

ROKOKAURI ARTERIALS

URBAN AND LANDSCAPE DESIGN FRAMEWORK

REVISION 3

JUNE 2023



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Action	Name	Signed	Date
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Approved by	Craig Sharman		12.07.2023

on behalf of Beca Ltd.

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1.

INTRODUCTION

1.1 INTRODUCTION

PROJECT DESCRIPTION

The Rotokauri development area forms a key part of the future urban growth strategy for Hamilton and will provide for an eventual population of between 16,000 and 20,000 people. Of the 788 hectares, 502ha will be residential land use. 280ha comprise industrial and employment zones and 6ha are zoned commercial centre to act as the principal community focal point.

The Operative Hamilton District Plan 2017 (OHDP) includes a Structure Plan that outlines the eventual pattern of development for Rotokauri and the vision for the area that seeks to ‘serve the sustainable expansion of the city, through a coherent, integrated and people-focused mixed-use development based on best practice urban design principles.’

The OHDP includes key structural guidance on the development of transportation, reserves, and open space. In addition, Hamilton City Council (HCC) have provided advice by way of a Network Operation Framework (NOF) which sets out a vision for level of service within the Structure Plan area for public transport, walking, cycling and freight. Other document that provide guidance on the layout of the structure plan area is the Mangaheka Integrated Catchment Management Plan (ICMP) and the Rotokauri Integrated Catchment Management Plan (ICMP) which lays out the approach to stormwater treatment and approximate locations of stormwater treatment devices.

The Rotokauri arterials project vision, objectives and urban design principles found in Part 3 of this document – objectives and principles, are largely driven by the Structure Plan and Access Hamilton. The project also integrates with surrounding projects including adjacent greenway, Rotokauri North Sports Park and the existing residential masterplans within the Structure Plan area. The project consists of existing roads which require designation and upgrades to new roads, both designed as part of this project.

The key zones of the project are:

- 1 - Rotokauri Minor Arterial North (3100.4, 3100.5)
- 2- Minor Arterial, Te Kowhai West Extension (3101.3)
- 3- Collector road (3121.1)
- 4- Collector road, Chalmers road extension (3122.1)
- 5- Minor Arterial, Te Kowhai Road West extension (3101.3)
- 6- Collector road, Arthur Porter Drive (3102.2)
- 7- Major Arterial, Te Kowhai Road East Upgrade (3101.1, 3101.2)
- 8- Rotokauri Minor Arterial North, Commercial Centre (3100.2)

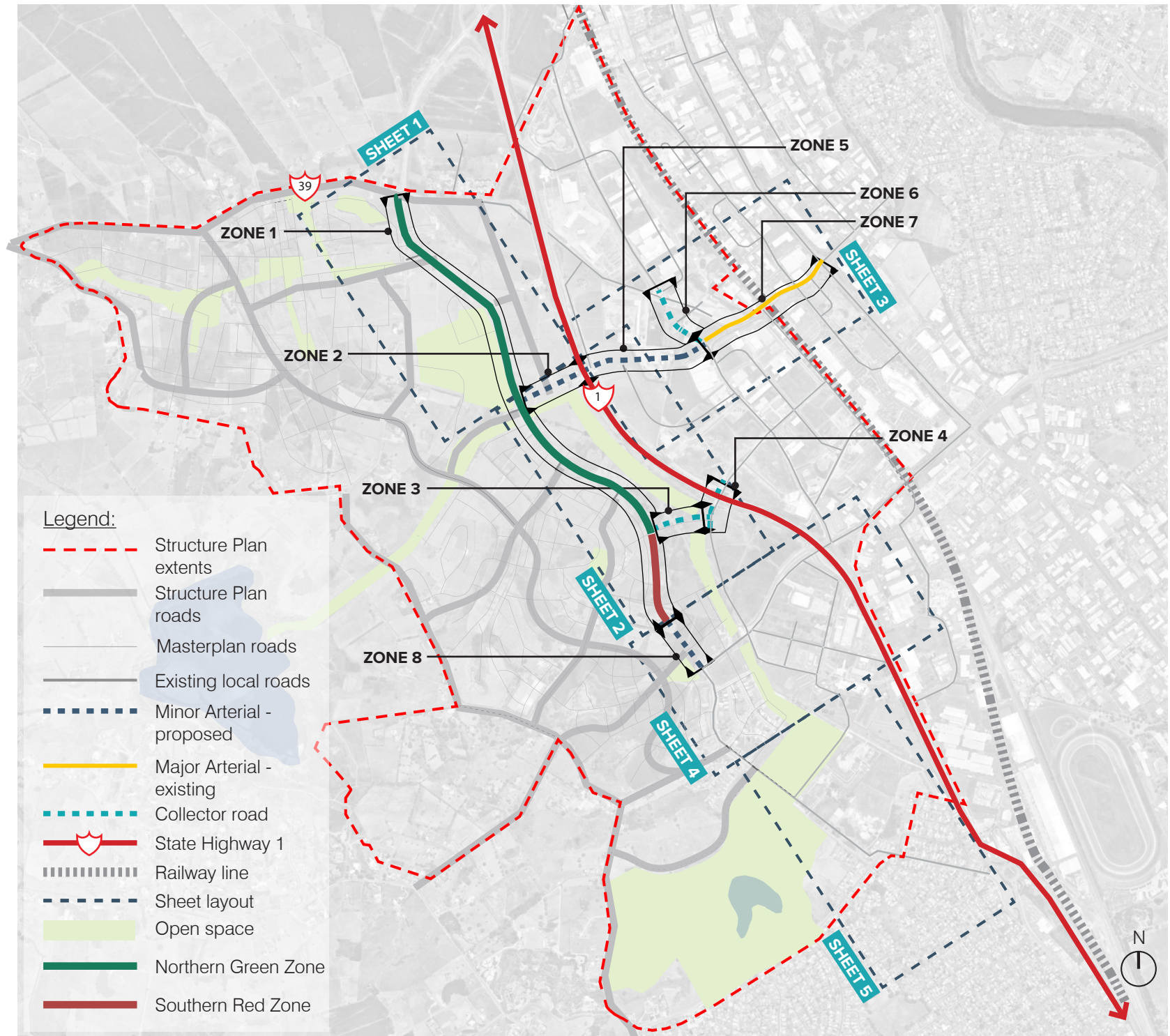


Figure 1. Project Extents

1.2 PURPOSE / APPROACH

WHAT IS THE FRAMEWORK?

The overall purpose in the design framework is to provide measurable guidance for outcomes based decisions and a design structure to inform future design phases.

The document explores the intent of the Rotokauri Structure Plan alongside the proposed developer masterplans (refer to Appendix 1), the greenway project documentation, the ICMP, relevant Hamilton City Council legislation and guidelines. This along with the analysis of the existing environment help to clarify opportunities for good landscape and urban design outcomes. Background information provides rigour which informs the urban design principles and the key moves and recommendations within the landscape zone plans and cross sections.

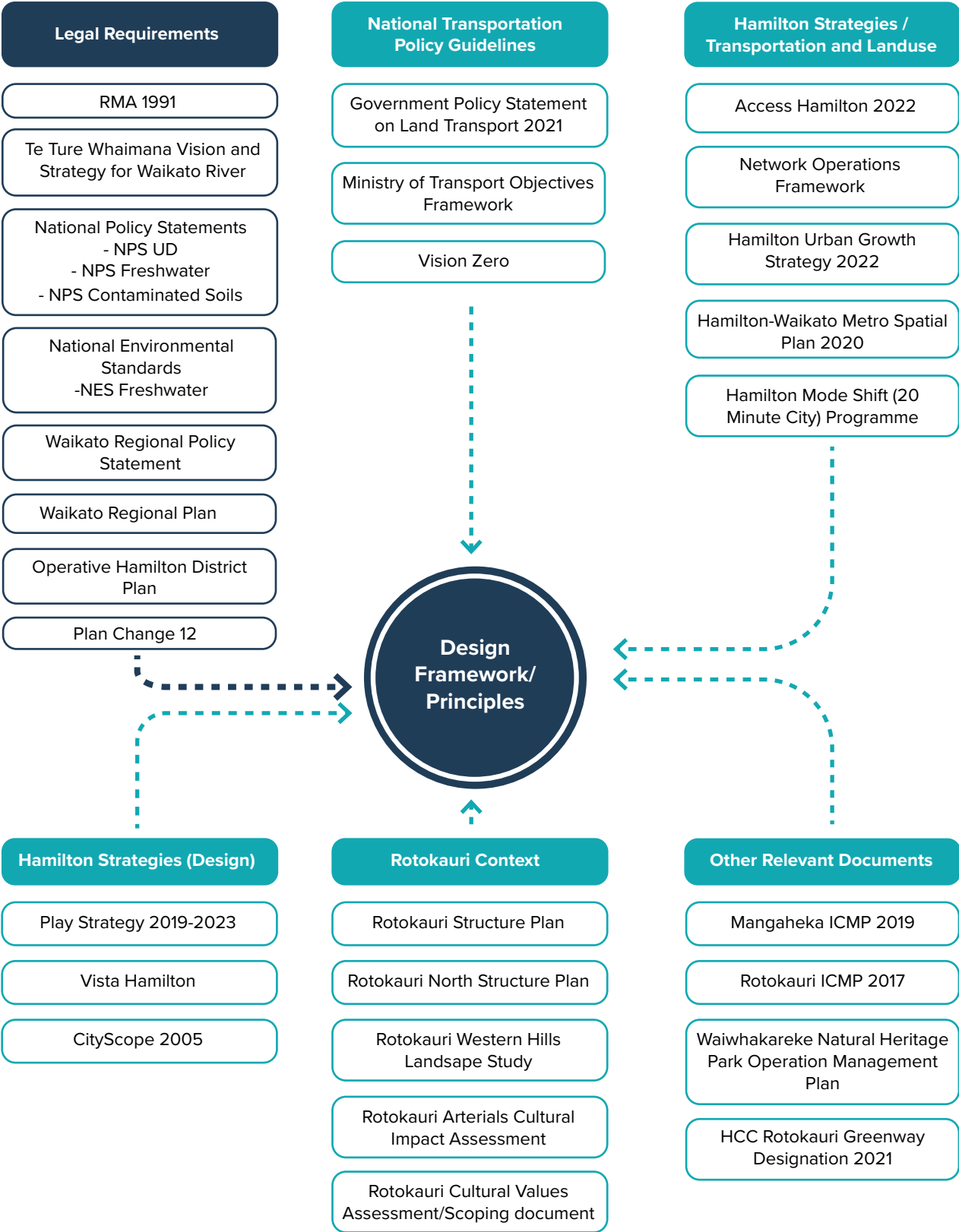
The Rotokauri Arterials project is centered around creating a transport network that promotes modal uplift, mode shift and transport options and enabling good stormwater and ecological outcomes. The ULDF provides a framework to support these outcomes. These can be used as a tool in future design phases to guide decision making and test thinking by ranking an outcome against the principles. A blank form for this has been included in Appendix 5.3. In addition Appendix 5.2 includes a series of design measures that have been developed to assist in design decision making to achieve the outcomes sought by the principles.

The zone plans provide a layout structure to inform future design phases including locations of core elements and key design moves. For key design moves which are outside the proposed designation boundary the zone plans provide recommendations. The intent is that Council adopts the recommendations as part of future projects to better service the Rotokauri community. There is some flexibility built into the design to allow for future detailed review of landuse and resulting corridor design at specific locations including carparking, bus stops raingarden design, above ground services and amenity. The intent is for possible excess land to be sold back to developers or used to provide community focal points such as nature play areas or pocket parks. The key landuse transport interfaces and key moves are looked at in more detail through interface treatment typologies which provide a design vision that can be applied including suggestions for materials, planting, furniture and edge treatments.



1.3 STRATEGIC POLICY CONTEXT

GUIDING DOCUMENTS



OPERATIVE HAMILTON DISTRICT PLAN CONTEXT

The catchment currently supports mixed rural land use and lifestyle block activities which have recently begun to give way to urban growth and development in accordance with the provisions of the HCC District Plan.

The Rotokauri Structure Plan vision is:
“The sustainable expansion of the City into Rotokauri, through a coherent, integrated and people focused mixed use development based on best practice urban design principles.”

The guiding principles for the Structure Plan are:

- Meeting local need
- Community facilities
- Employment
- Landscape and urban form
- Connectivity
- Staged; Infrastructure provision

Under the Rotokauri Structure Plan, medium density residential will be the predominant landuse with the network also servicing employment and light commercial areas.

HCC LANDSCAPE AND URBAN DESIGN OBJECTIVES AND POLICY

The OHDP is a ‘design led’ plan which is ‘outcome’ focused. The consideration of landscape and urban design throughout the District Plan is required to ensure that design principles are applied consistently throughout all zones.

Urban Design: The purpose of Urban Design policies are fundamental in delivering the HCC’s Vision for a smart, liveable city which is attractive, well-designed and compact with a strong sense of place. Urban design focuses on public frontages and spaces and addresses elements such as streetscape, walkability, sustainable design, mixed-use development, ‘active edges’ of building frontages, and people’s safety and accessibility. The design principles identified within the plan also reflect New Zealand’s national Urban Design Protocol of which Hamilton City has been a signatory since 2006. The City Design Guide VISTA further outlines Hamilton’s expectations for better designed environments – describing how a well-designed place should look, feel and function.

Objectives, policies, rules and assessment matters within the District Plan, along with other methods adopted by HCC, seek to facilitate and encourage subdivision and development design in a manner that will continually enhance the quality of the city’s urban environments.

Landscape: The purpose of landscape policies within the District Plan are ‘to provide a range of aesthetic, functional and ecological opportunities for environmental enhancement’ and ‘to reduce visual impacts and provide visual unity’. The standards also recognise that landscape can contribute towards improved ecology.

VISTA - HAMILTON CITY DESIGN GUIDE

The design guide outlines Hamilton’s expectations for better designed environments. The document provides guidance to achieve better design quality, sense of place, enhanced access, quality public space, quality lifestyles and sustainable environments.

ACCESS HAMILTON 2022

The strategy outlines how Hamilton’s key transport partners will collaborate to achieve a shared vision. This vision is ‘ Our transport network enables everyone to connect to people and places in safe, accessible ad smart ways’. This will incorporate:

- A low-emission transport network that is resilient against the effects of climate change
- Balancing and coordinating different forms of transport
- Safe, sustainable and multi-modal travel options
- Amenity facilities for users
- Improving transport equality and choice for users.
- Enabling a livable city
- Celebrating and protecting the culture and heritage of Hamilton Kirikiriroa.

HAMILTON MODE SHIFT PROGRAMME - 20 MINUTE CITY

The ‘20 Minute City’ is a project that is part of Hamilton City’s mode shift programme. The aim is to create a city where everyone has access to local employment, education, public spaces and destinations within a 20-minute walk from their home. To achieve this, the right infrastructure is required to enable shorter journeys and so that people do not have to rely on private vehicles. Key parts of delivery of the concept include safe pedestrian access, high connectivity across corridors and safe cycle lanes.

CITYSCOPE

CityScope is a urban design strategy that aims to address the urban development aspects of Hamilton city’s future.

The strategy provides guidance in design within Hamilton’s urban environment to make sure it is cohesive and high in quality, while diverse and exciting.

Potential benefits as a result of this guiding document include greater social equity, a more vibrant local economy, and reduced vehicle emissions.

PLAY STRATEGY 2019-23

The strategy outlines future outcomes that relate to the different spaces within Hamilton for organised spot, play, recreation and spontaneous play to encourage physical activity for all. The Strategy works towards to vision to Hamilton City Council’s vision ‘Hamilton is a great place for everyone to play.

2.

CONTEXT ANALYSIS

2.1 CONTEXT ANALYSIS

REGIONAL AND LOCAL CONTEXT

Hamilton is one of New Zealand’s fastest growing cities and the Rotokauri area is one of several growth cells set to respond to the demand for additional housing and jobs. Rotokauri Structure Plan area is located in the north-western area of Hamilton City and the upper headwaters of the Ohote Stream catchment.

Section 3.6 of the District Plan describes the development land in the following terms:

- The existing ridgelines and rolling hill country of Rotokauri contribute significantly to local character and identity.
- The flat land to the east is currently crossed with numerous agricultural drains and the extent of these indicates a high water table throughout the lower-lying areas that will need careful and comprehensive management.
- The proposed greenway while not part of the scope of this project, will provide several functions for the proposed community including active recreation activities like running, nature play, cycling and could feature exercise stations for circuit training.
- The site topography is generally very flat, punctuated with peripheral ridgeline and gully areas that further characterise the catchment. The Waiwhakareke Natural Heritage Park is located in the upper headwaters of the southern area of the catchment, so-named after Waiwhakareke which drains from the catchment via a highly modified stream known as the ‘Rotokauri Drain’. The Rotokauri Drain forms the single main outlet to this part of the catchment, passing beneath Exelby Road (the HCC jurisdictional boundary) prior to entering Lake Rotokauri. Beyond this point, the Ohote Stream forms the outlet to the lake and drains to the Waipa River, which in turn drains to the Waikato River where they meet at Ngaruawahia. The northern area of the catchment drains directly to the Ohote Stream.
- The catchment currently supports mixed rural land use and lifestyle block activities which have recently begun to give way to urban growth and development in accordance with the provisions of the HCC District Plan (District Plan).

