solid black;"></span> Roads		<span style="display:inline-block; width:15px; border-bottom: 2px dashed #0070c0;"></span> Neighbouring Local Board routes
<u>HWCN connections</u>		
<span style="display:inline-block; width:15px; border-bottom: 2px solid #0070c0;"></span> Proposed route		<span style="display:inline-block; width:15px; border-bottom: 2px dashed black;"></span> Existing paths



### 3.5 Proposed HWCN Plan MAP 3 OF 4

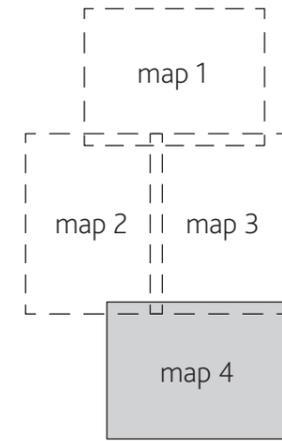
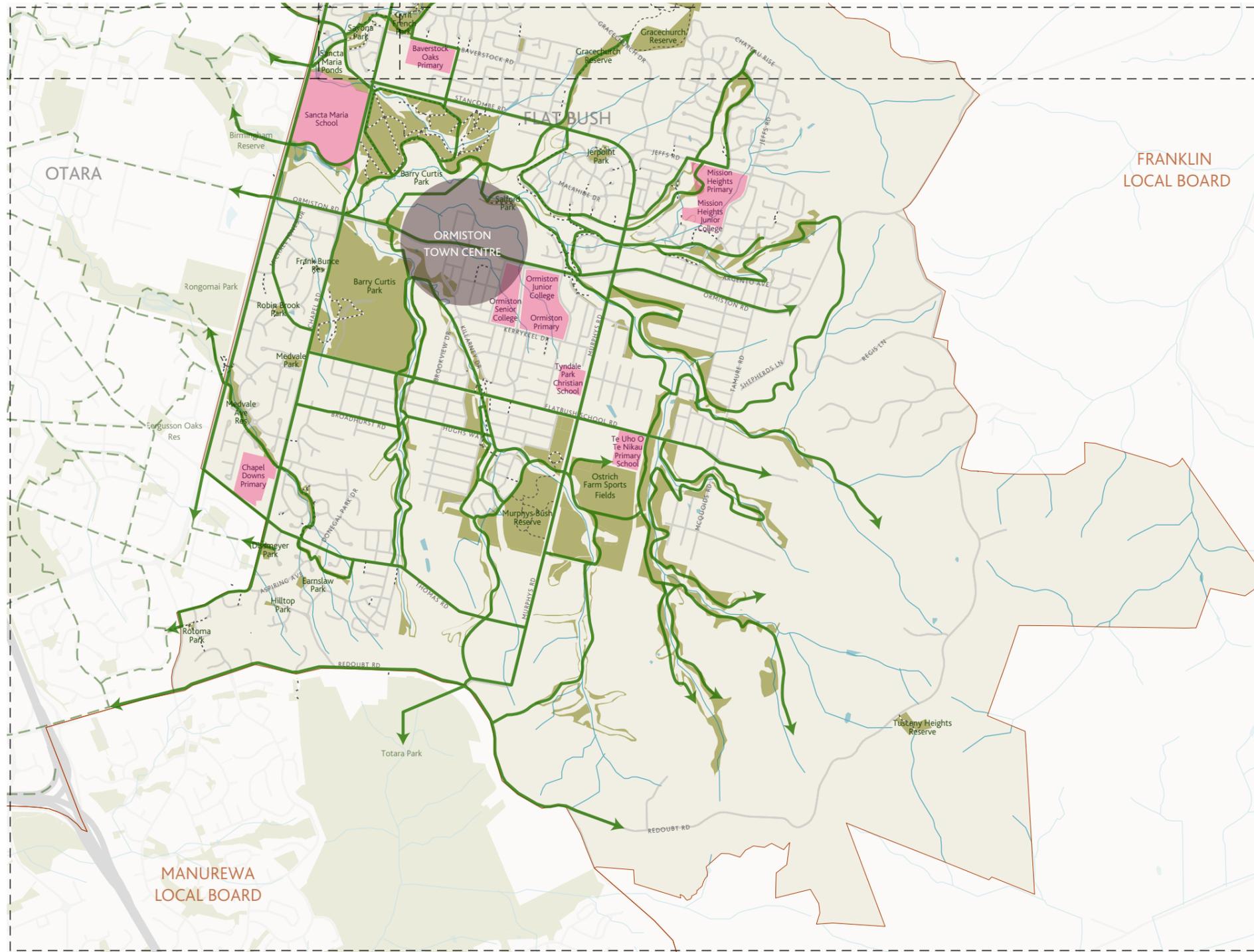


LEGEND:

<u>Base information</u>		
Schools	Streams & Rivers	
Parks & reserve land	Roads	
<u>HWCN connections</u>		
Proposed route	Neighbouring Local Board routes	
Existing paths		

N

### 3.5 Proposed HWCN Plan MAP 4 OF 4



LEGEND:

<b>Base information</b>	<b>HWCN connections</b>	<b>Neighbouring Local Board routes</b>
<span style="display:inline-block; width:15px; height:15px; background-color: #d9534f; border: 1px solid black;"></span> Schools	<span style="display:inline-block; width:15px; border-bottom: 2px solid #0070c0;"></span> Streams & Rivers	<span style="display:inline-block; width:15px; border-bottom: 2px dashed #0070c0;"></span> Proposed route
<span style="display:inline-block; width:15px; height:15px; background-color: #8ebf42; border: 1px solid black;"></span> Parks & reserve land	<span style="display:inline-block; width:15px; height:15px; background-color: #d9d9d9; border: 1px solid black;"></span> Roads	<span style="display:inline-block; width:15px; border-bottom: 2px dashed black;"></span> Existing paths





## 4.0 Future Development

## 4.1 Future Development

The Howick Walking and Cycling Network will be implemented over time to achieve (in part) the outcomes envisaged in the Local Board Plan. Implementation of this plan will include the upgrade of existing walking and cycling connections (both on and off-road), as well as the creation of new connections within open space land, through designation areas, and/or via partnerships with non-council parties.

Successful implementation of the plan requires co-ordination and commitment from the Howick Local Board, Auckland Council, Auckland Transport, as well as relevant public agencies such as the NZTA, Watercare Services Ltd, Transpower and Vector. Assistance from community groups, local businesses or schools would also greatly improve delivery of the network.

The following section gives an overview over the future development and implementation of the HWCN plan in the short-medium term, including best practice for implementation, stakeholder involvement and funding availability, related case studies and the prioritisation strategy.



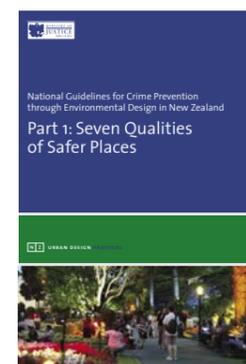
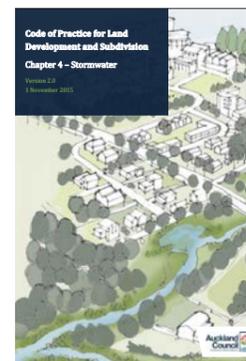
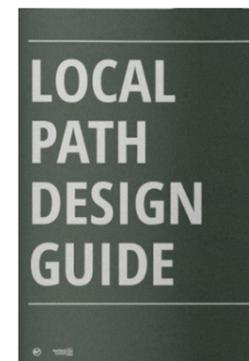
## 4.2 Best Practice for Implementation

Successful implementation of the HWCN plan relies on a co-ordinated approach between Auckland Council's Parks, Healthy Waters (Stormwater) and Community and Cultural Policy departments, as well as Auckland Transport. Future detailed planning shall take into consideration best practice guidelines, which include:

- Auckland Council/Auckland Transport Local Path Design Guide (2017)
- Auckland Transport Code of Practice (ATCOP)
- Auckland Council Stormwater Code of Practice (Healthy Waters)
- Auckland Council Parkland Design Guidelines (Community and Cultural Policy, Draft)

In addition to the above and all relevant unitary plan controls, there are related 'best practice' documents developed by external agencies that should also be taken into account as designs develop, including:

- Bridging the Gap: NZTA Urban Design Guidelines
- DoC Caring for Archaeological Sites: NZ Guidelines
- Ministry for the Environment (MFE) National Guidelines for CPTED



## 4.3 Stakeholder Funding and Information

Ongoing community engagement, stakeholder collaboration and partnerships are key to the successful implementation of the walking and cycling network.

Likely stakeholders, other than those previously mentioned include:

- Neighbouring Local Board areas (Franklin, Otara-Papatoetoe and Maungakiekie-Tamaki)
- Mana whenua
- Auckland Tourism, Events and Economic Development (ATEED)
- Cycle Action Auckland
- YES Disability
- Operators of community facilities, including schools
- Ministry of Education
- Department of Conservation
- Housing New Zealand
- Local residents and business associations
- Forest & Bird

Grass-roots community involvement is very important to ensure the ongoing success of the network plan. Local knowledge-sharing and volunteering are needed to provide community ownership, care and responsibility. Community involvement could take the form of planting/weed clearance days, 'adopt a stream/street' groups, fundraising, lobbying and artistic input.

Funding has been allocated for roading improvements in the board area in Auckland Council's Long Term Plan (LTP) for the next 10 years, and it is envisioned that a portion of this will be used to implement the HWCN. Other funding avenues include Auckland Transport and the NZTA's regional cycleways fund. In addition the Local Board has planned open space projects to assist with implementation of the priority sections of this Plan.

