

Devonport-Takapuna Greenways

June 2015



Cover page: View towards Auckland Harbour Bridge in the South West, over looking the Belmont area and Lake Road. Auckland Council Stock Photo, 2012.

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Figure 1. View of Takapuna town centre, looking towards Devonport. Auckland Council Stock Photo, 2012.

1.0 Introduction

Devonport-Takapuna Greenways



Figure 2. View of the Devonport, looking toward Auckland City Centre. Auckland Council Stock Photo, 2012.

1.1 Purpose of the document

Purpose

This document defines the long-term 'greenways plan' (often termed 'greenways network') for the Devonport-Takapuna Local Board area. This is a visionary and guiding document intended for use by elected members, Auckland Council and Council Controlled Organisations (CCO), community and volunteer groups, private developers and other interested parties.

Visionary document

Greenways plans are being developed throughout the world, with Portland, Oregon being one of the most successful and well advanced. More recently, London developed a greenways strategy, which was partially implemented in time for the 2012 Olympic Games. Auckland's greenways plans are a series of linked, visionary plans being driven from the 'ground up' by local boards with the long-term aim of greatly improving walking, cycling and ecological connections across the region.

Guiding document

Following each local board's adoption of their greenways plan, Council's Community Policy and Planning unit will develop Open Space Network Plans for each of the local board areas. Each greenways plan will guide and ultimately become one 'chapter' of the Open Space Network Plan. The network plans will sit under the Open Space Strategy, providing high level direction for improvements to the open space network, specific to each local board area.

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 improve transport, environmental protection, land uses, housing growth and economic development, with the benefits of one authority responsible for all coordination.

The Devonport-Takapuna Greenways Plan implements priorities and directives in a number of chapters in the Auckland Plan, including

Chapter 5: Auckland's recreation and 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 and 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...walkways and trails...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 greenways plan, a number of related Council and non-Council initiatives have been investigated and - where possible - included in the network:

- former Auckland City Council plans and current Auckland Council documents such as the Auckland Plan;
- the Devonport-Takapuna Local Board Plan;
- the SkyPath proposal;
- the Devonport to Takapuna Green Route;
- Walkway projects; the Takapuna to Milford and Torpedo Bay coastal walkways;
- Forest and Bird; the proposed walk/cycle route to avoid Shoal Bay (site of wildlife)
- New Zealand Transport Authority (NZTA) developments;
- local stormwater improvement/stream restoration projects; stormwater projects along Takapuna Beach
- the Auckland Cycleway Network (ACN), prepared by Auckland Transport (AT);
- individual reserve management plans;
- walking school bus routes; and
- initiatives currently underway or proposed by community and ecological restoration groups

Devonport-Takapuna 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 has been instrumental in shaping these plans, and they provide a touchstone for the aspirations of each area's community.

Devonport-Takapuna have advocated for greenways in their 2014 Devonport-Takapuna Local Board Plan. The greenways network is a 'Key Initiative' under the outcome 'Easy safe and reliable journeys that reduce congestion':

What we want to achieve (in partnership with Auckland Transport):

"Enabling cycling to be a realistic option for people who live and work locally"

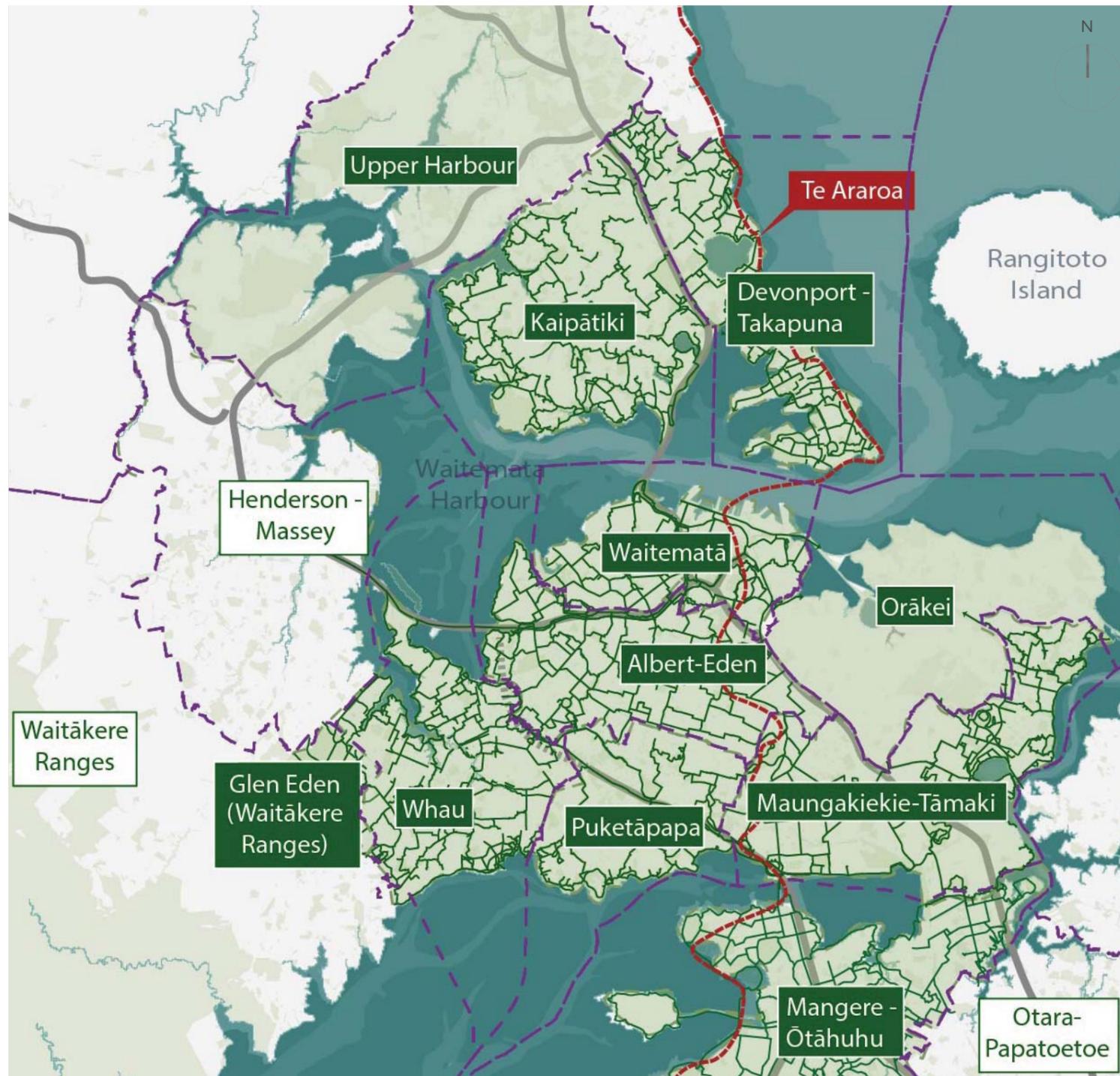
Key initiative: Implementation of the Greenways network plan

Further support for improving walking and cycling connections is noted under the outcome 'Open space that allows us to live':

"We intend to expand our walking and cycling network to better connect our beaches and parks, including constructing the Wairau Creek bridge and replacing the walking bridge on the Milford-Takapuna coastal walkway. We will continue to develop the Green Route on the western side of the Devonport Peninsula. This will include progressing a better connection to Esmonde Road and onwards providing a connection to a future walkway and cycleway over the harbour bridge."



Figure 3. Abbotsford Terrace, Devonport. Auckland Council Stock, 2014.



LEGEND:

not to scale

- local boards with a 'greenways plan'
- local boards - currently no 'greenways plan'
- Te Araroa (New Zealand's trail)
- local board boundaries

1.3 What is a 'greenways plan'

The broad aim of a greenways plan is to provide cycling and walking connections which are safe and enjoyable, while also improving local ecology and access to recreational opportunities. To achieve this, greenways may cross existing areas of parkland, and follow street connections between parks. The network typically follows natural landforms such as streams and coasts as well as man-made features such as streets and motorways.

Implementation of the greenways plan will better connect Devonport-Takapuna to the neighbouring Kaipātiki, Upper Harbour and Hibiscus and Bays Local Board areas and connect to regional walking/cycling proposals for the greater Auckland region. The adjoining map shows other greenways plans either under development or adopted by participating local boards. Each board sets their own greenways definition for their respective areas, based around a common aim.

Greenways also encourage opportunities for ecological restoration as they often align with streams and other natural areas. There are many organisations in the area which are dedicated to improving the natural environment and particularly the streams. In addition to the broader environmental benefits, as the greenways are restored ecologically, their natural beauty will return. This will encourage more people to use, be proud of, and care for their neighbourhood network of greenways, increasing their ongoing stewardship.

Devonport-Takapuna Greenways

The Devonport-Takapuna Greenways Plan seeks to create a network of greenways that will provide safe and enjoyable ways for people to get around, get active, and get engaged with the community and their environment. The network of greenways will:

- improve walking connections
- improve cycle connections
- improve recreation opportunities
- improve ecological opportunities
- improve community connections
- improve access to streams, rivers and the coast

Greenways can take many forms, and the images on the opposite sheet show what a greenway could look like in a variety of settings.

Network benefits

There are many benefits from developing a network of greenways, 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 water quality and reducing flooding events through low impact design (LID) measures, and by enhancing ecosystems, habitat sources and ecological niches;

Social

Providing improved opportunities for people to get out of their cars 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

High-performing greenways can create improved local employment opportunities as areas become more desirable for businesses and shoppers. Greenways can also provide a tourist destination for international and national visitors.

What the greenways might look like

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

- parks and reserves and connecting to bush tracks
- coastal areas or alongside streams/estuaries
- alongside industrial land or residential properties
- connecting to busy urban town centres and/or the Auckland Cycle Network (ACN) 'metro' or 'connector' routes
- next to a minor road and/or the ACN's 'feeder' routes
- slow-speed traffic environments on minor roads with planted build outs and sharrowes

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.

The illustrations on pages 12-13 show a range of potential greenway connections which could be carried out in the road corridor sections of Auckland's greenways network.



4	5	6
7	8	9
10	11	12

FIGURE LEGEND:

Figure 4. East Coast Road walkway cycleway, Auckland, 2014.

Figure 5. Waikaraka walkway and cycleway Auckland, 2013.

Figure 6. Swales alongside road network, Totara Avenue, New Lynn, 2012.

Figure 7. Cyclelanes, Sydney, Australia, 2013.

Figure 8. Shared path through park meets road network. Upper Harbour, Auckland 2013.

Figure 9. Art in pathway at Twins Streams Walk/ Cycleway, West Auckland, 2013

Figure 10. Roy Clements Treeway Boardwalk Auckland, 2013.

Figure 11. Signage at Roy Clements Treeway Boardwalk Auckland, 2013.

Figure 12. Planted build outs at Liveable Streets project, Point England, Auckland 2014.

Arterial street

The attached diagrams are draft scenarios for how the greenways **may** look in the road corridor of arterial roads (main roads).

Attributes:

- footpath next to property boundary
- designated off road 'one way' cycle lanes next to each side of the road
- planter beds and street trees between parking bays
- planting or swales/rain gardens separating cyclists and pedestrians (swale crossings / bridges required)
- separation of cyclists and opening car doors (1m 'safety strip')
- rain gardens/swales to filter and detain stormwater runoff from hard surfaces
- 'greenways' signage to highlight the network.



footpath / swale / one way cycle / 1m safety strip median / parking and planting / carriageway



footpath / swale / one way cycle / 1m raised safety strip / parking and planting / carriageway

These are visionary diagrams developed for discussion purposes only. Any specific project would be carefully planned with cost, parking, traffic flows and affected parties' needs taken into consideration - ideally these works would be phased with other planned upgrade works, and be delivered by Auckland Transport (AT). Refer to individual road 'Corridor Management plans' by AT.

Collector roads

The attached diagrams are draft scenarios for how the greenways may look in the road corridor on collector roads (secondary roads).

Attributes:

- designated 2.5-3m of footpath as shared path or;
- designated 2.5-3m of footpath with marked division for the pedestrian and cyclist or;
- designated off road 'one way' cyclelanes next to footpath, separated by kerb
- planter beds and street trees between parking bays
- separation of cyclists and opening car doors (1m 'safety strip' or planting bed)
- rain gardens/swales to filter and detain stormwater runoff from hard surfaces
- 'greenways' signage to highlight the network.
-



footpath and cyclelane (kerb as division) / 1m raised safety strip / parking and planting / carriageway



2.5-3m shared walkway/cycleway / 1m flush safety strip / parking and planting / carriageway / footpath



2.5-3m walkway/cycleway with marked division / planted safety strip / parking and planting / carriageway

These are visionary diagrams developed for discussion purposes only. Any specific project would be carefully planned with cost, parking, traffic flows and affected parties' needs taken into consideration - ideally these works would be phased with other planned upgrade works, and be delivered by Auckland Transport (A.T). Refer to individual road 'Corridor Management plans' by A.T.



Figure 13. View towards Takapuna, with Shoal Bay in the foreground. Auckland Council Stock Photo, 2012.



LEGEND:

not to scale

- Devonport-Takapuna Local Board area
- park and reserve land
- state highway network
- railway
- Hillary Trail
- Te Araroa (New Zealand's trail)
- network of walking and cycling trails (as shown in the Auckland Plan)

1.4 Auckland Context

This map shows the Devonport-Takapuna Local Board context within the Auckland Isthmus, north of the Central Business District (CBD) and Waitemata Harbour. The area is bordered by the Kaipātiki, Upper Harbour and Hibiscus and Bays Local Board areas.

Broader transport connections

Devonport-Takapuna is bordered to the west by State Highway 1, which can be accessed by car or bus at Takapuna (Esmonde Road), Northcote (Northcote Road), Forest Hill (Tristram Avenue), Sunnynook (Sunnynook Road), as well as Upper Harbour, at the North west edge of the board area. You can travel by the centre of the area from Upper harbour through Takapuna to Devonport, via the continuous arterial routes of East Coast Road, Kitchener Road, Hurstmere Road and Lake Road. There is no train service north of the Harbour Bridge, ruling this mode of transport out for those living in Devonport-Takapuna.

Add ferry/bus text.

Broader walking connections

Most of the eastern coastline is accessible by walkway or beach at low tide. This coastal connection forms part of the Te Araroa - New Zealand's Trail, which provides a continuous 3000km walking route stretching from Cape Reinga in the north, to Bluff in the south. The Te Araroa route departs the coast by ferry at Devonport, and crosses the inner Waitemata Harbour before arriving in Auckland's CBD. Within Auckland's central isthmus, Te Araroa follows the existing Coast to Coast Walkway, which runs from the CBD to Onehunga.



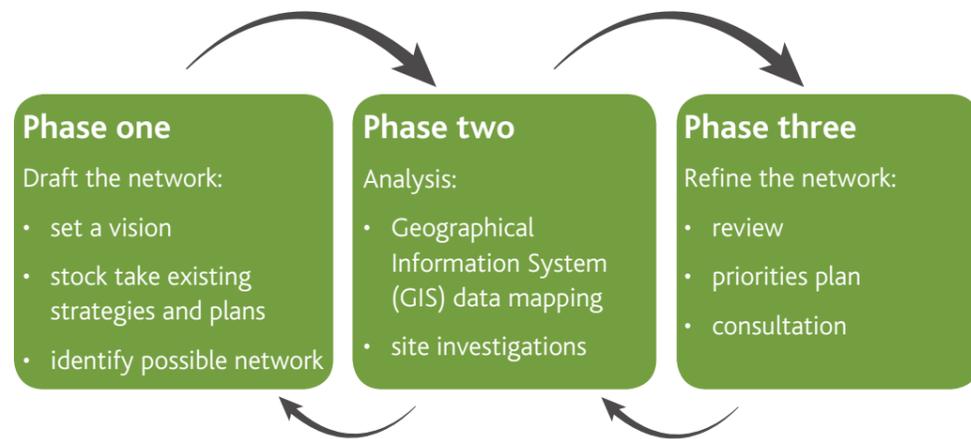
Figure 14. View of North Head and Mount Victoria, looking west. Auckland Council Stock Photo, 2012.

2.0 Methodology

Devonport-Takapuna Greenways

2.0 The process

The Devonport-Takapuna Greenways Plan was developed via an iterative three-stage process, with feedback loops, as outlined below:



Phase one - draft network

As a first step, previous studies and planning documents relevant to the area were collected and reviewed. The Devonport-Takapuna Local Board Plan was reviewed to gain an understanding of both the strategic vision of the community, and also their planned projects. After this, a definition for the Devonport-Takapuna Greenways was discussed and agreed with the Local Board, and a 'working party' set up, comprising council officers and elected members. This group met regularly to review the plan as it developed.

Next, a desktop study was carried out to map a draft a 'high-level' network, providing walking and cycling connections between existing parks, open spaces, reserves and streets. Potential ecological improvements were also considered looking at linking areas of existing vegetation, existing significant vegetation, and streams/rivers. These desktop studies gave an understanding of the broad landscape patterns within the Devonport-Takapuna Local Board were used to guide phase two of the process, where the network was 'ground-truthed'.

This 'desktop' network plan was taken to the working party for review prior to undertaking site investigations, to ensure that it was aligned with the Devonport-Takapuna Local Board's aspirations and objectives for the project, as well as any existing projects already in the pipeline.

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

Phase two - analysis

The draft network plan was next assessed on site to be 'ground truthed'. This process involved an analysis of the existing site conditions - including topography, vegetation cover, existing asset condition, CPTED (Crime Prevention through Environmental Design) principles, utility service locations and the layout of roading corridors.

All connections were sighted and evaluated, and a 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.

Following this ground-truthing, the route was overlaid with other GIS data to ensure that the network made appropriate connections to all existing facilities, such as schools, community facilities and transport nodes.

Phase three - refine the network

Following the analysis phase, the Devonport-Takapuna Local Board, and Auckland Council officers from Parks, Sport and Recreation and Community Policy and Planning, as well as Auckland Transport reviewed the proposed greenways routes in detail. The draft plans were then presented to stakeholders at a workshop to obtain feedback. The stakeholder groups included a representative from each group of the following:

- Cycle Action Auckland
- Environment Takapuna Inc
- Living Streets Aotearoa North Shore Branch
- Milford Village Forum
- Milford Residents Association
- Sunnynook Community Association
- Bike Devonport
- Castor Bay Residents and Ratepayers
- Whai Rawa Limited
- The Navy
- YES Disability
- Local Schools

Iwi were engaged on the concept of 'greenways' within a past, present and future walkway projects presentation at the Devonport Takapuna Green Route hui. In general Iwi are supportive of improvements to stormwater and ecology that greenways aim to deliver. Conversations with Iwi will be ongoing as specific areas of the greenways are funded and developed.

As the Devonport-Takapuna Greenways is a long-term project, to be developed over the next ten+ years, the Board will identify priority sections. These priority sections are based on their costs, benefits, constraints and opportunities.



Figure 15. Opening of the NZTA cycleway in Kingsland, 2011.



Figure 16. View over Narrow Neck and Bayswater, looking west. Auckland Council Stock Photo, 2012.

3.0 Greenways Mapping

Devonport-Takapuna Greenways



3.1 Devonport-Takapuna Greenways

Introduction

The Devonport-Takapuna Greenways network as shown on this map has been divided into ten maps over the following pages to allow the map information to be shown at a larger scale.

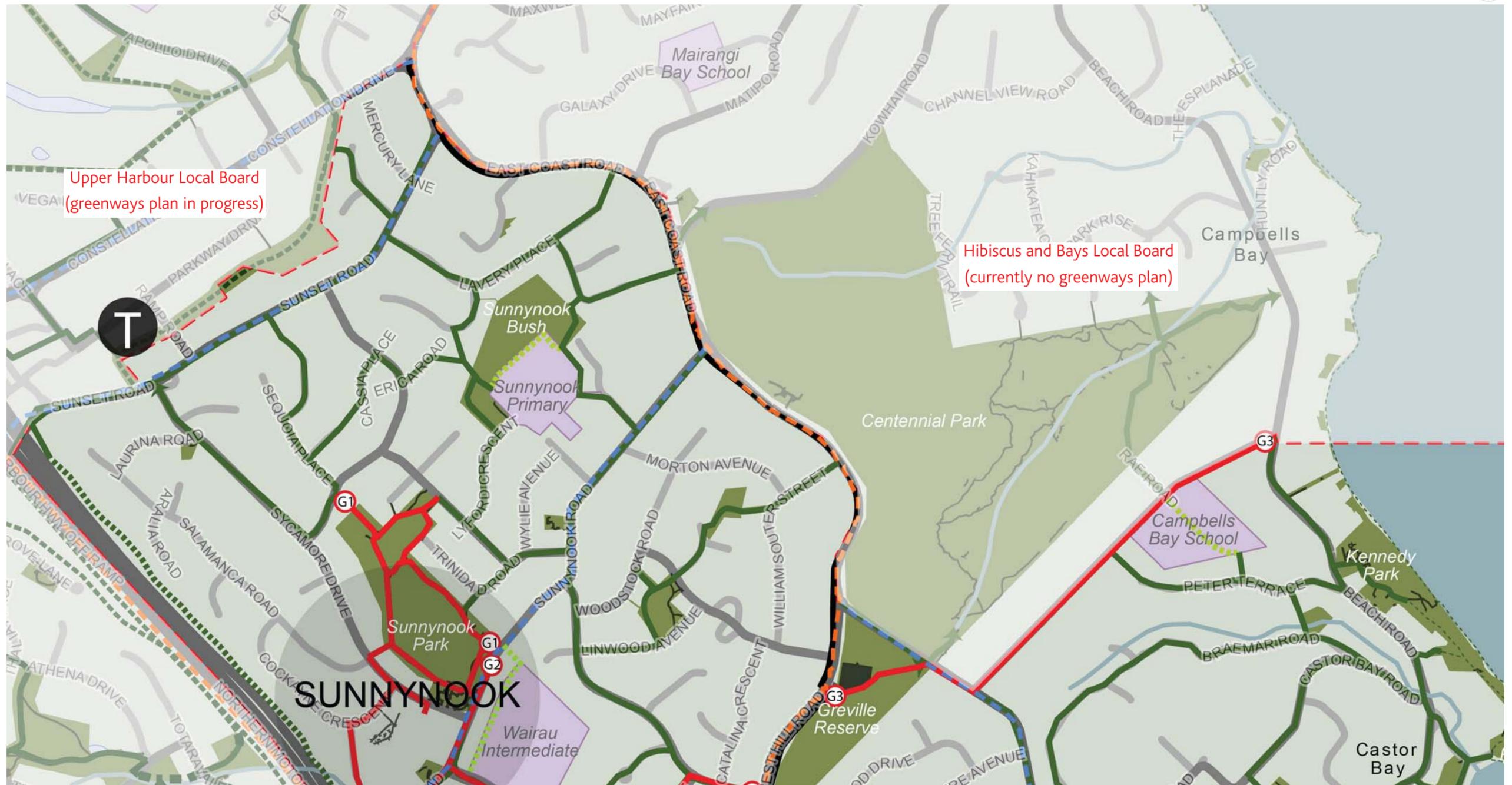
The information on the maps includes the network of greenways that have existing walking and/or cycling provision but that could be improved and/or promoted as greenways, as well as the proposed greenways where there is currently no walking or cycling provision. The proposed network is an aspirational vision, and will be reviewed on a regular basis as priority routes are developed, and as other related projects are completed.