HAMILTON STATISTICS

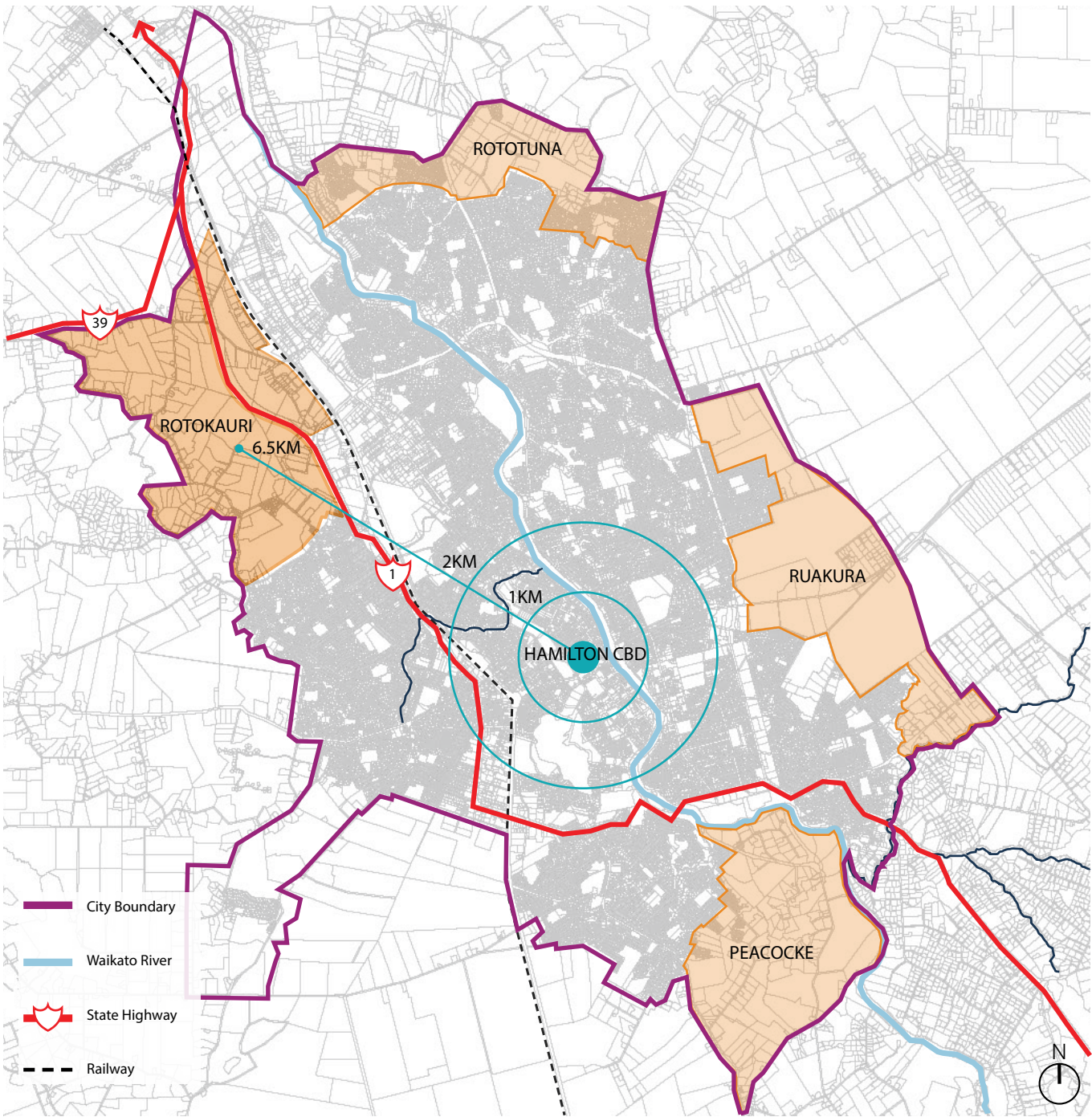
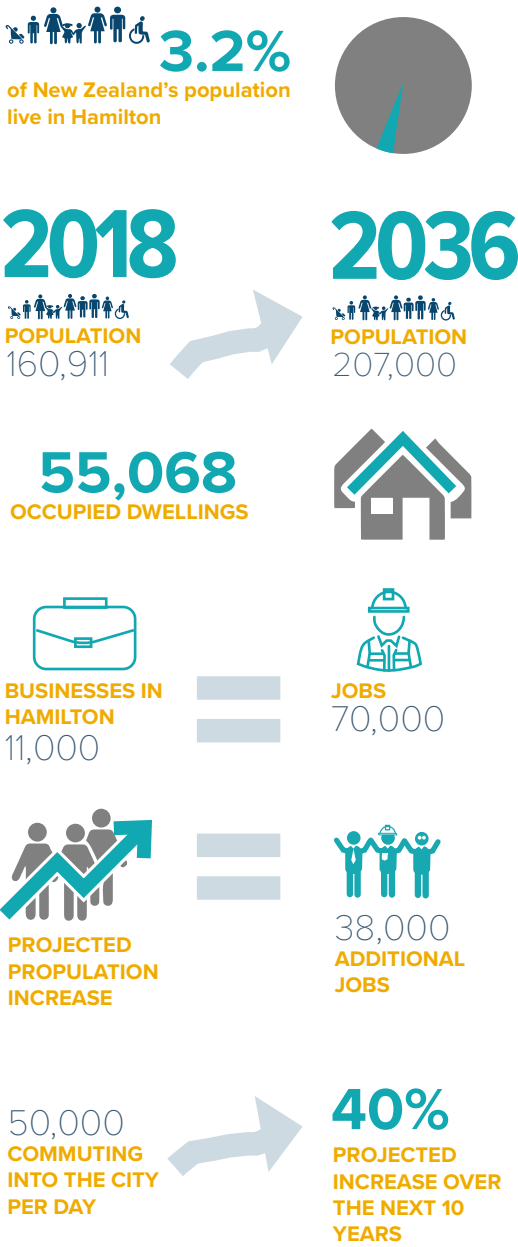


Figure 2. Regional and Local Context Analysis Map

SITE CONTEXT

- Rotokauri is a semi-rural suburb in Hamilton.
- The main State Highway through Hamilton straddles Rotokauri and breaks the land between industrial in the east to greenfield, proposed residential in the west.
- To meet the ongoing needs of this growth cell, the structure plan identified approximately 485ha to the west for residential development. This will focus higher densities to the centre of the suburban areas and retain unique ridgeline character by only allowing lower density residential developments.
- Additional industrial space is proposed in the plan that indicates approximately 270ha of new development space
- Rotokauri will have a new town centre on Te Wetini Drive that will become a hub for retail activity.

What makes Rotokauri Unique?

- Location in proximity to Lake Rotokauri, Waiwhakereke Natural Heritage Park and Hamilton Zoo.
- Potential for residential development. Creating new spaces and places for people to reside in Rotokauri.
- Development of community spaces and increased amenity value.
- Proximity to core infrastructure including the state highway trail networks.



Existing commercial area - Arthur Porter Drive



Existing watercourse with riparian planting as part of Rotokauri Rise residential development



Mooney Park and Playground. A recreation space and forest remnant



Chalmers Road underpass of Waikato Expressway



Cycleway and amenity/rest area alongside expressway



New roundabout with pedestrian island crossings and amenity planting on Rotokauri Road



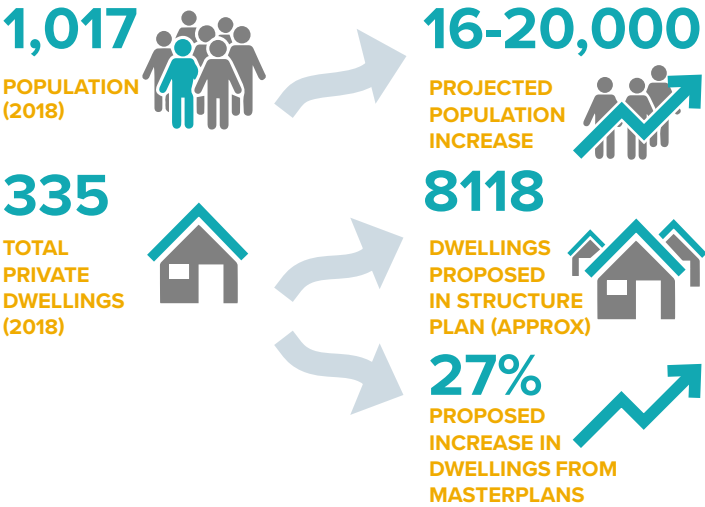
Existing rural land for future development



Rotokauri Road residential streetscape. Wide berms and road corridor with bus facilities



Taiatea Drive associated with Rotokauri Rise residential development



CULTURAL CONTEXT

SOURCED: ROTOKAURI GREENWAY CULTURAL IMPACT ASSESSMENT 2019
TECHNICAL SPECIALIST REPORT – ARCHAEOLOGY
NOTICE OF REQUIREMENT - ROTOKAURI GREENWAY 2019

Rotokauri means 'lake of kauri trees' and was given its name because of the kauri logs that are buried in the bed of the lake, remnants of the native kauri forests that used to dominate the area. Some fell over and into the lake and some were used for kauri gum by Māori during the 1840's - 1920's.

Rotokauri was renowned for its abundance of fish and birds and its large native forests. Once europeans arrived and settled, land was cleared and developed for pastoral use.

In 2019, a cultural impact assessment was completed for the Rotokauri greenway project. This assessment outlines both the Māori and european history of the Hamilton and Waikato area. The detail of this report is summarised below:

Māori (Pre European) History

The native forest included tree species such as matai, rimu, totara with underlying groundcover shrubs including punga and mamaku. Characteristic of a native New Zealand forest, vines climbed up to the canopy. These provided a natural resource utilised by Māori for everyday activities such as lashing hinaki eel pots, house structures, fortified fencing and other implements for farming.

Lake Rotokauri, Rotokaeo and Waiwhakareke provides a source of mahinga kai for Maori and included food such as freshwater mussels, hinaki, freshwater crayfish and introduced trout. As well as a food source, the mussel shells, like the native vines, were used as tools and manufacturing goods.

Iwi who have occupied the site

- **Nga Iwi**
- **Ngati Ngamurikairaua**
Owned and operated Te Uhi Pa and Kahikawaka Pa
- **Ngati Koura**
Took posession of the area from Nga Iwi
- **Ngati Ruru**
A sub-tribe of Ngati Koroki and Ngati Wairere, originating from Cambridge.
Occupied land between what is now Rotokauri Road and Lindsay Road. There have been records of them hunting pigeons through this area
- **Nagti Mahanga**
- **Ngati Wairere**
- **Ngati Hourua**
A sub-tribe of Ngati Haua that mainly occupied the banks of the Waipa River.
Hunted and gathered food from the region until the arrival of the Europeans. Operated their own flax and flour mills during the 1950's

Early European History

European settlement mainly throughout inland Waikato was confined to flax and kauri gum traders and mission stations around the 1820's.

Through the 1850's and 1860's main European activity consisted of growing crops such as maize, wheat, potatoes and kumara.

The arrival of christian missionaries led to a large amount of land clearance. Ancient native forests were destroyed from fire to make way for the growth of agriculture in the region. The destruction of this native forest damaged the commercial trade of gum that had boomed prior to the 1860's.

Kauri gum was found to be a superior resin and ingredient for varnish. This product was exported to London from New Zealand and began the introduction of European history to local Māori.

In the 1860's, the Colonial army staged an invasion of the Waikato with efforts of gaining land for European settlers. The town of Hamilton was formed from this military settlement and local land was confiscated and allocated to soldiers.

TE ARANGA DESIGN PRINCIPLES

SOURCED: AUCKLAND DESIGN MANUAL AND
TE ARANGA. 2008 TE ARANGA MĀORI CULTURAL
LANDSCAPE STRATEGY.



MAURI TU

Environmental health is protected, maintained and/or enhanced

- ▶ Daylighting of waterways/restoration
- ▶ Community wellbeing is enhanced
- ▶ Passive stormwater systems explored
- ▶ Local materials/building and hard landscape are explored



MAHI TOI

Iwi/hapu narratives are captured and expressed creatively and appropriately

- ▶ Appropriate people i.e. artists are involved in design process
- ▶ Narratives and names are inscribed in elements
- ▶ Shared spaces are to reflect local iwi/hapu identity
- ▶ Public art



TOHU

Mana whenua significant sites and cultural landmarks are acknowledged.

- ▶ Significant landmarks
- ▶ Visual connection to places/significant sites
- ▶ Wayfinding/interpretation boards
- ▶ Heritage trails



MANA

The status of Iwi and mana whenua is recognised and respected.

- ▶ Engagement is essential part of design / opportunities for design outcomes - working relationships
- ▶ Identify important groups and wider Mana whenua when considering developments



WHAKAPAPA

Māori names are celebrated

- ▶ Celebrates ancestral names - significance - entry points
- ▶ Recognised historical narratives - enhance sense of place connections
- ▶ Use of names to inform design processes
- ▶ Wayfinding opportunities
- ▶ Consultation with Mana whenua



TAIAO

The natural environment is protected, restored and enhanced

- ▶ Natural environments are protected and restored, sustained Mana whenua harvesting
- ▶ Re-establishment of local biodiversity
- ▶ Planting indigenous flora
- ▶ Seasonal markers - use of tree types
- ▶ Creating and enhancing ecological corridors.
- ▶ Attract native bird life
- ▶ Food and cultural resource areas



AHI KA

Iwi/hapu have a living and enduring presence and are secure and valued in their role

- ▶ Acknowledges post treaty settlement environment
- ▶ Iwi living can include customary, cultural and commercial dimensions - including in urban areas
- ▶ Access to natural resources

2.2 ANALYSIS LAYERS

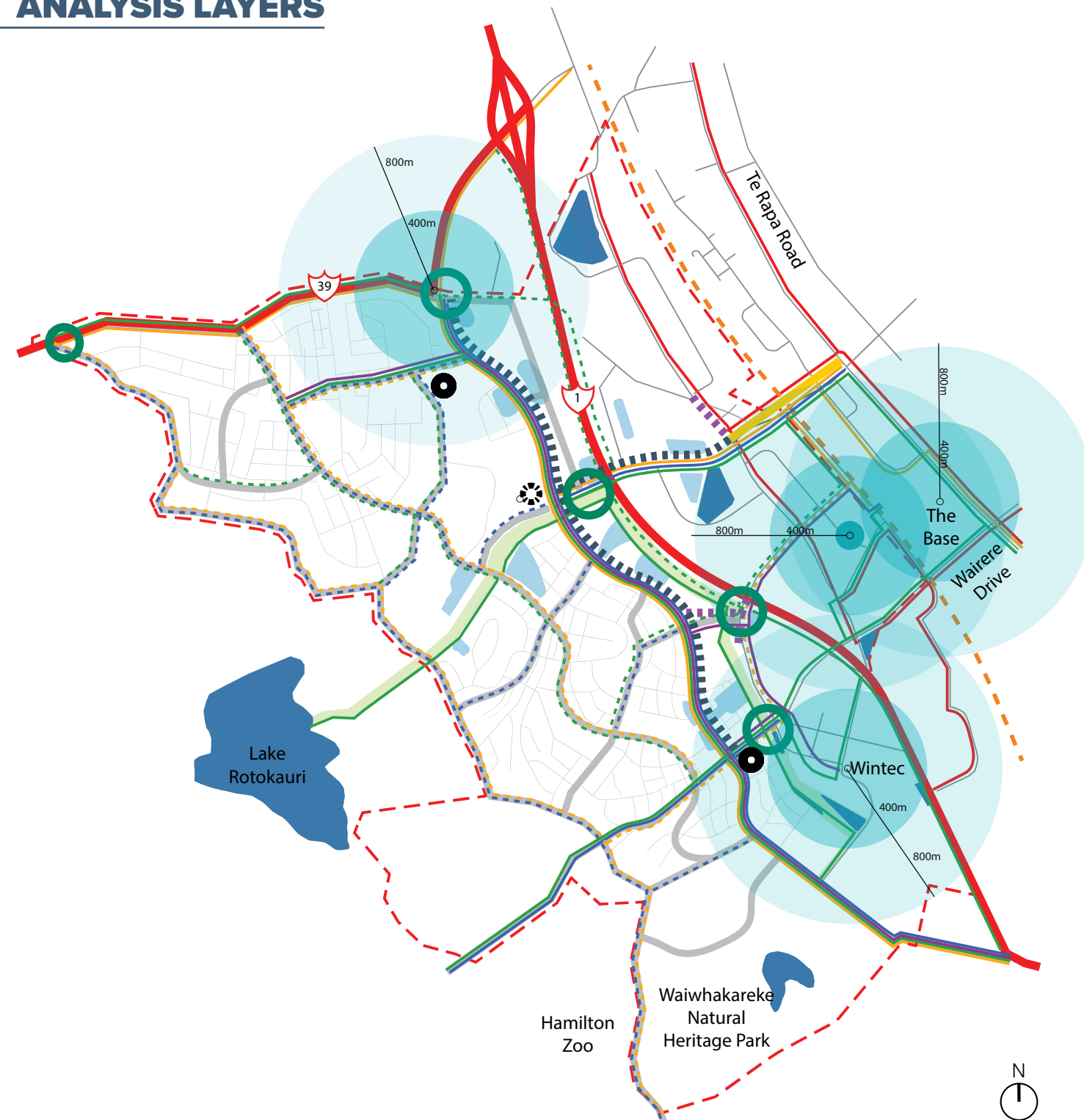


Figure 3. Transport and Connectivity Analysis Map

TRANSPORT AND CONNECTIVITY

Figure 3 shows the proposed Network Operations Framework (NOF) provide by HCC. This provides the key transport context which informs design decisions and functionality of the network.

The Structure Plan provides a network hierarchy of major and minor arterial roads, collector and local roads as well as cycleways that cross over and reveal key intersections. This creates opportunities for gateways and hierarchy throughout all road corridors.

How does this affect design outcomes?

- The NOF framework helps drive the location and level of walking and cycling functionality, where amenity is focused as well as consideration to corridor widths to service vehicle types and balance walking and cycling aspirations
- The proposed layout and connections to the existing road network provide several opportunities to create gateways into the residential development area. This will be especially important at Wairere Drive which will be the main entrance to the town centre.
- The State Highway creates a visual and physical barrier between industry and the commercial to the east and residential and employment to the west. Safe connections between the two for multiple modes requires consideration.
- Connectivity and a legible network will be important in creating an integrated multi-modal network.
- The design focus on multiple modes aids in Hamilton's cities aspiration outlined in Access Hamilton to target 30% active mode share over the next 30 years.

Legend

--- Structure Plan boundary	— Pedestrian - Primary	● 5 Minute walk (approx. 400m)
— Indicative roading layout from structure plan	- - - Pedestrian - Secondary	● 10 Minute walk (approx. 800m)
— Existing roads	— Freight	
— Indicative roading layout (from masterplans)	- - - Railway	
State Highway	- - - Cycleway/walkway	
Project Major Arterial - Existing	○ Gateway	
Project Minor Arterial - Proposed	■ Designated Greenway	
Project Collector Road - Proposed	■ Lakes and wetlands	
Cycle - Primary	● Public Transport Hub	
Cycle - Secondary	● Suburban/Neighbourhood Centre	
Bus - Primary	● Community Focal Point	
Bus - Secondary		

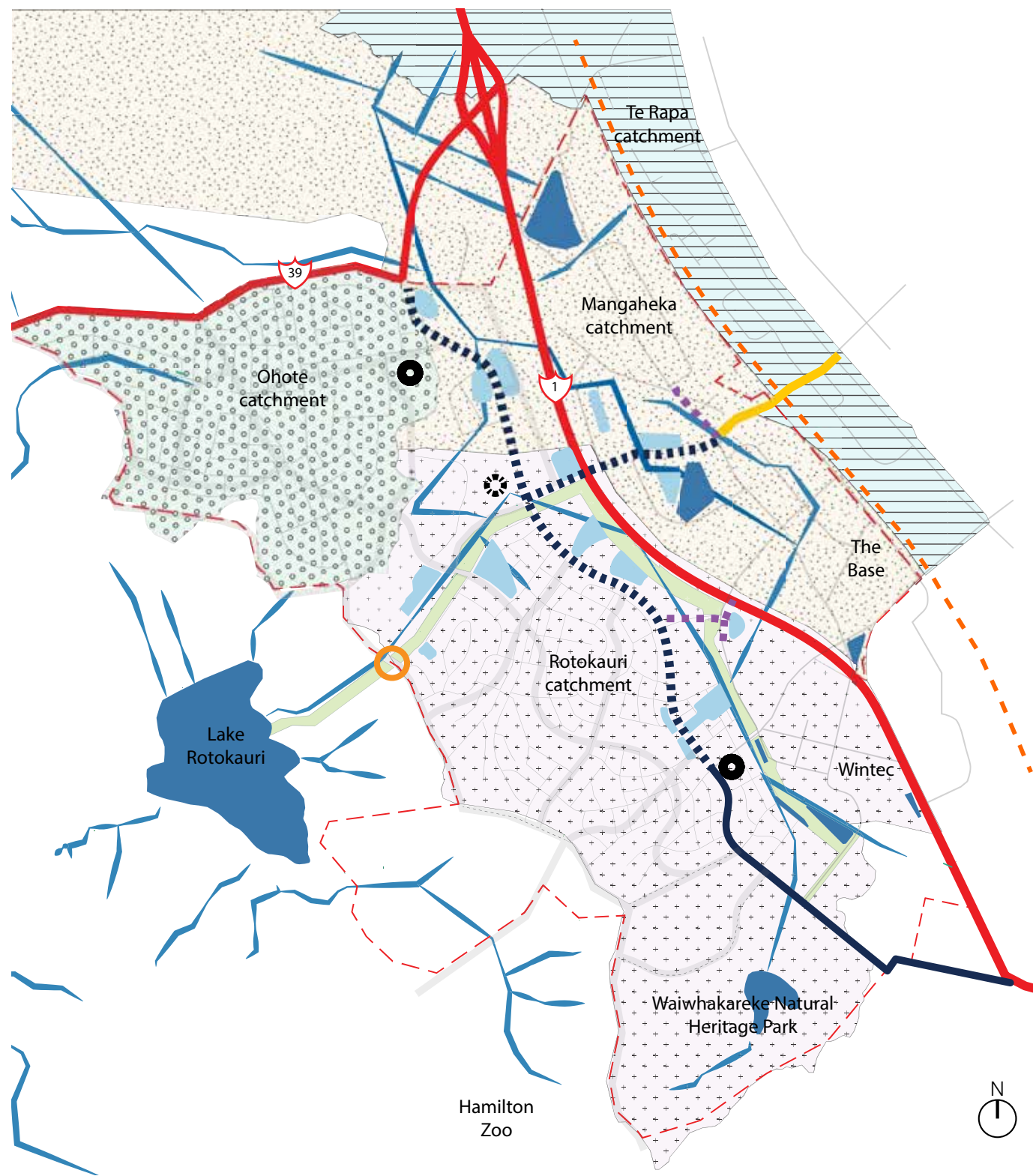


Figure 4. Stormwater & Watercourses Analysis Map

STORMWATER AND WATERCOURSES

Figure 4 identifies the existing stormwater network across 4 main catchments that surround the Rotokauri Arterials Designation. Across these catchments, there are several watercourses (natural, modified, and artificial) that cross feed into Mangaheka Stream and Lake Rotokauri.