The maps contained in Appendix - Section C, break down the prioritised projects in more detail, to assist with budgeting, advocacy and programming.



Barry Curtis Park



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# Appendices



Tamaki River Festival, Bramley Drive Reserve



A. Analysis Mapping



## A.1 Howick Local Board Area

This aerial photograph shows the broad landscape patterns of the Howick Local Board area within its surrounding context. The area is bound northwest to northeast by the Waitemata Harbour, specifically the Tamaki and Mangemangeroa Estuaries on either side of the peninsula, and several small bays in between.

Howick is one of the older 'urbanised' board areas on the isthmus, with large zones of residential land which have been established for a long time. A pocket of rural land is visible at the southern boundary of the board, from Flatbush towards Murphys Road. Some of this is set to change however, with sections of this rural pocket posited for residential development under the Unitary Plan.

Looking at the Board area at this scale, there are three 'macro' landscape patterns which define it from a Local Paths perspective:

- Generally flat contour, meaning that the walking and cycling network can occur on good accessible grades to maximise usage.
- Relatively long sections of coastline, with good portions of this in public ownership.
- Industrial land neatly confined to the East Tamaki business precinct, while the remainder of the board area is residential. No large transport infrastructure bisects the area.

Howick connects to four local board areas;

- Maungakiekie-Tamaki (to the northwest)
- Otara-Papatoetoe (to the southwest)
- Manurewa (to the south)
- Franklin (to the east)

All four board areas have developed their own Local Paths plans, and as the Howick routes are constructed, care will be taken to ensure that the links shown flow smoothly out into these adjacent areas.

## A.2 Significant Ecological Areas

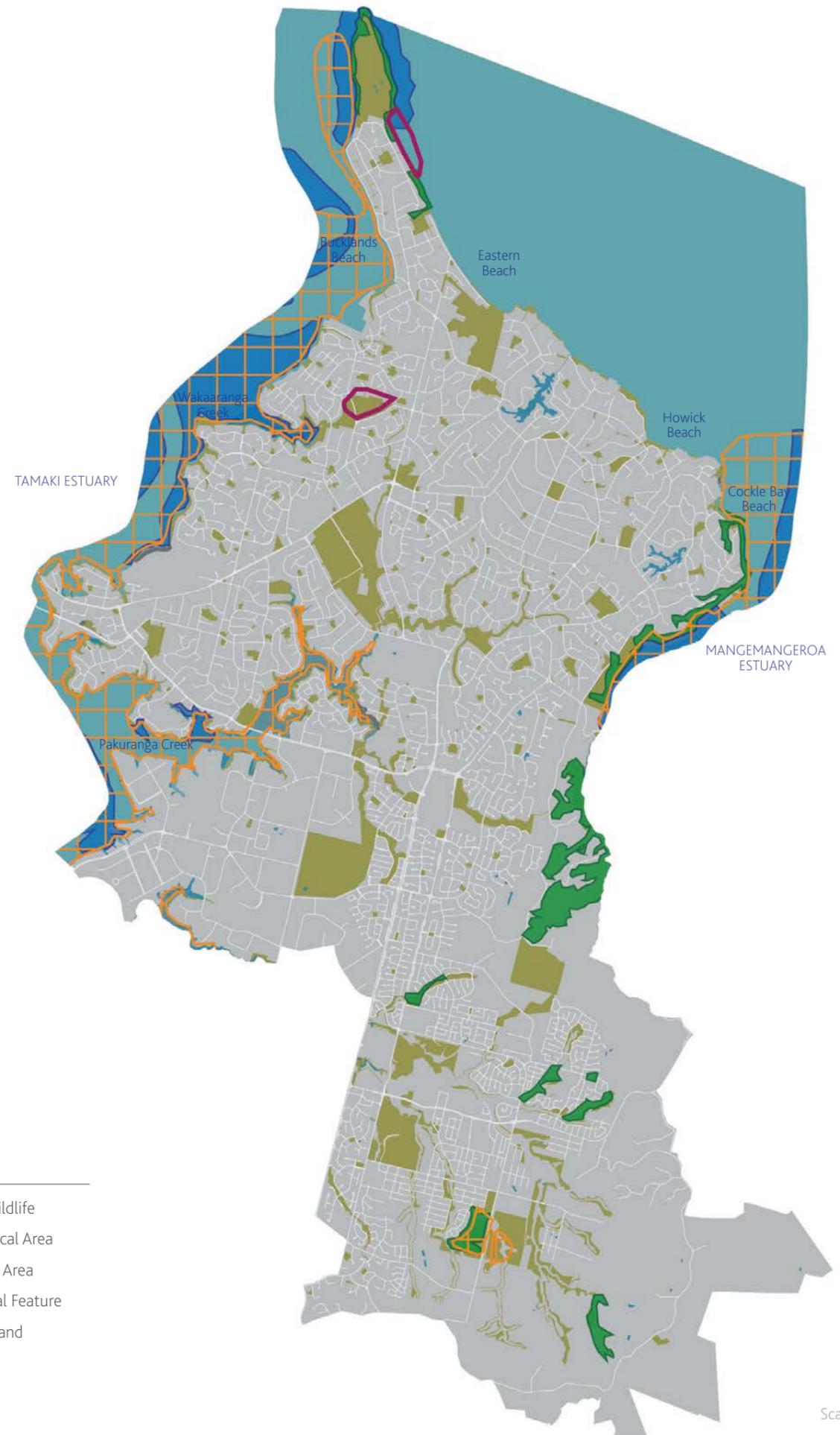
This map shows Significant Ecological Areas (SEA's) as identified within the Auckland Unitary Plan. Much of the ecological significance in the Howick area relates to its marine environment. The entire western coastline of the Tamaki Estuary (Waitemata Harbour) is a regionally significant wildlife habitat, extending down to the narrow inlets where Pakuranga Creek traverses inland. The eastern coastline from Cockle Bay Beach to Mangemangeroa Estuary is highlighted as a significant wildlife area as well, but is also of high terrestrial ecological importance due to the native bush margin located in Mangemangeroa Reserve.

There are several other significant terrestrial ecological areas within the project area, primarily the protected native bush at Murphys Bush Scenic Reserve, and some nearby land on Jeffs Road. The HWCN project can support and link these ecological 'nodes', strengthening resilience of the network as a whole. Fully-formed routes can treat and reduce contaminated urban stormwater runoff, improving the health of both freshwater and coastal waterways.

The Auckland Regional Policy Statement (ARPS) notes that the intertidal flats and sand-shell spit of the Tamaki Estuary provides a number of roosting sites for hundreds of wading birds using the estuary to feed. Bird species that are known to frequent the area include the South Island pied oystercatcher, pied stilt, godwit, knot, turnstone, golden plover, banded and NZ dotterels, wrybill, black-backed and red-billed gulls, caspian terns, pied and little shags, white-faced and blue reef herons. Grey warblers, fantails, and kingfishers, along with numerous introduced species, can often be heard if not seen walking along the spit too.

In order to maintain the wader population, preservation of roosting areas is one of the most important factors. If public land access is provided to any of these areas for walking and cycling routes, it should be planned so as to least disturb these features. Protection of the intertidal sand and mud banks is also essential for bird life in the harbour.

As with archaeological areas, the presence of such rich fauna brings with it specific development constraints, but adds greatly to the interest and potential education potential of any walking and cycling routes here.



Scale 1:80,000 



- LEGEND:
- Notable Parks
  - Parks and reserve land
  - Roads

Scale 1:80,000

## A.3 Key Open Spaces

This map includes large open spaces with a recreational function (typically playing fields, attractive walks, gymnasiums and pools). These areas can be considered 'destination' points within the open space network, and connecting these via walking and cycling routes will improve usage of both.

This map shows that recreational destinations are generally well distributed within the Howick area, with a number of smaller parks and green spaces located in between.