Also shown on the maps is the draft Auckland Cycling Network (ACN). It is worth noting that the greenways often overlap with the ACN's routes, and there are currently discussions with Auckland Transport (AT) as which routes will form part of the 'greenways' network, and which will remain solely for cycle provision. Where the ACN traverses busy roads, greenways outcomes are unlikely to be achievable, due to traffic volumes/speed and competing demands on the space within the road corridor. The 'Feeder' routes of the ACN are most likely to be greenways. These routes are usually on low traffic volume, 'minor' streets or in open spaces.

It is also of note that the ACN is currently in draft, and a process to better align and add to the 'feeder' routes as shown on the various Local Board's Greenways Plans is currently underway. It is intended that both the ACN and the Greenways Plans are 'live' documents, which will be updated at regular intervals. The draft ACN shown on these maps was current as of February 2014.

The greenways network maps also show key destinations that greenways in this area may connect to. These include schools, parks, major transport nodes and community facilities. Where proposed connections occur across Ministry of Education, Housing New Zealand, NZTA or other non-Council properties, easements or other agreements would need to be negotiated during the detailed route assessment phase, on a project by project basis. If these negotiations cannot be concluded successfully, an alternate route would be selected.

Map 1 - SH1, Sunnynook (connections to Upper Harbour and Centennial Park)



LEGEND: Draft ACN (by Auckland Transport) Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land Possible greenway connections on non Council land Scale: 1:10,000 @ A3

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<ul style="list-style-type: none"> Cycling/walking route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<ul style="list-style-type: none"> Walking only route utilising existing formed path (for walking only) Existing lowtide route, informal track or beach - no path upgrade proposed 	<ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) 	<ul style="list-style-type: none"> map 1 map 2 map 3 map 4 map 5 map 6 map 7 map 8 map 9 map 10
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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

Map 2 - SH1, Sunnynook and Forrest Hill (connection to Wairau Valley and Milford)



Kaipātiki Local Board
(greenways plan adopted)

LEGEND:

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<p>Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land</p> <ul style="list-style-type: none"> Cycling/walking 🚲🚶 route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<p>Possible greenway connections on non Council land</p> <ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) Existing lowtide route, informal track or beach - no path upgrade proposed 	<p>Scale: 1:10,000 @ A3</p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <ul style="list-style-type: none"> map 1 <li style="border: 2px solid green; padding: 2px;">map 2 map 3 map 4 map 5 map 6 map 7 map 8 map 9 map 10 </div> </div>
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Map 3 - Milford

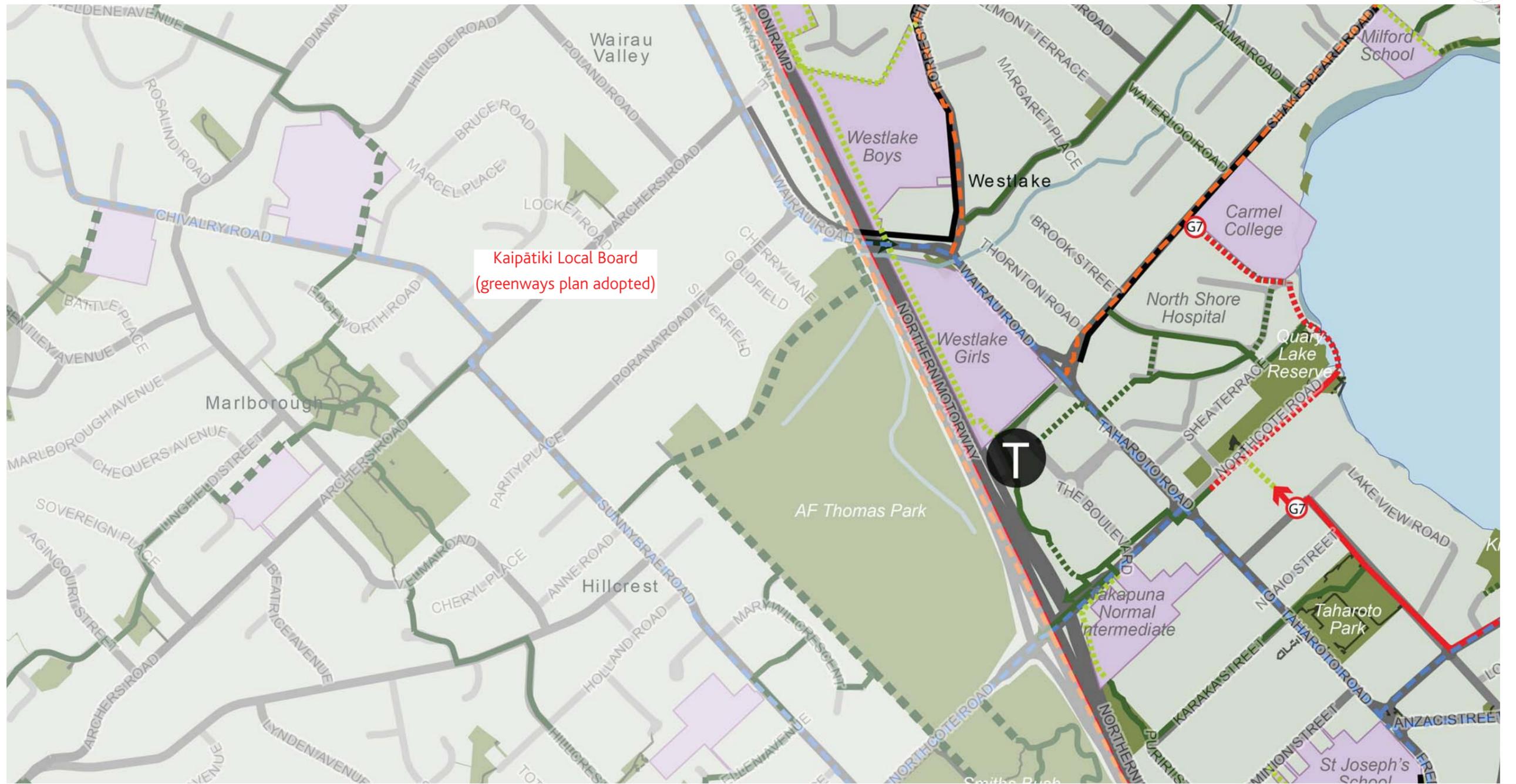


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Map 4 - SH1, Lake Pupuke (Connections to Hillcrest)



LEGEND:

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<ul style="list-style-type: none"> Cycling/walking 🚴🚶 route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<ul style="list-style-type: none"> Walking only 🚶 route utilising existing formed path (for walking only) Existing lowtide route, informal track or beach - no path upgrade proposed 	<ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) 	<p>Scale: 1:10,000 @ A3</p> <table border="0"> <tr><td>map 1</td><td>map 3</td></tr> <tr><td>map 2</td><td>map 5</td></tr> <tr><td>map 4</td><td>map 7</td></tr> <tr><td>map 6</td><td>map 9</td></tr> <tr><td>map 8</td><td>map 10</td></tr> </table>	map 1	map 3	map 2	map 5	map 4	map 7	map 6	map 9	map 8	map 10
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Map 5 - Lake Pupuke and Takapuna

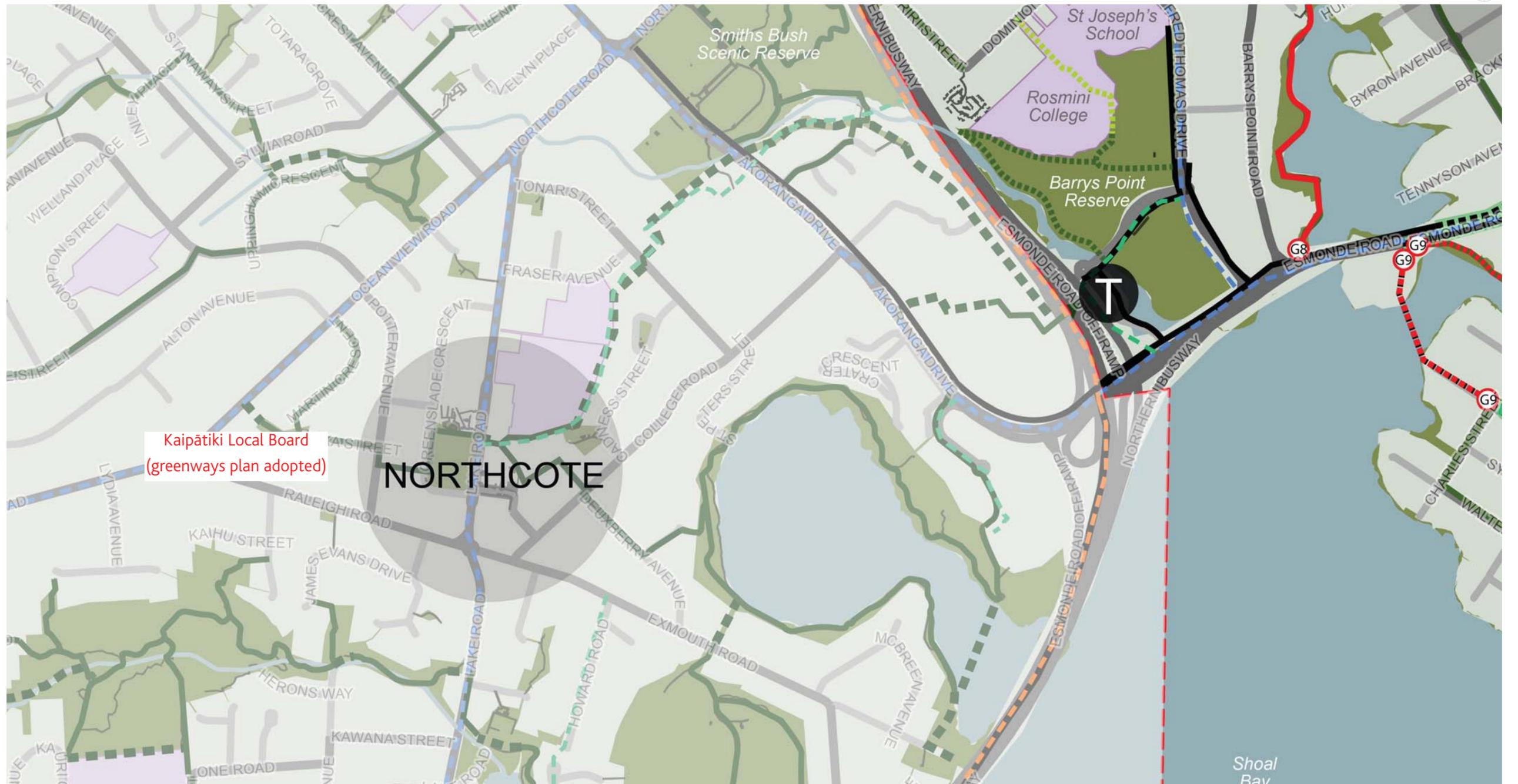


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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

Map 6 - Esmonde Road (connections to Northcote)



LEGEND: Draft ACN (by Auckland Transport) Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land Possible greenway connections on non Council land Scale: 1:10,000 @ A3

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Map 7 - Hauraki Corner and Lake Road

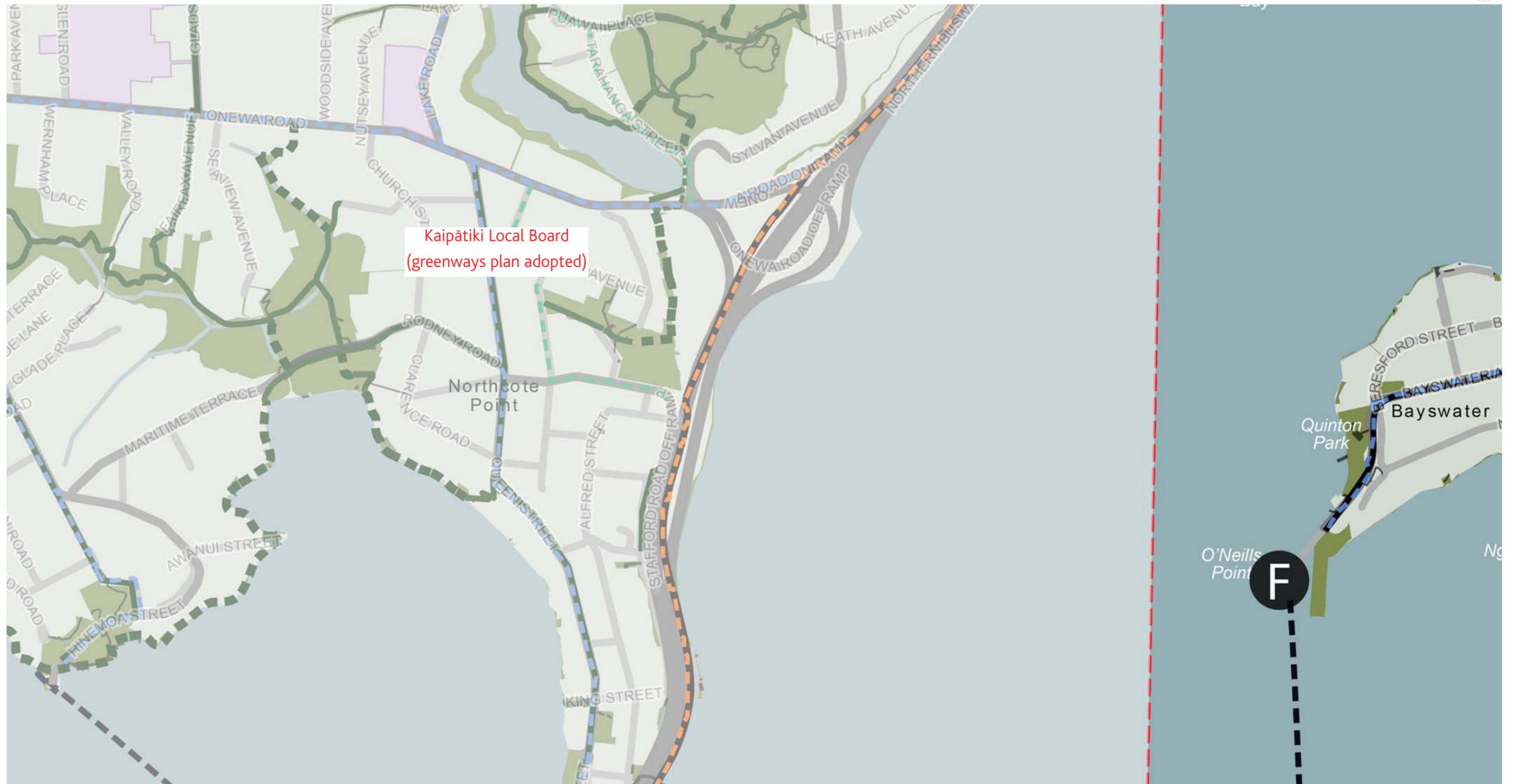


LEGEND:

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<p>Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land</p> <ul style="list-style-type: none"> Cycling/walking route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<p>Possible greenway connections on non Council land</p> <ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) 	<p>Scale: 1:10,000 @ A3</p> <ul style="list-style-type: none"> map 1 map 2 map 3 map 4 map 5 map 6 <li style="border: 2px solid green;">map 7 map 8 map 9 map 10
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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

Map 8 - Bayswater

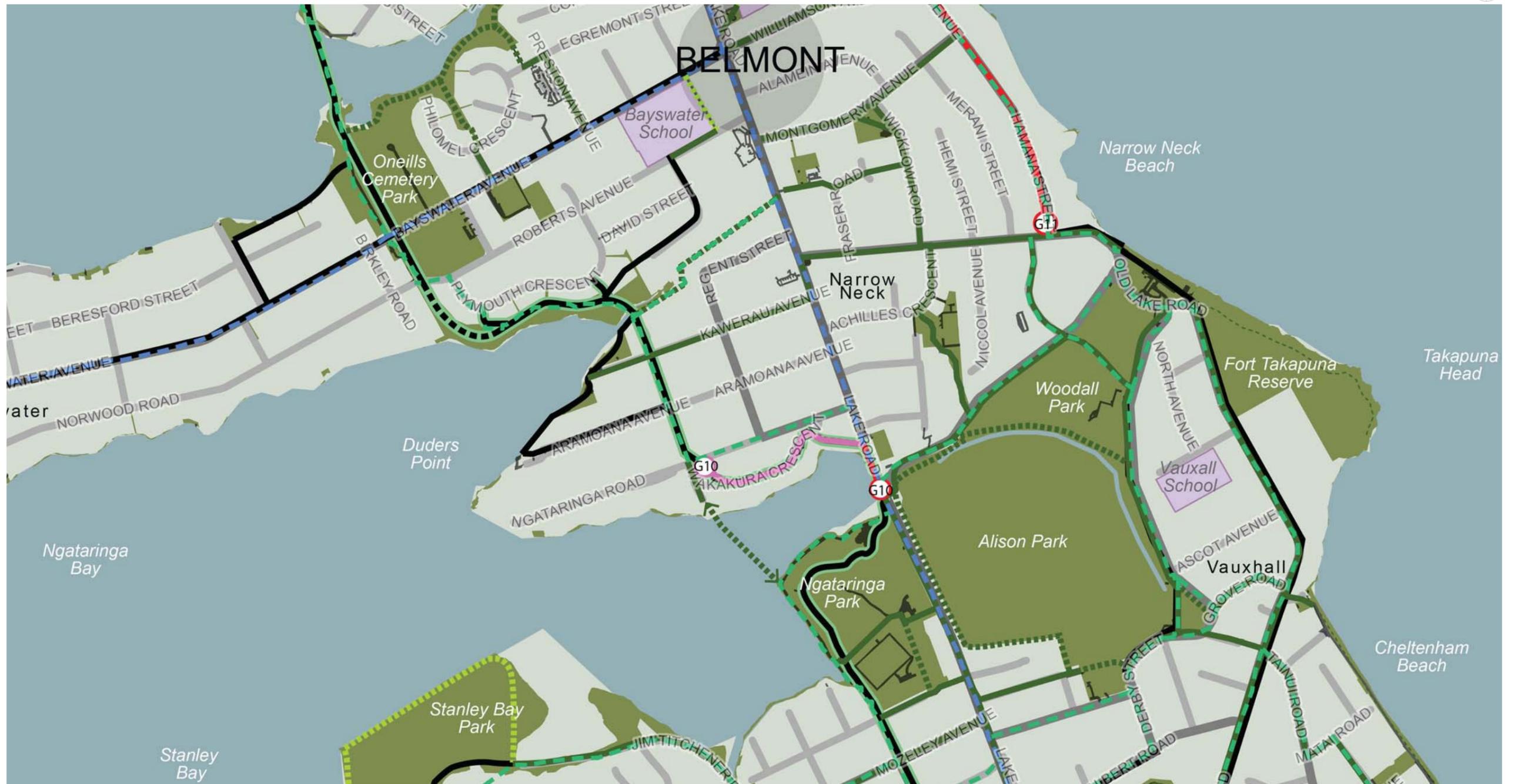


LEGEND: Draft ACN (by Auckland Transport) Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land Possible greenway connections on non Council land Scale: 1:10,000 @ A3

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<ul style="list-style-type: none"> Cycling/walking route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<ul style="list-style-type: none"> Walking only route utilising existing formed path (for walking only) Existing lowtide route, informal track or beach - no path upgrade proposed 	<ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) 	<ul style="list-style-type: none"> map 1 map 2 map 3 map 4 map 5 map 6 map 7 <li style="background-color: #5cb85c; color: white; padding: 2px;">map 8 map 9 map 10
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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

Map 9 - Bayswater, Belmont and Lake Road



LEGEND:

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<p>Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land</p> <ul style="list-style-type: none"> Cycling/walking route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<p>Possible greenway connections on non Council land</p> <ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) <p>Walking only </p> <ul style="list-style-type: none"> route utilising existing formed path (for walking only) Existing lowtide route, informal track or beach - no path upgrade proposed 	<p>Scale: 1:10,000 @ A3</p> <table border="0"> <tr><td>map 1</td><td>map 3</td></tr> <tr><td>map 2</td><td>map 5</td></tr> <tr><td>map 4</td><td>map 7</td></tr> <tr><td>map 6</td><td>map 9</td></tr> <tr><td>map 8</td><td>map 10</td></tr> </table>	map 1	map 3	map 2	map 5	map 4	map 7	map 6	map 9	map 8	map 10
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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