The Rotokauri Arterials Designation project will respond directly to treatment of runoff from the arterial roads where the main function of the Greenway is for flood management. Both projects work in alignment help achieve better water quality for the Mangaheka Stream and Lake Rotokauri. This integrated network will extend treatment into the new residential areas and suburban centre and provides an opportunity to respond to the natural systems and processes and enhance ecology through planting in the proposed connection into the Greenway and Mangaheka stream diversion.

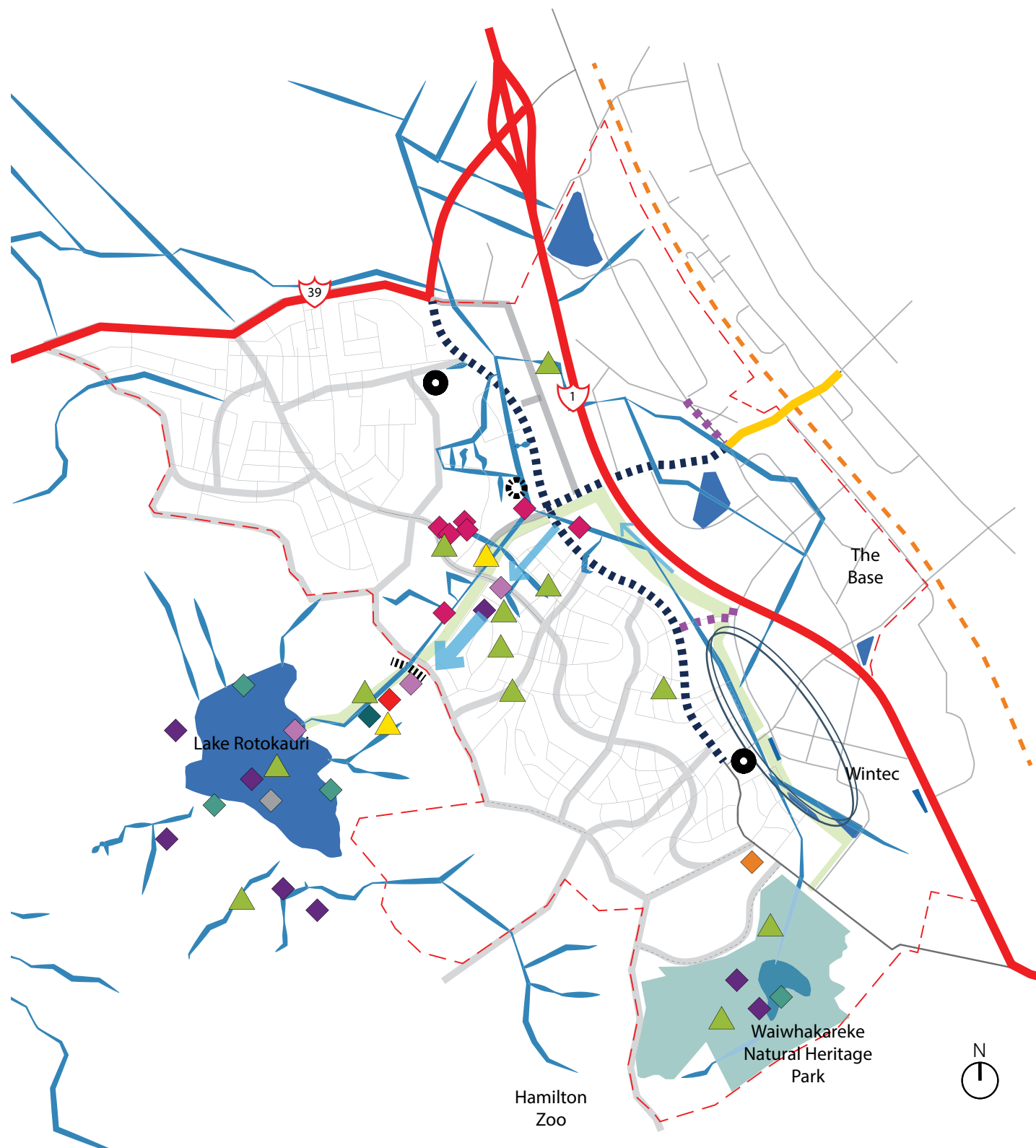
Rotokauri has four main sub-catchments: Rotokauri, Mangaheka, Ohote and Te Rapa. All catchments have active integrated catchment management plans that provide a framework for development to occur in a way that stormwater, streams, and rivers are managed and integrated into the Rotokauri Arterials Designation appropriately. It is important to acknowledge these plans when proposing any development or change in land use to understand the direct effects on the catchment such as water quality, flood management and erosion i.e., the majority of land use of the Rotokauri Arterials Designation is greenfield at present however, the structure plan indicates the land use will become residential and industrial. It is important to acknowledge these plans when proposing any development or change in land use to understand the direct effects on the catchment such as water quality, flood management and erosion i.e., the majority of land use of the Rotokauri Arterials Designation (RAD) is greenfield at present however, the structure plan indicates the land use will become residential and industrial.

How does this affect design outcomes?

- As part of the Rotokauri Arterials project, it is only where the project crosses the stormwater network i.e. an existing drain, or where we are diverting streams that the project aims to restore and protect these existing features
- Include Water Sensitive Design as a way of improving water quality
- Allow for key conveyance connections to the Greenway and Mangaheka for a cohesive network
- Manage impacts of flooding
- Inclusion of habitat features in key drainage routes to enhance the local ecology
- The integration of the stormwater within the Rotokauri Arterials Project supports the objectives of the Greenway as an ecological corridor and enhancement of the local flora and fauna.
- Integration of stormwater treatment areas and recreational space for the community
- Maintain naturalised stream corridors

Legend

- Structure Plan boundary
- Indicative roading layout from structure plan
- Existing roads
- Indicative roading layout (from masterplans)
- State Highway
- Major Arterial - Existing
- Minor Arterial - Proposed
- Collector Road - Proposed
- Railway
- Existing watercourses
- Exelby Rd culvert, governs water flow (bottle neck point)
- Existing lakes and wetlands
- Proposed wetlands
- Designated Greenway
- Suburban/Neighbourhood Centre
- Community Focal Point
- ICMP catchments
 - Te Rapa catchment
 - Mangaheka catchment
 - Ohote catchment
 - Rotokauri catchment



ECOLOGY AND BIODIVERSITY

Figure 5 identifies a number of indigenous species of fish and birds that inhabit the areas surrounding the lakes. The lakes provide existing habitat although at present, these are isolated locations.

The proposed Greenway provides an opportunity to create a series of ecological stepping stones between wetland patches and open spaces linking Waiwhakareke (Horseshoe Lake) and Lake Rotokauri to enhance habitat and biodiversity.

How does this affect design outcomes?

- Water sensitive design
- Connection into the Greenway and nominated wetlands/ proposed in the Greenway plan
- Opportunity to reflect the ecological principles of the area and enhance a sense of place
- Providing access from WNHP to Lake Rotokauri
- Cohesive design between the urban and natural environment.

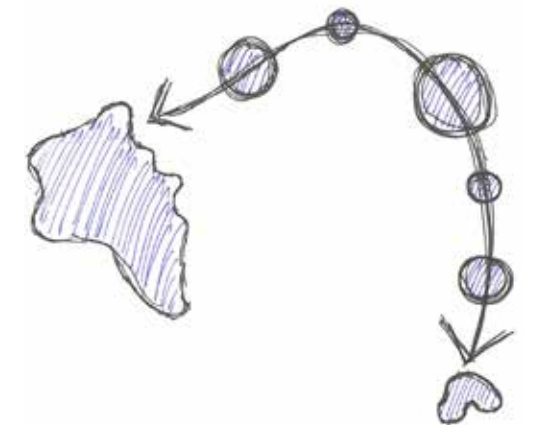


Figure 6. Ecological link between the two lakes with nodes between (taken from Greenway ULDF)

Legend

- | | |
|---|--|
| --- Structure Plan boundary | Suburban/Neighbourhood Centre |
| --- Indicative roading layout from structure plan | Community Focal Point |
| --- Existing roads | Area or ecological improvement away from lakes |
| --- Indicative roading layout (from masterplans) | Banded Kokopu |
| State Highway | Common Smelt |
| --- Major Arterial - Existing | Inanga |
| --- Minor Arterial - Proposed | Black Mudfish |
| --- Collector Road - Proposed | Galaxias |
| --- Railway | Common Bully |
| Existing major drainage channels and direction | Giant Kokopu |
| --- Existing watercourses | Mosquito Fish |
| Exelby Culvert | Longfin Eel |
| Waiwhakareke Natural Heritage Zone | Shortfin Eel |
| Existing lakes and wetlands | |
| Ridgeline Character Area | |
| Designated Greenway | |

Figure 5. Ecology & Biodiversity Analysis Map
Survey information taken from the Ecological Impact Assessment undertaken by Beca, March 2022. Birdlife was not surveyed as part of the assessment.



Figure 7. Pre-European Settlement Vegetation Analysis Map
Source: Rotokauri Integrated Catchment Mangement Plan (ICMP), Kessels Ecology.

PRE-EUROPEAN SETTLEMENT AND VEGETATION

Figure 7 identifies the vegetation present pre-european settlement in Rotokauri. The area was once covered by large portion of native vegetation although the landscape has been highly modified and vegetation extensively removed due to rural development.

How does this affect design outcomes?

- Opportunity to celebrate and use plants that previously existed in the area to strengthen a sense of place and connection to the environment
- Use of open space network for connections to supplement the roading network to encourage engagement with the environment and active transport modes
- Combine open space with treatment sites e.g. wetlands as recreational reserves
- Street trees provide shade to reduce heat island effects and habitat to support “nature in the city”.
- Utilise existing examples of ecological restoration such as Waiwhakareke Natural Heritage Park to provide plant species and restoration methodologies that are responsive to the local ecosystem.

Trees



Rewarewa



Maire



Pukatea



Titoki



Kahikatea

Ferns



Ferns



Ponga



Mamaku

Legend

- | | |
|---|-------------------------------|
| --- Structure Plan boundary | ■ Designated Greenway |
| — Indicative roading layout from structure plan | ■ Fen (Pre-European) |
| — Existing roads | ■ Bog (Pre-European) |
| — Indicative roading layout (from masterplans) | ■ Swamp (Pre-European) |
| — State Highway | ■ Existing lakes and wetlands |
| — Major Arterial - Existing | |
| --- Minor Arterial - Proposed | |
| --- Collector Road - Proposed | |
| — Railway | |
| ● Suburban/Neighbourhood Centre | |
| ⊗ Community Focal Point | |

OPEN SPACE NETWORK AND RECREATION

Figure 8 identifies existing open spaces such as lakes, urban parks and recreation reserves that provide relief from the urban environment and are important for wellbeing. There are several proposed open spaces within the Rotokauri area that create a network of its own for open space. The Greenway corridor is an important part of this network as a connecting element that ties several open spaces together. These spaces should be treated as multi-functional public space to provide amenity, recreation, community and biodiversity, enable recreation, engagement with the environment and provide additional connections to key facilities.

Lake Rotokauri and Waiwhakareke Natural Heritage Park are important open spaces that are well utilised by the community. It is important to respect both cultural and social connections the community has with these open spaces and integrate these into the design in a way that is sensitive and responds to place.

How does this affect design outcomes?

- Cohesion between land uses through open space connections enabling people movement as well as opportunities to create a sense of identity for those that live and work in the area
- Opportunities to enhance community space
- Opportunity to educate the community through signage and art.
- Celebrating the environmental heritage value of the open spaces such as wetlands as public spaces to instill a sense of belonging.

Legend

Structure Plan boundary

Indicative roading layout from structure plan

Existing roads

Indicative roading layout (from masterplans)

State Highway

Major Arterial - Existing

Minor Arterial - Proposed

Collector Road - Proposed

Green Drainage Corridor - from the Structure Plan

Central North-South Collector Transport Corridor

Railway

Designated Greenway

School - existing

Future Reserves

Existing lakes and wetlands

Proposed wetlands as part of Greenway designation

Suburban/Neighbourhood Centre

Community Focal Point

Key destinations:

1

Town centre hub

2

Sports park development

3

School

4

WINTEC Campus

5

Waiwhakareke Natural Heritage Park

6

Rotokauri Lake

7

Hamilton Zoo

8

Pukete Farm Park and mountain bike area

9

The Base shopping complex

10

Mooney Park

11

Sports Park

Figure 8. Open Space Network & Recreation Analysis Map

4288564 // ROTOKAURI ARTERIALS URBAN DESIGN AND LANDSCAPE FRAMEWORK // JUNE 2023 | Beca | 17

LANDUSE AND DESTINATIONS

Figure 9 identifies the landuses of Rotokauri as outlined in the Structure Plan area. The majority of the area proposed for development consists of greenfield and the following landuses:

Residential

- Standalone low density housing characterise the majority of the existing residential areas located to the west of the state highway

Industrial and employment

Immediately to the west of the state highway, employment or light industrial areas span along the length of the state highway whereas on the east side, the land use is mainly industrial. These zones will consist of:

- Commercial businesses
- Transitional land use zone from industrial large lot development with little street and wide berms. This is similar to what already occurs along Te Kowhai Road East.

Suburban/ Neighbourhood Centre

An area identified in the Rotokauri Structure Plan that will support the surrounding residential area by providing a wide range of activities but with an emphasis on retailing. These businesses will support active frontages and help enhance the setting for adjacent public spaces.

Open Space

There are formal and informal recreation areas within and adjacent to the project area including:

- Waiwhakareke Natural Heritage Park
- Lake Rotokauri
- The Greenway forms a green corridor that connects all landuses and provides connection to various open spaces for recreation including Lake Rotokauri
- Rotokauri Sports Park.

How does this affect design outcomes?

- Opportunity to provide connection to all land uses through new arterial network
- Greenway provides opportunity as a connection to the different landuses and existing open spaces for recreation
- There is opportunity through the new arterial network to establish cohesion between all landuses
- Use of flexible berm space and variations to road design has the ability to respond to landuse. This could be through car parking provision, planting typologies, and stormwater treatment.

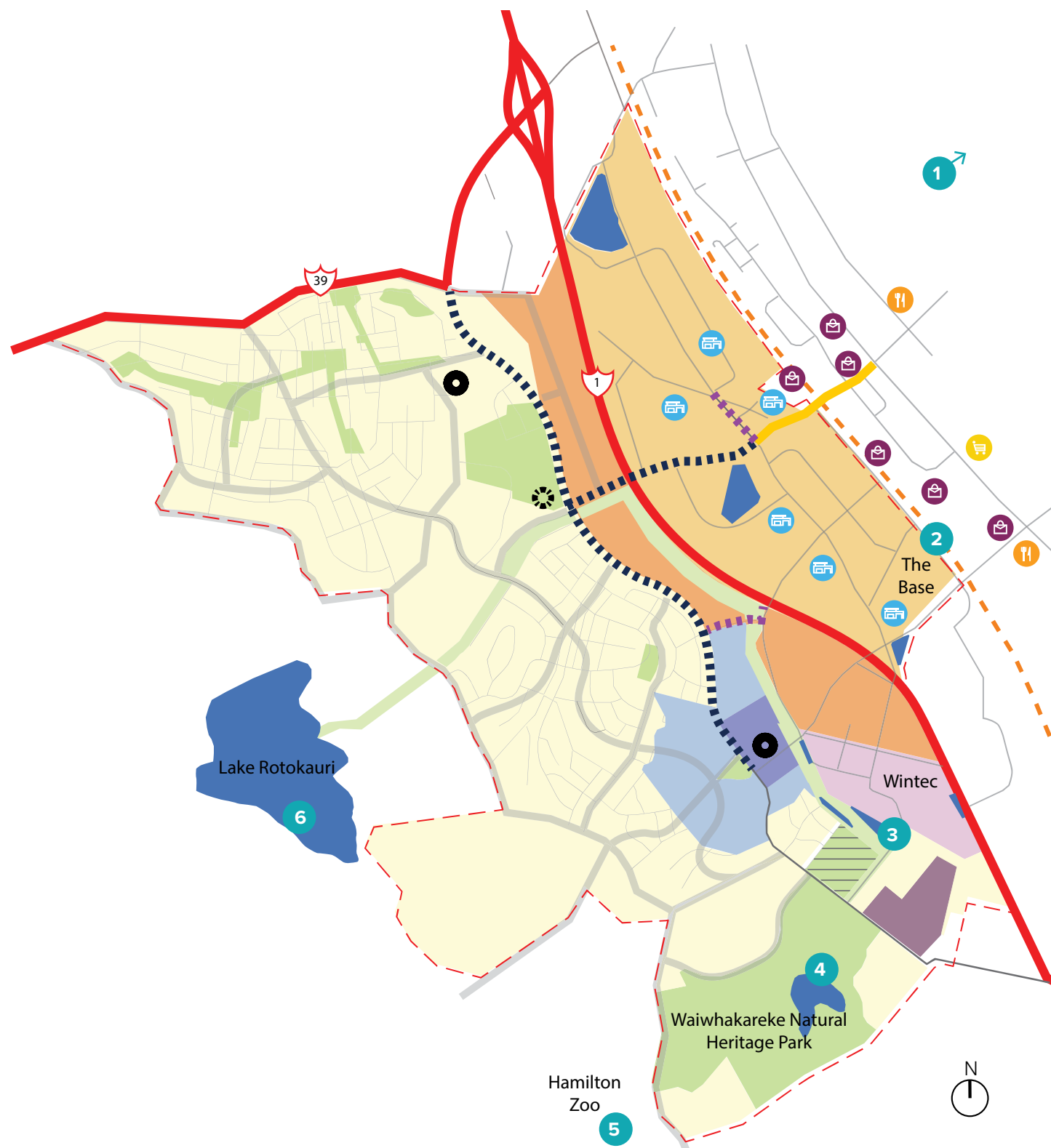


Figure 9. Landuse and Destinations Analysis Map
Source: Zoning as per Rotokauri Structure Plan and Hamilton District Plan

Legend

Key destinations

- 1 Pukete Farm Park and mountain bike area
- 2 The Base
- 3 WINTEC
- 4 Waiwhakareke Natural Heritage Park
- 5 Hamilton Zoo
- 6 Lake Rotokauri
- Food
- Supermarket
- Shopping/retail
- Commercial
- PT Hub

Future developments

- Suburban/Neighbourhood Centre
- Community Focal Point
- Structure Plan boundary
- Indicative roading layout from structure plan
- Existing roads
- Indicative roading layout (masterplans)
- State Highway
- Major Arterial - Existing
- Minor Arterial - Proposed
- Collector Road - Proposed
- Railway

Land use zones

- Reserves and Sports Fields
- Existing lakes and wetlands
- Residential
- Employment (light industrial)
- Medium density residential
- Suburban centre/hub
- Major facilities
- Community focal point
- Industrial
- Community Facilities
- Designated Greenway
- Existing lakes and wetlands

LANDSCAPE CHARACTER

Figure 10 provides an analysis of the existing character of the Rotokauri Landscape. The Rotokauri landscape has a defined ridgeline character. These areas defined in orange provide for larger section sizes and are zoned for residential living.