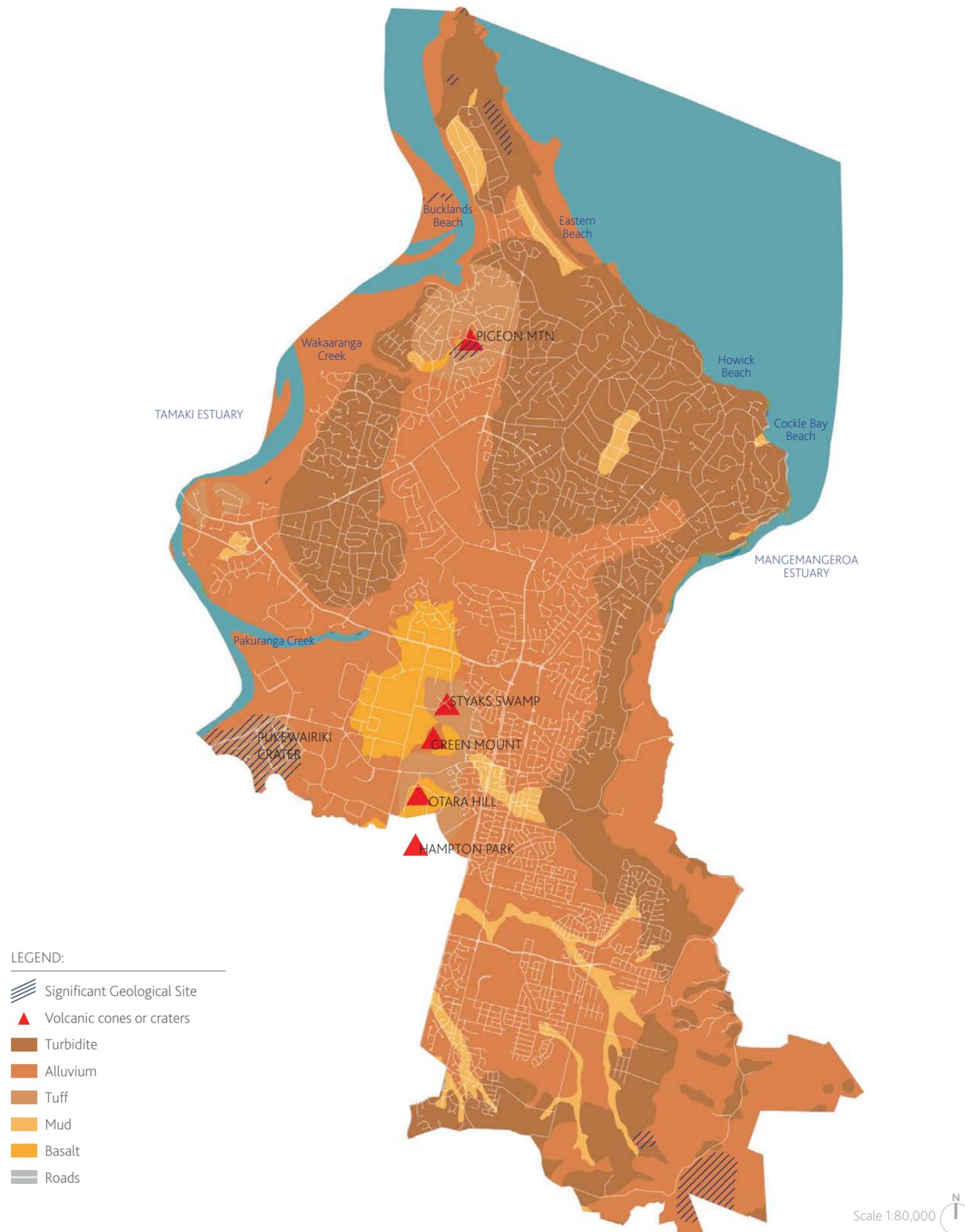
Lloyd Elsmore Park is one of Auckland's premier parks and sporting grounds, comprised of approximately 80 ha. It is home to a wide range of sports clubs and facilities, including a council owned leisure centre and pool complex, a theatre, community hall and the Howick Historical Village. The Cascades Walkway runs through Lloyd Elsmore and connects to several neighbourhoods. A key goal for the HWCN is to replicate this sort of connection in other local open spaces, and create a more accessible network of recreational destinations.

## A.4 Geology

The underlying geomorphology of the Howick area is heavily influenced by its volcanic history. The area generally comprises of low lying and gently undulating alluvium soils, as well as turbidite rock which can be seen predominantly on the eastern coast. Along the stream and coastal inlets there are areas of muddy substrate, while pockets of local volcanic deposits are situated around the volcanic cones and tuff rings in the area.

A number of prominent volcanic landscape features occur within the study area including:

- Pukewairiki Crater (Highbrook Park) - a breached explosion crater and tuff ring located on the end of the Waioura Peninsula.
- O Huiarangi (Pigeon Mountain) - a scoria cone which was created from a wet explosion crater with surrounding tuff ring, of which during the eruption some of this tuff ring arc collapsed back into the explosion crater to form a double rim. Today Pigeon Mountain only exists as half a volcanic cone, as the northern half was quarried away between 1950 and 1970.
- East Tamaki volcanoes - a line of four volcanoes, which are thought to have been wet explosion eruptions that occurred at similar times, lies in the East Tamaki industrial area between the Otara-Papatoetoe and Howick local board areas:
  - Styaks Swamp - the youngest volcano of the four, the crater once contained a swamp but is now covered by industrial development.
  - Matanginui (Green Mount) - a former scoria cone which was quarried away in the early 1900's before becoming a landfill site. Remedial works have recently been undertaken to reform the cone - and upon reduction of gas levels - turn it into a large public park.
  - Te Puke o Taramainuku (Otara Hill) - formerly a scoria cone with smaller scoria mounds, a breached crater and tuff ring 'moat', Otara Hill was completely quarried by 2002 and is now covered by industrial subdivisions.
  - Hampton Park - the oldest of the four volcanoes, the heart of the cone was quarried during the late 1800's but its lower slopes and maori terracing remain. Hampton Park sits within the Otara-Papatoetoe Local Board Area.



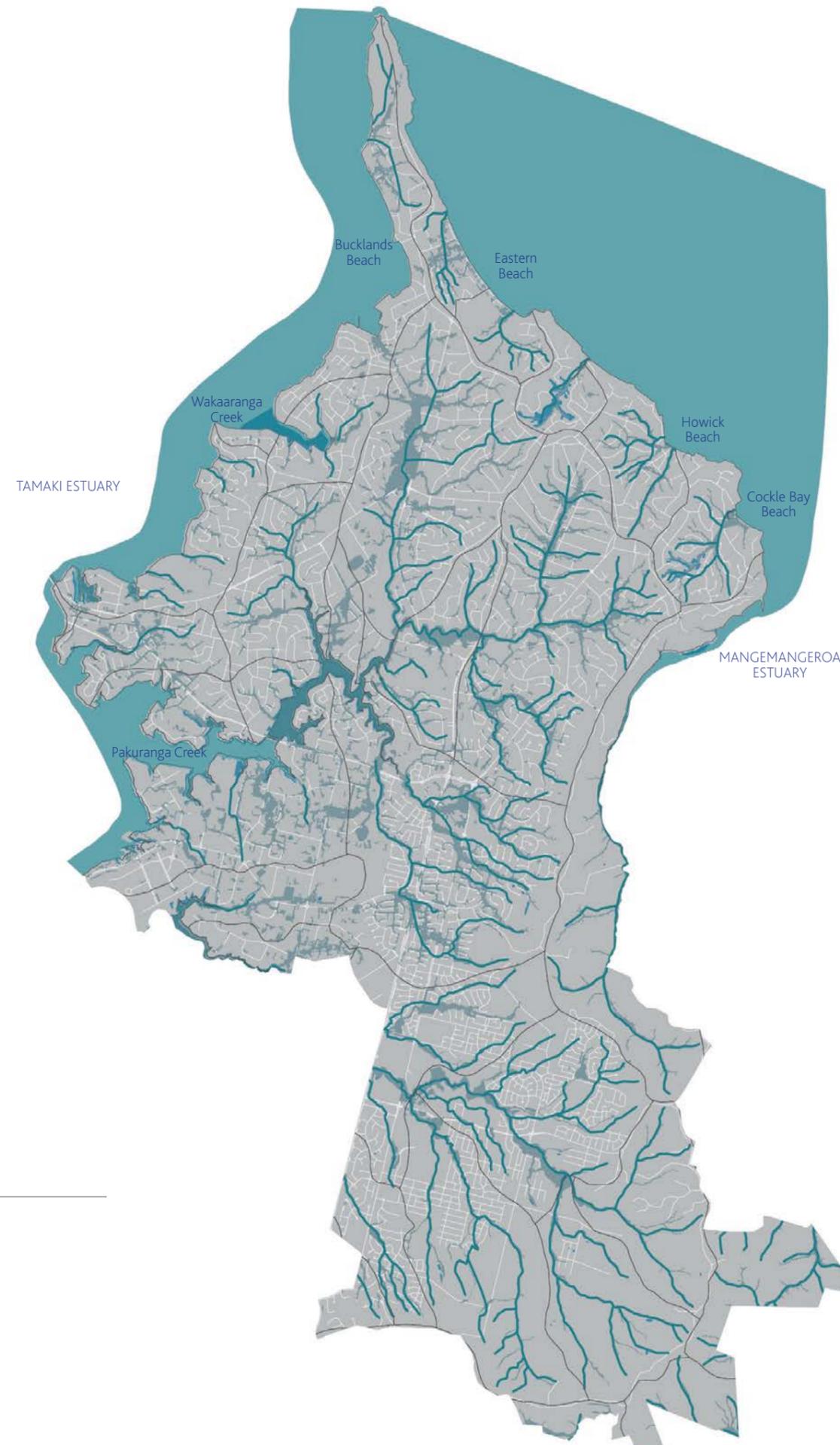
## A.5 Hydrology and Catchments

This map shows stormwater catchments, sub-catchments and the 100 year flood plains within the Howick Local Board area, as well as local watercourses. The primary waterways in the area include Pakuranga, Wakaaranga, Mangemangeroa and Botany Creeks; which flow out to the surrounding coastal beaches and estuaries in the Waitemata Harbour.

Some of the streams in the area have been significantly modified over time – with large sections of Botany Creek and Pakuranga Stream being channelised (these streams run along the length of Lloyd Elsmore Park and the Cascades Walkway). In addition, a number of minor streams run through industrial areas and suffer the effects of pollutant runoff. These often flow out via pipes and culverts to the harbour and contribute to the poor water quality of the Tamaki Estuary. The 2016 State of Auckland Report Card marks the ecological health of both marine and freshwater environments in Howick as severely unhealthy (D and F ratings).

The Local Paths network typically aims to follow streams and their tributaries for a number of reasons, including:

- Projects along waterway offer opportunities to enhance local ecology through riparian planting, habitat restoration, and daylighting/re-naturalisation, all of which have great potential in strengthening Auckland's network of ecological corridors.
- Riparian planting also acts as a filtration system, improving water quality as pollutants from overland flow paths are removed.
- Well planned planting and pedestrian/cycle facilities will ensure that routes along waterways will be highly used, which in turn will provide increased stewardship by users alerting authorities of incidents of pollution, dumping etc.
- There are educational benefits of opening up and restoring our stream corridors, to tell the stories of local ecology to our communities, and in turn this can further promote stewardship.