Map 10 - Devonport

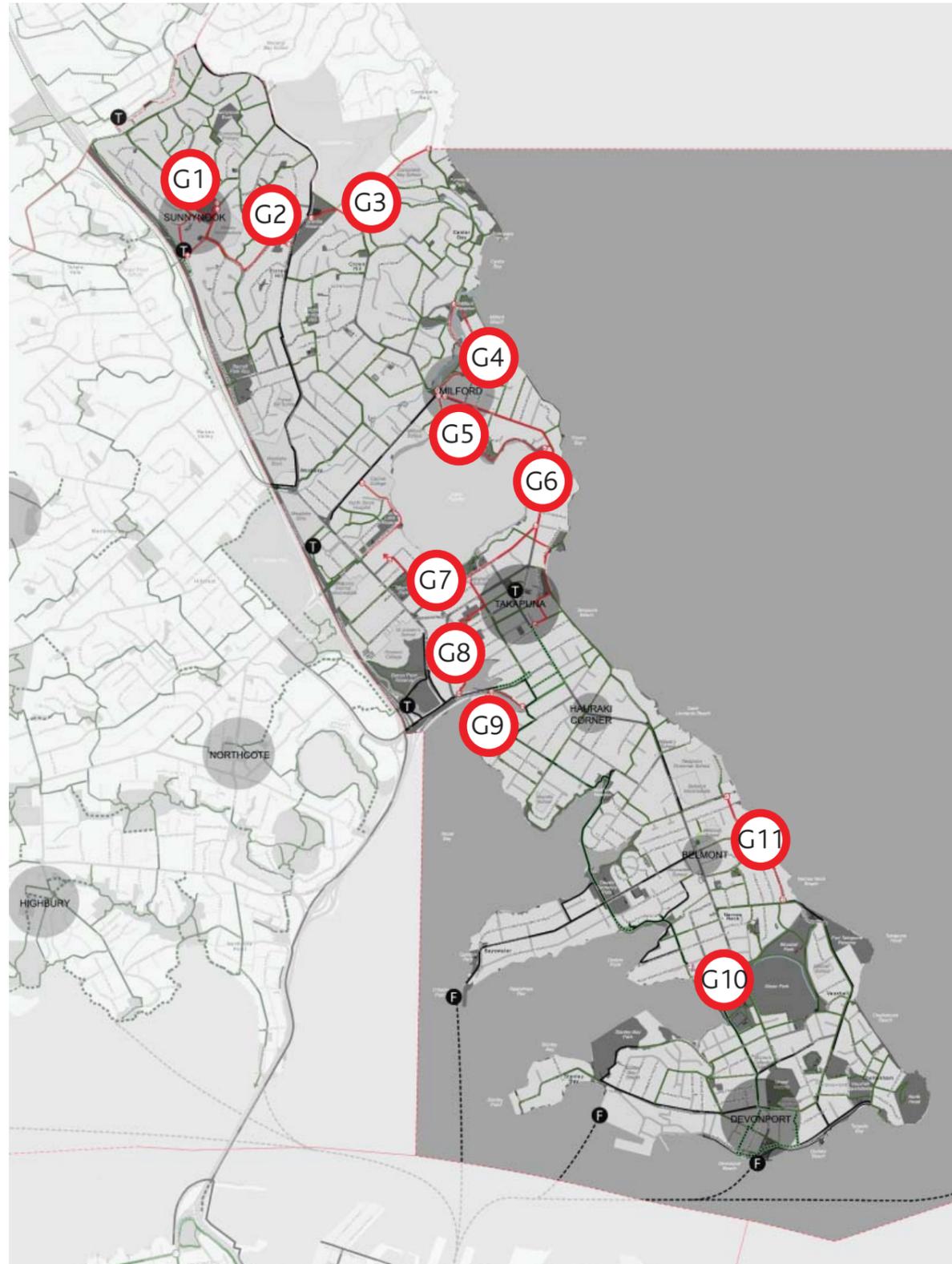


LEGEND: Draft ACN (by Auckland Transport) Greenway connections on Auckland Council, CCO, AT, Kiwirail or NZTA land Possible greenway connections on non Council land Scale: 1:10,000 @ A3

<ul style="list-style-type: none"> schools inc. public and private parks, reserves and open spaces local board boundary T transport node (bus station) F ferry terminal other cycling / walking projects 	<ul style="list-style-type: none"> feeder routes connector routes metro routes metro routes 2030 	<p>Cycling/walking </p> <ul style="list-style-type: none"> route utilising existing formed path priority route utilising existing formed path proposed new route (no formed path exists) proposed new path for priority route greenway by neighbouring local board (out of Devonport-Takapuna Greenways scope) 	<p>Walking only </p> <ul style="list-style-type: none"> route utilising existing formed path (for walking only) Existing lowtide route, informal track or beach - no path upgrade proposed 	<ul style="list-style-type: none"> connection through schools / other (access or easement required) connection for discussion with iwi (access or easement required) 	<ul style="list-style-type: none"> <li style="margin-right: 5px; margin-bottom: 5px;"> map 1 <li style="margin-right: 5px; margin-bottom: 5px;"> map 2 <li style="margin-right: 5px; margin-bottom: 5px;"> map 3 <li style="margin-right: 5px; margin-bottom: 5px;"> map 4 <li style="margin-right: 5px; margin-bottom: 5px;"> map 5 <li style="margin-right: 5px; margin-bottom: 5px;"> map 6 <li style="margin-right: 5px; margin-bottom: 5px;"> map 7 <li style="margin-right: 5px; margin-bottom: 5px;"> map 8 <li style="margin-right: 5px; margin-bottom: 5px;"> map 9 <li style="margin-right: 5px; margin-bottom: 5px;"> map 10
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Note: This is an aspirational and 'high level' network plan. Further investigation is required for each individual project, as the route may be influenced/modified by topography, vegetation, land ownership, timing of renewals funding and the like.

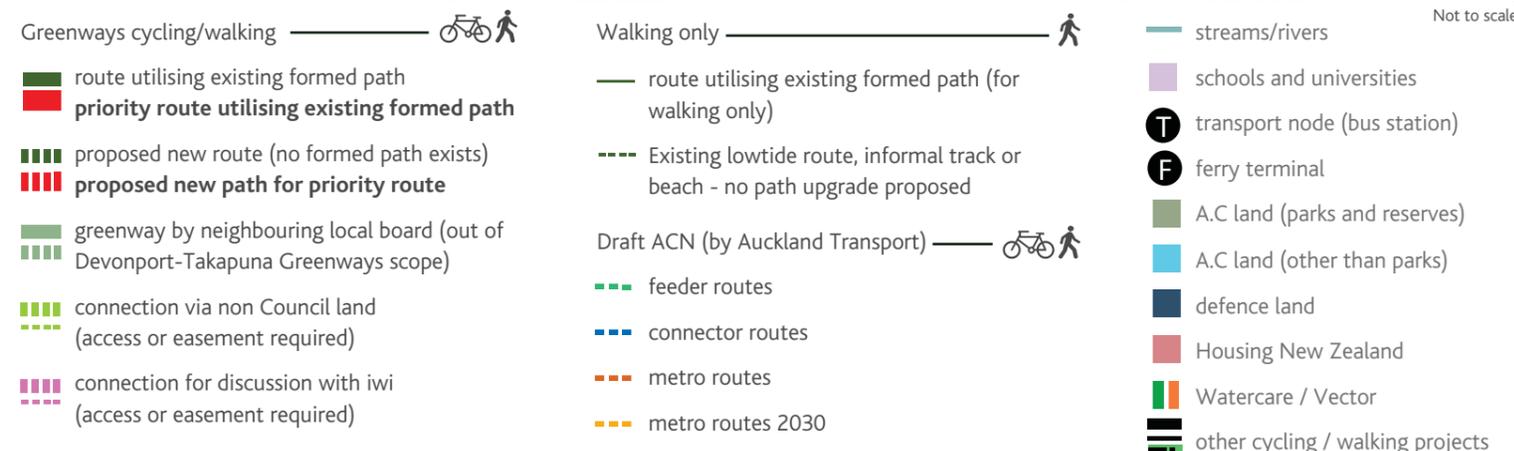
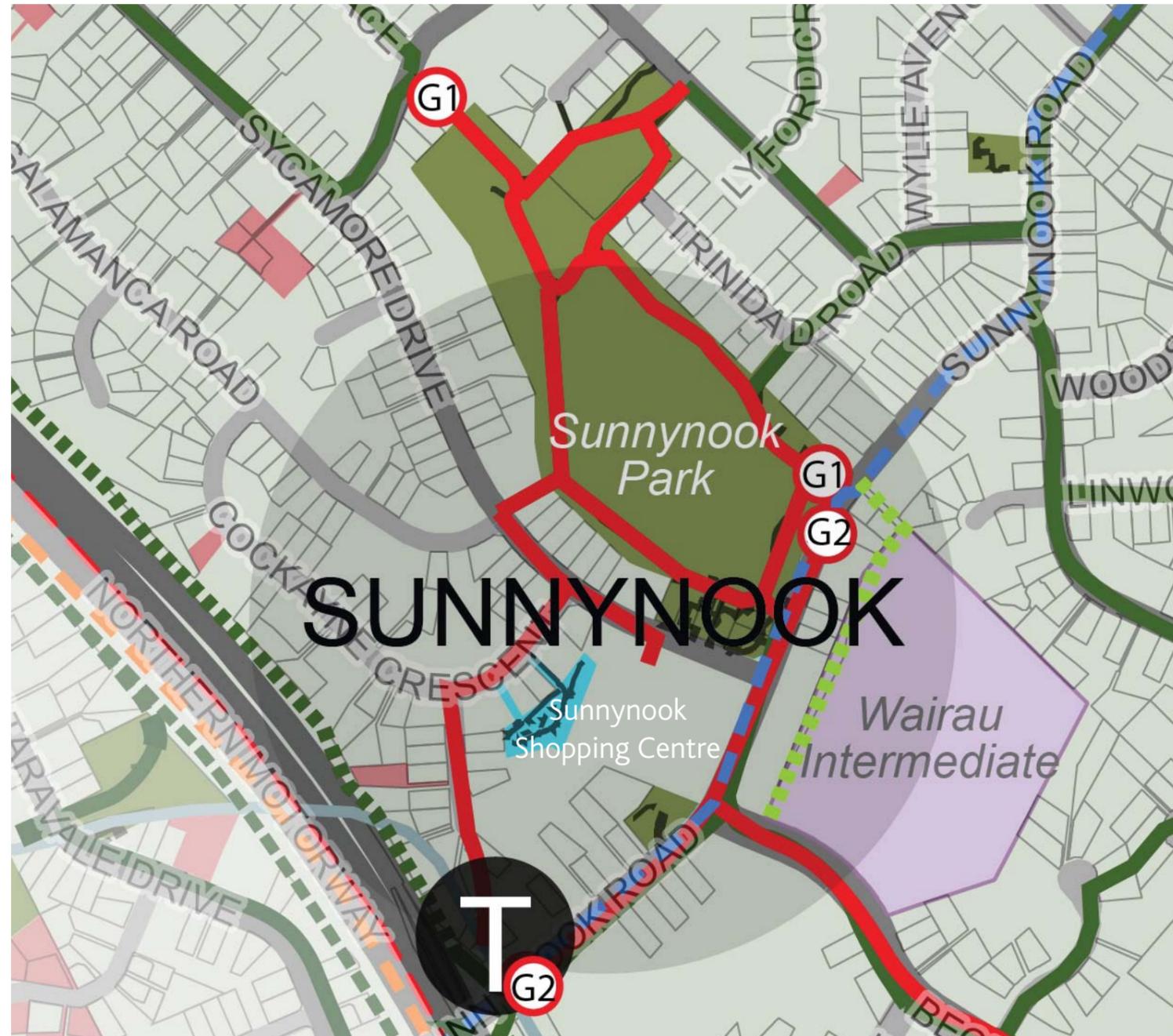
Priorities



This map shows the location of 10 routes that Devonport-Takapuna Local Board have identified as priority:

- G1 Sunnynook Park**
Planned / current works: stormwater works and lowering of the playing fields (by Watercare), outdoor fitness equipment to be installed
- G2 Sunnynook to Forrest Hill Road and Greville Reserve**
Connect to shared path at Forrest Hill / East Coast Roads
- G3 Greville Reserve**
Current works: path upgrade and installation of artificial turf
- G4 Wairau Creek Bridge (to Milford)**
Auckland Transport connection via street network from Saltburn Road to Wairau Creek (part of the 'connector' network)
- G5 Sylvan Park and Henderson Park, Lake Pupuke**
Current project scoping by parks ADBS for a walkway connection around Lake Pupuke. Potential to extend along Fenwick Avenue to connect to Milford
- G6 Takapuna via Gould Reserve** (connection from Milford to Takapuna and Takapuna Beaches). Auckland Transport planned works for Kitchener / Hurstmere, connecting to Bloomfield Spa / Lake Road. Gould Reserve is a current local board project, with the concept plan recently adopted
- G7 Lake Pupuke Drive to Carmel College**
Auckland Transport planned works for Killarney Street and Lake Pupuke Drive
- G8 Auburn and Patuone Reserves to Esmonde Road**
Alternative pedestrian and cycle route along esplanade reserve to Esmonde Road which could be developed as an 'feeder' route under the Auckland Cycle Network (ACN).
- G9 Francis Street Pedestrian Bridge**
As part of the Green Route and connection to the sky path via Esmonde Road. Alternate route over the waterwater pipe at Harley Close also worth investigation
- G10 Lake Road and Wakakura Crescent**
CMP for Lake Road and completion of the Green Route or investigate alternate pedestrian bridge from Ngataranga Park to Wesley Street.
- G11 Seacliffe Avenue**
Auckland Transport Feeder and key connection leading from Belmont Intermediate and Takapuna Grammar School.

Priority greenway map of G1 - Sunnynook Park



Description of priority route G1

Location Sunnynook Park

Description G1 is a circuit path around Sunnynook Park connecting to all parks entrances with extension from the Sycamore Drive entrance, to Sunnynook Bus Station and Sunnynook Shopping Centre via Sycamore Drive, Cockayne Crescent and Kapiti Place. Auckland Transport have designated these road connections as high priority for development, in support of the Greenways.



Auckland Transport (AT) has also designated Sunnynook Road as future 'connector route' in the Auckland Cycle Network (ACN) which would connect people from East Coast Road to the park, bus station and shopping centre.

Ecology of the area Sunnynook Park forms the bottom of a Sunnynook valley and is part of the Wairua catchment. The park collects stream tributaries and channels water south to the Wairau Creek. Much of the park boundary is boarded by trees, predominantly exotic species. Enhancement of under-planting particularly along the stream edge would improve habitat for native birds and invertebrates. Stream naturalisation of the current concrete lined channel flowing through Sunnynook Park would also add value to ecological outcomes in this area, and improve the water quality before it meets the sea. Overtime aquatic species will flourish along the natural stream banks.

Opportunities

- stormwater works currently in progress by Auckland Council Stormwater team and Watercare (lowering the height of the sports fields) - opportunity to naturalise the stream, and expand low lying areas to wetlands with boardwalk network
- outdoor fitness equipment planned - opportunity to reinstatement of the path at greenway width of 2.5-3m to provide a shared circuit path
- extend greenways network in local streets within the upcoming 'Centre Plan' for Sunnynook
- the circuit path can be used by adults and children to learn to ride bikes, providing the community a safe place to learn and then practice
- address parking issues on local street network as identified by local community

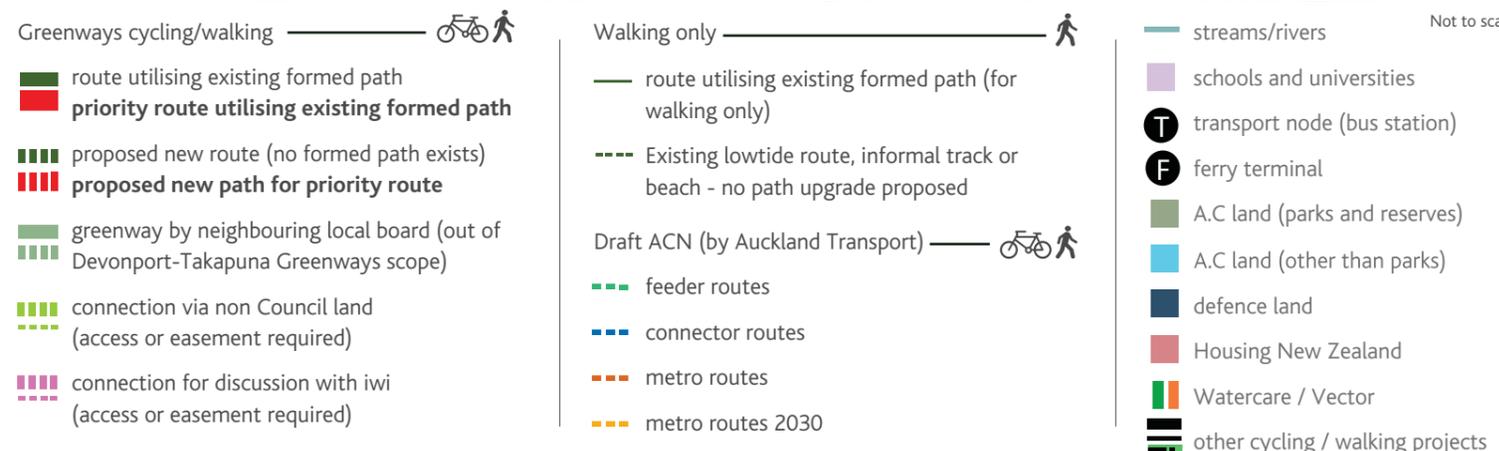
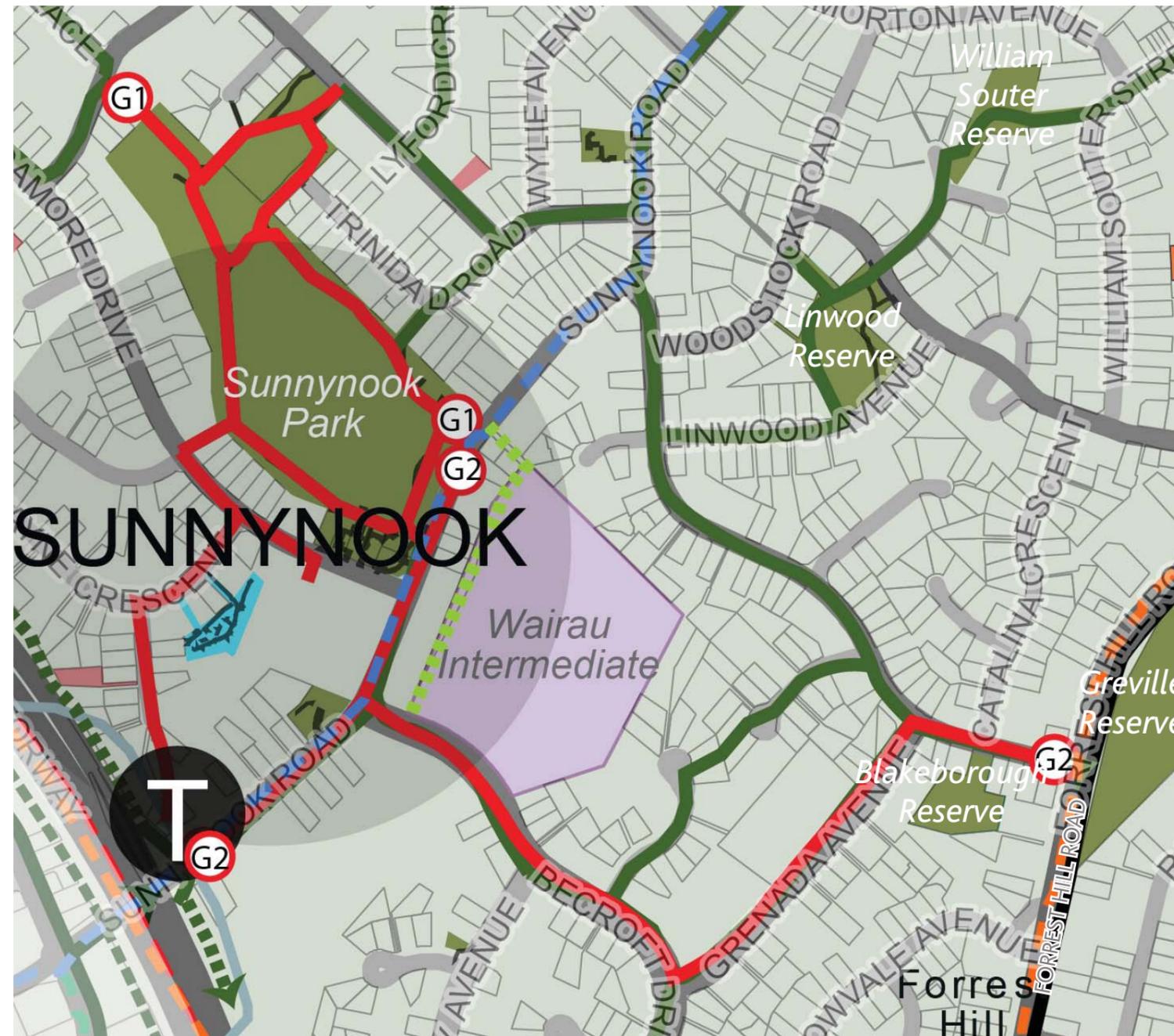
Budget Requirements (Capex)

- Auckland Transport to deliver road connections
- parks budget for total works of fitness stations: 50k
- work with Auckland Council Stormwater and Watercare to reinstatement path at 2.5-3m width (parks budget for high level estimate for construction of 3m path and 10m wide planting strip buffer to stream - \$580,000).