How does this affect design outcomes?

- Road alignment respects ridgeline character
- Retain and enhance a sense of place
- Providing access to Lake Rotokauri and Waiwhakareke Natural Heritage Park
- Maintain the significance of the ridgeline character through sensitive design
- Cohesive design the natural and human environment.

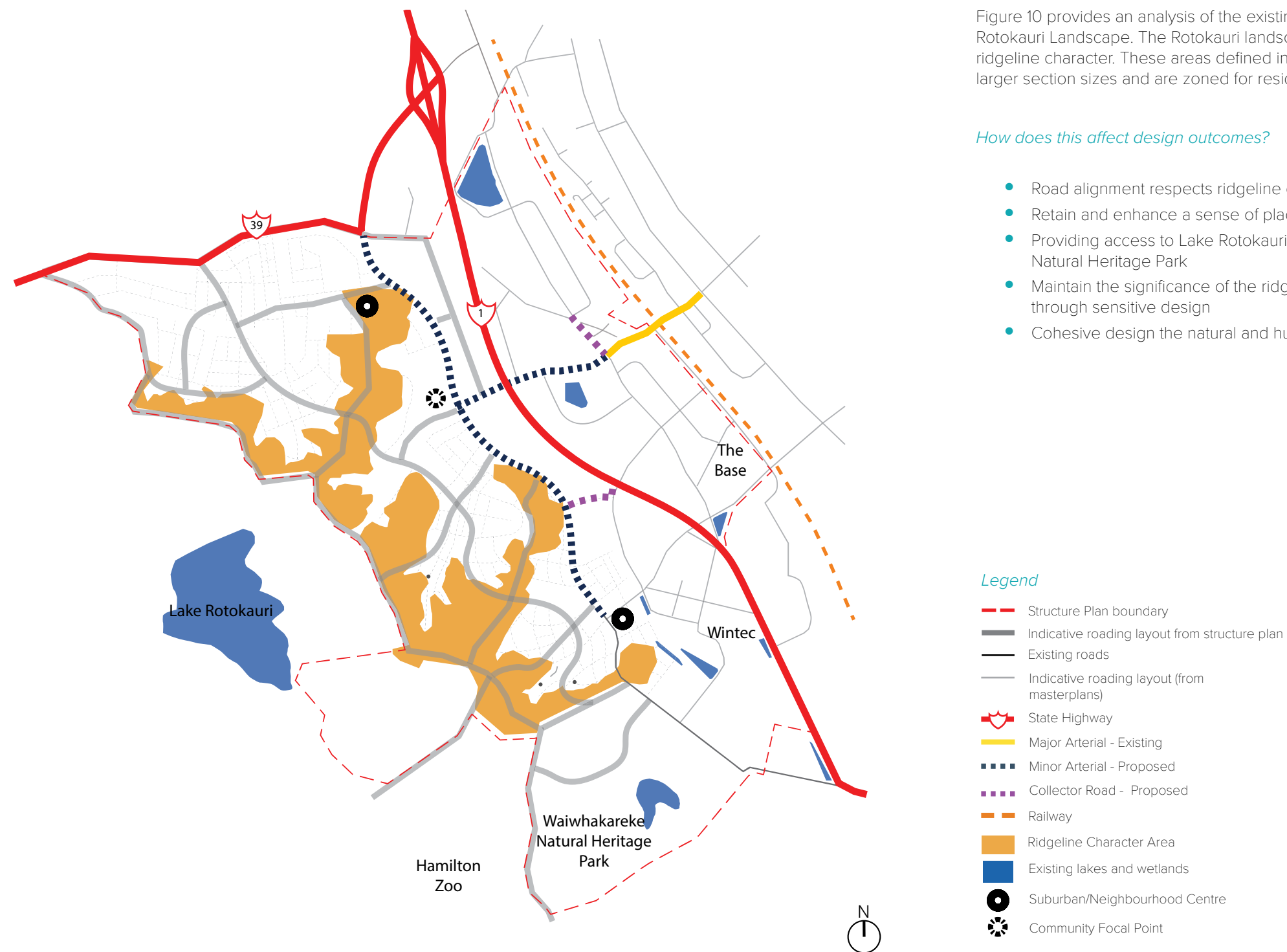


Figure 10. Landscape Character Analysis Map

CULTURAL REFLECTION

Figure 11 identifies significant cultural features and sites in Rotokauri and their proximity to the proposed project area. It is important to identify these existing features to provide cohesion with the proposed design.

What does this mean?

- Opportunities to ensure the protection, reinstatement and reaffirmation of mana whenua connection and association to the landscape.
- Sites of interest: Te Uhi Pa (Lake Rotokauri) / Pikihinau Reserve / Waiwhakareke Natural Heritage Park, Puea Waitapu Water Springs / Te Tongahuanui Track / Te Raukaka (Mooney Park)
- Opportunities to apply Te Aranga Principles to reflect whakapapa. To be captured through use of maori names, mauri tu through native planting, reflecting narratives using mahi toi using local artists, bridge abutments, lighting, and pavement treatments
- Enhancing the existing infrastructure such as footpaths, light poles and bridge pillars and abutments.

What are the key features?

Te Uhi Pa and Urupa

The pa was built on the northern side of Lake Rotokauri and was occupied by multiple iwi groups. The pa takes its name from a chisel blade used in tattooing ‘Te Uhi’. The site was renowned for tattooing due to being rich in local resource of kauri gum and soot from burning the gum that was the basis for the ink used. Tattooing is a sacred ritual for Maori and this history is within the soil of this site in Rotokauri.

Te Tongahuanui Walkway

This track was regularly used by local hunting and fishing groups and by invading war parties. Cabbage trees and shrines to deities

Pikihinau Reserve

One of the last remnant of a native forest stand of kahitkatea trees located between Te Kowhai Road and Burbush Road. This area of trees was a traditional bird hunting area

Waiwhakareke Natural Heritage Park

A significant site to Maori for its supply of freshwater mussels. These not only provided a source of food but the shells were also used for making tools

Mooney Park

A native remnant stand of kahikatea trees. Part of the Te Tongahuanui Track once ran through this area

Lake Rotokauri

A significant site for its use as a food and material resource for local Maori and for the kauri logs within the lake that provide the lake its name and connection to the Taniwha Tikiraupo. Lake Rotokauri is in close proximity to Te Uhi Pa site.

Legend

- Structure Plan boundary
- Indicative roading layout from structure plan
- Existing roads
- Nominated roading layout (from masterplans)
- State Highway
- Major Arterial - existing
- Minor Arterial - proposed
- Collector Road - proposed
- Railway
- Culturally significant sites
- Designated greenway
- Native remnant
- Existing lakes and wetlands
- Community Focal Point
- Suburban/Neighbourhood Centre
- Tu Uhi Pa and Urupa

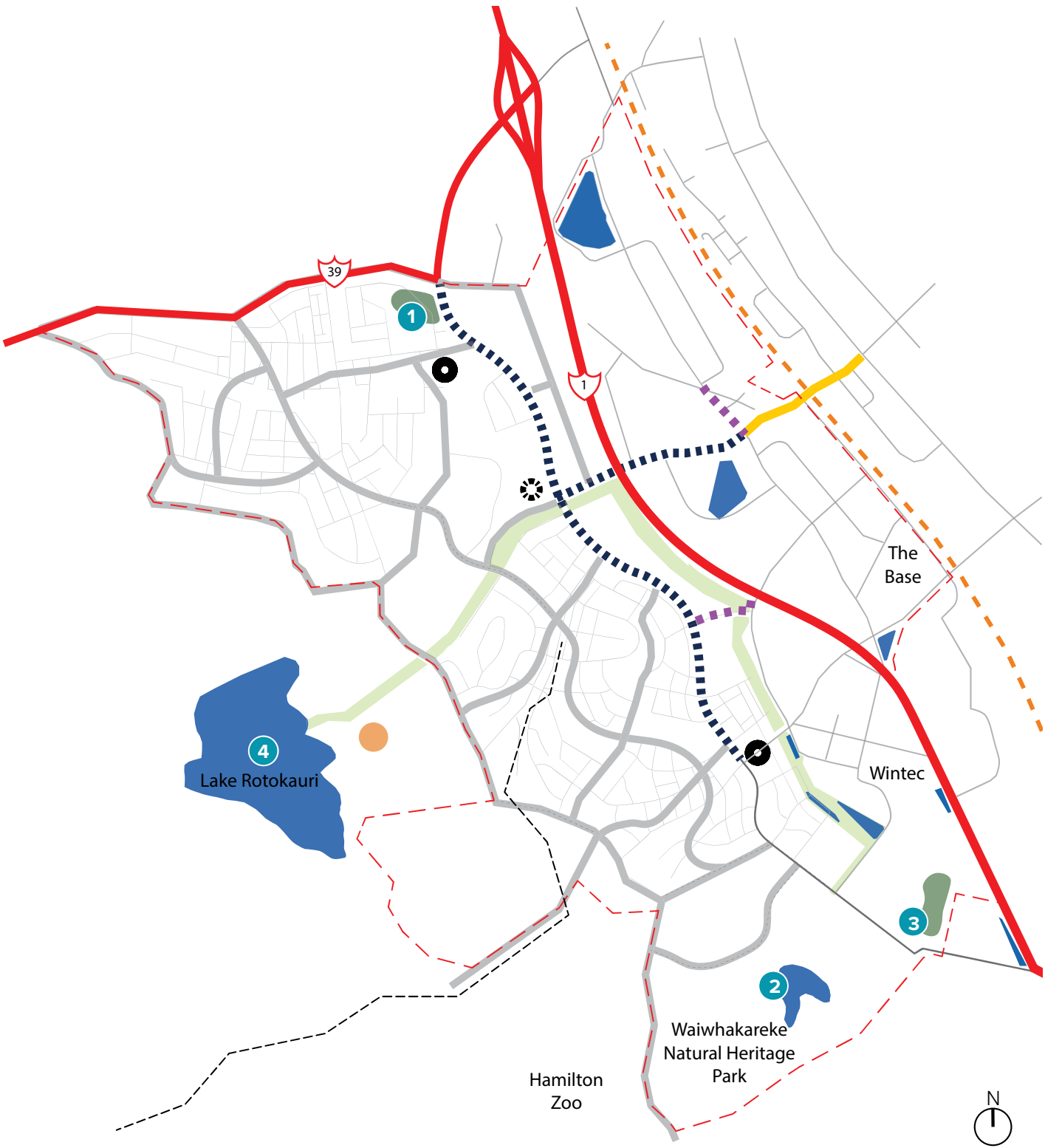


Figure 11. Cultural Reflection Analysis Map

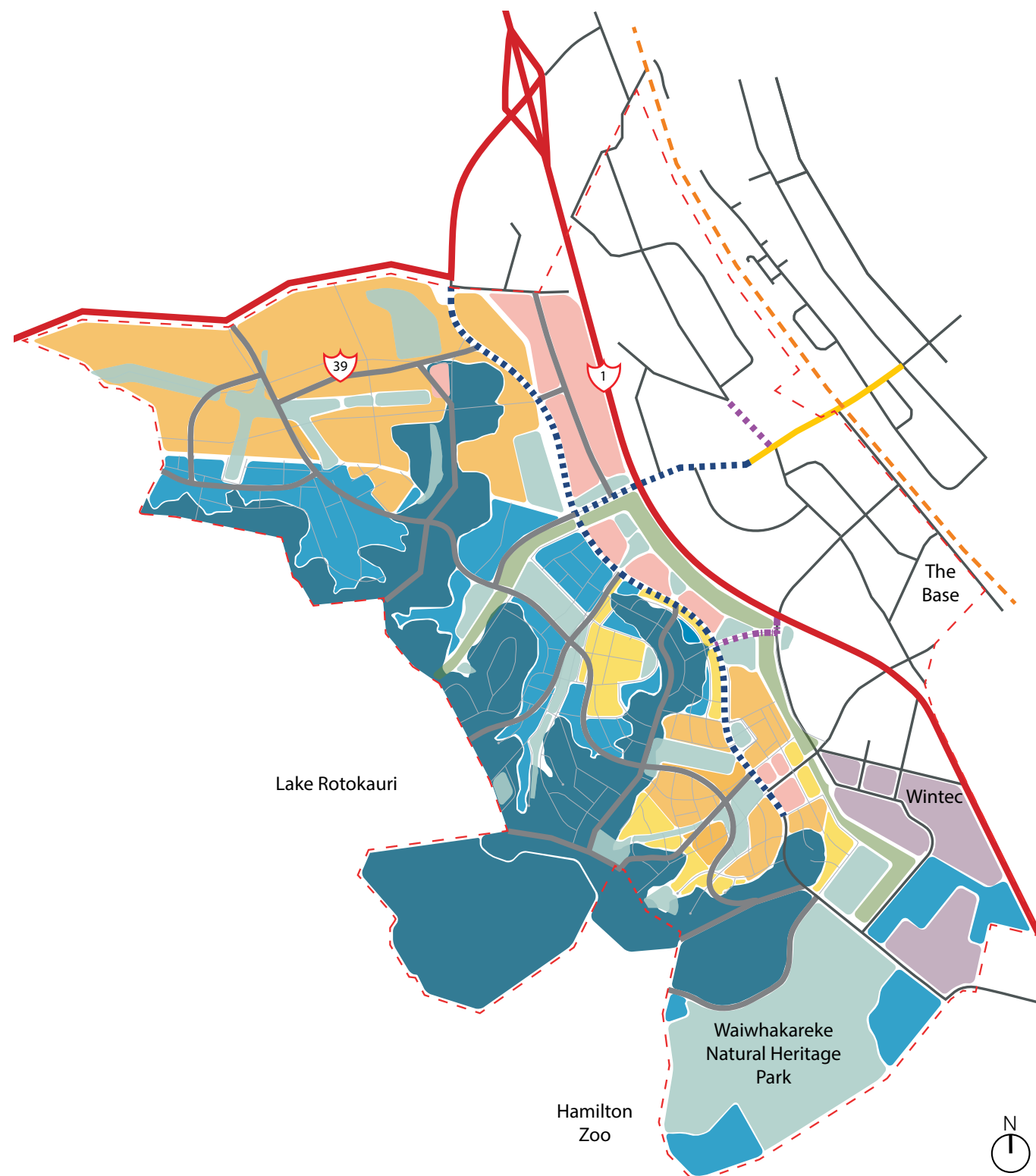


Figure 12. Housing Density Analysis Map

HOUSING DENSITY

Figure 12 shows calculated housing density based on a combination of existing densities, the structure plan and proposed masterplans available for the area.

How does this affect design outcomes?

- Most residential areas proposed align with the structure plan and are low density, however in places there is a slight increase in density trending
- The map shows the low/medium densities areas (higher densities) concentrated around the main commercial/town centre areas
- The open space network provides several areas that provide relief amongst the residential areas and allow space for the community to socialise
- Higher density areas lend themselves to a higher amenity streetscape. Transport corridors provide a core connection between areas of medium density with opportunity to encourage active modes.

Legend

- Structure Plan boundary
- Indicative roading layout from structure plan
- Existing roads
- Indicative roading layout (from masterplans)
- State Highway
- Major Arterial - Existing
- Minor Arterial - Proposed
- Collector Road - Proposed
- Railway
- Ridgeline/lake residential character (17 DPH)
- Low density residential character (17-23 DPH)
- Low - medium density residential (35 DPH)
- Medium density residential (30 DPH)
- Employment/commercial
- Designated Greenway
- Open space
- Education

*Density calculations are net and based on enabled capacity.
Calculations have been based on developer masterplans in Appendix 1.



Figure 13. Development Context Analysis Map
For development plans, refer to Appendix 1.

DEVELOPMENT CONTEXT

Figure 13 identifies the existing development context in Rotokauri. There have been 3 masterplans developed for the Rotokauri area that have been combined to identify the different residential densities proposed as well as key design moves and see if they align with the Rotokauri Structure Plan.

Below indicates the main outcomes of each masterplan and infographics highlight the varied densities across all masterplans.



13.22

DPH
FROM THE
STRUCTURE PLAN

Green Seed Consultants (February 2018)

- Assumed lot sizes range of 200-800m²/ average 350m²
- Centralised stormwater network
- Emphasis on local centre and community destination
- Medium density residential around focal area



27.08

DPH*

Hounsell (2018)

- Central open green space with linear park and wetland ponds
- Preserving ridgeline character zone with low density residential development
- Utilise roads as a structure for development i.e. spur roads, valley roads and ridge roads
- Flexible residential block layouts
- 'Borrowed' amenity. Create open and multifunctional spaces where there is limited amenity



14.28

DPH*

Rotokauri Rise (November 2016)

- Central stormwater treatment corridor
- Network of open space



12.17

DPH*

**Density calculations are net and have been based on developer masterplans in Appendix 1.*

Land use zones

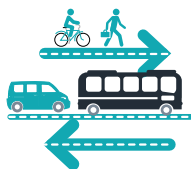
Reserves and Sports Fields	Industrial
Existing lakes and wetlands	Community Facilities
Employment (light industrial)	Designated Greenway
Major facilities	Existing lakes and wetlands
Community focal point	

3.

OBJECTIVES AND PRINCIPLES

3.1 OBJECTIVES AND PRINCIPLES

PROJECT OBJECTIVES



NETWORK AND FUNCTION

To provide a well-integrated multi modal transportation network that promotes a wide range of responsive, efficient and sustainable transport modes including walking, cycling, and public transport and makes suitable allowance for adaptive change in the future.