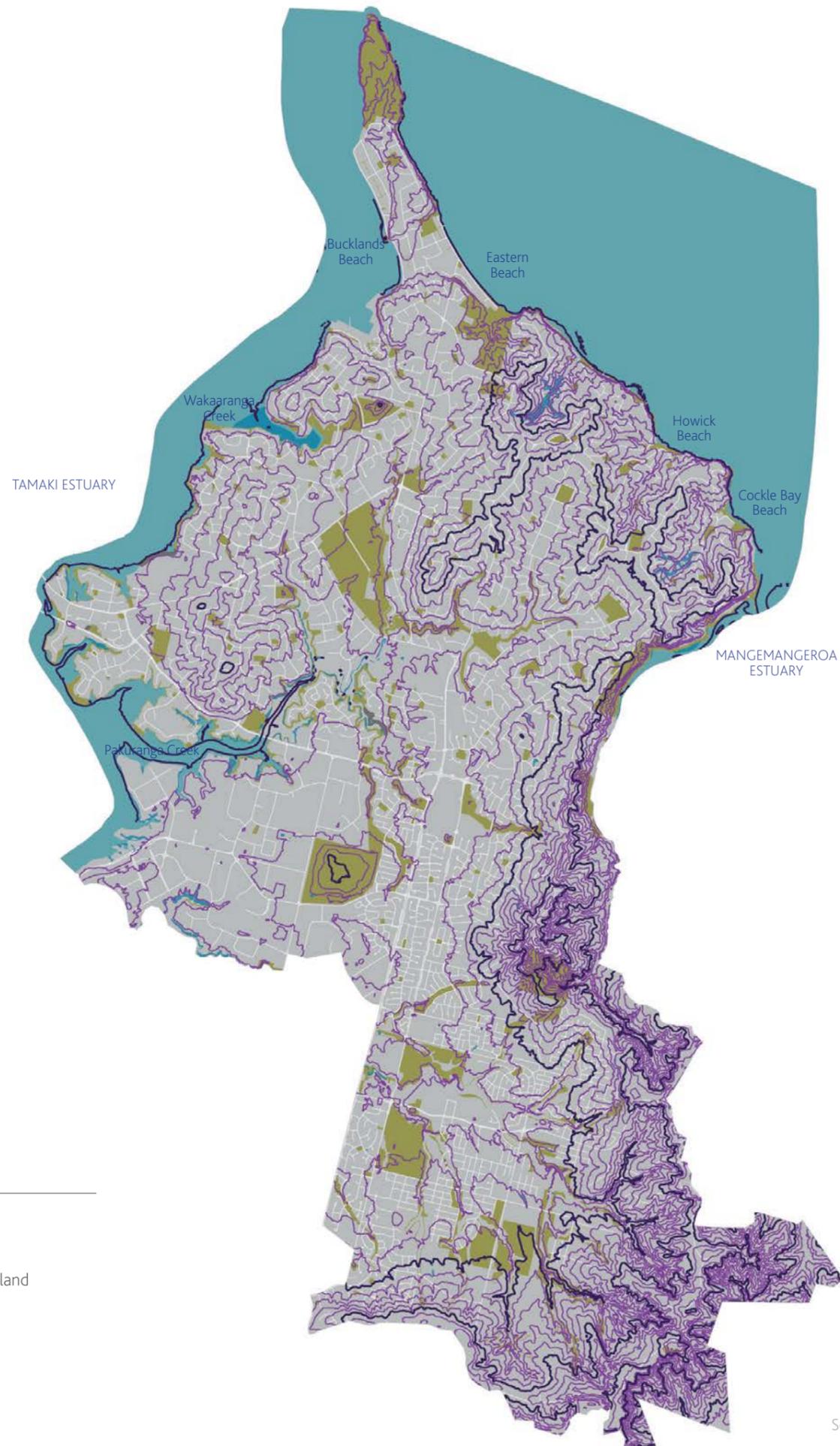


### LEGEND:

- Catchments
- Streams/Rivers
- Floodplains
- Roads

Scale 1:80,000





## A.6 Topography

Most of the suburbs in Howick are built on relatively flat to gently sloping land, with the exception of the coastal and rural fringe areas along the eastern boundary, which grade down steeply into the Mangemangeroa and Point View/Redoubt Road valleys.

Some of the suburbs also take in small streams and channels where minor local incisions have been carved by the stream network, but topography along these corridors is generally non-challenging.

From a walking and cycling perspective a flat contour is favourable, as it allows for a range of route options, avoiding busy roads; and is suitable for a wider range of ages and physical abilities. Where the network may encounter steeper topography, routes will be selected to minimise vertical climb, by orientating the paths along cross slopes.

In terms of the proposed routes, further investigation is required at a detailed stage to determine the feasibility of providing cycle access. There may be walking-only tracks provided where cycling is not possible due to slope.

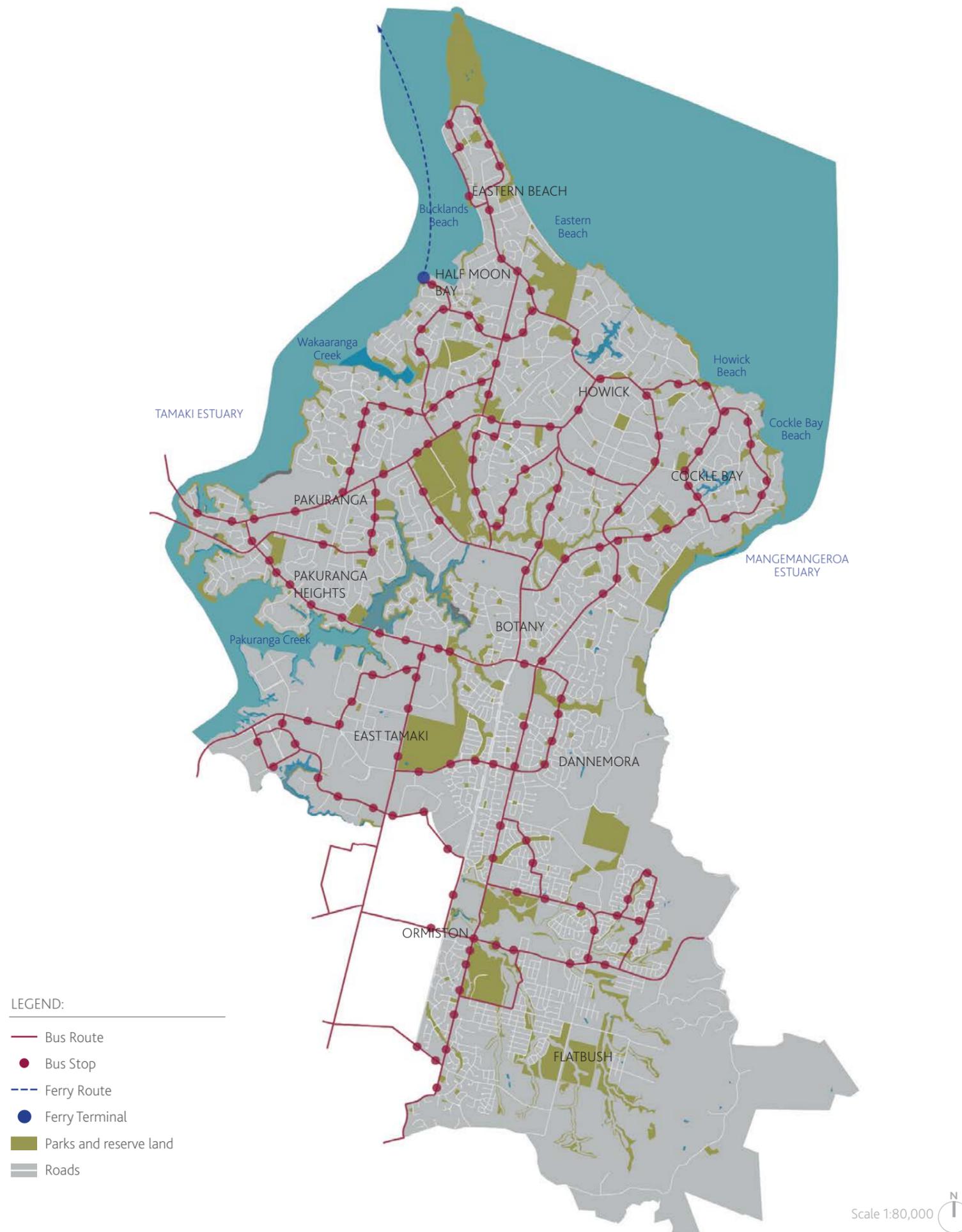
Scale 1:80,000

## A.7 Public Transport Network

Existing and planned public transport routes are illustrated on the adjacent map, showing residential areas of Howick, Botany, Pakuranga and Flatbush which are relatively well serviced by public bus routes. Some of these suburbs also have access to ferry services at Halfmoon Bay Marina. There is no rail within the Local Board area and it is a long trip for most residents to get to the nearest station which is in Panmure, however there are park and ride facilities available at Panmure Station.

In planning the HWCN routes, links to the major transport hubs at Panmure and Manukau were a key consideration, as those transfer stations would likely service a large amount of residents needing to travel towards the city for work etc.