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Priority greenway map of G2 - Sunnynook to Forrest Hill Road and Greville Reserve



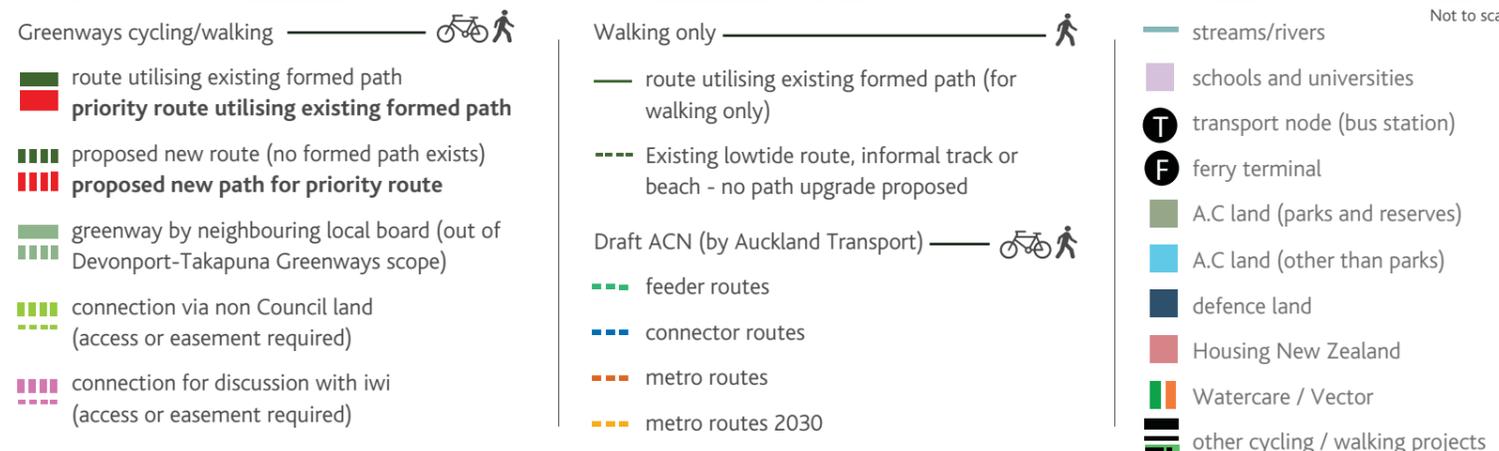
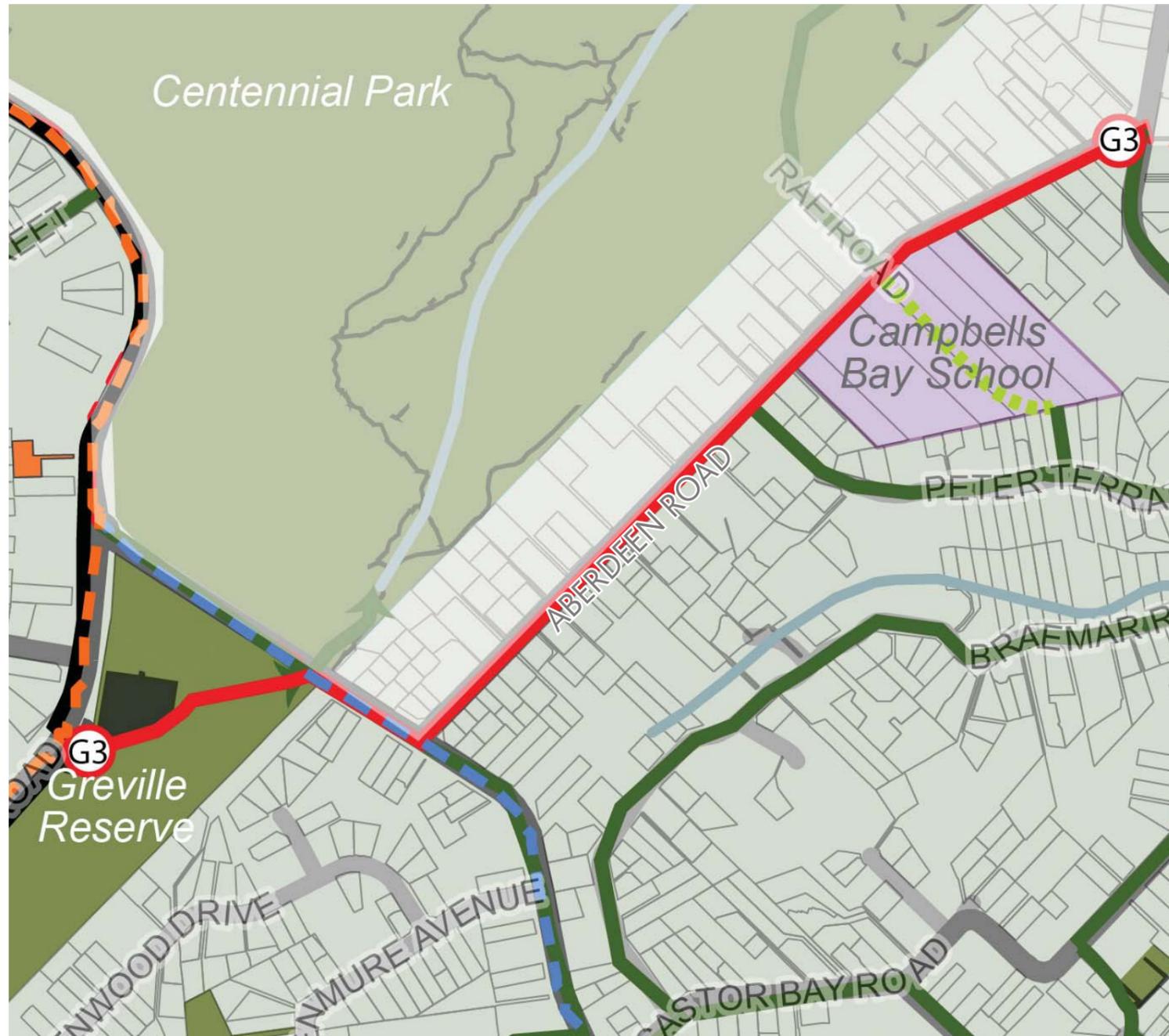
Description of priority route G2

Location	Sunnynook Park to Forrest Hill Road and Greville Reserve
Description	G2 connection sits within the Sunnynook valley and is via the street network. G2 creates a link from Forrest Hill Road using the street network to Sunnynook Park (G1 priority route) and Sunnynook Bus Station. It passes Wairau Intermediate on Becroft Drive, and continues along Grenada Avenue to Blakeborough Drive where it meets the shared pathway, alongside Centennial Park. This existing connection along Forrest Hill and East Coast Roads is part of Auckland Transport's (AT) 'metro' route on the Auckland Cycle Network (ACN).
Ecology of the area	Nearby reserves include Blakeborough Reserve, Probert Park, Greville Road Reserve, Linwood Reserve and William Souter Reserve. Linwood Reserve has an established vegetation on the periphery, with an avenue of trees (recently planted) aligning a narrow path. A stream runs through adjacent properties and flows via culvert to low areas of the park. Potentially this flow could be 'daylighted' in to enhance the ecology of the park, and a wetland could be created (may be ephemeral). Some of the streets have potential to feature raingarden swales, e.g Becroft Drive which has in the grassed areas of the road median zone.
Constraints	<ul style="list-style-type: none"> topography - grades steep for cycling in the valley safety issues - crossing of busy roads i.e Forrest Hill and Sunnynook Roads for pedestrians, footpath is at time compromised by bus tracking
Opportunities	<ul style="list-style-type: none"> AT have a connector route on Sunnynook Road raingarden swales in the centre of Becroft Drive in the current grass median stream daylighting opportunities exist in Linwood Reserve AT could address crossing of busy roads to improve pedestrian safety
Budget Requirements (Capex)	<ul style="list-style-type: none"> AT to deliver road to road connections



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Priority greenway map of G3 - Greville Reserve



Description of priority route G3

Location Greville Reserve - connection from Forrest Hill to Campbells bay and Castor Bay

Description G3 priority route connects Forrest Hill to Campbells bay and Castor Bay via Greville Reserve, along East Coast Road and Aberdeen Road. The connection begins at Forrest Hill Road where there is currently a shared path and runs diagonally through Greville Reserve, meeting East Coast Road. The route continues north west along Aberdeen Road where it passes Campbells Bay School, terminating at the intersection of Aberdeen and Beach Roads. Aberdeen Road is part of the Walking School Bus route (WBS), improving pedestrian and cyclist safety here is vital Walking School Bus route (WBS).

East Coast Road and Forrest Hill Road are designated as a 'connector' routes by Auckland Transport (AT).

Ecology of the area Greville Reserve has a large area of mixed native and exotic bush in the southern end. The culvert could be opened for stream daylighting to enhance the ecology of the Park. Additional planting along the north east boundary would increase the connectivity for bird species to Centennial Park. Centennial Park, in Hibiscus and Bays Local Board area is large open space (Golf Course) with a large area of native bush and streams.

Constraints • timing - path upgrade works are currently in 2015

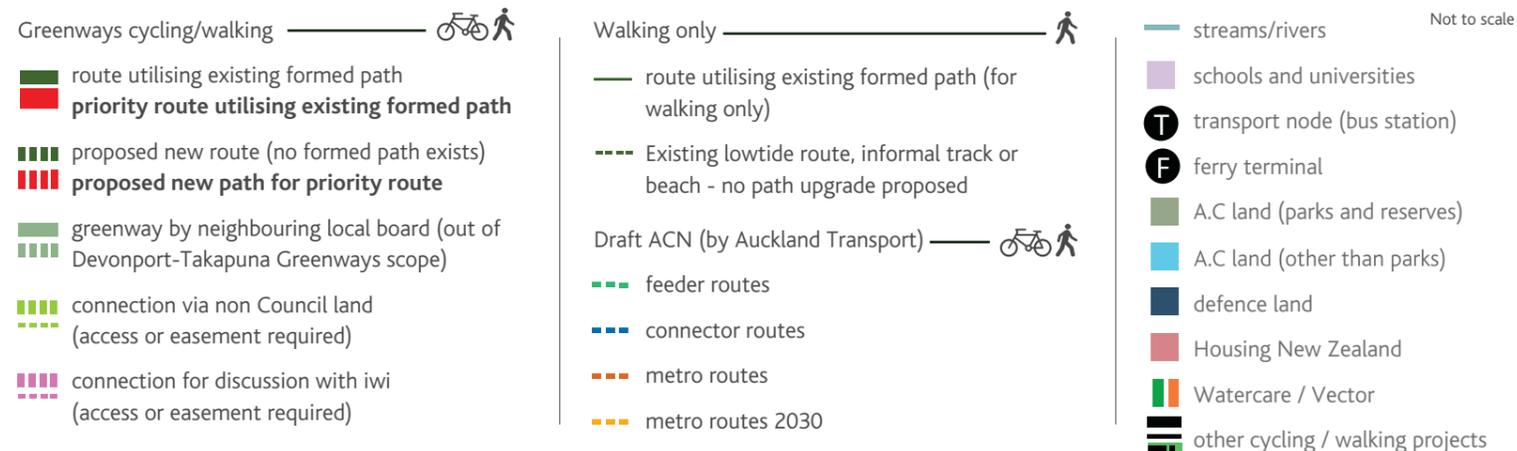
Opportunities • any future works by Watercare could assist the delivery of the greenway within Greville Reserve
• improve ecological connection into Centennial Park with planting in Greville Reserve
• path scheduled for upgrade, opportunity to upgrade to greenways width of 2.5-3m (currently proposed for 2m)
• potential to connect via a greenways network into Hibiscus and Bays Local Board via Centennial Park

Budget Requirements (Capex) • AT to deliver road to road connections along 'connector' - East Coast Road
• Parks budget for 2m path, bollards and signage is currently under approval. (high level estimate for construction of 3m path and 2500m sq of revegetation planting - \$175,000).



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Priority greenway map of G4 - Wairau Creek Bridge (to Milford)



Description of priority route G4

Location Wairau Creek Bridge (to Milford)

Description G4 connection links Milford town centre to the proposed pedestrian bridge Wairau Creek footbridge. The bridge is approx 40 metres long, spanning the Wairau Creek between Inga Rd, Beach Rd and Milford Reserve (placement shown is indicative). From Milford Reserve the connection would go via Inga and Craig Roads to Omana Road, and onwards to meet the Omana / Kitchener / Shakespear Roads intersection in Milford town centre. This greenway connects to 'priority route G6'.

Ecology of the area Milford Reserve is the only park section for this greenway, however sections of the road corridor offer wide berms which can be planted or converted to raingardens to filter road surface water. Milford Reserve is in the coastal environment, and partially framed by large pohutukawa trees. Additional coastal species would add ecological value to the park. From a wider perspective, ecological enhancement of the adjacent reserves Commodore Parry and Bryan Byrnes Reserves would better connectivity for birds inhabiting the estuary.

Constraints

- the connection is predominantly via road network, so the ecological component will rely on the delivery of planted verges, and street trees within the road corridor
- path construction near roots of large pohutukawa specimens - may require a section of boardwalk or create a root bridge to protect the roots within the drip line

Opportunities

- AT have identified the connection from Saltburn Road to Wairau Creek (pedestrian bridge) as a priority 'connector' route in the Auckland Cycle Network

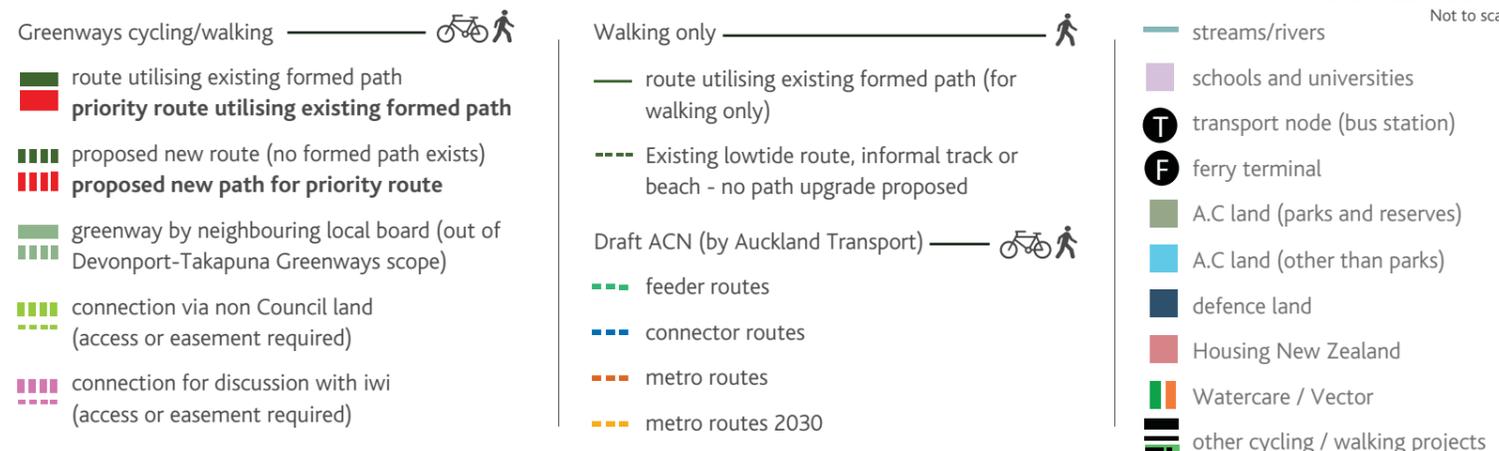
Budget Requirements (Capex)

- AT to deliver road to road connections
- budget for total bridge works \$2.3 million
- Parks budget for high level estimate for construction of 3m path and 5m wide planting strip alongside path- \$110,000.



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Priority greenway map of G5 - Sylvan Park and Henderson Park, Lake Pupuke



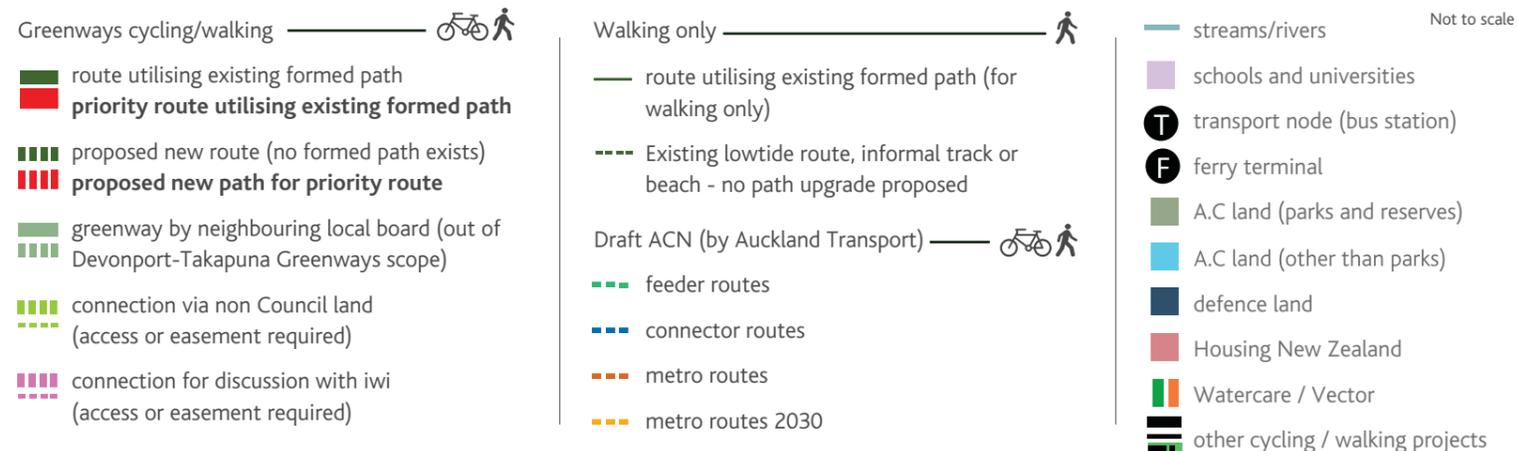
Description of priority route G5

Location	Kitchener Park, Sylvan Park and Henderson Park, Lake Pupuke
Description	<p>Connection from Milford to Hurstmere Road Takapuna via esplanade, as an alternative route to main roads of Kitchener and Hurstmere. The connection runs the full length of Fenwick Avenue connecting the parks bordering Lake Pupuke with Milford town centre. In the east, at Henderson Park the route meets Hurstmere Road, of which 'priority route G6' connects to Takapuna.</p> <p>G5 connects to G4 at Omana Road.</p>
Ecology of the area	The freshwater Lake Pupuke is in a Significant Ecological Area (SEA) and in the Lake Management Area. Invasive weeds such as Eelgrass (<i>Vallisneria gigantea</i>) dominate the lake, posing a challenge to establish native aquatic species. Sylvan Park borders Lake Pupuke, and is a mix of native bush with open grassed areas. Henderson, also bordering Lake Pupuke, is open grass area with a stand of mature trees. Opportunity to improve the riparian planting at the edge of the lake, this will aid the succession of native aquatic species and improve water quality of the lake.
Constraints	<ul style="list-style-type: none"> excavation restraints in the west of the reserve due to 'Historic Heritage' achieving a 2.5-3m wide shared path in areas of bush, path may need to narrow down in bush clad sections consent for works in the marine environment and SEA (path connections exists although may need upgrading to shared path width)
Opportunities	<ul style="list-style-type: none"> potential for future funding by Auckland Transport as a 'feeder' route as part of park works: improve the riparian planting at the edge of the lake use community planting to inspire and encourage riparian planting in private properties future relocation of tennis club building, tie in connecting path to greenway
Budget Requirements (Capex)	<ul style="list-style-type: none"> concept plan and planning review for Sylvan Park path (including Quarry Lake) in process, cost of physical works not yet determined. AT to deliver road to road connections Parks budget for high level estimate for construction of 2-3m path through Kitchener Park, Sylvan Park and Henderson Park \$330,000. Planting works require further scoping with assessment of the riparian zone, and extent of weed species eradication.



NOTE: These plans are indicative only, for the purposes of identifying opportunities, constraints and setting budget estimates. They are subject to feasibility, consultation/landholding agreements and detailed design, which may alter the routes shown. Further investigation is needed to determine the feasibility of cycle access. Walking tracks are shown where cycling is thought to be unachievable.

Priority greenway map of G6 - Gould Reserve (connection from Milford to Takapuna Beaches)



Description of priority route G6

Location Takapuna via Gould Reserve (connection from Milford to Takapuna and Takapuna Beaches)

Description This route connects the two commercial areas of Milford town centre and the metropolitan centre of Takapuna. The route is predominantly along the road corridor adjacent residential and mixed use properties, with the exception of Gould Reserve at Takapuna Beach. The route crosses the seaward portions of properties at 41-45 The Strand at low tide and would require an easement or respective purchase for Esplanade Reserve purposes to enable all tide access along the beach.

Connects to priority routes; G4, G5 and G7.

Ecology of the area The built environment provides little opportunity for enhancement of ecology, there is limited space, and much of the surfaces are impervious. The addition of raingardens, planted verges and additional street trees would be the only option in this case. The weed removal and native planting proposed at Gould Reserve under the Takapuna Beach Reserve South Concept Plan would benefit the ecology of the coastal area. Takapuna Beach is a Significant Ecological Area (SEA).