The network should support improved accessibility and connectivity into Hamilton City that is consistent with the land use spatial framework, Rotokauri Structure Plan and achieves the strategic direction established by Access Hamilton.



INTEGRATION

Through the design of the network, enhance the accessibility for people and cohesion between the proposed and existing communities in a well-planned and legible way. By applying urban design principles, the network should:

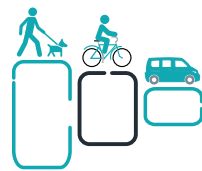
- integrate to the future urban land use context, and
- promote strong people-focused connections to the street environment.



CHARACTER AND AMENITY

By applying urban design principles, the network should:

- enhance the vitality of public spaces in a way that interacts with the multi modal transportation network,
- create a strong sense of community identity for Rotokauri through a distinctive sense of place and the quality of the public open spaces,
- incorporate, protect and enhance the habitat of the receiving environments,
- respond to the cultural identity of Rotokauri and the wider area, and
- promote safe and enjoyable use of public space.

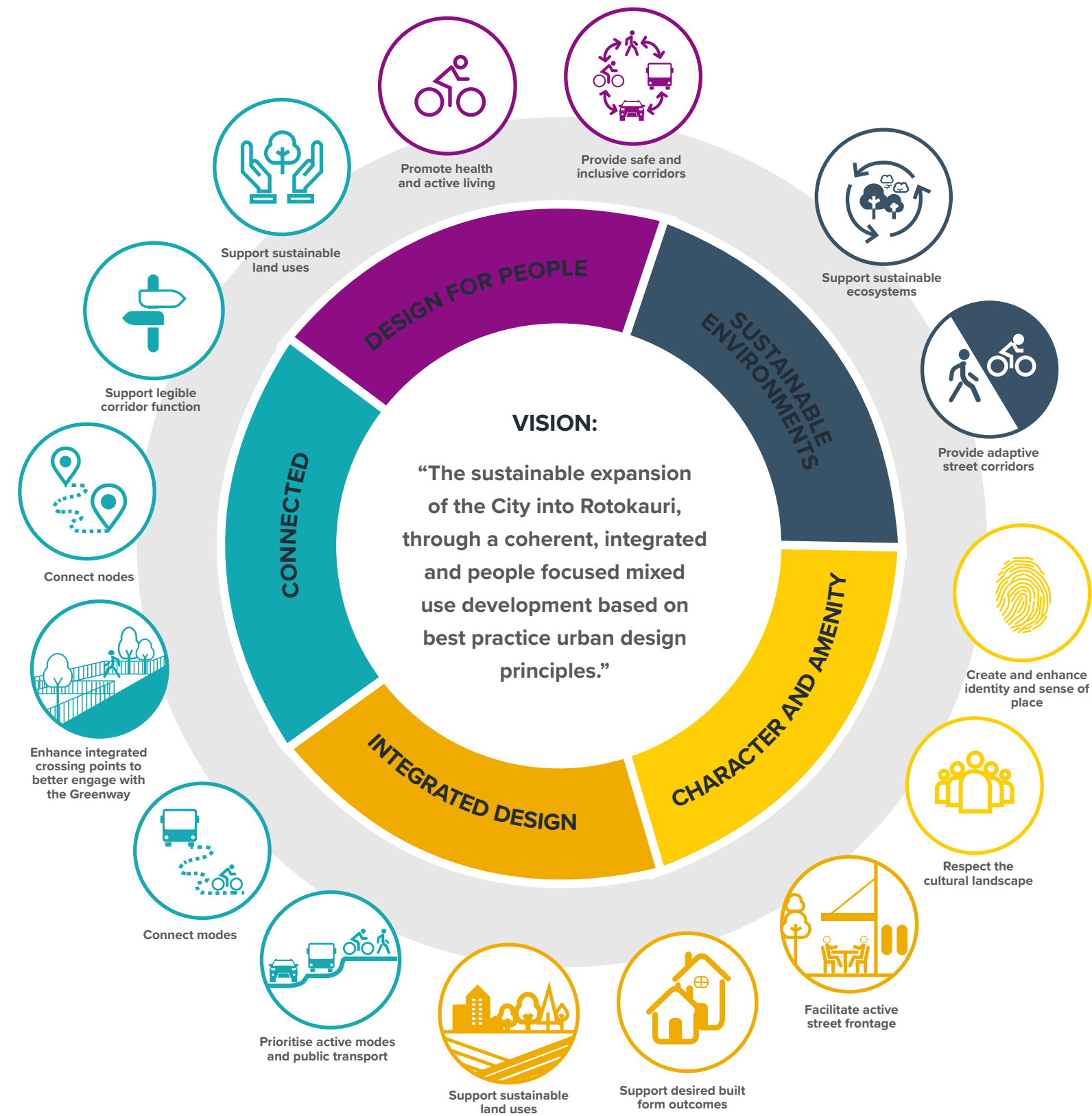


INFRASTRUCTURE

To support the sustainable future urban land use development of Rotokauri in accordance with the Rotokauri Structure Plan by requiring sufficient land through the designation process and manage the risk of spatial conflicts between land use and the provision of affordable, robust and efficient infrastructure. The designation shall facilitate:

- an integrated transport system including the coherent form of intersections,
- three waters infrastructure network,
- the provision of key stormwater and flood management infrastructure and secondary flow corridors in accordance with local catchments and associated Integrated Catchment Management Plans,
- provision for other network utilities.

URBAN DESIGN PRINCIPLES





1.0 DESIGN FOR PEOPLE

1.1 Promote health and active living

- Provide a convenient and comfortable network of active transport options. The transport network design can influence the lifestyle choices people make around how they socialise, exercise and travel ultimately contributing to people's physical and mental health.

Outcomes:

- An inviting, comfortable and stimulating network of multi-modal transport corridors, functioning according to the senses, thus supporting modal shift and social cohesion.
- A diversity of travel choices (e.g. strong links to public transport (bus / train) and different forms of urban mobility) for more of the population.
- Safe, suitable and legible paths and facilities for all users.

1.2 Provide safe and inclusive corridors

- Provide a safe and inclusive network of walking and cycling routes accessible to people of all ages, life stages and abilities. A safe transport network will support a greater level of active transport movement and activity that promotes a sense of personal safety.
- A key focus area of both HCC policy (Access Hamilton) and Waka Kotahi NZ Transport Agency (Arataki 30-year strategic plan) in the Waikato region is to increase safety outcomes and reduce significant harm. Increased safety outcomes include perceived and actual safety improvements.

Outcomes:

- Low counts of antisocial behaviour, death and injury statistics along the corridors.
- Corridor configuration that supports actual and perceived personal safety at all times of the day through an effective layout and co-location of different modes and land uses.
- Universal design and accessibility achieved throughout the transport network with lack of physical barriers in the built environment resulting in increased community participation and health and wellbeing outcomes.
- Safe and inclusive corridors that support modal shift.



2.0 SUSTAINABLE ENVIRONMENTS

2.1 Support sustainable ecosystems

- Protect and enhance existing ecological areas such as Lake Rotokauri, Waiwhakareke Natural Heritage Park, Rotokauri Drain and pockets of native trees. Seek opportunities to add new open space areas that achieve positive ecological and biodiversity outcomes. This will help to offset the effects of noise and pollution on the environment including habitat and water quality.

Outcomes:

- The natural environment is protected, restored and/or enhanced, including existing landscape features.
- Consumption of resources and materials is minimised.
- Low carbon emissions achieved through materiality and minimal intensive maintenance activities (e.g. mowing).
- The transport network supports and enhances the continuity of natural systems, (at a range of scales) ecological corridors and biodiversity.
- Improvement in stormwater quality to protect Lake Rotokauri.
- Community connection to natural habitats through well designed and convenient walking and cycling trails.
- Minimal heat island effect through continuous tree planting and canopy closure over active transport paths.
- Access to and use of public transport, walking and cycling facilities to reduce carbon emissions.
- Stormwater treated at source to reduce downstream maintenance and impact on habitat values of the wetlands and lakes.

2.2 Provide adaptive street corridors

- Demonstrate flexibility throughout the transport network to respond to changes in function and physical interfaces. Consider an adaptive approach in the way corridors are designed to be able to respond to future changes in land use, the way we move around or utilise technology over time.

Outcomes:

- Minimise environmental impact through reduced need to update and replace corridors, saving emissions and materials through future proofing the network layout.
- Minimise social disruption by future proofing the corridor design.
- Minimise significant and permanent engineering interventions/solutions.
- Network configuration that does not preclude the growth and expansion of active modes or public transport in the future.
- Provision of space function for non-transport functions such as ecological diversity, water management and recreation.
- Minimise corridor widths and residual land.



3.0 INTEGRATED DESIGN

3.1 Support sustainable land uses

- Facilitate integration of the various land uses that make up the Rotokauri area. It is the integration of these land uses that will determine how well the transport network can perform. Residents should be provided with the choice to live in amenity rich neighbourhoods where they are a short walk or bike ride away from shopping, parks, schools and cafes and are encouraged to take active or public transport to work and regional destinations.
- Integrate and support the future viability of the Rotokauri suburban centre through a corridor design that supports desired place and future land use functions. It is critical that the design of the corridor responds to adjacent land uses and supports density through appropriate corridor typologies.
- The development of any small residual land resulting from future design phases along the corridor edges is not precluded and can contribute to a safe, user friendly and inviting transport corridor and adjacent land uses.

Outcomes:

- Network supports adjacent land uses and provides an appropriate level of amenity which achieves for e.g. corridor widths and design speeds to promote placemaking outcomes and active mode prioritisation.
- Minimal land take, disturbance and biodiversity impacts.
- Residual land at gateway locations acknowledges and celebrates the historic, cultural and environmental narratives of Rotokauri.
- Minimal ongoing maintenance requirements for structures, landscaping and street furniture through use of robust materials, finishes and plant species.

3.2 Support desired built form outcomes

- Support the desired built form typologies of a sustainable community through transport network design. Public transport stops and active transport connections are best located within walking distance of higher density development to facilitate modal shift, support commercial and mixed use centres and contribute to vibrant active urban environments.

Outcomes:

- Transport network aligns with density.
- Transport network scaled to the future context and urban structure.
- Supports connectivity and interface to open and public spaces.
- Allocation of street space responds to the desired land use function.

3.3 Facilitate active frontage

- Create a positive relationship between built form, open space and the transport corridor by providing a clear, direct, overlooked, well connected edge that serves the needs of multiple users and adjacent land uses.
- Facilitate opportunities for place (for e.g. retail/shopping, alfresco dining, play, public art, cultural landmark), as well as movement functions in corridors.

Outcomes:

- Supports appropriate public / private interfaces along the transport network edges. Corridors should deliver street typologies scaled to the adjoining land use that provide a clear movement function as well as an appropriate interface to built form.
- Improves amenity and connectivity at a fine grain (pedestrian) level.
- Social cohesion and economic benefit achieved for local businesses.
- People orientated streets and streets as public spaces.
- Active frontages supporting longer walking distances and modal shift.
- Appropriate building setbacks and boundary treatments that support safety and active frontage outcomes.



4.0 CHARACTER AND AMENITY

4.1 Create and enhance identity and sense of place

- Acknowledge the identity or sense of place as unique to the inherent built, natural and cultural qualities of a place. Responding to identity in the location and type of the new corridor can provide a sense of continuity and contribute to our collective memory.

Outcomes:

- Reinforces the character of Rotokauri, drawing inspiration from the underlying landscape and cultural histories of the area to create a sense of identity for the new community.
- Supports social cohesion, sense of belonging and pride in an area through clear connection to history and identity to place.
- Transport network is sensitive to context and has an appropriate level of amenity to support the intensification and placemaking outcomes in the vision of the Rotokauri Structure Plan.
- Considers, respects and/ or enhances the established identity/ form/ layout of a place.
- Preserves and or enhances the amenity values and quality of a place.

Te Aranga Design Principles

- Connection to the Māori world view is described in the Te Aranga Design Principles through Ahi Ka, Mahi Toi and Tohu.

4.2 Respect the cultural landscape

- Acknowledge significant sites and features in the layout of the transport network including Waahi Tapu sites and viewsheds to significant landmarks. Protecting or featuring these vistas or landmarks acknowledges the wider cultural or natural landscape and provides context and orientation for people who are either moving through or living within an area.

Outcomes:

- Protects and or enhances cultural sites of significance within the corridor.
- Supports the cultural context of places.
- Contributes to the placemaking drivers in the surrounding context.
- Places of interest and destinations promote passive and active recreation and community health and wellbeing.

Te Aranga Design Principles

- Connection to the Māori world view is described in the Te Aranga Design Principles through Ahi Ka, Mahi Toi and Tohu.



5.0 CONNECTED

Provide legible, accessible and safe connections between residential neighbourhoods, suburban centres, recreational areas and transit stops for pedestrians, cyclists and local road users. Provide a high level of cross corridor connectivity between the city and the suburb, identified activity nodes and residential neighbourhoods. Prioritise active modes and transport and provide choice in travel and the ability to connect at interchanges between modes.

5.1 Enhance integrated crossing points to better engage with the Greenway

- A number of new road crossings over the Rotokauri Greenway will be required, to connect the suburb with the city. While the structure of these crossings is yet to be determined, they will be important thresholds and gateways to the suburb and will be visible elements along the open space network for residents and users of the Greenway, as well as visitors entering the suburb by road. It is therefore important to establish a vision statement and principles for these crossings:
“a family of simple, well detailed structures that fit unassertively within the Rotokauri Greenway, and that celebrate the landscape and that suit the cultural and low-level suburban context of the area”.

Outcomes:

- A crossing which relates to the surrounding and wider context, including the cultural environment through use of scale, form and materiality and which achieves minimal visual impact on and conflict with the surrounding environment.
- Achieves a consistent form and quality of detailing for each of the crossings balancing structural elements.
- Experience of travelling across the Greenway contributes to users’ sense of place, arrival experience and sense of identity with Rotokauri.
- Optimal pedestrian and cycle amenity on each of the crossings.
- Crossings which create or enhance views to and from the structures along the greenway.

5.2 Connect nodes

- Provide high quality active transport links between identified activity nodes and community facilities. The corridor should provide direct and legible connections between key destinations. Each corridor should have a clear function and consider connectivity for all modes (walking, cycling, public transport, freight transport and private vehicle). Connect between areas as well as through central corridors.

Outcomes:

- Cross corridor connections to greenway, public spaces, services and facilities that are safe, accessible and direct.
- Wayfinding incorporated by drawing on visual cues in the natural and built environment particularly at decision points for drivers and active modes.
- Provides community connectivity, mobility and choice.
- Provides safe crossings for people crossing roads and railways.
- Supports an increased level of movement that promotes a sense of personal safety.
- Provides clear and tangible connectivity between complimentary destinations i.e. schools and open spaces.

5.3 Connect modes

- Provide for choice in travel and the ability to connect at interchanges between modes. Provide access to multiple travel modes. Corridors can contribute to outcomes for a wider cross section of the community (including elderly, children and mobility-impaired users) when they support safe, comfortable and attractive multi-modal transport for all users.

Outcomes:

- Provides a transition between modes that is convenient, safe and comfortable.
- Provides community connectivity, mobility and choice.
- Supports joint micro-mobility and public transport outcomes.
- Creates and supports nodes along the corridor with higher levels of amenity.

5.4 Support legible corridor function

- Consider how areas can be clearly navigated and understood by all users, in particular vulnerable users, including pedestrians and cyclists moving with the transport network.

Outcomes:

- Supports community connectivity, mobility and choice within and beyond the corridor
- Reduces conflict between modes
- Supports placemaking and wayfinding outcomes through clear gateways and direct connections to destinations.

5.5 Prioritise active modes and public transport

- Provide quality active mode networks and dedicated public transport corridor to enable a modal shift away from private vehicle use. Dedicated and connected active mode networks provide choices for people walking and cycling, reduces land consumption, and improves overall network efficiency. Dedicated and efficient public transport corridors provide modal choice to a larger number of users and reduces the impact on the environment.

Outcomes:

- Supports community connectivity, mobility and choice
- Reduction of car dependency and emissions reduces traffic congestion/parking
- Supports healthy lifestyles within the community by replacing short motor vehicle trips with opportunity to use alternative modes
- Reduced environmental impact of travel to lesson climate change impacts.

5.6 Support access to employment and industry

- Provide alternative and efficient access to areas of employment.

Outcomes:

- Balances private and delivery vehicle access with active and public transport access.
- Transport network supports access to employment and industry.
- Reduces modal conflict and provides a legible corridor.
- Reduces impact of road closures and social disruptions.
- Strategic corridors, to enable rubbish collection, emergency services, maintenance to buildings and supply of goods.

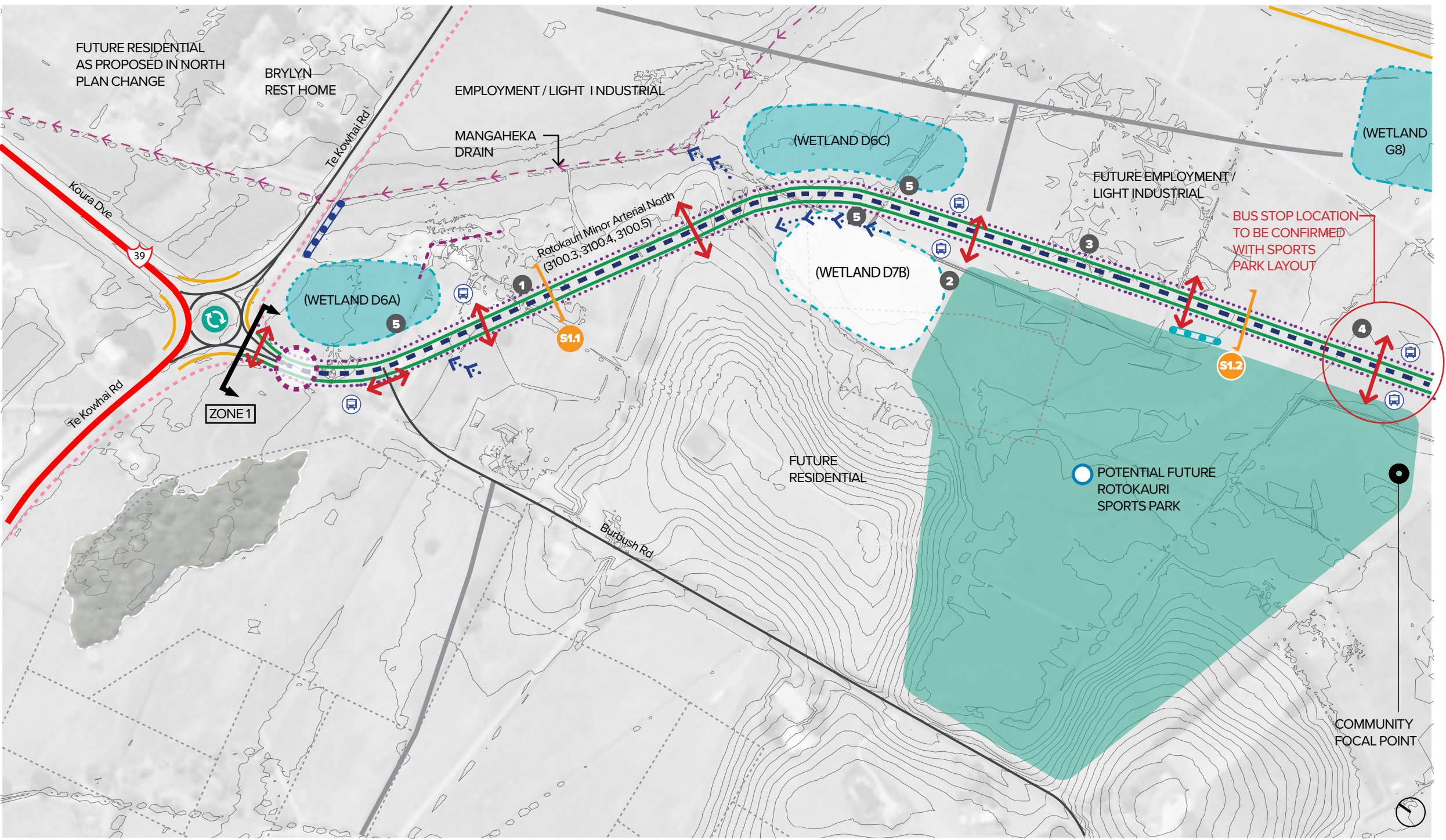
4.