Bus routes were also considered as these routes offer less potential for creating 'slow speed' walking and cycling street environments, and the buses themselves create more risk to cyclists. On-road routes therefore avoid bus routes wherever possible, although links to bus stops have been considered. However it is important to note that the HWCN routes do aim to tie into the future implementation of the AMETI Eastern Busway scheme, which will see separate dedicated bus and cycle lanes go in along sections of Pakuranga Road and Ti Rakau Drive.



## A.8 Road Hierarchy

Existing road hierarchy has been considered when determining the HWCN routes in order to create safe, desirable and high-amenity environments, encouraging use by as many Aucklanders as possible.

Major, medium and arterial roads are typically busy roads that provide for a range of transport types, including cars, buses and trucks. Careful consideration needs to be taken where the HWCN intersects or runs along these roads, to ensure desirable/safe routes are formed.

Minor or local roads are slower speed environments with lower traffic flows, and will typically provide more desirable walking and cycling connections. While these tend to be prioritised when planning the routes, careful consideration at the design stage will still be required in order to ensure there will be adequate passive surveillance and motorist awareness of pedestrians, cyclists and recreational users.

The road hierarchy also affects potential for street 'greening' initiatives, such as narrowing traffic lanes, providing vegetated chicanes and shared spaces, and treating stormwater on site. Methods for providing safe crossing points will also be affected by the road hierarchy - for instance, un-signalised crossings are unlikely to be permitted on arterial roads.



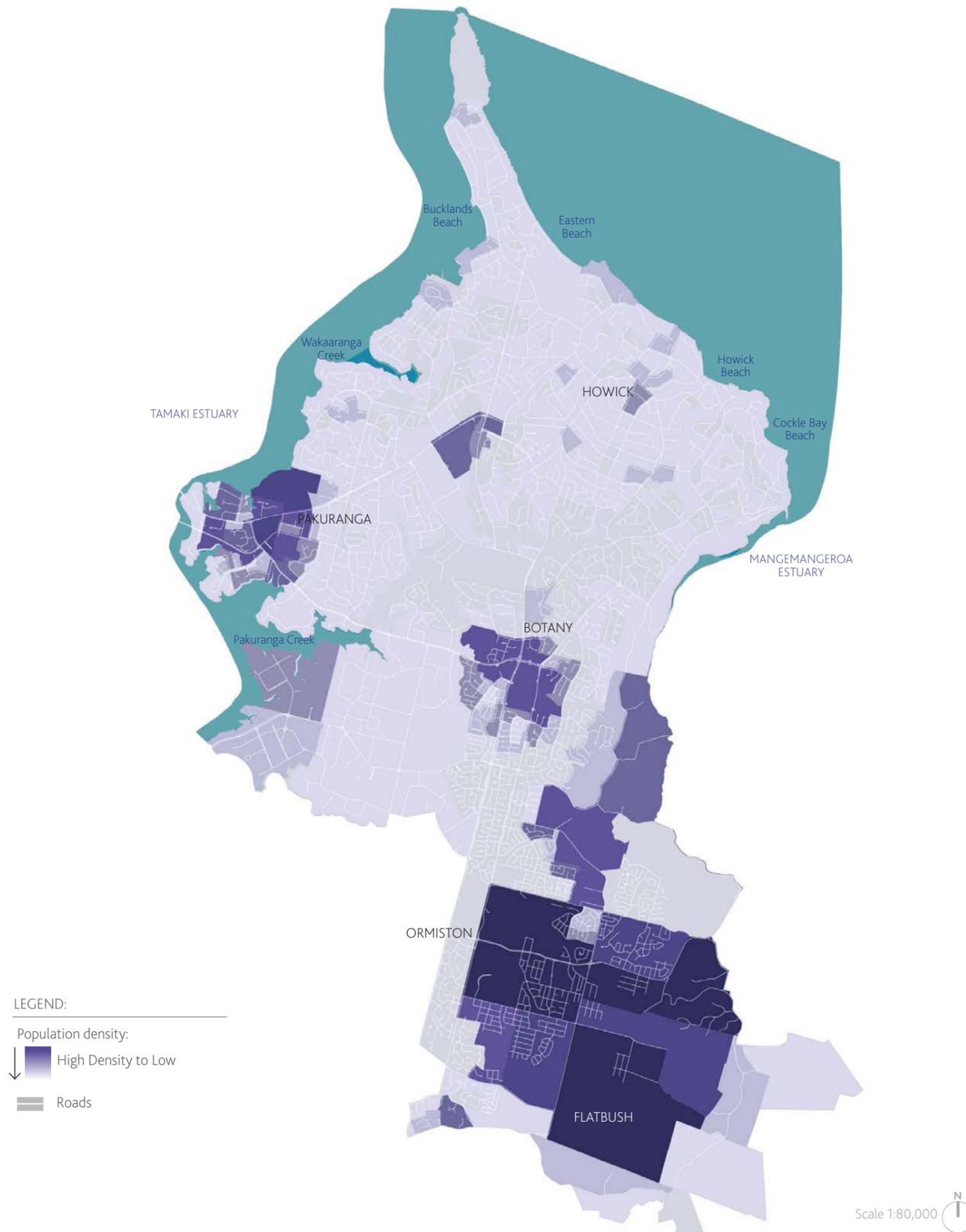
## A.9 Population Density & Growth Centres

The adjoining map shows anticipated population density growth between 2011 - 2051. Population and dwelling density is important in walking and cycling planning as it shows where potential users will be coming from, and it is logical to focus efforts in these areas (in addition to providing strategic regional connections, which are not as influenced by proximity to housing).

While Howick has traditionally been comprised of three main residential areas (Howick, Botany and Pakuranga), this map shows where recent and planned growth will also be occurring, notably around the Ormiston and Flatbush developments. Growth is also anticipated at the Botany Town Centre and Pakuranga Plaza areas.

Areas of low population density on the map reflect the older, more established suburbs of Howick where larger-sized lots prevail, as well as the East Tamaki commercial industrial business precinct.

In general, as a city intensifies, residential section sizes become smaller, and residents require recreation facilities beyond their backyard. While this can be perceived as a negative impact of intensification, if well planned, these public open spaces can actually build communities by providing locations and facilities where people from different communities can come together and meet.



## A.10 Social Infrastructure

This map shows community facilities in the Howick Local Board area, including schools, community halls, places of worship, community centres, libraries, swimming pools, recreation facilities and marae.

Schools and community facilities are critical points in planning the walking and cycling routes, as they provide both an opportunity to create connections via easements, while also providing destinations in their own right. These facilities are visited on a frequent basis, so to be able to offer safer, higher amenity and more accessible connections has great potential to reduce reliance on private vehicles.

Proposed connections to schools may be influenced by existing 'walking school bus' routes. Auckland Transport makes funding available for walking school bus routes, and it is possible that some connections could be supplemented by this funding stream.

Any easement proposal within the boundaries of a community facility would need to be firstly consulted with the landowner or leaseholder, and needs to be carefully considered to ensure the safety of students/facility users, and minimise risk of property damage. Some access may need to be limited to certain times of day for these reasons.



### LEGEND:

- R Recreation Facilities
- † Places of Worship
- + Medical Facilities
- C Communities Centres & Halls
- L Library
- M Marae
- Schools
- Park and reserve land
- Roads