Constraints

- busy main road connections of Kitchener and Hurstmere Road; narrowing the carriageway to provide a 2.5-3m shared path may potentially compromise carparking spaces along the narrow sections of road
- the acquisition of the seaward portions of properties at 41-45 The Strand to gain all tide access along the beach. This will be investigated under the Draft Reserve Management Plan fro Takapuna Beach Waiwhariki 2012.

Opportunities

- AT have identified Kitchener and Hurstmere road as 'connector routes' in the Auckland Cycle Network - a proposed separated cycleway within 5-10 years
- AT have identified Esmond Road to Takapuna town centre as 3-6 year priority, including the connection from The Strand (Gould Reserve) to Bloomfield Spa

Budget Requirements (Capex)

- AT to deliver road to road connections. Budget undetermined
- Developed Design for Takapuna Beach Reserve South concept plan budget not yet allocated



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Priority greenway map of G7 - Lake Pupuke Drive to Carmel College



Description of priority route G7

Location Killarney Street and Lake Pupuke Drive to Carmel College

Description G7 route connects east west around Lake Pupuke via street network and open spaces and connecting two schools; Takapuna School and Carmel College. The three open spaces include; Killarney Park, Taharoto Park and Quarry Lake Reserve. Taharoto Park is a recreational reserve, with playing fields and tennis courts, while Killarney is passive recreation, with the popular Pumphouse Theatre overlooking the lake. Quarry Lake Reserve is mainly Lake, however the riparian area is accessible and connects to the North Shore Hospital. From North Shore Hospital the route runs past Carmel College to the existing shared path along Shakespeare Road.

Connection to 'priority route G6' along the length of Kitchener road to Hurstmere Road Takapuna , and 'priority route G8'

Ecology of the area There is little esplanade reserve around the southern riparian zone of Lake Pupuke in comparison to the north. Killarney Park would be the longest stretch of esplanade reserve in the neighbouring this route. Lake Pupuke is in a Significant Ecological Area (SEA) and Lake Management Area, supporting a variety of fish and bird life including; pied shag, ducks, black swan, pukeko, whitefaced heron, Canadian geese (all of which breed on the lake), tui, fantail, silvereye, and grey warbler.

Weed removal and enrichment of planting in the riparian planting at the edge of the lake will aid the succession of native aquatic species and improve water quality of the lake.

Constraints

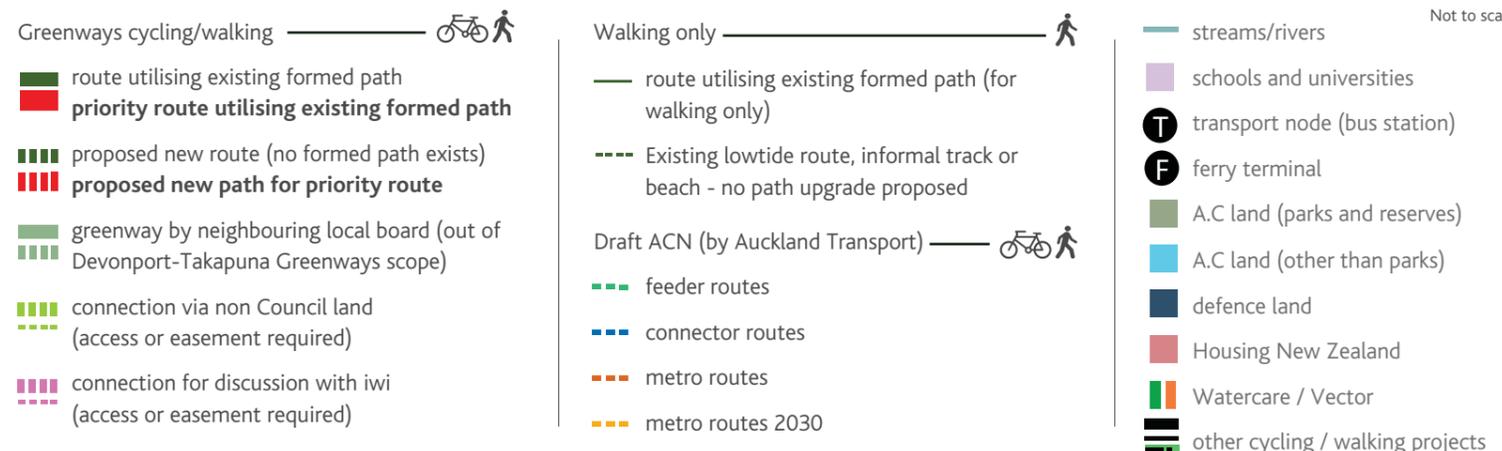
- connection requires easement or acquisition through private ownership (former Quarry site)
- connection requires access over Waitemata District Health Board (alongside Carmel College)
- consent for works in the marine environment and SEA (connection exists although path is not formed)
- access to the the northern section will be limited in bird mating season, so an alternative path will need to be formed in too close to roosting sites

Opportunities

- as part of park works: improve the riparian planting at the edge of the lake
- use community planting to inspire and encourage riparian planting in private properties
- Auckland Transport have identified Killarney Street as priority 'connector' route in the Auckland Cycle Network (ACN)
- Auckland Transport have initiative to find a cycle connection from Killarney Street to Taharoto Road under the Northcote Safer Routes project which includes a shared path from Taharoto Road to the Motorway (0-3 year priority)

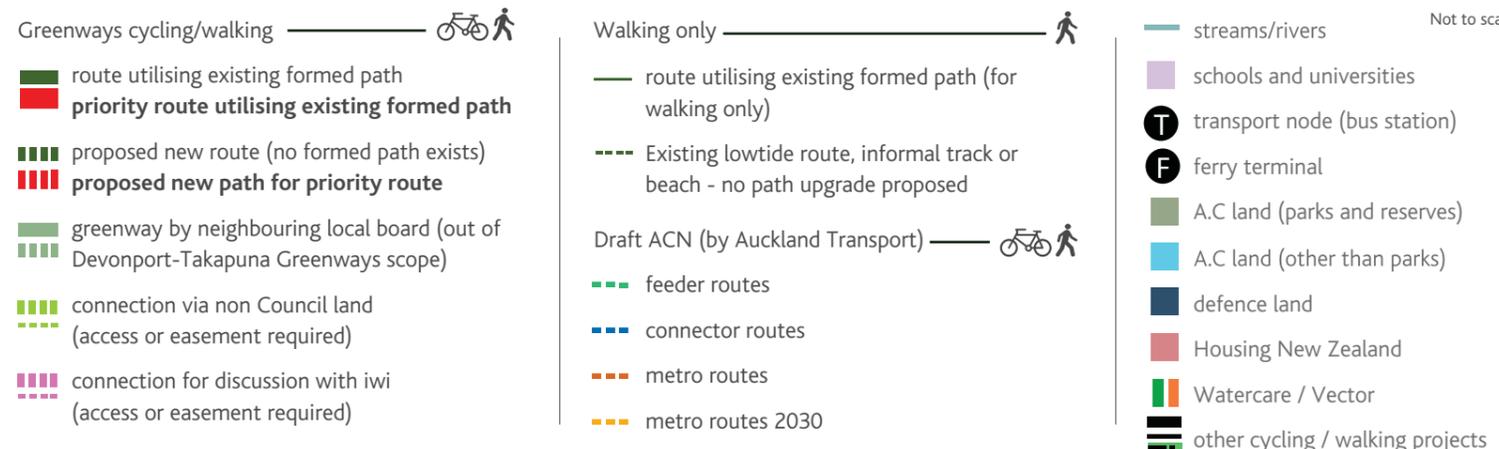
Budget Requirements (Capex)

- Auckland Transport to deliver road to road connections, Killarney Street, Lake Pupuke Drive and Rangitira Avenue
- concept plan and planning review for Quarry Lake path (including Sylvan Park) in process, cost of physical works not yet determined.



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Priority greenway map of G8 - Auburn Reserve to Esmonde Road



Description of priority route G8

Location Auburn Reserve to Esmonde Road

Description G8 connects Takapuna metropolitan centre to Esmonde Road via esplanade reserve, leading from Auburn Reserve alongside Takapuna Estuary, with connection to the supermarket and Barrys Point Road. It connects to 'priority route G7' at Killarney and Auburn Streets.

G8 priority route could form part of Auckland Transport's (AT) 'feeder' network, as it acts as a crucial connection to 'highway' routes on the Auckland Cycle Network (ACN). A cycle 'highway' route would connect from Esmonde Road to the future 'Skypath', which spans the Auckland Harbour Bridge.

Ecology of the area Takapuna Estuary and esplanade reserve fall within a 'Significant Ecological Area' (SEA), as there is significant estuarine habitat for wading birds. Shoal Bay, south Takapuna Estuary is an important feeding and roosting area. Shorebirds like caspian tern, New Zealand dotterel, pied stilt, white-faced heron, pukeko, kingfisher and gulls can be seen in the area. The Department of Conservation has designated that area as 'Site of Special Wildlife Interest'. With regards to the proposed cycleway / walkway to the future 'Skypath', Forest and Bird have suggested a connection via Northcote termed 'Naturepath', in order to keep development out of Shoal Bay to protect important wildlife habitat

Constraints

- consent for works in the coastal environment and SEA (connection exists although existing path and boardwalk would need to be widened to 2.5-3m shared path)
- the northern section of the current walkway is a steeper grade
- connecting from Barry's Point road to the mid section of the route would require easement and land acquisition

Opportunities

- AT are conducting the 'Takapuna Transport Study, opportunity to link into improved public transport
- work with AT to develop 'feeder' routes in this area

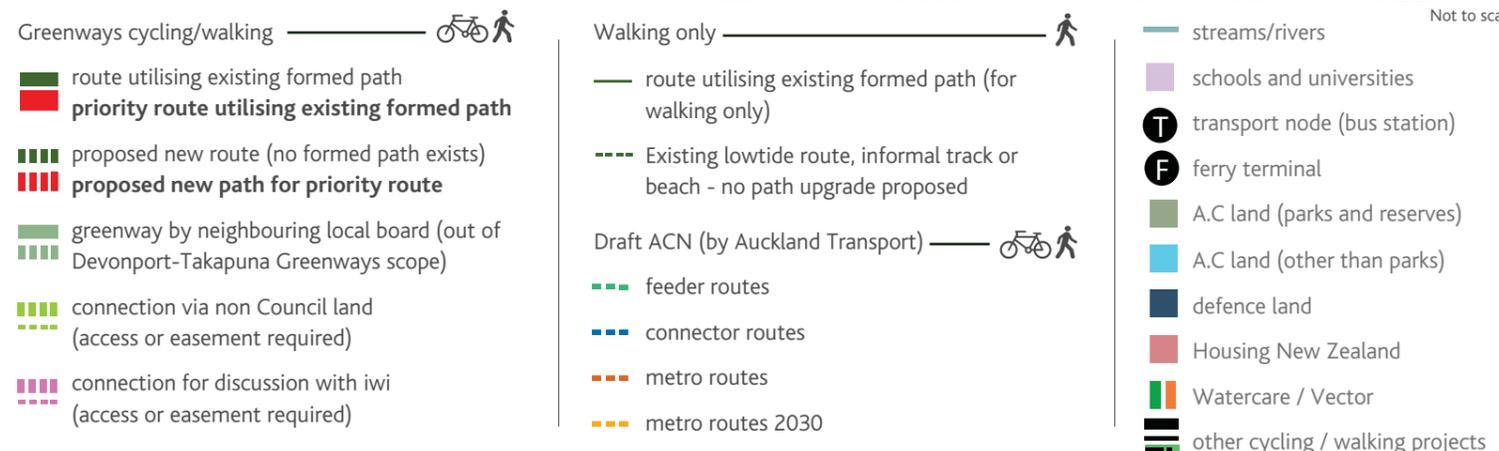
Budget Requirements (Capex)

- additional esplanade planting, weed removal and path upgrade requires scoping to determine parks budget (eligible for AT funding as feeds into public transport hub, under the PT trips programme, and could be a 'feeder' within the ACN)
- high level estimate for construction of 2.5-3m shared path is \$250,000.



NOTE: These plans are indicative only, for the purposes of identifying opportunities, constraints and setting budget estimates. They are subject to feasibility, consultation/landholding agreements and detailed design, which may alter the routes shown. Further investigation is needed to determine the feasibility of cycle access. Walking tracks are shown where cycling is thought to be unachievable.

Priority greenway map of G9 - Francis Street Pedestrian Bridge



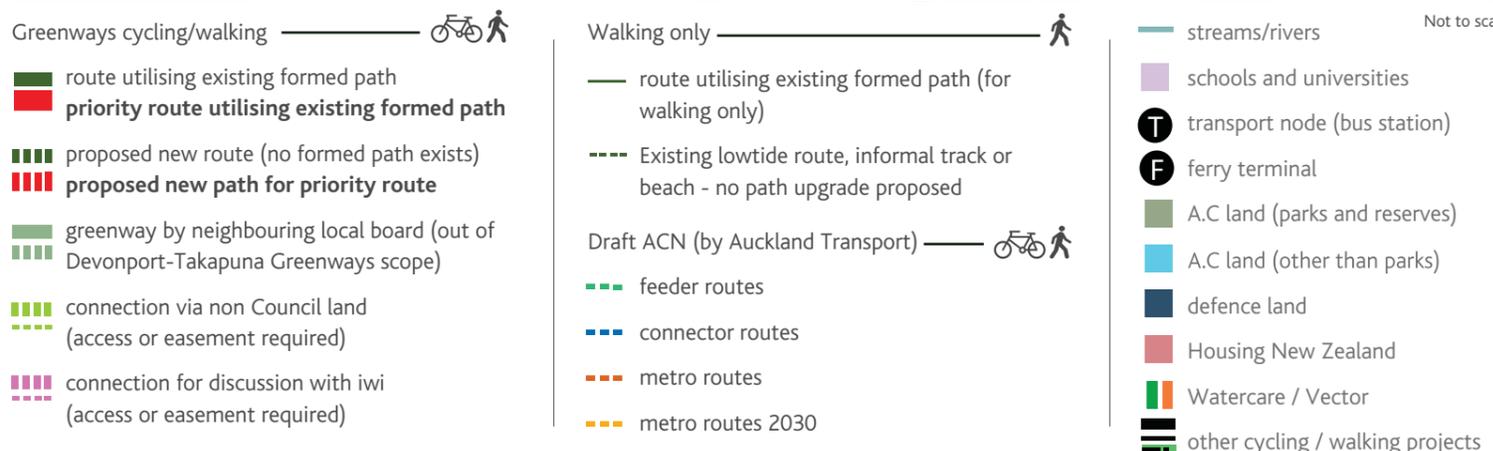
Description of priority route G9

Location	Francis Street Pedestrian Bridge
Description	<p>Key connection for the Green Route (in Hauraki) to Esmonde Road. It would provide a direct access for residents to walk or cycle between Hauraki and Takapuna, and the Akoranga Bus Station.</p> <p>There are three options to make this connection, including;</p> <ul style="list-style-type: none"> - pedestrian bridge at the north end of Francis Street - esplanade reserve at Harley Close - road network; Francis Street, Hart Road, Harley Close, Harley Road, Eldon Street to Esmonde Road <p>G9 would form part of Auckland Transports (AT) 'feeder' route as it provides a link to the 'connector' route which leads to the cycle 'highway' to the Skypath, or 'priority route G8' which leads to Takapuna metropolitan centre.</p>
Ecology of the area	The bridge and esplanade options fall within a 'Significant Ecological Area' of Shoal Bay. Shoal Bay is an important feeding and roosting area for Shorebirds, among them, the endangered New Zealand dotterel. The Department of Conservation has designated that area as 'Site of Special Wildlife Interest'.
Constraints	<ul style="list-style-type: none"> • consent for works in the coastal environment and SEA if the bridge or esplanade options are implemented
Opportunities	<ul style="list-style-type: none"> • AT have identified Francis Street to Esmonde Road as a priority connection • opportunity to enhance the esplanade with riparian planting and thus the health of the estuary
Budget Requirements (Capex)	<ul style="list-style-type: none"> • AT to deliver road to road connections under the ACN, 'feeder' route • Funding for project scoping: \$30,000.



NOTE: These plans are indicative only, for the purposes of identifying opportunities, constraints and setting budget estimates. They are subject to feasibility, consultation/landholding agreements and detailed design, which may alter the routes shown. Further investigation is needed to determine the feasibility of cycle access. Walking tracks are shown where cycling is thought to be unachievable.

Priority greenway map of G10 - Lake Road and Wakakura Crescent



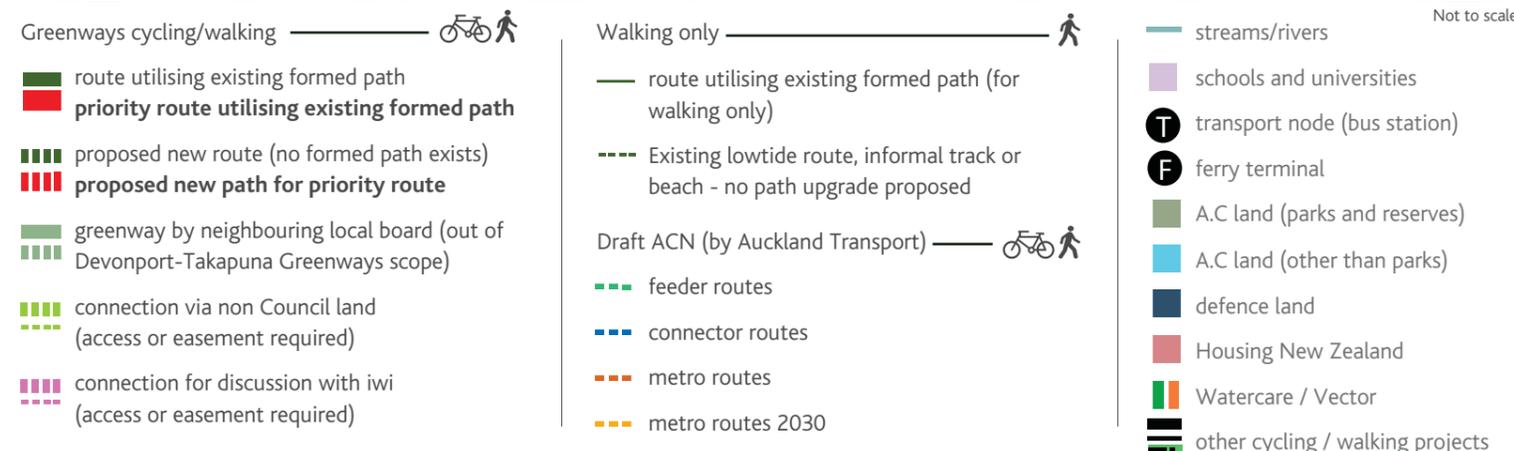
Description of priority route G10

Location	Lake Road and Wakakura Crescent
Description	This route forms the key connections from Devonport to Narrow Neck on the 'Devonport to Takapuna Green Route'. The connection will link the existing Green Route shared path within Ngararinga Park to Wakakura Crescent via Lake Road. This section of Lake Road over a narrow causeway it is worth exploring other options to make this connection, for instance the suggested connection across the estuary (refer to plan 'possible alternative'). The precise location for the route within land at Wakakura Crescent is undetermined and subject to consultation with the landowner or trust. There is an existing path along the esplanade, or the existing road can be utilised (as shown).
Ecology of the area	The connection crosses the estuary to Ngararinga Bay. Installation of raingardens along Lake Road could filter road surface water containing contaminants before water is discharged to the estuary. The estuary falls within 'Significant Ecological Area'. There is established native vegetation along the margins of Ngararinga Park and 1-88 Wakakura Crescent.
Constraints	<ul style="list-style-type: none"> Lake Road is a busy main road the location for a shared path is dependent on the future development of 1-88 Wakakura Crescent
Opportunities	<ul style="list-style-type: none"> Lake Road corridor management plan by Auckland Transport, which provides the opportunity to explore options for pedestrian and cycle connections at this location opportunity to enhance the esplanade with riparian planting and thus the health of the estuary
Budget Requirements (Capex)	<ul style="list-style-type: none"> Auckland Transport to deliver road to road connections potential funding from developer contributions at 1-88 Wakakura Crescent Parks budget undetermined as dependant on land designation (connection may follow access under AT or easement)



NOTE: These plans are indicative only, for the purposes of identifying opportunities, constraints and setting budget estimates. They are subject to feasibility, consultation/landholding agreements and detailed design, which may alter the routes shown. Further investigation is needed to determine the feasibility of cycle access. Walking tracks are shown where cycling is thought to be unachievable.

Priority greenway map of G11 - Seacliffe Avenue - separated cycleway



Description of priority route G11

Location	Seacliffe Avenue - separated cycleway
Description	Key connection for Takapuna Grammar School and Belmont Intermediate to Old Lake Road.
Ecology of the area	There is little room in the road corridor for vegetation other than plant buildouts and street trees, although the creation of swales and raingardens will help to filter heavy metals discharging to the sea adjacent - the coastline adjacent is an area of ecological significance.
Constraints	<ul style="list-style-type: none"> high traffic risk intersection at Lake Road and Winscombe Street suggested no right turn coming out of Old Lake Road onto Lake Road (feedback from community consultation)
Opportunities	<ul style="list-style-type: none"> AT have identified Seacliffe Avenue as a 'feeder' route, the community have provided feedback that they want a 'separated cycleway' swales and raingardens where possible within the road corridor
Budget Requirements (Capex)	<ul style="list-style-type: none"> AT to deliver road to road connections under the ACN, 'feeder' route



NOTE: These plans are indicative only, for the purposes of identifying opportunities, constraints and setting budget estimates. They are subject to feasibility, consultation/landholding agreements and detailed design, which may alter the routes shown. Further investigation is needed to determine the feasibility of cycle access. Walking tracks are shown where cycling is thought to be unachievable.