DESIGN APPROACH

4.1 ZONE PLANS AND SECTIONS

SHEET 1 - ZONE 1

ZONE 1: ROTOKAURI MINOR ARTERIAL NORTH (3100.3, 3100.4, 3100.5)



- KEY MOVES**
- 1 Separated walking and cycling facilities both sides of minor arterial to encourage use of active modes
 - 2 Bus facilities located close to community facilities and key transport nodes.
 - 3 High amenity network through use of planting and materials which draws inspiration from the underlying landscape and cultural histories reinforcing the character of Rotokauri.
 - 4 Provide connections across the road at a maximum spacing of 400m.
 - 5 Incorporate recreation, amenity and biodiversity into stormwater storage facilities.



Major arterial - existing

Major arterial - proposed

Minor arterial - existing

Minor arterial - proposed

Collector road - proposed

State Highway 1

Zone #

Section line (S#)

Local road - existing

Local road - proposed as part of masterplans by others

Local road - shown in structure plan

Future Cycleway - proposed

Existing rest stop/pocket space

Bus stop - existing

Bus stop - proposed

Roundabout - proposed

Footpath - Existing

Footpath - Proposed

Cycleway - (offroad) existing. Includes shared and separated

Cycleway - proposed separated one way

Cycleway - proposed separated two way

Open space

Road crossing points and connections for active modes - Proposed

Gateway - Proposed

Community focal point

Community facilities - Existing

Community facilities - Proposed

Proposed stormwater management areas (included in the designation)

Indicative future stormwater management areas (not included in the designation)

End of pipe raingarden

Existing watercourse /open channel drain

Drain diversion

Drain - Proposed - Temporary To be superseded when land is developed

Conveyance swale - Proposed

Wetland swale - Proposed

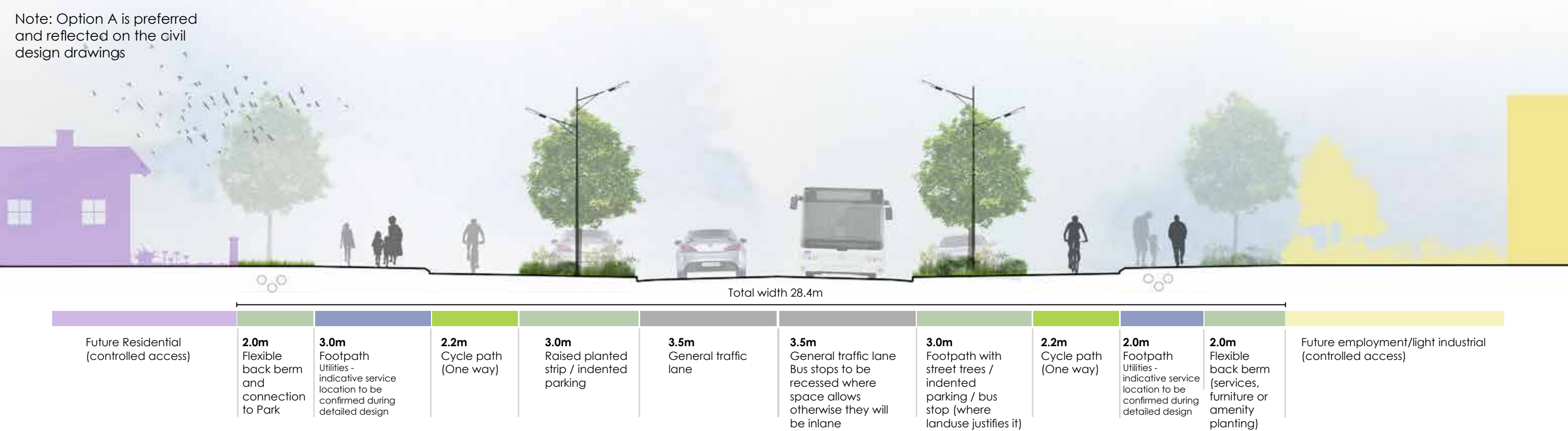
SECTION 1.1 - MINOR ARTERIAL -
ROKOAURI MINOR ARTERIAL NORTH FACING NORTH WEST (3100.4, 3100.5) OPTION A, WIDTH 29.4 - ZONE 1



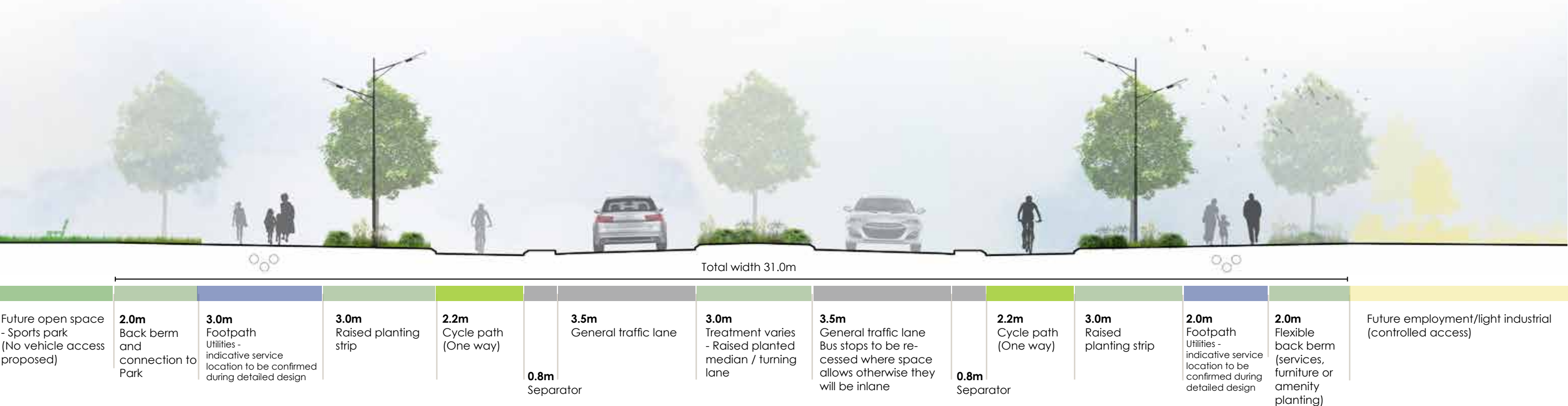
SECTION 1.1 - MINOR ARTERIAL
ROKOAURI MINOR ARTERIAL NORTH FACING NORTH WEST (3100.4, 3100.5) OPTION B, WIDTH 31.0 - ZONE 1



SECTION 1.2 - MINOR ARTERIAL
ROKOAURI MINOR ARTERIAL NORTH FACING NORTH (3100.3) OPTION A, WIDTH 28.4 - ZONE 1

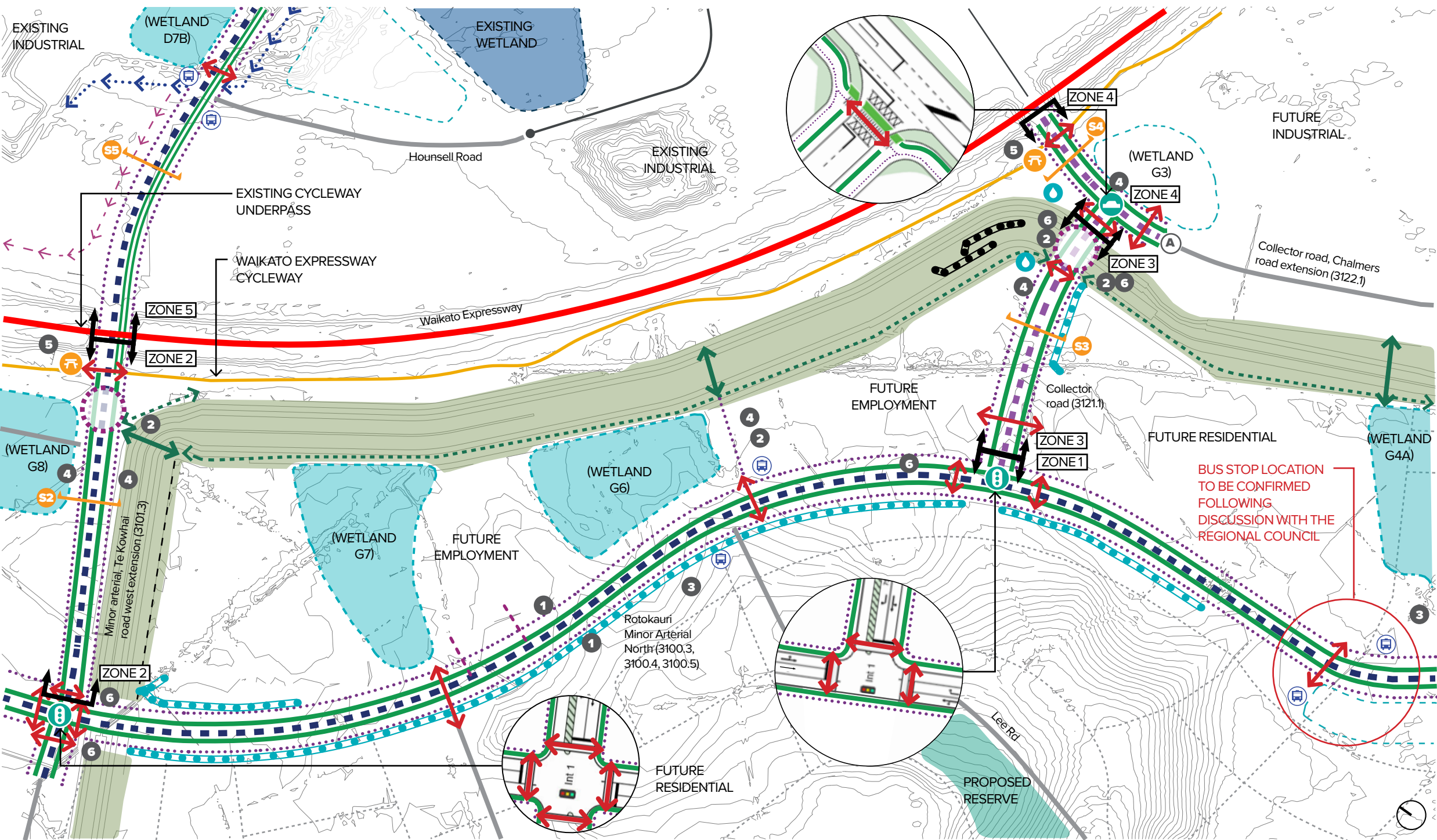


SECTION 1.2 - MINOR ARTERIAL
ROKOAURI MINOR ARTERIAL NORTH FACING NORTH (3100.3) OPTION B, WIDTH 31.0 - ZONE 1



SHEET 2 - ZONES 1,2,3,4 5

ZONE 1: ROTOKAURI MINOR ARTERIAL NORTH (3100.3, 3100.4, 3100.5), ZONE 2: MINOR ARTERIAL, TE KOWHAI ROAD WEST EXTENSION (3101.3), ZONE 3: COLLECTOR ROAD (3121.1), ZONE 4: COLLECTOR ROAD, CHALMERS ROAD EXTENSION (3122.1), ZONE 5: MINOR ARTERIAL, TE KOWHAI ROAD WEST EXTENSION (3101.3)



KEY MOVES

- 1 Separated walking and cycling facilities both sides of minor arterial road
- 2 Connect to future greenway walking + cycling network
- 3 Bus stop facilities and cycle parking located close to community destinations and key transport nodes
- 4 Respond to adjacent stormwater devices to increase biodiversity through plant selection
- 5 Increase quality of existing cycleway facilities through materiality/artwork to encourage use and integration of existing networks into proposed cycleway connections i.e. state highway underpass
- 6 Greenway rest area and viewing platform

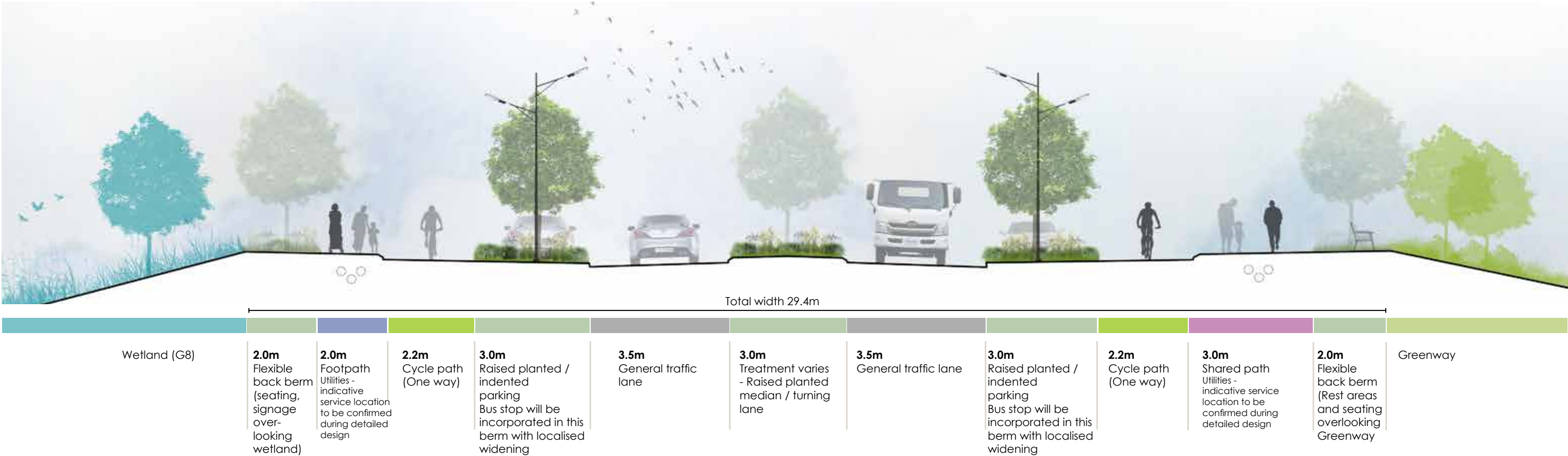
RECOMMENDATION

- A Crossing points and hierarchy to be rationalised in future design phases



Major arterial - existing	State Highway 1	Local road - shown in structure plan	Signalised Intersection - proposed	Rotokauri Greenway	Indicative future stormwater management areas (not included in the designation)	Drain - Proposed - Temporary To be superseded when land is developed
Major arterial - proposed	Zone #	Existing rest stop/pocket space	Cycleway -(offroad) existing. Includes shared and separated	Open space	Proposed stormwater management areas (included in the designation)	Conveyance swale - Proposed
Minor arterial - existing	Section line (S#)	Bus stop - existing	Cycleway - proposed separated one way	Road crossing points and connections for active modes - Proposed	Existing watercourse /open channel drain	Wetland swale - Proposed
Minor arterial - proposed	Local road - existing	Bus stop - proposed	Cycleway - proposed separated two way	Gateway - Proposed	Drain diversion	Existing wetland
Collector road - proposed	Local road - proposed as part of masterplans by others	Priority controlled raised table - proposed	Footpath - Existing	Community focal point		End of pipe raingarden
			Footpath - Proposed			