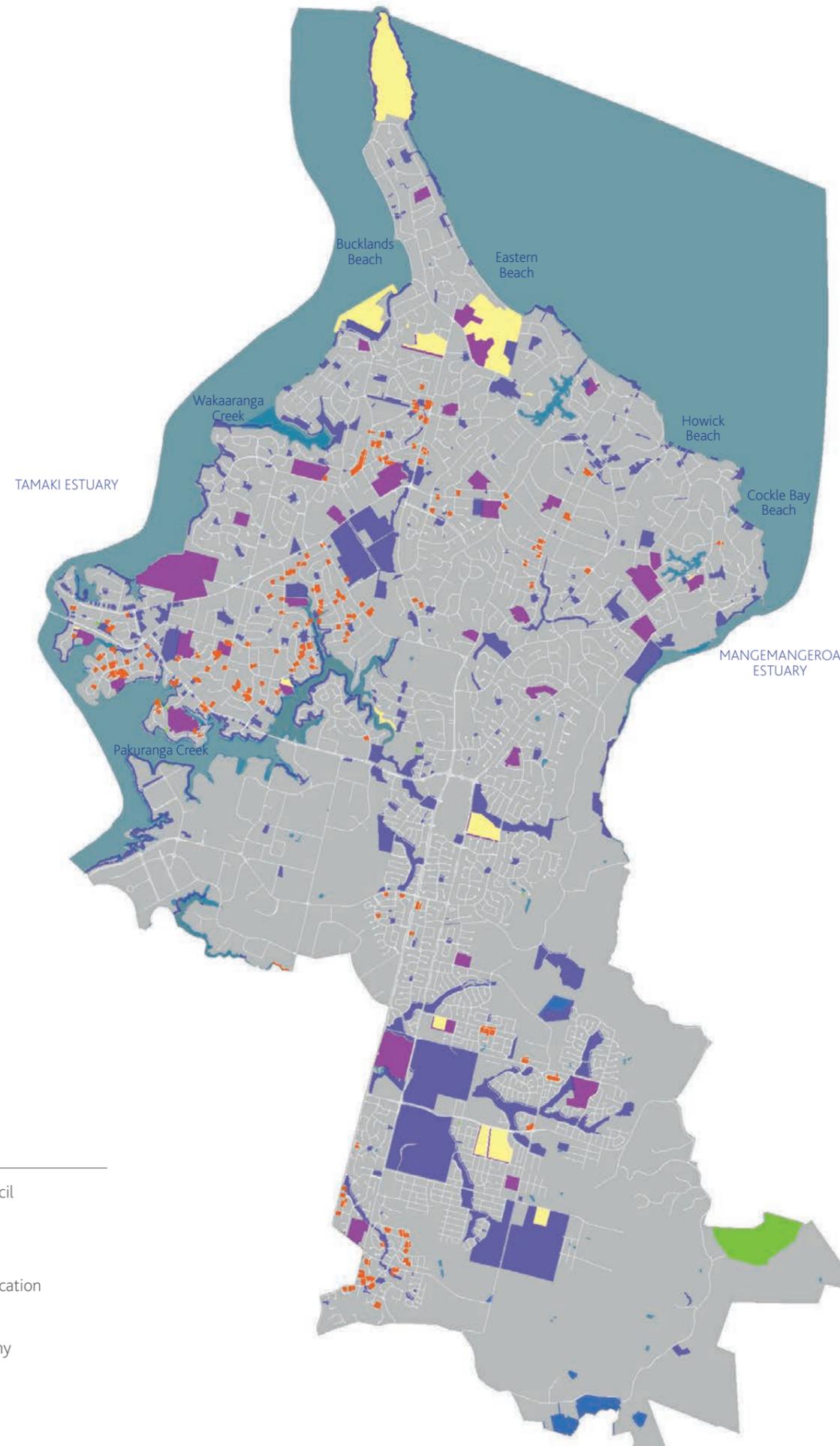
Scale 1:80,000

## A.11 Land Ownership

This map shows land within the Howick Local Board area that is in some form in public ownership. This information is important, as connections on publicly-owned land are more readily achieved than those on privately-owned property.

Publicly-owned land within the study area has been divided in to four types of ownership:

- **Auckland Council and Council Controlled Organisations (CCO's):** This land may be available for HWCN connections, dependent on the current or proposed usage of the site. CCO's include Watercare Services Ltd, Auckland Transport, Panuku (Development Auckland), Regional Facilities Auckland and Auckland Tourism, Events and Economic Development Ltd (ATEED).
- **Government Departments and Ministries:** Educational institutions generally feature large areas of open space, and discussions may be held regarding public use and/or connection easements over this land.
- **Housing New Zealand (HNZ):** In areas where there is a cluster of HNZ properties, discussions may be held regarding redevelopment of housing stock, and the redistribution of public open space to a layout which suits both housing and recreational purposes better.
- **Crown generally:** This is land owned by the Crown and may include conservation land administered by the Department of Conservation (for example, Macleans Park); as well as commercial forests, leased pastoral land, and marine and coastal areas.



### LEGEND:

- Auckland Council
- Crown
- Housing NZ
- Ministry of Education
- Watercare
- Energy Company
- Roads

Scale 1:80,000

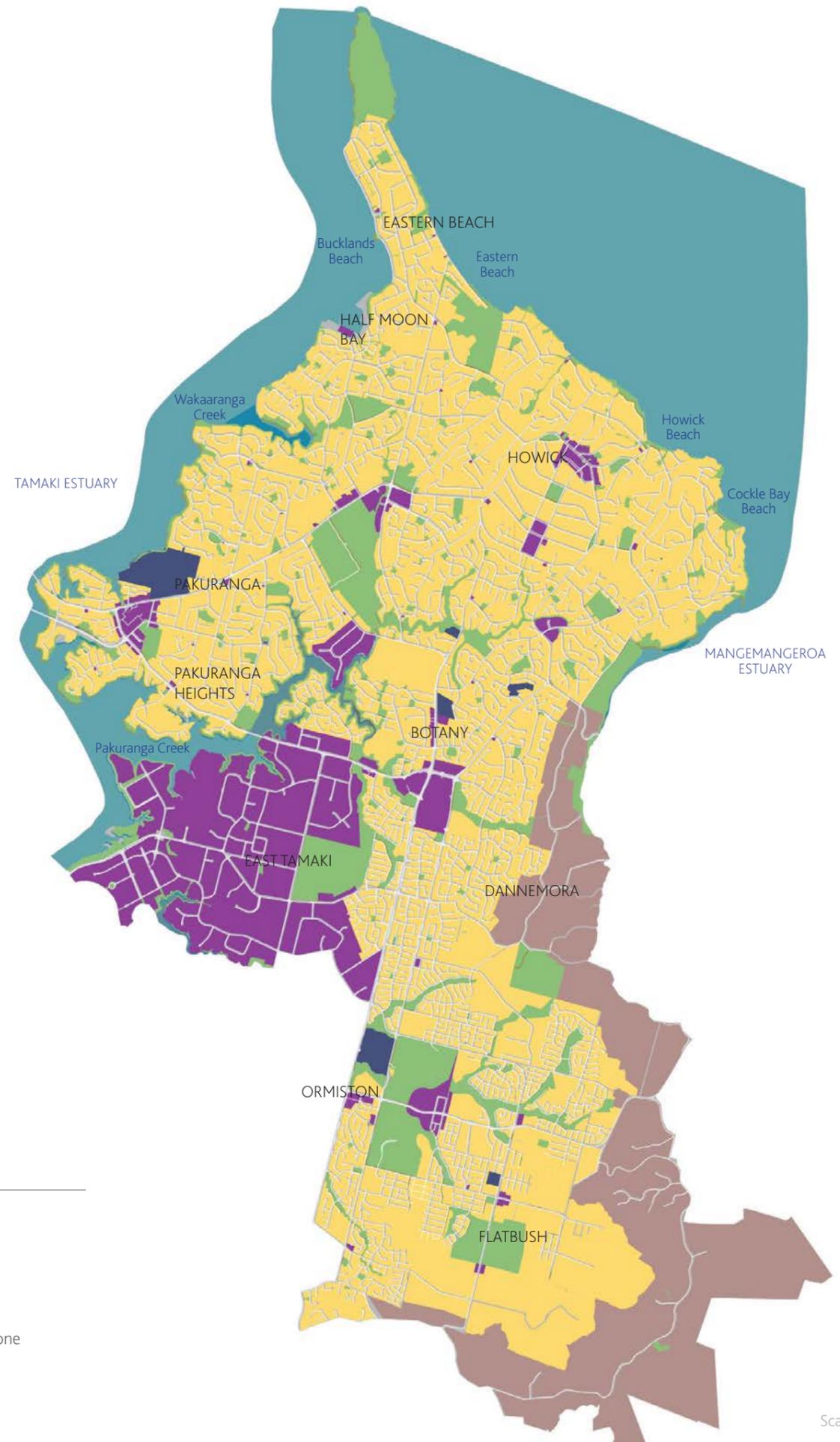


## A.12 Unitary Plan

This map shows Auckland Council Unitary Plan zoning (operative since 2016) which supersedes the legacy council District Plans. In essence, the Unitary Plan is a blueprint for future development in Auckland, covering everything from housing densities to heritage and environmental protection.

Zoning in the Howick area can be summarised as:

- Residential Zones:** Is the largest land use, and relates to areas that are predominately but not exclusively used for residential activity. Howick is a relatively well established district, and most of the residential areas are zoned 'mixed housing suburban' meaning properties may subdivide and build up to 2 storeys. Overall dwelling density here will be similar to other Auckland suburbs.  
 The pockets of housing around all the main centres and business areas are zoned 'mixed urban and terraced housing/apartment zones' to encourage higher density living in these areas. Development here can occur with 3+ storeys depending on context.  
 In contrast, the residential strip running between Howick Village and Howick and Cockle Bay Beaches is zoned as 'single housing' to retain its low density character.
- Open Space Zones:** Relate to a range of open spaces. There are 5 broad zones which facilitate the management of activities on public open spaces including conservation, informal recreation, sport and active recreation, civic and community.
- Business Zones:** Relate to commercial and industrial activities, including retailing, servicing, offices, warehousing, manufacturing and research orientated activities. Zoning for business for Howick is predominantly concentrated in East Tamaki, which draws a large number of employees from both inside and outside the Local Board boundaries. Smaller business zones are also located at town centres and shopping precincts such as Pakuranga Plaza, Botany Town Centre, Howick Village and Ormiston.
- Rural Zones:** Relate to rural activities, including rural production, rural character and amenity, rural industry and services. Rural areas may include areas of ecological significance as well as countryside living.
- Special Purpose Zones:** Relate to sites or areas that require special treatment and are of particular consequence to the communities well-being, health and safety but do not conform to the provisions of the standard zones.



- LEGEND:
- Residential
  - Open Space
  - Business
  - Rural
  - Special Purpose Zone
  - Roads

Scale 1:80,000



## A.13 Auckland Cycle Network (ACN)

This map shows the Auckland Cycle Network (ACN) overlaid onto the Howick Local Board area. The ACN is based on the Regional Cycle Network (RCN), which was developed by the former Auckland Regional Transport Authority in conjunction with former legacy Auckland councils and the NZTA. The ACN is driven by the Auckland Plan growth projections and the Auckland Integrated Transport Plan 'One Network' approach, both of which share an estimated completion date of 2040.

The ACN is broken into three types of cycleways:

- Metro
- Connectors
- Feeders

'Metro' cycleways offer the highest level of service to the cyclist, in that they are dedicated connections, continuous, direct and traffic free. They typically exist along motorway or railway corridors.

'Connectors' follow arterial routes, and are designed to connect people quickly and directly to key destinations and public transport nodes. They are on road connections. A number of these exist already, many in shared bus lanes.

'Feeders' are local neighbourhood connections. These may include and/or double up with the HWCN routes. 'Feeder routes' are intended to connect open spaces, and like HWCN routes are likely to follow quieter streets.