Figure 17. View over Smales Farm business park, State Highway One and Takapuna Golf Course, Auckland Council Stock Photo, 2012.

4.0 Future development

Devonport-Takapuna Greenways

4.1 Future development

The Devonport-Takapuna Greenways Plan will be implemented over time to achieve (in part) the outcomes envisaged in the Devonport-Takapuna Local Board Plan. Implementation of the greenways plan will include upgrades of existing walking and cycling connections (both on and off-road), as well as the creation of new connections within open space land, and/or via property easements/agreements.

Successful implementation of the plan requires co-ordination and commitment from the Devonport-Takapuna Local Board, Auckland Council, Auckland Transport, as well as key related public/utility organisations such as the NZTA, Watercare, Transpower and Vector.

The following section gives an overview of the future development and implementation of the Devonport-Takapuna Greenways Plan over the next ten years, including best practice for implementation, stakeholder involvement and funding availability, related case studies and the 10-year prioritisation strategy.

Best practice for implementation

Successful implementation of a greenways plan relies on a co-ordinated approach between Auckland Council's Parks Sports and Recreation, Stormwater, Ecology and Community Policy and Planning departments, as well as Auckland Transport. Future detailed planning shall take into consideration best practice guidelines, which include:

- Auckland Transport Code of Practice- ATCOP (Auckland Transport)
- Stormwater Code of Practice (Auckland Council Stormwater Team, Draft)
- Water Sensitive Design for Stormwater - Technical Guidance document (GD04) (Auckland Council Stormwater Team, Draft)
- Parkland Design Guidelines (Community and Cultural Policy/PSR, Draft)

Related 'best practice' documents such as NZTA's 'Bridging the Gap – Urban Design Guidelines (Draft)', DoC's 'Caring for Archaeological Sites' report, and the Ministry of Justice's 'National Guidelines for Crime Prevention through Environmental Design (CPTED) in New Zealand' shall also be taken into account as designs develop, in addition to all relevant Unitary Plan controls and area-specific policies.



Figure 18. Clark Street roadside planting, New Lynn. Auckland Council Stock Photo, 2013.

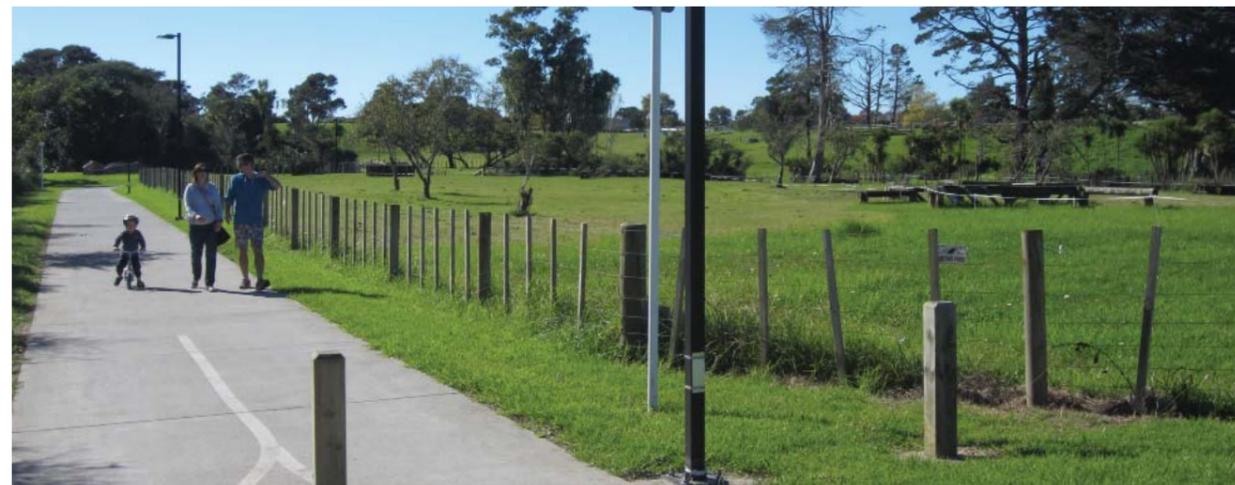


Figure 19. Twin Stream walkway / cycleway in Waitakere Ranges Local Board area. Auckland Council Stock Photo, 2013.

Stakeholder involvement and funding

Ongoing community engagement, stakeholder collaboration and partnerships are key to the successful implementation of the Devonport-Takapuna Greenways. Likely stakeholders, include:

- Neighbouring Local Board areas (Hibiscus and Bays, Upper Harbour and Kaipātiki)
- Local Iwi
- Schools and walking school bus groups
- Cycle Action Auckland
- Disability advocate groups, such as YES Disability
- Operators of community facilities, including schools
- Ministry of Education
- Department of Conservation
- Housing New Zealand
- Local residents and business associations
- Royal Forest and Bird Protection Society of New Zealand Inc.
- The Greenways Project Inc.

Grass-roots community involvement is very important to ensure the ongoing success of the Greenways 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, fund-raising, lobbying and artistic input.

Some funding for implementation of priority projects has already been allocated for in the Devonport-Takapuna Local Board budget. Other funding avenues include Auckland Transport, public/private partnerships and NZTA's regional cycleways fund.



Figure 20. Community planting, West Auckland, 2013.



Figure 21. Community Planting, West Auckland, 2013.



Figure 22. View of Milford and Lake Pupuke, looking south. Auckland Council Stock Photo, 2012.

5.0 References

Devonport-Takapuna Greenways

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Image References

Cover page

Auckland Council Stock Photo (2012). *View towards Auckland Harbour Bridge in the South West, over looking the Belmont area and Lake Road*

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Figure 1.

Auckland Council Stock Photo (2012). *View of Takapuna town centre, looking towards Devonport.*

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Figure 2.

Auckland Council Design Team (2012). *View of the Devonport, looking toward Auckland City Centre.*

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Figure 3.

Auckland Council Design Team (2012). *Abbotsford Terrace, Devonport.*

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Figure 4.

Auckland Council Design Team (2014). *East Coast Road walkway / cycleway, Auckland.*

Figure 5.

Harvey, Luke (2013). *Waikaraka Park walkway and cyclway Auckland.*

Figure 6.

Auckland Council Design Team (2012). *Swales alongside road network, Totara Avenue, New Lynn, West Auckland.*

Figure 7.

Auckland Council Design Team (2012). *Cyclelanes, Sydney, Australia.*

Figure 8.

Krantz, Adele (2013). *Shared path through park meets road network, Upper Harbour, Auckland.*

Figure 9.

Auckland Council Design Team (2013). *Art in pathway at Twin Streams Twin Streams Walk / Cycleway, West Auckland.*

Figure 10.

Auckland Council Design Team (2013) *Roy Clements Treeway Boardwalk, Auckland.*

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Auckland Council Design Team (2013). *Signage at Roy Clements Treeway Boardwalk, Auckland.*

Figure 12.

Auckland Council Design Team (2014) *Planted build outs at Livable Streets project, Point England, Auckland.*

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Figure 13.

Auckland Council Stock Photo (2012). *View towards Takapuna, with Shoal Bay in the foreground.*

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Figure 14.

Auckland Council Stock Photo (2012). *View of North Head and Mount Victoria, looking west.*

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Figure 15.

Auckland Council Stock Photo (2011). *Opening of the NZTA cycleway in Kingsland.*

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Figure 16. Auckland Council Stock Photo (2012). *View over Narrow Neck and Bayswater, looking west*

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Figure 17. Auckland Council Stock Photo (2012). *View over Smales Farm business park, State Highway One and Takapuna Golf Course.*

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Figure 18. Auckland Council Stock Photo (2012). *Clark Street roadside planting, New Lynn.*

Figure 19. Auckland Council Stock Photo (2013). *Twin Stream walkway / cycleway in Waitakere Ranges Local Board area.*

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Figure 20. Krantz, Adele (2013). *Community planting , West Auckland.*

Figure 21. Krantz, Adele (2013). *Community planting , West Auckland.*

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Figure 22. Auckland Council Stock Photo (2012). *View of Milford and Lake Pupuke, looking south.*

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Figure 23. Auckland Council Stock Photo (2012). *View Takapuna Beach, looking south towards Devonport*

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Figure 24. Auckland Council. (2013). *Auckland Unitary Plan Legend.*

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Figure 25. Auckland Council Stock Photo (2012). *View of Hurstmere Road and Lake Road, connecting to Takapuna town centre.*

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Figure 26. Portland Development Commission, Lloyd Crossing Project. (n.d) *2050 Habitat Conditions.*

Figure 27. Portland Development Commission, Lloyd Crossing Project. (n.d) *Pre-Development Water Conditions.*

Figure 28. Portland Development Commission, Lloyd Crossing Project. (n.d) *2004 Existing Water Conditions.*

Figure 29. Portland Development Commission, Lloyd Crossing Project. (n.d) *2050 Per Plan Water Use Conditions.*

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Figure 30. City Of Portland, Bureau of Environmental Services. Portland Greenways and Green Streets. (n.d) *Stormwater runoff treatment, Portland.*

Figure 31. City Of Portland, Bureau of Environmental Services. Portland Greenways and Green Streets. (n.d) *Permeable paving setout, Portland.*

Figure 32. City Of Portland, Bureau of Environmental Services. Portland Greenways and Green Streets. (n.d) *Green Streets, Portland.*

Figure 33. Environmental Services. City of Portland. Green Streets in Portland. (n.d) *Planted verges, swales, Portland.*
Retrieved deom URL:
<http://www.portlandonline.com/bes/index.cfm?a=209685&c=45379>

Figure 34. Environmental Services. City of Portland. Green Streets in Portland. (n.d) *Planted verges, swales, Portland.*

Figure 35. Environmental Services. City of Portland. Green Streets in Portland. (n.d) *Swales and footbridges, Portland.*

Figure 36. Environmental Services. City of Portland. Green Streets in Portland. (n.d) *Green Streets, Portland.*

Figure 37. Environmental Services. City of Portland. Green Streets in Portland. (n.d) *Greenway junction, Portland.*

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Figure 38. Waterfront Auckland. (Artists Impression) Auckland. (n.d) *Waterfront Auckland.*

Figure 39. Waterfront Auckland. (Artists Impression) Auckland. (n.d) *Waterfront Auckland.*

Figure 40. Tram in shared space streetscape. (Artists Impression) Auckland. (n.d) *Waterfront Auckland.*

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Figure 41. Waterfront Auckland. (Artists Impression) Auckland. (n.d) *Waterfront Auckland. Green Park, Reading.*

Figure 42. *Green Park Reading.* (n.d)
Green Park Reading. Green Park. Retrieved from URL
http://www.greenpark.co.uk/pdf/pdf/GP_OVERVIEW_BROCHURE.pdf



Figure 23. View of Takapuna Beach, looking south towards Devonport, Auckland Council Stock Photo, 2012.

6.0 Appendices

Devonport-Takapuna Greenways

A1. Analysis maps

Devonport-Takapuna Greenways



Aerial photograph

This aerial photograph shows the broad landscape patterns of the Devonport-Takapuna Local Board area within its surrounding context. While located centrally within the broader Auckland region, the area is somewhat disconnected from its neighbouring board areas - being surrounded on three sides by the coast, and State Highway 1. The coastline to the east comprises a series of sandy beaches and rocky headlands fronting the Hauraki Gulf. To the west, the inner reaches of the Waitemata harbour have created a more incised landscape, with mangrove flats at the termination of minor stream gullies. The volcanic blast crater of Lake Pupuke is another dominant landscape feature, giving this area a very high ratio of 'water edge' landscapes.

A number of man-made elements restrict connectivity in the local board area - most notably State Highway 1, which runs along the western edge, and restricting access to the neighbouring Kaipatiki Local Board area to five points, many of which are of very low amenity/safety for walking and cycling users. The combined industrial area of Smales Farm and North Shore Hospital, and their associated busy roads create some severance issues through the middle of the area, west of Lake Pupuke.

A number large open space areas are clearly visible on this aerial including Barrys Point Reserve (1), Alison Park (golf course) (2), Ngataringa Bay Sports Field (3) and the volcanic cones of Mount Victoria (4) and North Head (5). There is also much in the way of esplanade reserves on both harbour sides and around Lake Pupuke.

A number of town and local centres are included in this area, including: Sunnynook, Milford, Takapuna, Hauraki Corner, Belmont and Devonport. There is very little in the way of industrial activity, although there are relatively large institutional areas - primarily healthcare and defence.

To summarise, the Devonport-Takapuna landscape can be categorised by four distinct patterns at a 'macro-scale':

- High ratio of 'water edge', creating a very pleasant amenity, but making connections to other areas more complicated
- High proportion of residential neighbourhoods, little industrial activity
- Large parks, reserves and public open spaces
- Significant transport corridors, particularly SH1 to the west.

LEGEND:

- Local board boundaries
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes and terminal



Cycling and walking projects

This map has been created using Local Board Plan and the Northern Cycle Map (AT). It shows key existing - and proposed - shared paths for pedestrian and cyclists. The shared path along East Coast Road and Forest Hill Roads (1) is a major north / south connection between Rosedale and Westlake. This link follows arterial routes, linking destinations such as local shops, schools and parks. This existing connection could act as a 'spine' for surrounding greenway connections. Typically greenways run along the quieter 'local' roads, however there is potential for this arterial route to feature an ecological component - grass verges could be transformed into swales to filter surface water runoff, and planting could be enhanced in existing bordering park land. Similarly, Shakespeare Road (2) and other existing shared paths on arterials or major roads could be fed into the greenway network. Key destinations such as schools and Auckland North Shore Hospital are located on Shakespeare Road, and Lake Pupuke would provide a pleasant recreational loop, if continuous access could be provided around its entire shoreline.

The 'Green Route' is a proposed walking/cycling connection from the Devonport Ferry Terminal to Esmonde Road in Takapuna. The route is being developed in stages, and will include a connection to the Auckland Harbour Bridge at Esmonde Road. The connection shown from Francis Street to Esmonde Road via a future bridge is an option for this link - refer to (3) on the map.

Auckland Transport has provided sharrows, speed tables and planted islands along the local roads in some residential areas, such as Seacliffe Drive (4). These traffic calming devices can allow for cyclists to more safely use the carriageway of low volume/speed local roads, minimising the potential pedestrian conflicts and amenity impacts of providing 'off road' shared paths in these areas.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes and terminal
- Parks and reserve land
- Road network
- Auckland Transport 'shared path'
- Auckland Transport 'sharrows'
- Existing Green Route (Devonport to Takapuna)
- Proposed Green Route (Devonport to Takapuna)
- Francis Street Bridge to Esmonde Road
- Devonport Waterfront Promenade
- 1 East Coast Road shared path - cycle/walkway
- 2 Shakespeare Road shared path - cycle/walkway
- 3 Francis Street bridge for pedestrians and cyclists
- 4 Auckland Transport trial for 'sharrows'



Ecological areas

This map shows the 'Significant Ecological Areas' (SEA's) from the proposed Auckland Unitary Plan's 'Natural Resource' overlay. A SEA is an area of significant indigenous vegetation or a significant habitat of indigenous fauna, that is identified for protection within the Unitary Plan. Any vegetation removal or alteration within SEA would require a Resource Consent. More stringent provisions may also apply for earthworks and other activities, to ensure development is directed away from SEA's as much as possible. Six criteria were used to assess each area's potential significance, these being: representativeness; threat status and rarity; diversity; stepping stones, migration pathways and buffers; and uniqueness or distinctiveness.

Shoal Bay and Ngataranga Bay are the largest SEA's as they are intertidal and offer habitat for native birds such as the Dotterel and the Caspian tern. Saltmarsh and mangrove communities also flourish in the margins of this area. The stretch of coast on the east coast by North Head and Takapuna consists of a series of rocky headlands with soft sandy beaches between. The nature of this coastline, with wave exposure, volcanic rock and vegetative cliff tops enable a range of habitats for plant and animal communities.

In developing the Devonport-Takapuna Greenway network further protection improvement or extension of existing SEA will be considered. In addition all works will need to be consistent with the objectives and policies of the Unitary Plan. The Greenway network should provide opportunities for education and engagement within the natural environment to ensure its long term protection and preservation.

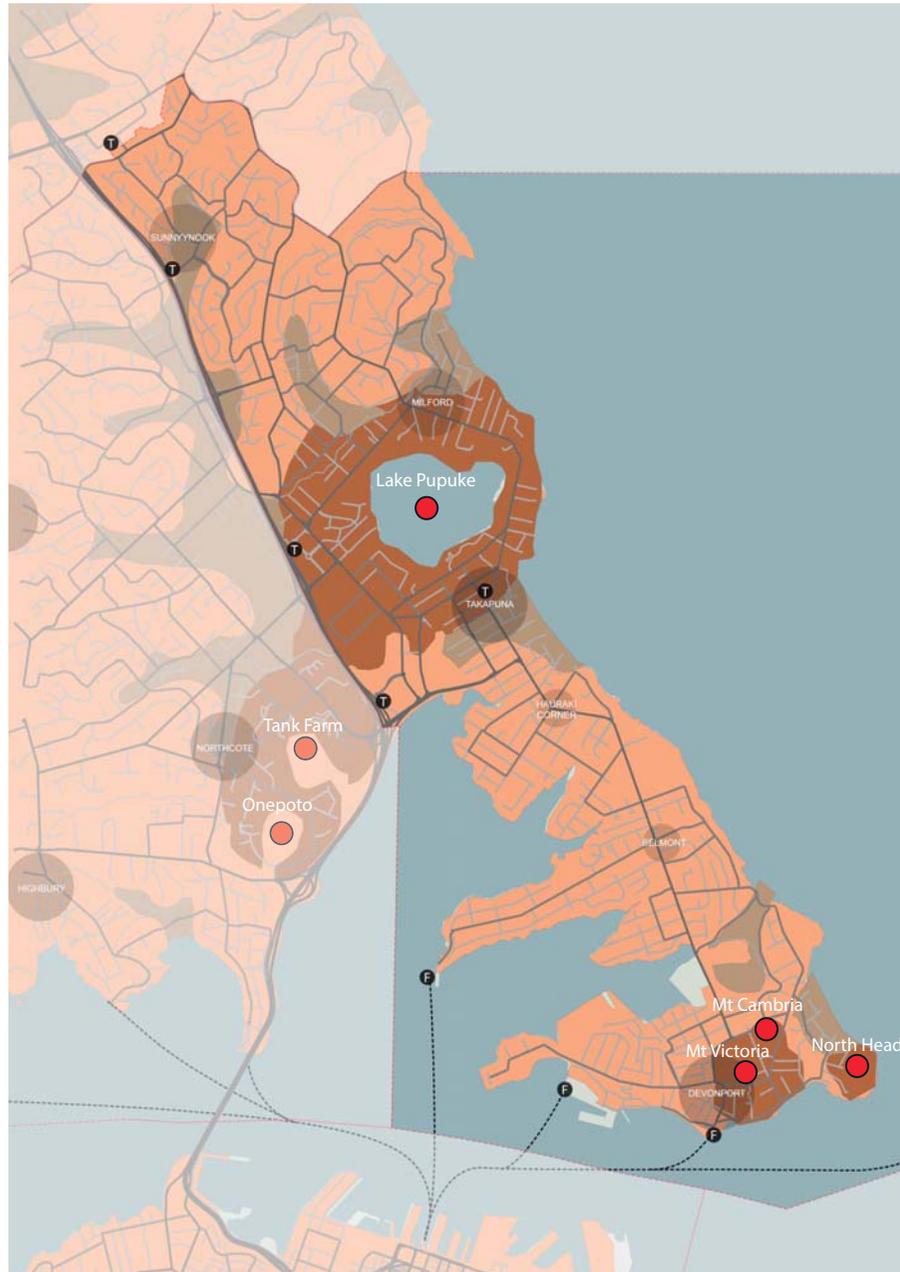
The legislation relating to SEA's derived from the Auckland 'Regional Plan' (rp), the 'Regional Policy Statement' (rps) and the 'Regional Coastal Plan' (rcp):

- Land (rps/rp)
- Marine 1 (rps/rcp)
- Marine 2 (rps/rcp)

For more information visit: www.aucklandcouncil.govt.nz/unitaryplan

LEGEND:

- | | |
|---|----------|
| Devonport-Takapuna Local Board Boundary | Land |
| Streams / rivers | Marine 1 |
| Transport centre / main bus station | Marine 2 |
| Ferry routes and terminal | |
| Parks and reserve land | |
| Road network | |



Soil types and geology

The Devonport-Takapuna Local Board area, like much of the Auckland Isthmus, has a relatively undulating landform, due to the underlying geology of the volcanic field. Lake Pupuke (Pupuke Moana), Mt Cambria (Takararo), Mt Victoria (Takarunga) and North Head (Maungauika) are the most readily visible features within the area. Takapuna Beach is also home to one of the world's best example of a 'reef fossil forest'. About 250,000 years ago when the sea level was lower and a native forest with large Kauri specimens grew at this location, the eruption of the Pupuke Volcano engulfed the forest in lava, encasing the trunk and then burning out the centre. This has created the fascinating basalt formations present at the reef. Today, all that remains of the Pupuke Volcano is a tuff ring, with Lake Pupuke having infilled the remnant crater.