SECTION 2 - MINOR ARTERIAL
TE KOWHAI WEST EXTENSION FACING EAST (3101.3) WIDTH 29.4 - ZONE 2



SECTION 3
COLLECTOR ROAD FACING EAST (3121.1) WIDTH 27.4M - ZONE 3



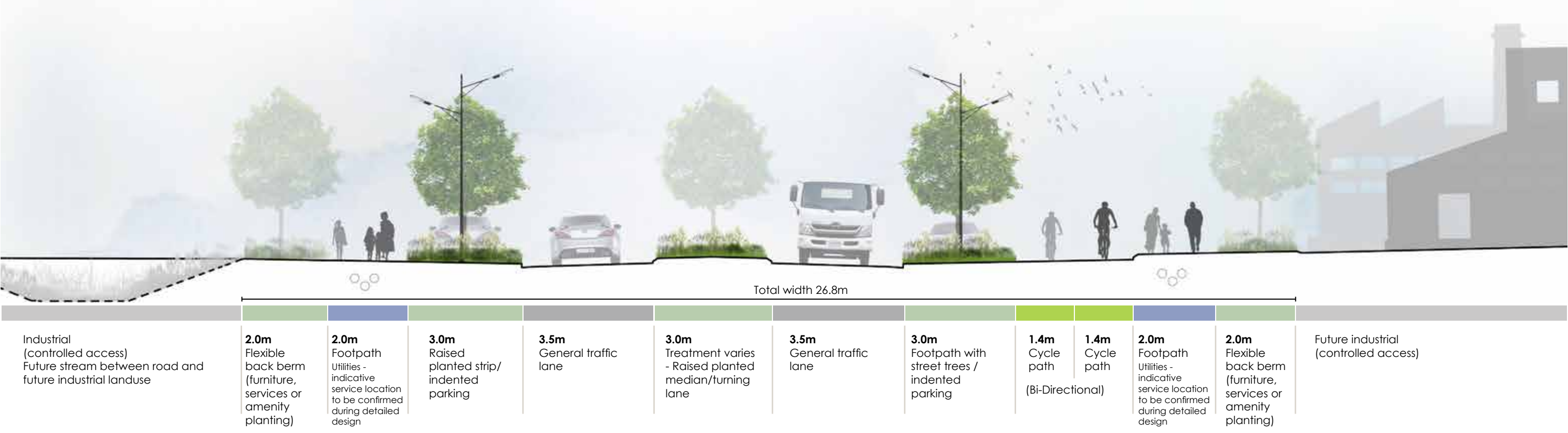
SECTION 4 - COLLECTOR ROAD

CHALMERS ROAD EXTENSION FACING NORTH (3122.1) WIDTH 23.8M - ZONE 4



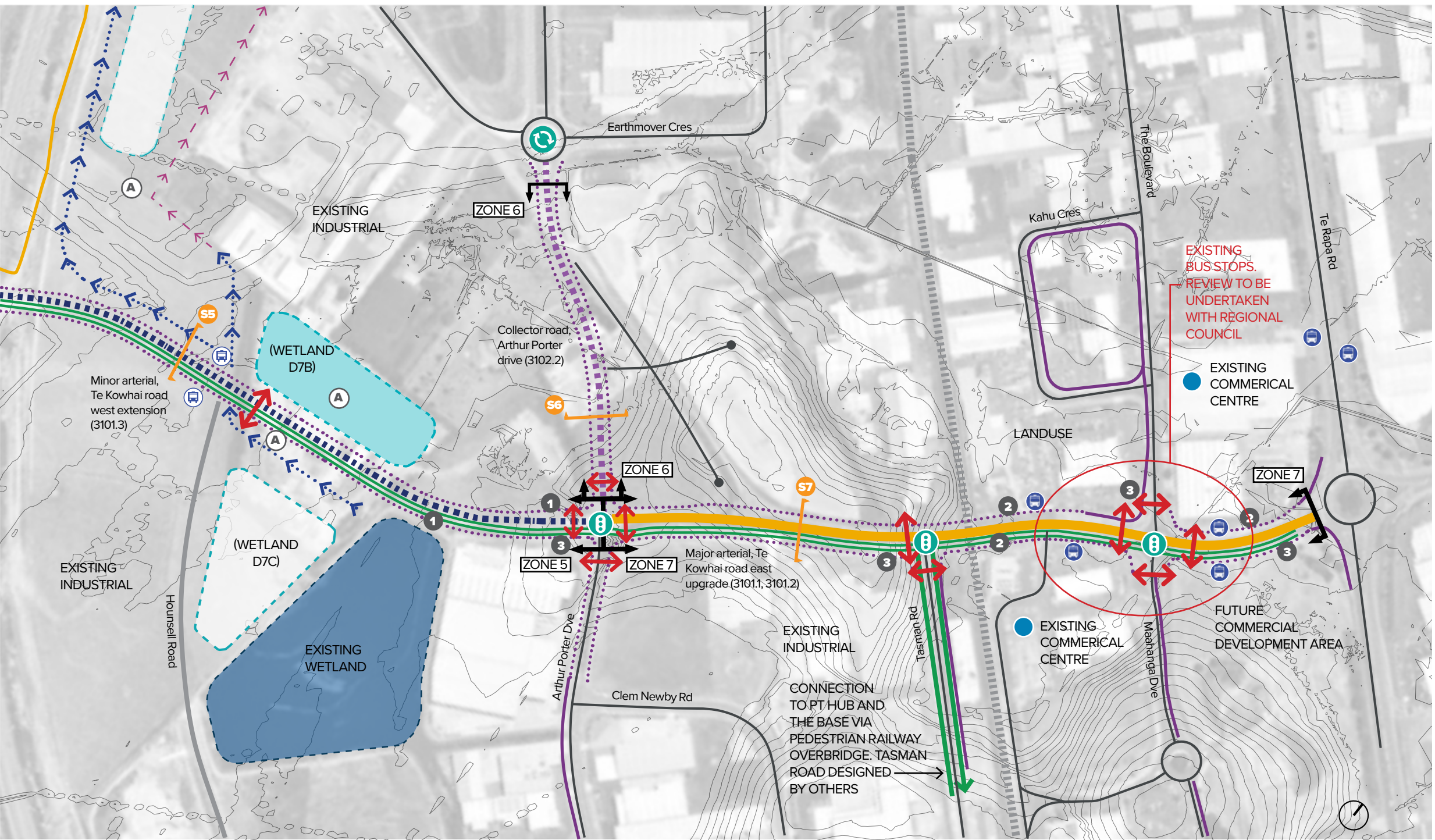
SECTION 5 - MINOR ARTERIAL

TE KOWHAI ROAD WEST EXTENSION FACING EAST (3101.3) WIDTH 26.8M - ZONE 5



SHEET 3 - ZONES 5,6 + 7

ZONE 5: MINOR ARTERIAL, TE KOWHAI ROAD WEST EXTENSION (3101.3), ZONE 6: COLLECTOR ROAD, ARTHUR PORTER DRIVE (3102.2), ZONE 7: MAJOR ARTERIAL, TE KOWHAI ROAD EAST UPGRADE (3101.1, 3101.2)

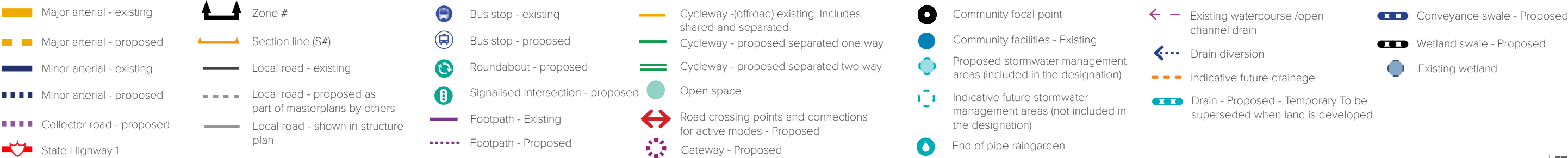


KEY MOVES

- 1 2-directional cycleway on south side of Te Kowhai Road East
- 2 Enhance street edge through use of high quality vegetation and trees to soften the industrial and commercial and industrial environment - provide a human scale and rhythm to the street.
- 3 Provide safe cycle crossing at intersections for access to wider transport network

RECOMMENDATIONS

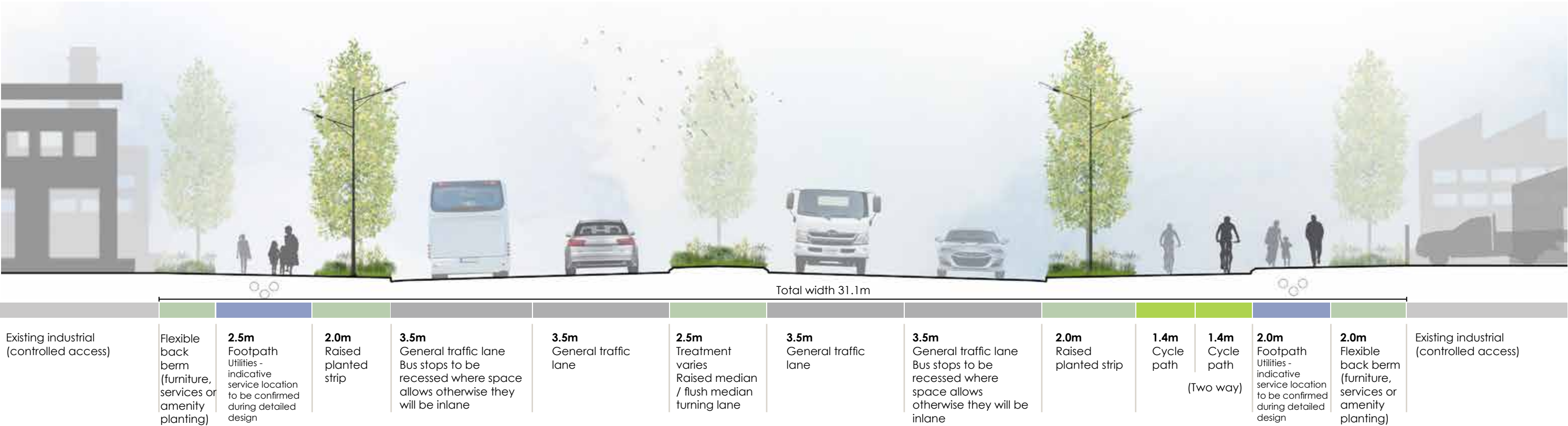
- A Incorporate recreation, amenity and biodiversity into stormwater storage facilities



SECTION 6 - COLLECTOR ROAD
ARTHUR PORTER DRIVE FACING NORTH WEST (3102.2) WIDTH 23.0M - ZONE 6

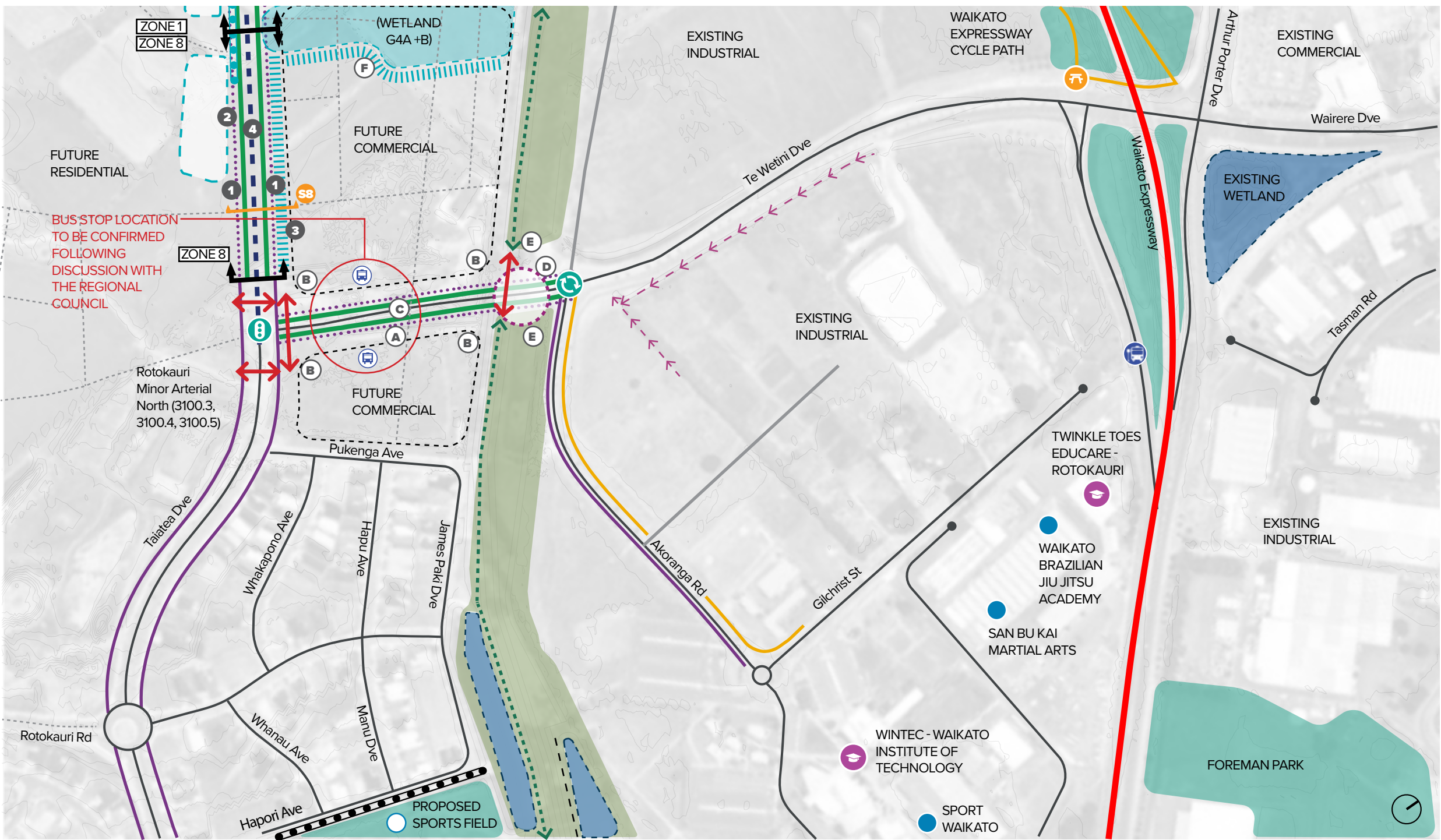


SECTION 7 - MAJOR ARTERIAL
TE KOWHAI ROAD EAST UPGRADE FACING NORTH EAST (3101.1, 3101.2) WIDTH 31.1M - ZONE 7



SHEET 4 - ZONE 8

ZONE 8: ROTOKAURI MINOR ARTERIAL NORTH (3100.3, 3100.4, 3100.5)

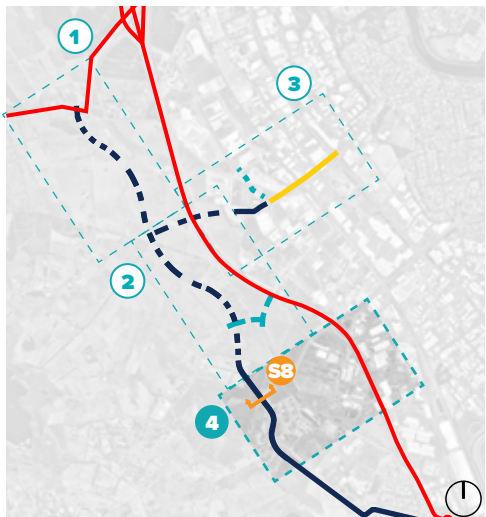


KEY MOVES

- 1 Separated walking and cycling facilities both sides of minor arterial
- 2 High quality street environment achieved through planting, materiality, shade trees and positive interface with adjacent properties to achieve street appeal and minimise disruption to walking and cycling.
- 3 Activate edge through strong relationship between pedestrian and cycling facilities and commercial centre. Enable commercial buildings to frame the street edge and spill out onto street.
- 4 Minor arterial road corridor to respond to land use requirements i.e. narrower corridor through commercial centre and increase pedestrian and amenity space.

RECOMMENDATIONS

- A High quality street environment achieved through planting, materiality, shade trees and positive interface with adjacent properties to achieve street appeal and minimise disruption to walking and cycling.
- B Threshold defined through built form articulation. Buildings should help frame intersection and make legible to road users.
- C Strong connection across Te Wetini Drive to bridge the suburban centre for active modes.
- D Gateway treatment and walking and cycling facilities across greenway.
- E Greenway rest area and viewing platform
- F Activate edge of landuse i.e. commercial with adjacent open space.



- Major arterial - existing
- Major arterial - proposed
- Minor arterial - existing
- Minor arterial - proposed
- Collector road - proposed
- State Highway 1

- Zone #
- Section line (S#)
- Local road - existing
- Local road - proposed as part of masterplans by others
- Local road - shown in structure plan
- Bus stop - existing

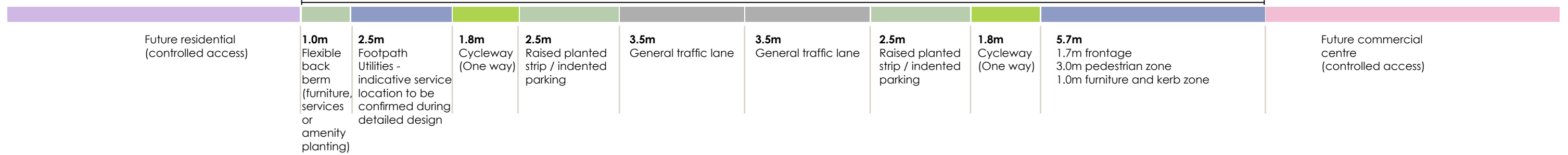
- Bus stop - proposed
- Roundabout - proposed
- Signalised Intersection - proposed
- Footpath - Existing
- Footpath - Proposed
- Education - Existing

- Cycleway -(offroad) existing. Includes shared and separated
- Cycleway - proposed separated one way
- Cycleway - proposed separated two way
- Open space
- Road crossing points and connections for active modes - Proposed
- Rotokauri Greenway

- Gateway - Proposed
- Community facilities - Existing
- Community facilities - Proposed
- Proposed stormwater management areas (included in the designation)
- Indicative future stormwater management areas (not included in the designation)
- End of pipe raingarden

- Existing watercourse /open channel drain
- Drain diversion
- Drain - Proposed - Temporary To be superseded when land is developed
- Swale - Proposed - Permanent
- Existing wetland

ROTKAURI MINOR ARTERIAL NORTH FACING WEST, COMMERCIAL CENTRE (3100.2) WIDTH 24.8M - ZONE 8



4.2 DESIGN STRATEGIES

LAND USE INTERFACE

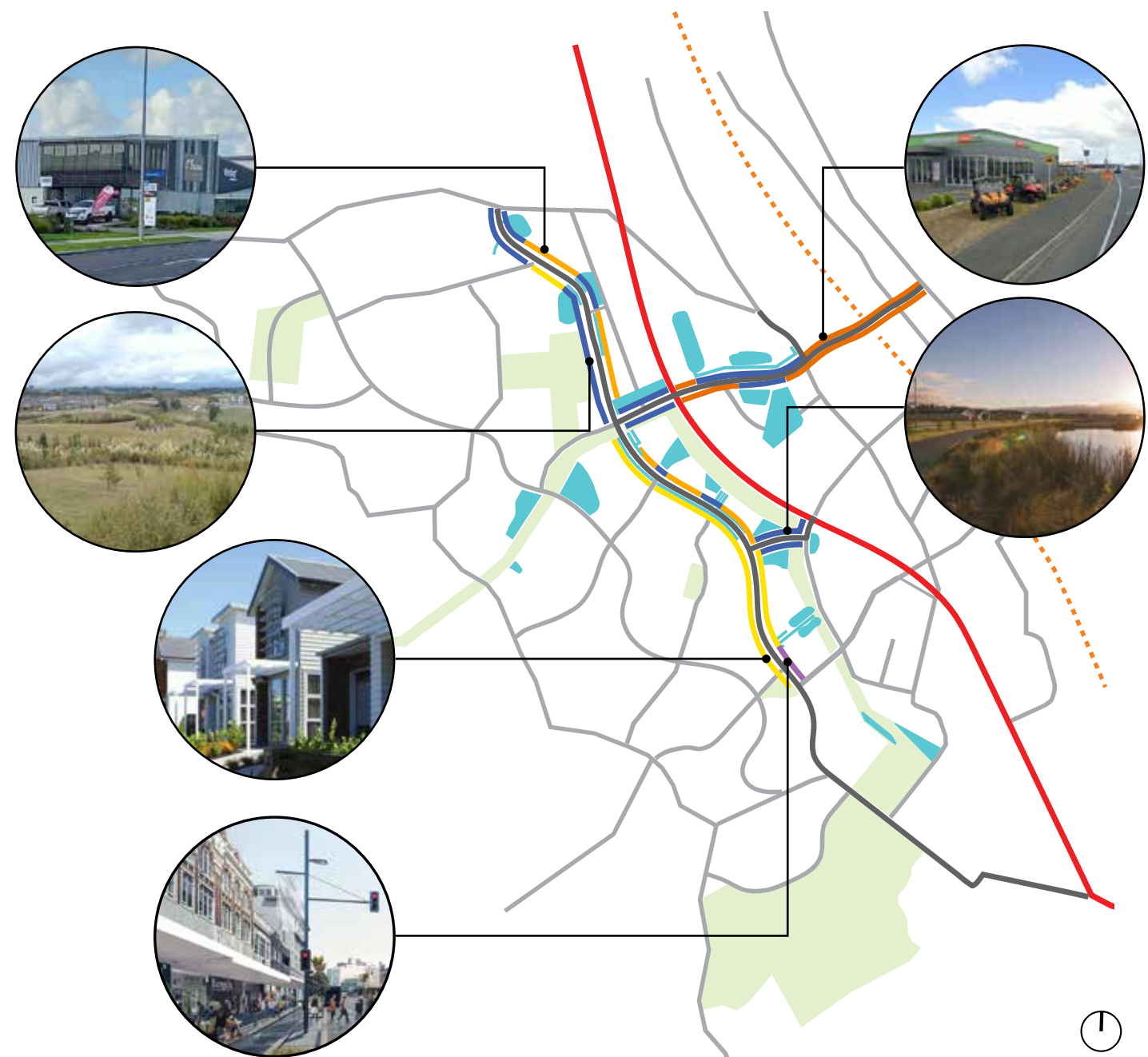


Figure 14. Land use interface analysis map

Whilst landuse is outside the direct control of the project team the intent is to work with developers to help achieve the desired outcomes listed below.