Within internal officer workshops for the development of Auckland's 'Local Paths', Auckland Transport has expressed an interest in adjusting their 'feeder' routes over time to align more closely with those routes developed via Local Board plans – so as to align delivery and funding.



### LEGEND:

- Metro
- Connector
- Feeder
- Parks and reserve land
- Roads

Scale 1:80,000



## A.14 Cultural Heritage Inventory

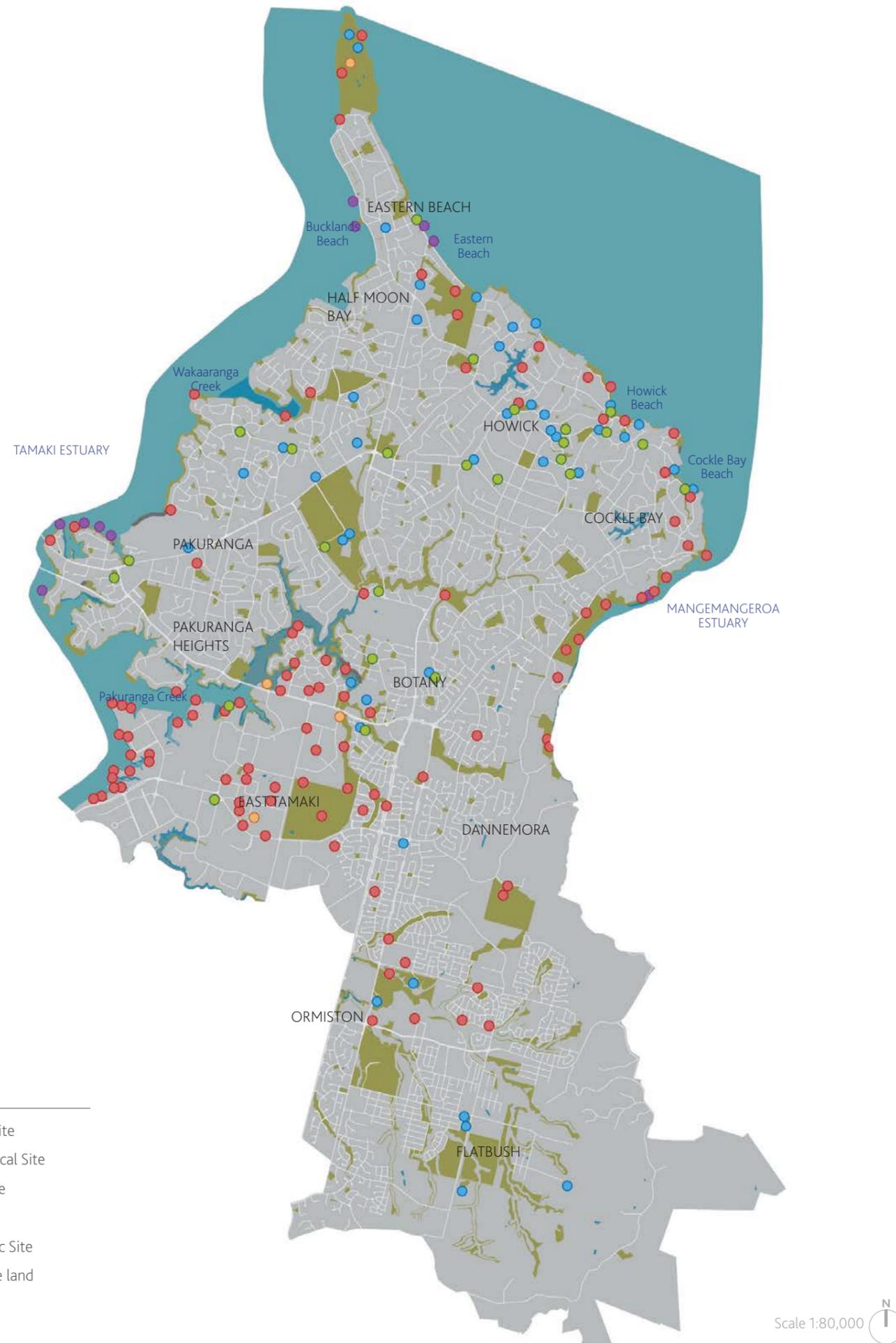
This map shows sites that identified by the Cultural Heritage Inventory (CHI) that was created by the former Auckland Regional Council. The CHI was established to promote sustainable management of our cultural heritage by providing easy access to relevant information, and should be used as a resource when developing the network.

CHI sites are classified as follows:

- Archaeological Sites - e.g. midden and pa sites;
- Historic Botanical Sites - e.g. specimen trees;
- Built Heritage Sites - e.g. typically early European buildings;
- Maritime Sites - e.g. shipwrecks, wharfs, boatsheds; and
- Maori Heritage Sites - e.g. known locations of significance to mana whenua

There are large number of historic structures concentrated in and around Howick Village, highlighting its colonial origins. Majority of the historic botanical sites are also clustered in this area, representing the iconic and well established exotic species perhaps planted by the town's first settlers.

Archaeological sites are also well represented, particularly on the coastline and along Tamaki River, illustrating the significance of the area to Maori. These areas were desirable for occupation and food gathering. Walking and cycling routes will take in many of these sites, and while this will create specific development constraints, it can also add greatly to the interest of the routes.



### LEGEND:

- Archaeological Site
- Historical Botanical Site
- Historic Structure
- Maritime Site
- Reported Historic Site
- Parks and reserve land
- Roads

Scale 1:80,000



## B. Case Studies



## B.1 Lloyds Crossing, Portland (USA)

Lloyds Crossing in Portland is a brownfield redevelopment site in the central city area, with the aim of:

"Developing a conceptual design for a sustainable, financially feasible, mixed-use development project that will catalyse future private development in the district.. Following conceptual master planning, a stakeholder engagement process is now underway, to create the 'Lloyd Green District.'"

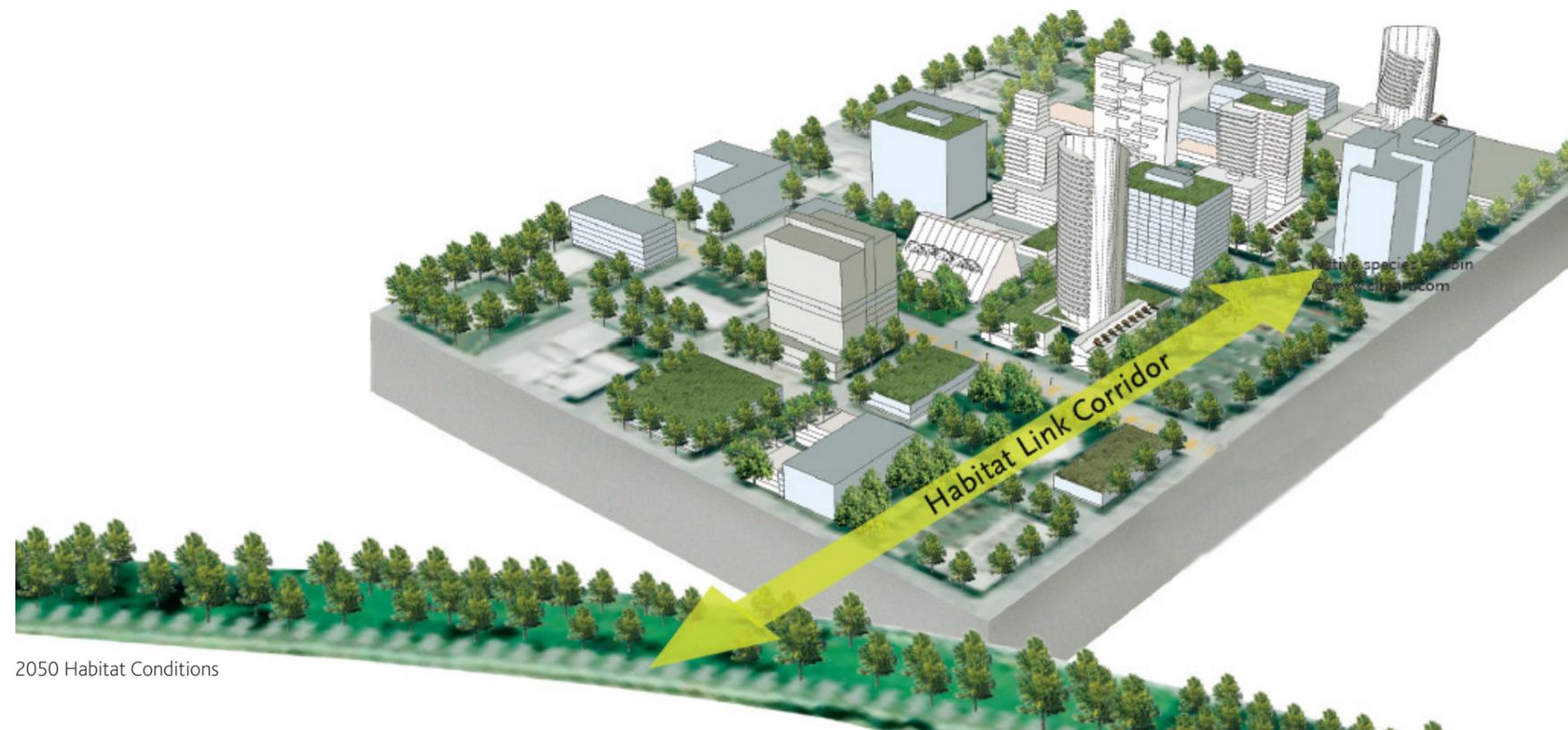
Co-conveners of the stakeholder group are the Mayor of Portland, Council President Metro and Multnomah County Commissioner. Forming the "Lloyd Green District," the group includes sponsors (Portland Development Commission, METRO, City of Portland and Lloyd TMA/BID), invited property owners, employers and developers in the proposed district area and other local and state agencies and civic organizations.