The soil in Devonport-Takapuna falls into three general categories; Waitematā residual soils, Isthmus volcanic soils, and alluvial soils. The residual soils of the Waitematā Group are predominantly made up of mudstone and lithic sandstone, and while relatively fertile, are readily eroded due to the soft nature of this subgrade. Isthmus volcanic soils are predominately derived from basalt and basanite scoria, and would have originally been colonised by coastal forest species, dominated by Pōhutukawa, which colonise easily in rocky ground. The areas of alluvial soils are a mix of mud, sand and gravel, often with organic matter, and provide the most fertile areas found locally. These would have typically been colonised by kahikatea and other broadleaf species.

This map has been created using Auckland Council GIS database, with further detail regarding the geology sourced from '*Geology of the Auckland Urban Area*' (Kermode, 1992) and '*Volcanoes of Auckland - The Essential Guide*' (Hayward, 2011).

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Road network
- T Transport centre / main bus station
- F Ferry routes and terminal
- Waitematā residential soils
- Isthmus volcanic soils
- Alluvial soils



Hydrology

The Auckland area can be affected by a wide range of natural hazards including those that occur frequently such as flooding (both coastal and freshwater) and land instability, as well as those that occur less frequently such as tsunamis. This map shows 'Coastal Inundation' areas and 'Stormwater Management Areas'.

Coastal inundation areas exist where sea level rise and high/king tides may threaten low lands and the built environment. Under the Unitary Plan, there are certain requirements regarding infrastructure in a coastal inundation area relating to finished floor levels of new dwellings and modifications or extensions to existing dwellings. Any new infrastructure must not increase inundation risk and must be designed to withstand 1 per cent of the 'annual exceedance probability' (AEP) of a coastal inundation event.

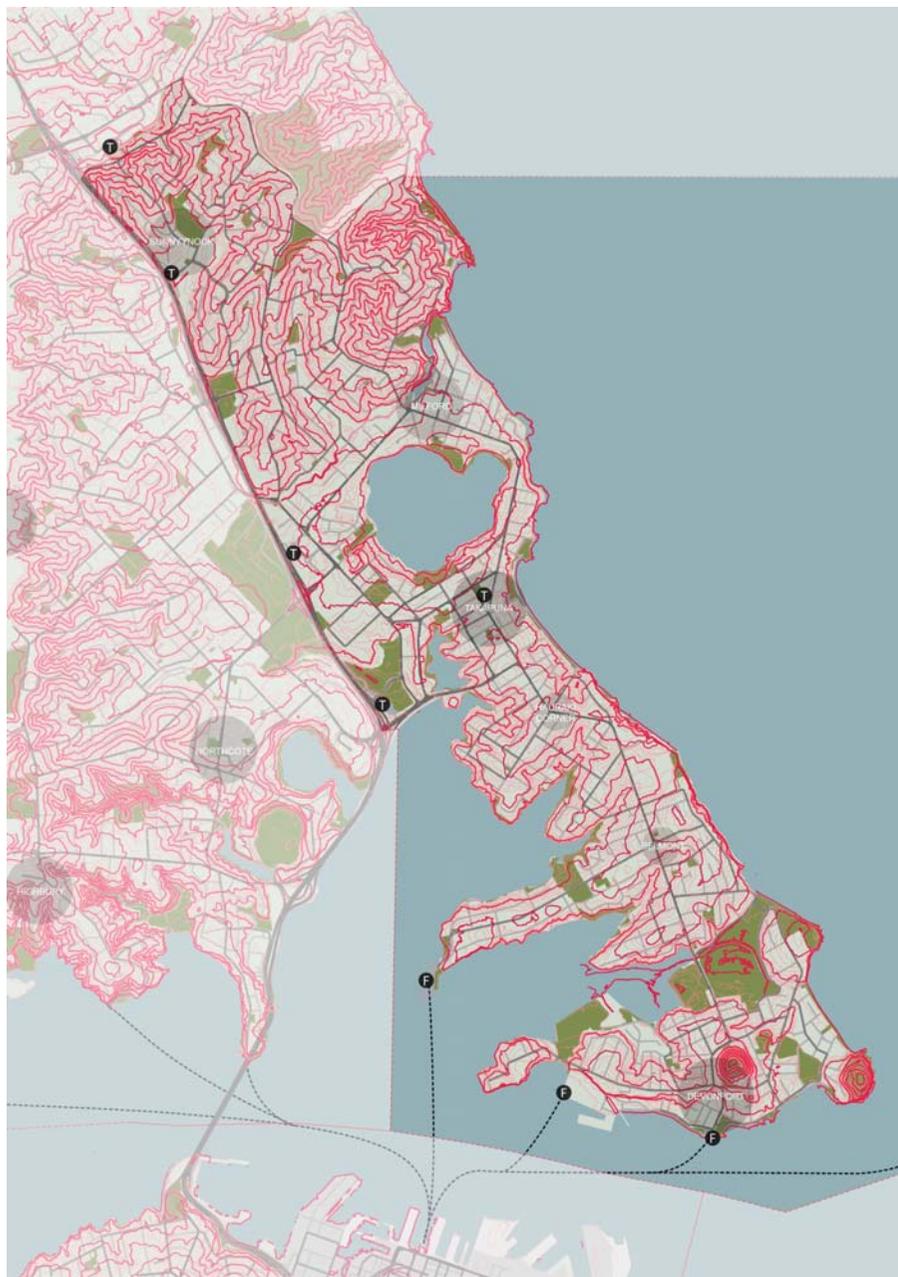
The objective of SMA's is to protect and enhance Auckland's rivers, streams and aquatic biodiversity in urban areas. Under the delivery of greenways there is opportunity to improve the stormwater quality of these SMA's via the use of treatment devices. The Unitary Plan glossary suggests the following devices to reduce stormwater runoff volume, flow and/or contaminant loads prior to discharge:

- Rain gardens
- Porous paving
- Infiltration trenches
- Sand filters
- Green roofs
- Wetlands and/or ponds
- Proprietary devices.

Within the Devonport-Takapuna local board area, Castor Bay is designated as 'Flow 2'. 'Flow 2' describes an area where discharges are typically into streams with moderate to high values and sensitivity to stormwater, but generally with higher levels of existing impervious (paved) areas within the catchment. 'Flow 1' areas, which can be seen immediately north of this area (around Centennial Park) describe catchments which discharge to sensitive or high value streams that have relatively low levels of existing impervious area.

LEGEND:

- | | |
|---|-------------------------------------|
| — Devonport-Takapuna Local Board Boundary | Coastal inundation |
| Streams / rivers | stormwater management area - Flow 1 |
| Transport centre / main bus station | stormwater management area - Flow 2 |
| Ferry routes and terminal | |
| Parks and reserve land | |
| Road network | |



Topography

The adjacent map shows the topography of the Devonport-Takapuna Local Board area, with contours running from sea level along the coastline to the highest points at the top of the cliffs along the northeast coast, and higher still to North Head and Mount Victoria in Devonport.

From a greenways perspective, this undulating topography presents a range of gradient-related challenges. The valleys of Sunnynook, Forest Hill and Castor Bay are steep, making cycling up them very difficult for less experienced cyclists, and also many walkers. The volcanic cones of Mt Victoria and North Head likewise challenge the average stroller or runner, and may not be completely accessible for cyclists. Steep, localised areas such as the volcanic cones can be seen more as destinations than part of a greenway route per se. Further investigation is required in steeper areas at a detailed stage to determine the feasibility of providing cycle access and there will be walking-only tracks where cycling is deemed to be unachievable. There are however considerably flat to moderate inclines from the coastline, for example, Cheltenham Beach or Devonport which are ideal for greenways routes, especially where there is parkland to connect to (such as the area around Woodall Park). In terms of access around the coastline, this is only possible at low-tide in cliff face locations - and this option is not available to cyclists.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Road network
- T Transport centre / main bus station
- F Ferry routes and terminal
- Contours at 2m
- Contours at 10m



Road hierarchy

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

Major 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 greenways network intersects or runs along these roads, to ensure desirable/safe routes are formed, and greenways generally avoid these major routes.

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

The road hierarchy also affects the potential for street 'greening' initiatives to support the greenway network. Methods for providing safe crossing points will also be affected by the road hierarchy - for instance, unsignalised crossings are unlikely to be permitted on arterial roads.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes and terminal
- Parks and reserve land
- Motorway
- Major, medium and arterial
- Minor roads



Public transport

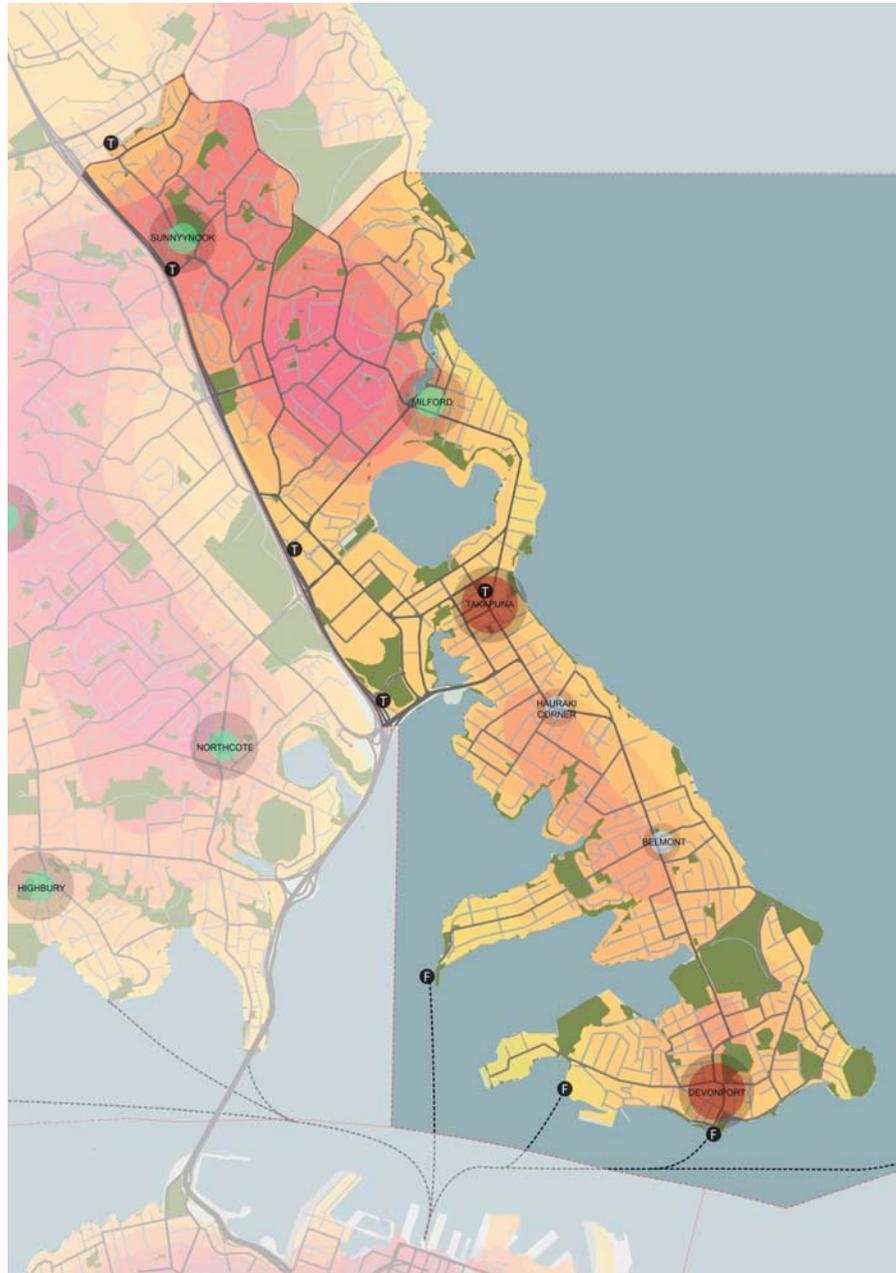
The existing public transport routes are illustrated on the adjacent map, showing that the Devonport-Takapuna Local Board is relatively well served by bus and ferry services in the south. There is, however, no rail service in Devonport-Takapuna.

Due to the lack of a rail service, as well as the comprehensive provision of dedicated bus lanes along SH1, public transport by bus on the North Shore is of greater importance and uptake than in other areas of the isthmus. The major transport interchange stations for buses in the study area are; Sunnynook, Smales Farm and Akoranga (all clustered along the SH1 busway), and the Takapuna facility which connects to these. The Constellation Drive interchange is located north of the Devonport-Takapuna Local Board area, and offers a park and ride service. Other bus routes are as shown.

In planning the greenways routes, bus routes were taken into consideration as these offer less potential for creating 'slow speed' street environments, and the presence of buses intimidates all but the most experienced cyclists. Greenways therefore avoided wherever possible those roads that feature bus routes. However, bus stops on frequent routes in high density areas, and particularly the interchange bus stations were considered as key destinations for the greenways to connect to. Bus stops of particular importance included those that service places of employment, education or regional facilities. Bus stations have potential to bring visitors into the area on 'day trips', to walk or cycle the Greenways network - particularly the more scenic coastal or riparian routes.

LEGEND:

- Devonport Takapuna Local Board Boundary
- Streams / rivers
- Transport centre / main bus station
- Ferry routes
- Parks and reserve land
- Road network
- Bus routes servicing Sunnynook
- Bus routes servicing Caster Bay
- Bus routes servicing Milford
- Bus routes servicing Belmont / Hauraki Corner
- Bus routes servicing Devonport



Population density and growth centres

This map, sourced from the Auckland Plan 2012, shows the classification of town centres in the area, along with population densities based on the 2006 Census meshblock data. Population density is important in greenways 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).

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.

This map also illustrates the network of urban centres within the Devonport-Takapuna Local Board as illustrated in the Auckland Plan 2012. In the Auckland Plan, Takapuna and Devonport have been identified as a metropolitan centres; Sunnynook and Milford as town centres; and Hauraki Corner and Belmont as local centres.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- Transport centre / main bus station
- Ferry routes
- Parks and reserve land
- Road network
- ↑ Population density (indicative only)
- Metropolitan centre
- Town centre
- Local centre



Schools and community services

This map shows schools and community facilities in the Devonport-Takapuna Local Board area - including places of worship, boat ramps, recreation/recreational facilities and shopping centres.

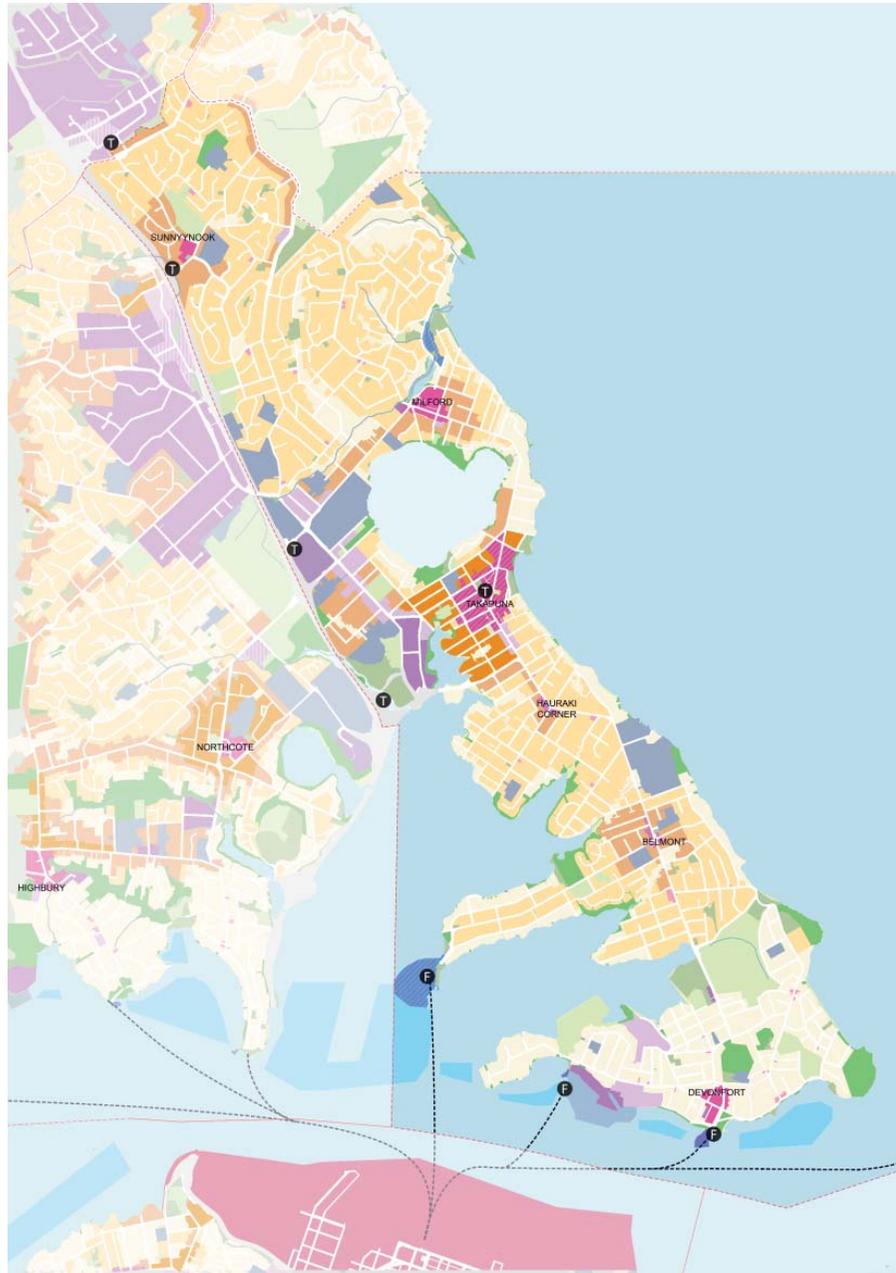
Schools and community facilities are critical points in the Greenways plan, providing both an opportunity to create connections (via easements or similar agreements), while also providing destinations in their own right. These facilities are visited on a frequent basis, and providing safer, higher amenity and more accessible connections has great potential to reduce our 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 and leaseholder, and needs to be carefully considered to ensure the safety of students/facility users, and minimise any risk of property damage. Some access may need to be limited to certain times of day for these reasons.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes
- Parks and reserve land
- Road network
- Schools
- + Hospitals
- Place of worship
- Boat ramps
- Recreational facility
- Recreation
- Shopping centre



Zoning

This map shows proposed Auckland Unitary Plan Zoning. Devonport-Takapuna is primarily zoned residential - generally a mix of single and mixed residential types. Some clusters of terrace/apartment residential exist around the metropolitan centre of Takapuna. The residential zoning is punctuated by pockets of special purpose or open space zoning, reflecting parks, schools, tertiary institutions and community facilities. These offer great opportunities for greenways connections.

A summary of the key zones found in the Devonport-Takapuna area includes:

- **Special purpose:** schools/tertiary institutions or other entity i.e North Shore Hospital
- **Residential:** both single and mixed suburban and urban housing, with a concentration of terraced housing and apartments in Takapuna
- **Commercial:** mixed use, business park and light industry, typically centred around Devonport, Takapuna and Milford
- **Public open space:** ranging from conservation on the volcanic cones to sport and active recreation on the flat parkland
- **Marina and mooring:** mooring is shown in the coastal waters adjacent to Devonport, and a major Marina is located at Bayswater.
- **Defence:** Devonport Navy base and associated housing

Figure 24. Auckland Unitary Plan Legend





Land ownership

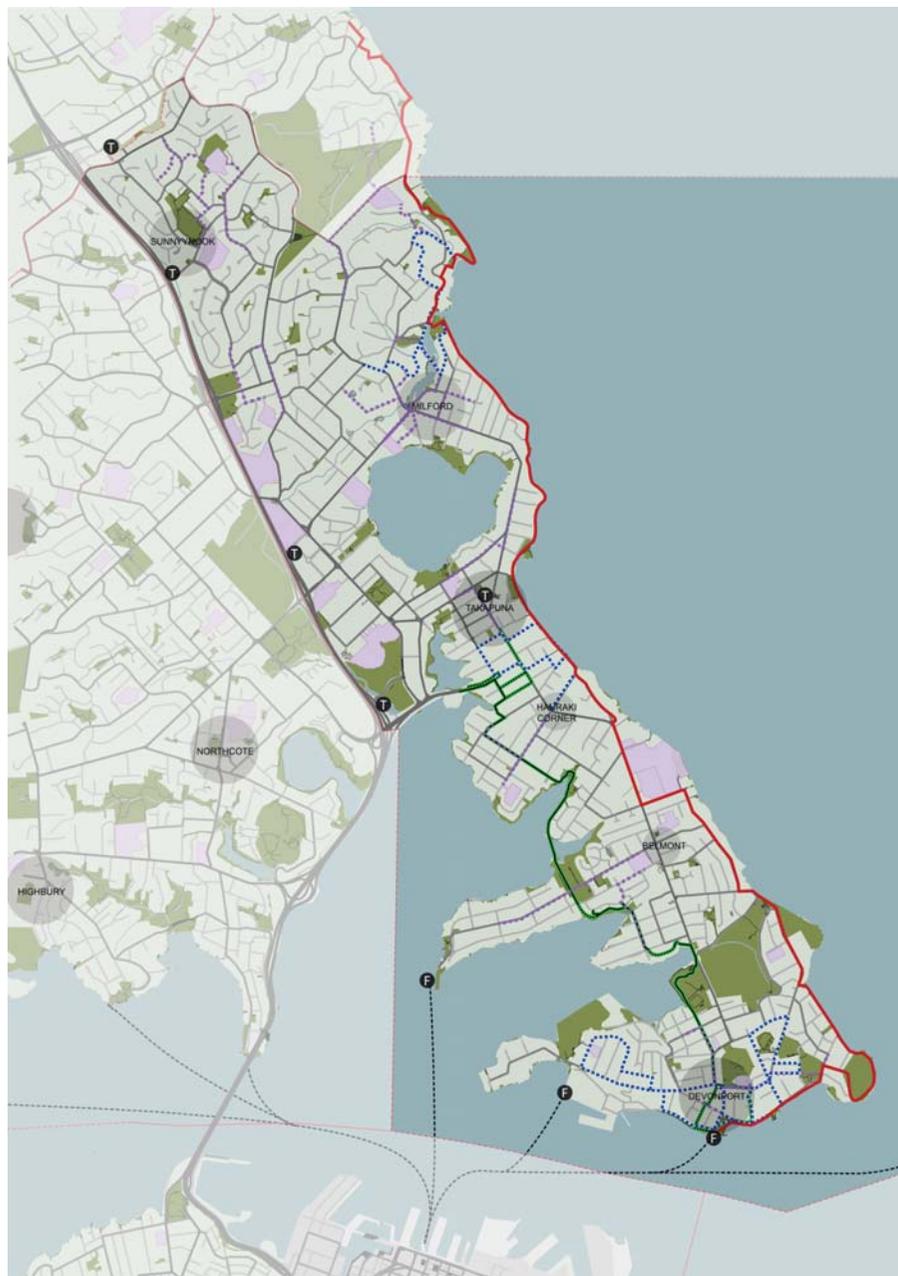
This map provides details of land within the Devonport-Takapuna Local Board area that is in some form in public ownership. This information is of key importance, as connections on publicly-owned land are more readily achieved than those on privately-owned property.