**Their goal is to:**

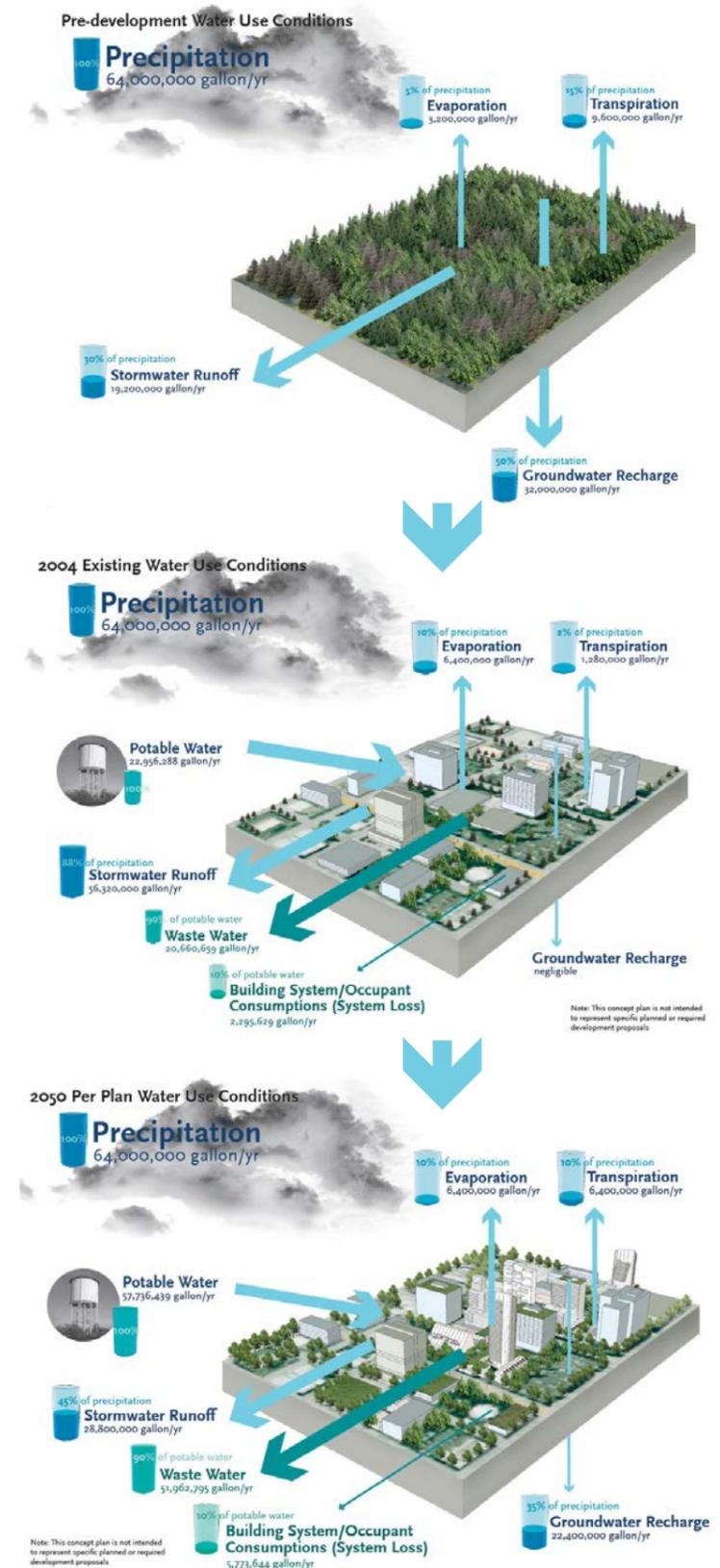
"Create a premier sustainable multi-use development district within an urban center." The District "will become a lifestyle community of choice for residents, workers, and visitors, and a showcase demonstrating Portland's leadership in creating economically viable earth-friendly development."

This will become one of the first redevelopments under Washington State's developing programme of Climate Benefit Districts - a programme which aims to:

- support the creation of "green jobs";
- support liveable, diverse and affordable urban neighbourhoods;
- reduce the impact of urban development on the environment;
- capture the innovations and life cycle cost savings for district level energy and infrastructure solutions;
- rebuild and reinvest in communities in ways that reduce the demand for driving;
- help public and private interests to work together in developing healthy, vibrant urban communities aimed at achieving carbon reduction goals;
- send a clear policy signal to attract desirable private investment and coordinate public action from multiple levels of government; and
- give communities the means to meet major environmental and economic challenges while remaining responsive to local conditions and opportunities.



2050 Habitat Conditions



## B.2 Portland Green Streets (USA)

Portland has been designing and building Green Streets for many years. Their consistent monitoring has proven that they successfully reduced peak stormwater flows and runoff volumes. The images to the right show a variety of Green Streets in Portland that have been successfully implemented.

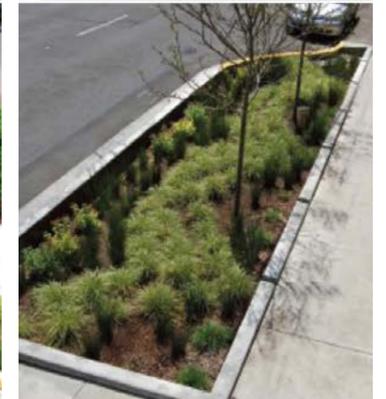
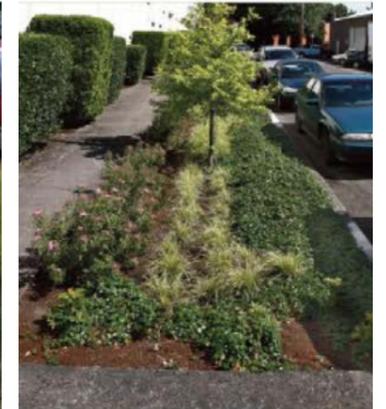
Green Streets convert impervious street surfaces into green spaces that capture stormwater runoff and allow the water to permeate through the ground as plants and soil remove pollutants. Green Streets help to create attractive open spaces, streetscapes, provide ecological urban habitats, and help to connect neighbourhoods, open spaces, schools and other areas within the city.

### The city of Portland is:

"Committed to green development practices and sustainable stormwater management. Green Streets are an innovative, effective way to restore watershed health. They protect water quality in rivers and streams, manage stormwater from impervious surfaces, and can be more cost efficient than new sewer pipes. Green Streets offer many benefits that sewer pipes can't."

### Green Streets offer the following benefits:

- convert stormwater from a waste diverted into a pipe, to a resource that replenishes groundwater supplies;
- 80%+ of storm water volume to be infiltrated on site;
- add urban green space and wildlife habitat;
- reduce stormwater in the sewer system;
- save money on wastewater pumping and treatment costs;
- use plants and soil to slow, filter, cleanse, and infiltrate runoff; and
- design facilities that aesthetically enhance the neighbourhood livability and property values.



## B.3 Jellicoe Street, Auckland (NZ)

Jellicoe Street features over 600m<sup>2</sup> of purpose-built rain gardens. Run-off from over 9000m<sup>2</sup> of the surrounding roads and surfaces flows into the rain gardens. Other key objects for the project include:

- integrate Best Practice Stormwater Design and the efficient use of water resources;
- re-use existing structures and infrastructure where possible
- generate renewable energy on site;
- preserve coastal water quality and protect waterfront ecologies;
- protect air quality and reduce traffic congestion;
- improve permeability and establish pedestrian priority and safety;
- facilitate better access and circulation between transport modes;
- enable visual connections through the precinct to the water; and
- promote pedestrian and cycle activity.

This new initiative in a high-use area has proven to be a great way to educate visitors and residents about the merits of low traffic speed, shared space environments and 'green' infrastructure approaches.



## B.4 Greenpark, Thames Valley (UK)

This new industrial development is an exemplary model of best-practice industrial/commercial development. It is acknowledged that retrofitting an existing industrial zone (such as that found in Howick) is a significantly more difficult task than greenfield development, but this case study shows a range of solutions which can be employed to improve conditions for workers, visitors and the environment. Solutions employed at Greenpark include:

### Landscaped parkland:

- a network of cycleways;
- nature trails; and
- paths running around the banks of the stormwater treatment wetlands.

### Community life:

- frequent, comfortable buses to bring people into Green Park from Reading station or nearby town centres;
- well-maintained, well-lit walkways make it easy to get around the Park;
- cafés and restaurants;
- health club;
- a day nursery; and
- acres of natural parkland.

### Event hosting:

- Events throughout the year, attract workers and nearby residents alike, and these include a range of organised annual events and one off events, including the Reading half-marathon and the Corus Triathlon. Longwater Lake also hosts regular angling competitions.

### Green energy (wind and solar):

- The development generates 2.3 megawatts of clean energy, enough to power around 1200 homes.

### Green Park fast track:

- A fleet of low emission eco-friendly buses. These are among the first in the UK to meet the stringent 'Euro 4' European emission standards and produce significantly lower levels of carbon dioxide and nitrogen oxide than regular fleets.
- Buses include full wireless access and a real time information system for maximum passenger comfort and security.