Different public ownership types exist within the study area:

- **Auckland Council Land, zoned 'Open Space' or other:** No access arrangements required to improve connections, although resource consent may be required, dependent on the proposal.
- **Council Controlled Organisations owned properties:** This land may be available for Greenway connections, dependent on the current or proposed usage of the site. i.e. Watercare.
- **Ministry of Education land:** 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):** HNZ land exists 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.
- **New Zealand Transport Authority land (NZTA) - not mapped:** NZTA holds land adjacent to the motorways, such as SH1 on the border of Devonport-Takapuna Local Board area

LEGEND:

- Devonport Takapuna Local Board boundary
- Streams / rivers
- Ⓜ Transport centre / main bus station
- Ⓧ Ferry routes
- Road network
- █ Auckland Council (inc. parks and reserves)
- █ Housing New Zealand Land (HNZ)
- █ Ministry of Education land
- █ Her Majesty the Queen (other designation)
- █ Ports of Auckland (in Waitemata Local Board)
- █ Watercare (CCO)
- █ Vector



Walking routes

This map shows existing walking routes within the Devonport-Takapuna Local Board area. The intent of Greenways plans in this area will be to overlap with - or connect to - these established walking routes wherever possible.

Walking School Bus (WSB) routes have been developed by Auckland Transport, to provide a safe and healthy environment for children to walk to and from school along quiet streets, under the supervision of an adult.

The Te Araroa (New Zealand Trail) traverses the east coast and heads inland where coastline access is available at low tide only. Greenway attributes can improve the Te Araroa connection on an aesthetic and ecological level - for example via planted swales and directional signage. The greenways routes can feed neighbourhoods on the trail.

'The Green Route' is an Auckland Transport initiative, offering 6km of 'scenic alternative' walking and cycling between Devonport and Takapuna, along the west coast. It will form part of the Greenways network as it connects to as many open spaces as possible in a network of paths, boardwalks and bridges, heritage areas and residential streets.

The 'Literary Walks' are a series of heritage walks users can take that features the residences or areas of inspiration for some of New Zealand's most enduring writers. Short stories, plays, poems and novels that were written on (and at least to some extent inspired by) the North Shore. Literary Walk locations include; the Castor Bay Walk, Takapuna Walk, and Devonport Walk.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes and terminal
- Parks and reserve land
- Road network
- Existing pathways / imperious surfaces
- Schools
- Walking School Bus routes (WSB)
- Te Araroa (New Zealand's trail)
- The Green Route
- 'Literary Walks' (North Shore City Council)



Cycle routes

This map combines the draft Auckland Cycle Network (ACN). The draft 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 draft ACN (shown on the adjoining map) is broken into three types of cycleways:

- Metro routes
- Connector routes
- Feeder routes

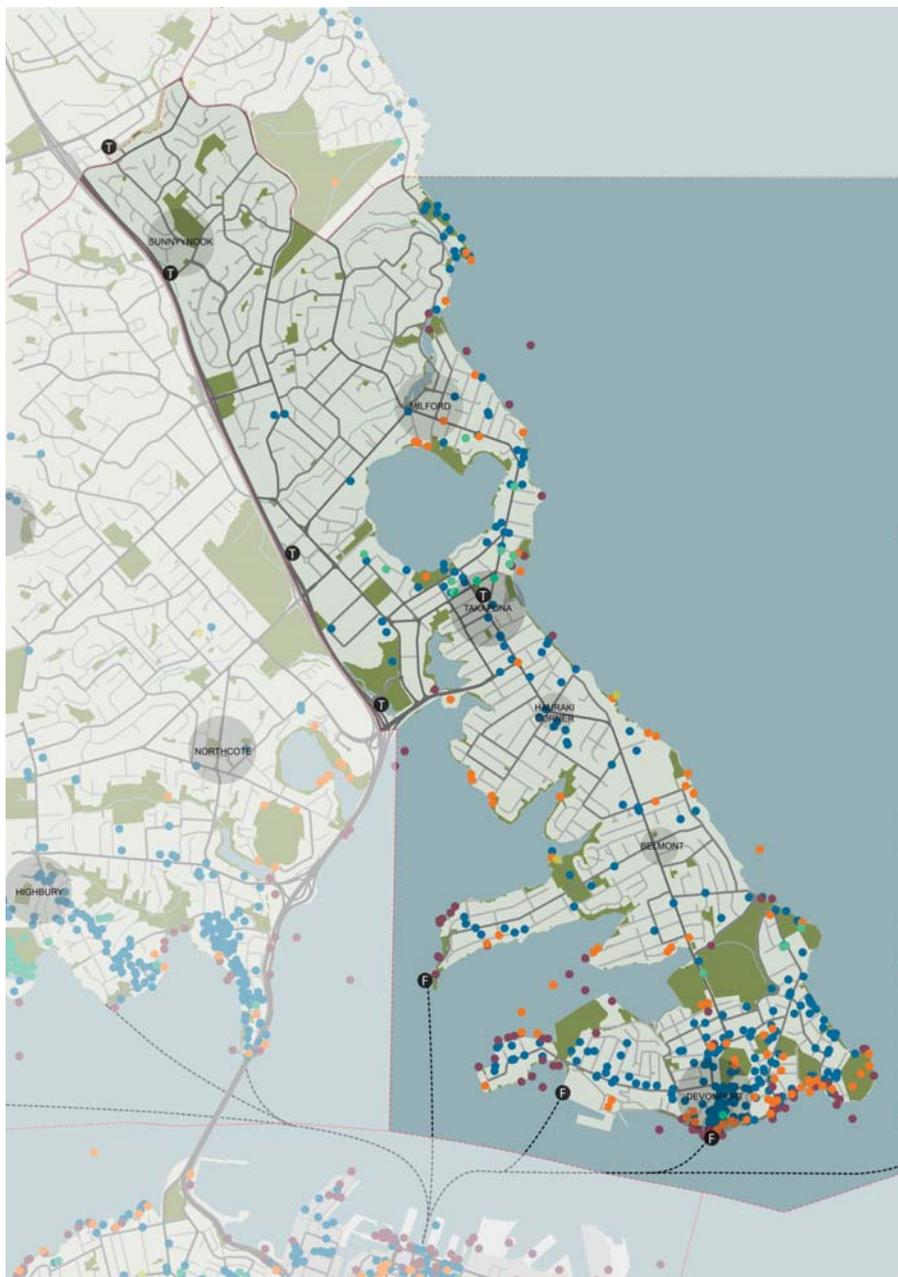
'Metro' routes offer the highest level of service to the cyclist, in that they are dedicated connections, continuous, direct and traffic free. They would exist along motorway or railway corridors. 'Connector' routes follow arterial routes, and are designed to connect people quickly and directly to key destinations and public transport nodes. They are 'on road' connections. A number of these exist already, many in shared bus lanes, such as Lake Road.

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

Within internal officer workshops for the development of the greenways, Auckland Transport has expressed an interest in adjusting their current 'feeder' routes and adding further 'feeder' routes to align with those routes chosen in the greenways plans.

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes
- Parks and reserve land
- Road network
- Feeder routes
- Connector routes
- Metro routes



Cultural Heritage Inventory

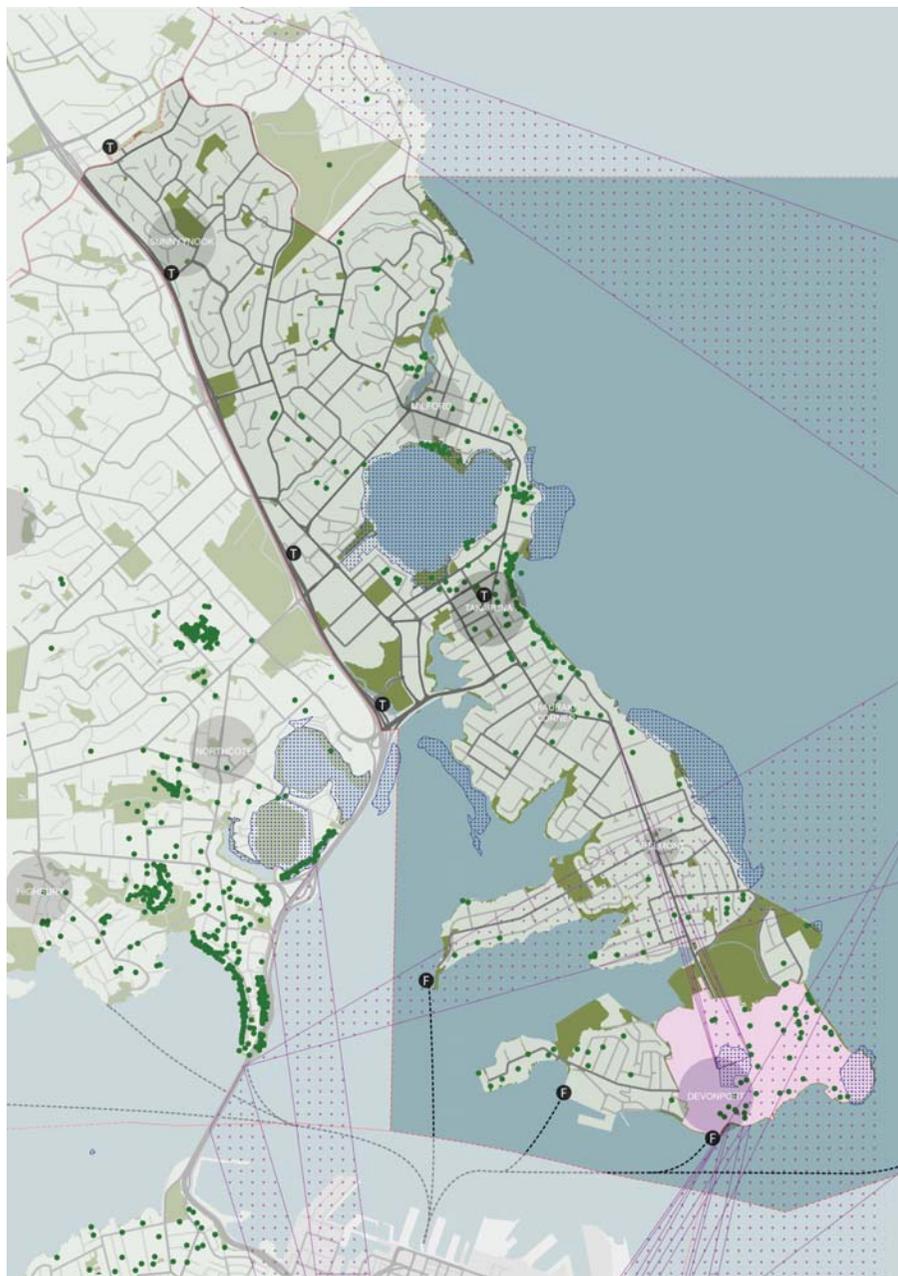
This map shows sites that have been identified for their cultural heritage value. The Auckland Council GIS database has a Cultural Heritage Inventory (CHI) layer, that was created by the former Auckland Regional Council. The CHI was established to promote sustainable management of cultural heritage by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

CHI sites are classified as follows:

- Archaeological Sites recorded under the New Zealand Archaeological Site Recording Scheme (e.g. midden, pa sites)
- Historic Botanical Sites (e.g. specimen trees in parks)
- Built Heritage Sites (typically early European buildings)
- Maritime Sites (e.g. shipwrecks, wharfs, boatsheds)
- Reported Historic Sites (e.g. known locations of battles)

LEGEND:

- Devonport-Takapuna Local Board Boundary
- Streams / rivers
- T Transport centre / main bus station
- F Ferry routes and terminal
- Parks and reserve land
- Road network
- Archaeological site
- Historical botanical site
- Historical structure
- Maritime site
- Reported historic site



Natural Heritage

This map was created using GIS data from the Unitary Plan's 'Natural Heritage' overlay.

'Notable trees' are individual trees and groups of trees that have met the 'Notable Tree' criteria and are considered to be among the most significant trees in Auckland. These trees have been specifically identified to ensure the benefits they provide are retained for future generations. Vegetation cover in sensitive environments and in areas of contiguous cover also makes a significant contribution to indigenous biological diversity and ecological services including hazard mitigation. Large areas of contiguous vegetation cover are protected in the rural areas in the Unitary Plan. In coastal and riparian margins, both trees and vegetation are protected from damage and clearance.

'Outstanding Natural Features' (ONF's) are geological and landform features of regional or greater significance as identified in the Unitary Plan. ONF's are vulnerable to damage from new development, and the Unitary Plan promotes the protection of their physical and visual integrity, and the integrated management of their multiple values. Mount Victoria is an ONF in a highly sensitive area, there is a clear vista from Hauraki Corner down Lake Road.

The 'Volcanic Viewshafts' and 'Height Sensitive Areas' overlays are to protect significant views of Auckland's volcanic cones through the use of viewshafts and height sensitive areas, for example, viewshafts from the Auckland CBD and the Harbour Bridge over Devonport to Rangitoto. The 'height sensitive area' in Devonport provides a visual buffer around Mount Victoria and North Head volcanic cones and ensures that development is of a scale or location that does not dominate the local landscape or reduce the visual significance or amenity values of the volcanic feature.

The legislation relating to 'Natural Heritage' has derived from legacy documents and plans such as the 'North Shore City Council District Plan' (dp), Auckland 'Regional Plan' (rp), the 'Regional Policy Statement' (rps) and the 'Regional Coastal Plan' (rcp).

LEGEND:

- Devonport Takapuna Local Board Boundary
- Streams / rivers
- T** Transport centre / main bus station
- F** Ferry routes
- Parks and reserve land
- Road network
- Notable Trees
- Outstanding Natural Features (rps/rcp/dp)
- Volcanic Viewshafts (rps)
- Height Sensitive Areas (rsp/dp)



Figure 25. View of Hurstmere Road and Lake Road, connecting to Takapuna town centre. Auckland Council Stock Photo, 2012.

A2. Case studies

Devonport-Takapuna Greenways

A2. Case studies

Lloyds Crossing, Portland (USA)

Lloyds Crossing in Portland is a brownfields 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 livable, 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.
- Give communities the means to meet major environmental and economic challenges while remaining responsive to local conditions and opportunities.

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FIGURE LEGEND:

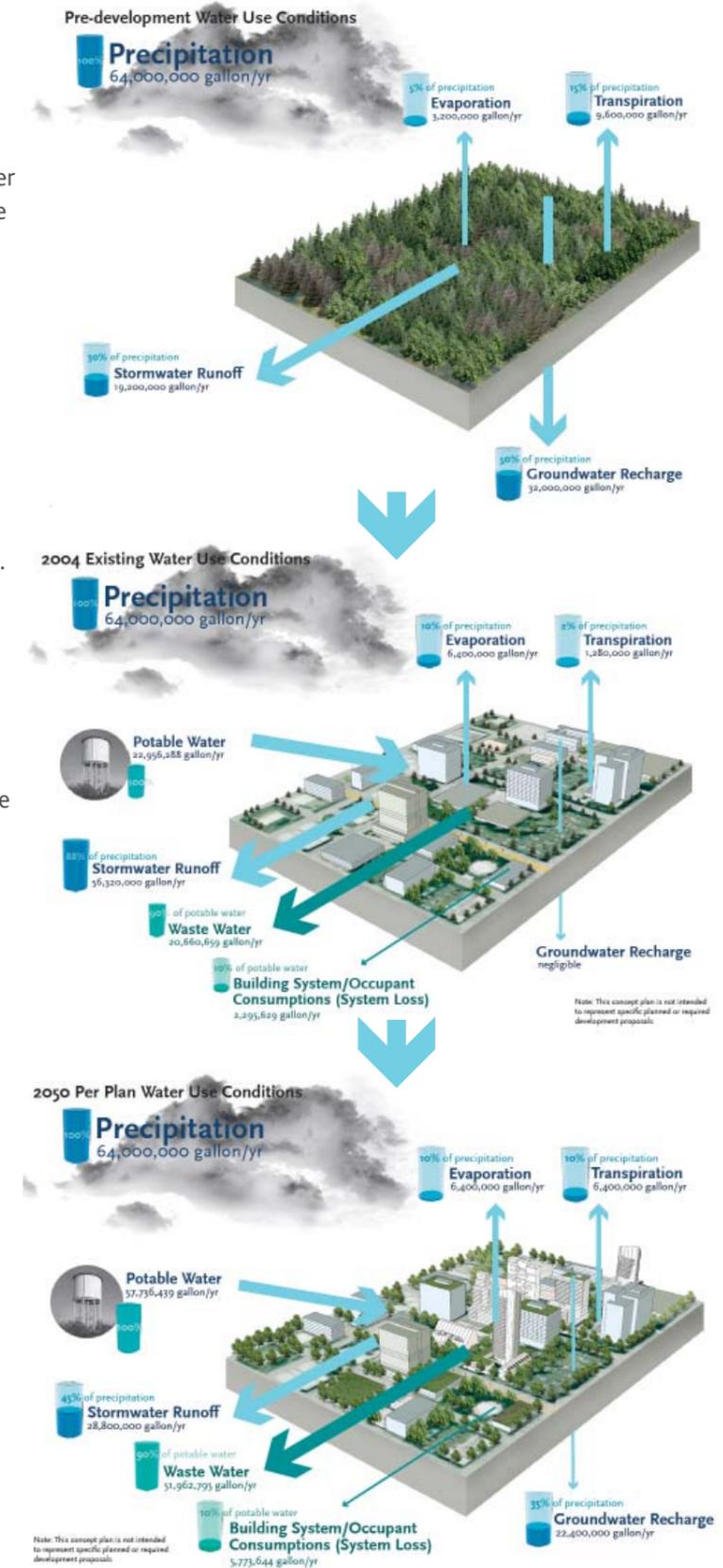
Figure 26. Habitat corridor.

Figure 27. Pre-development water conditions.

Figure 28. 2004 existing water use conditions.

Figure 29. 2050 Per plan water use conditions

The above images are sourced from: Portland Development Commission, Lloyd Crossing Project.



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."

Greenstreets 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
- Design facilities that aesthetically enhance the neighbourhood livability and property values

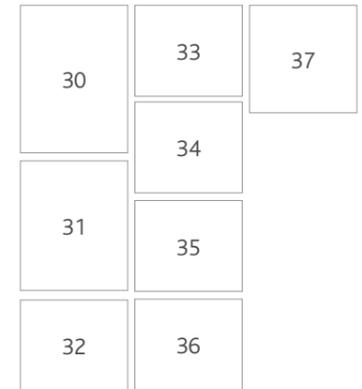


FIGURE LEGEND:

- Figure 30. Stormwater runoff treatment, Portland.
- Figure 31. Permeable paving setout, Portland.
- Figure 32. 'Green Streets' Portland.
- Figure 33. Stormwater runoff treatment, Portland.
- Figure 34. Planted verges, swales, Portland.
- Figure 35. Swales and footbridges, Portland.
- Figure 36. 'Green Streets' Portland.
- Figure 37. Greenway junction.

The above images are sourced from: Environmental Services, City of Portland. Green Streets in Portland. Retrieved deom URL: <http://www.portlandonline.com/bes/index.cfm?a=209685&c=45379>

Jellicoe Street, Auckland (NZ)

Jellicoe street features over 600m² of purpose built rain gardens. Rain from over 9000m² of the surrounding roads and surfaces flows into the rain gardens.

- 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
- 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.

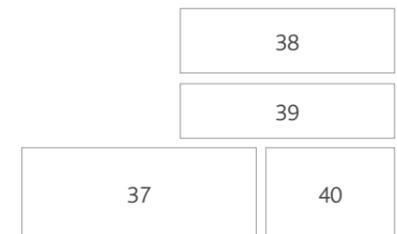


FIGURE LEGEND:

Figure 38. Waterfront Auckland. (Artists Impression) Auckland.

Figure 39. Waterfront Auckland. (Artists Impression) Auckland.

Figure 40. Waterfront Auckland. (Artists Impression) Auckland.

Figure 41. Tram in shared space streetscape. (Artists Impression) Auckland.

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 Maungakiekie-Tamaki) 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 including:

- a network of cycleways
- nature trails
- 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
- 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.



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FIGURE LEGEND:

Figure 42. Green Park, Reading.

Figure 43. Green Park, Reading.

Retrieved from URL:

http://www.greenpark.co.uk/pdf/pdf/GP_OVERVIEW_BROCHURE.pdf