Residential

- Largely rear vehicle access properties with pedestrian and cycle access onto the minor arterial road through gate connection
- Promote low fencing to maintain visual connection to the streetscape and provide passive surveillance to the streetscape

Commercial

- Berm to be utilised for widened pedestrian space to encourage retail / shopping, alfresco dining to occupy street and activate commercial edge. Mixed-use buildings interfacing directly with the corridor network will address passive surveillance opportunities to deter criminal or antisocial behaviour from these areas outside of business hours.
- Higher amenity streetscape to support commercial landuse including seating, bins, lighting and paving

Employment

- Encourage buildings to relate to street frontage through window orientation, minimising setbacks and carparks at rear
- Where possible encourage planting and trees to delineate land boundaries to support or replace fencing treatments

Industrial

- Encourage scale and materiality of built form to be appropriate to the context of the surroundings
- Encourage buildings to relate to street frontage through minimising setbacks, window orientation towards street, and carparks at rear
- Where possible encourage planting and trees to delineate land boundaries rather than fencing
- The project seeks sufficient pedestrian and cycle facilities to provide efficient transition through industrial areas i.e. provide well-lit and highly visible streets to encourage multi-modal choice when transit crosses multiple land uses
- Encourage rear vehicle access to properties where they conflict with active transport corridors.

- Controlled access off arterial road network across cycle lanes.

Open Space and Wetlands

- Open interaction with streetscape to encourage connection to openspace and promote multiple uses for wetlands including recreation.
- Provide for wayfinding signage, street furniture to improve amenity and provide connections and areas for community gathering and respite between land uses
- A mix of low planted areas and trees to provide shade and add biodiversity and vertical dimension to sparse and uninviting open spaces
- Native plant species to be used to enhance local ecology
- Open spaces which incorporate continuity of natural systems i.e. stormwater treatment where possible to daylight services and make use of all space available to influence positive ecological and biodiversity outcomes
- Residential low-medium density properties bordering large open spaces to encourage use of open spaces as shared areas for community and group gatherings as well as recreation

General notes

- 1-2m berms throughout to allow for above ground services, sightlines where driveways cross, additional width for bus stops and potential raingarden width variability. Final berm width to be determined during detailed design with an option to sell land back to developers if not required.
- Controlled access throughout to limit number of driveway crossings which will enhance cyclist and pedestrian experience and therefore increase uptake

Legend

Proposed arterial roads	Employment
Structure plan roads	Residential
State Highway	Open space
Wetland/Stormwater	Open space/reserves
Town Centre	Stormwater treatment devices
Industrial	

4.3 INTERFACE TREATMENT TYPOLOGIES

RESIDENTIAL + MINOR ARTERIAL
ZONES 1, 2 + 3

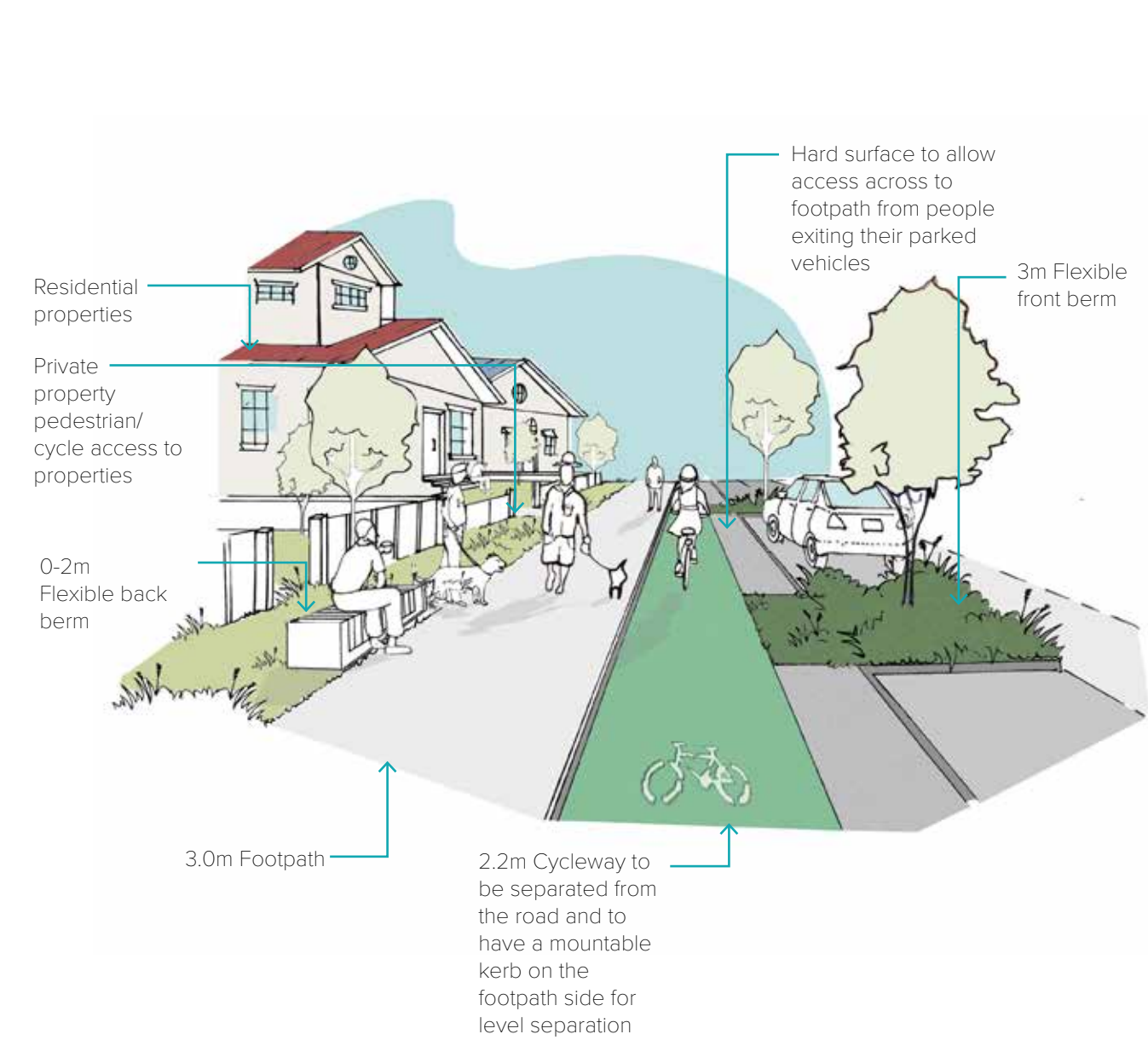


Figure 15. Residential and Minor Arterial Interface treatment typology sketch



Whilst landuse is outside the direct control of the project team the intent is to work with developers to help achieve the desired outcomes listed below.

Low fences and gate access

- Promote low fencing to maintain visual connection to the streetscape and provide passive surveillance
- Gate access for cyclists and pedestrians to property to encourage multi-modal use through ease of access to corridor



Flexible back berm (0-2m)

- Planted or grassed back berms that provide flexible space for street furniture and above ground services. The berm will also provide physical separation from footpaths to fences for safety from vehicle crossings at driveway thresholds where applicable.
- Low planting to allow for clear sightlines on controlled access points to the minor arterial.



Flexible front berm (2-3m)

- Allowance for street trees, carparking, swales and raingardens



Street Trees and Planting

- Amenity planting will help celebrate the unique ecosystems of Rotokauri and the

wider ecological area. This will include low native groundcover planting and species appropriate for use i.e. providing separation from road corridor or swale planting

- Corridors will be lined with locally sourced endemic species that will provide suitable shade for pedestrians and cyclists while providing a habitat and food source for birds.

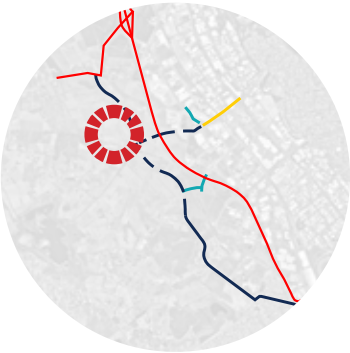
Street Furniture

- Opportunity for street furniture to improve accessibility for all ages and abilities
- Opportunity to incorporate narrative and artwork into the design of the furniture to provide sense of place

Surface Treatments

- Concrete footpath and asphalt cyclepath provide visual separation. Asphalt creates a smooth surface for cycling. Opportunity to use segmental paving and/or tactiles to highlight key nodes such as road crossing points.

Context map



EMPLOYMENT + MINOR ARTERIAL ZONE 1

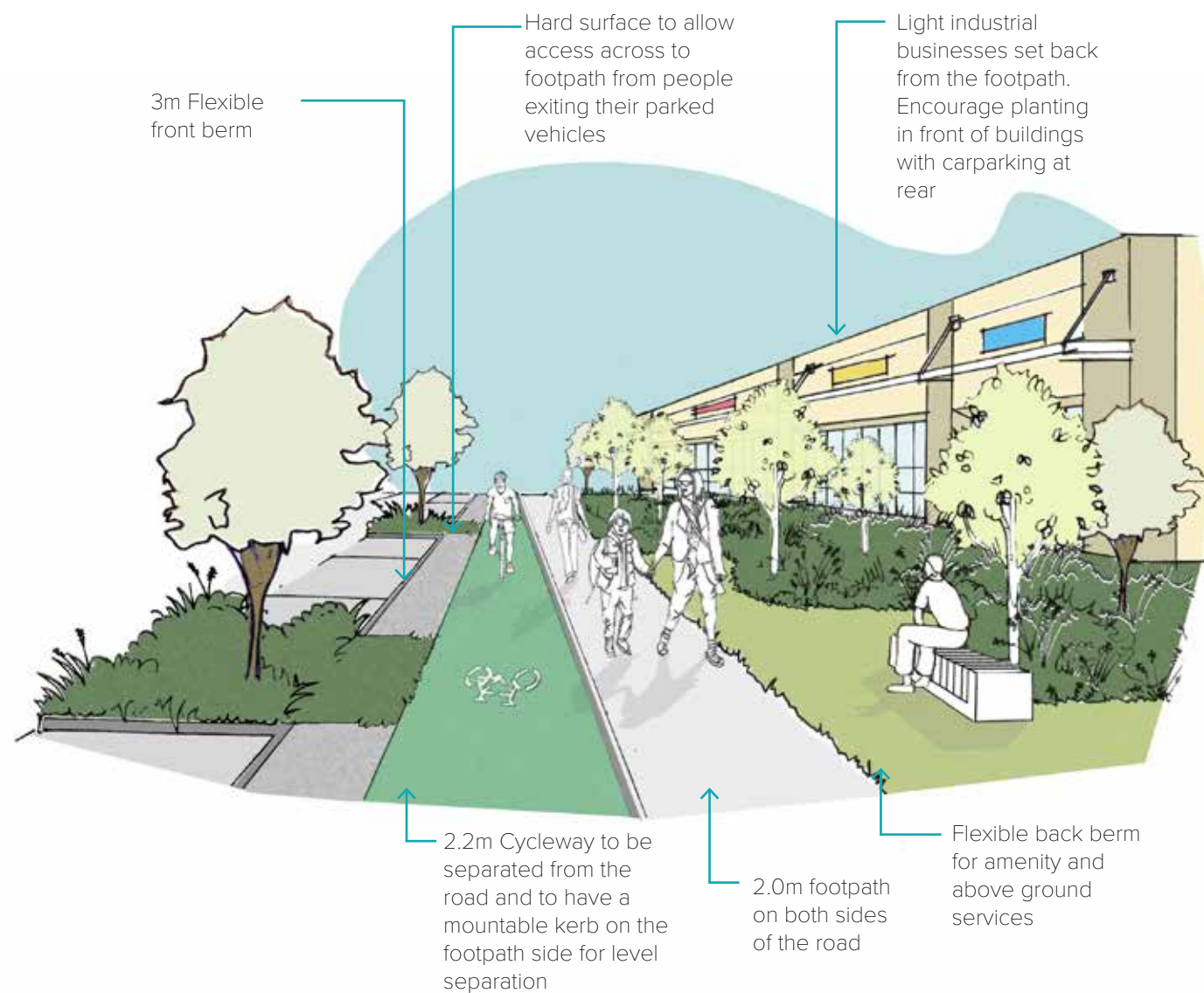
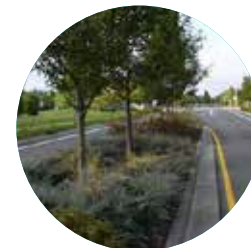


Figure 16. Employment and Minor Arterial Interface treatment typology sketch
Sketch shown reflects option A. Option b not shown.



Whilst landuse is outside the direct control of the project team the intent is to work with developers to help achieve the desired outcomes listed below.

Flexible back berm (0-2m)

- Planted or grassed back berms that provide flexible space for street furniture and above ground services. The berm will also provide physical separation from footpaths to fences for safety from vehicle crossings at driveway thresholds where applicable
- Low planting to allow for clear sightlines on controlled access points to the minor arterial

Flexible front berm (2-3m)

- Allowance for street trees, carparking, streetlighting, bus stops and raingardens.

Street Trees and Planting

- Amenity planting will help celebrate the unique ecosystems of Rotokauri and the wider ecological area. This will include low native groundcover planting and species appropriate for use i.e. providing separation from road corridor or rain gardens
- Corridors will be lined with locally sourced endemic species that will provide suitable shade for pedestrians and cyclists while providing a habitat and food source for birds.

Street Furniture

- Opportunity for rest areas with street furniture to improve accessibility for all ages and abilities

- Opportunity to incorporate narrative and artwork into the design of the furniture to provide sense of place.

Surface Treatments

- Concrete footpath and asphalt cyclepath provide visual separation. Asphalt creates a smooth surface for cycling. Opportunity to use segmental paving and/or tactiles to highlight key nodes such as road crossing points.

Median treatments

- Wide planted medians will be planted with robust, locally sourced, low maintenance native species with low water requirements.

Cycle and pedestrian treatments

- Cycle facilities and pedestrian space will be separated from the road corridor through level change as well as concrete raised separators and planted medians to delineate space and provide a safe and comfortable environment for active modes
- Cycleways will have a green and non-slip treatment applied to the road surface to further enhance the separate environment.

Context map



COMMERCIAL + MINOR ARTERIAL ZONE 8

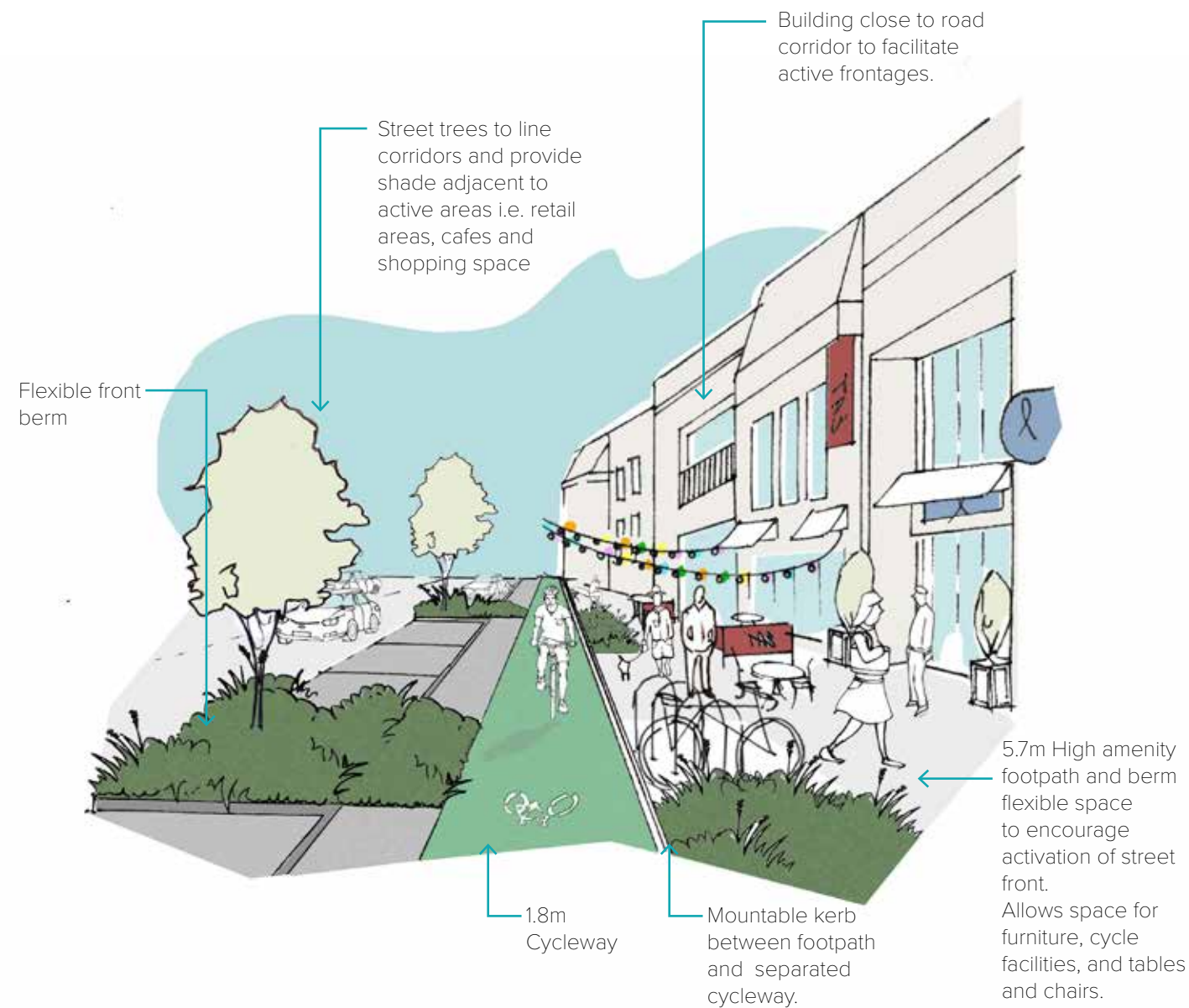


Figure 17. Commercial and Minor Arterial Interface treatment typology sketch



Whilst landuse is outside the direct control of the project team the intent is to work with developers to help achieve the desired outcomes listed below.

Crossings

- More frequent controlled crossings will improve connectivity between the commercial and adjacent zones



Flexible back berm space / Shared space

- Widened footpath pedestrian and furniture zones to provide facilities for cycle parking, seating, planting and cafe tables to encourage an activated building edge
- Low planting to allow for clear sightlines on controlled access points to the minor arterial



Flexible front berm

- Allowance for street trees, carparking and raingardens



Planting

- Amenity planting will help celebrate the unique ecosystems of Rotokauri and the wider ecological area. This will include low native groundcover planting and species appropriate for use i.e. providing separation from road corridor or swale planting
- Corridors will be lined with locally sourced endemic species that will provide suitable shade for pedestrians and cyclists while providing a habitat and food source for birds.



Street Furniture

- Provide a higher level of street furniture to service the town centre. This should include rubbish bins, lighting, signage and wayfinding, CCTV cameras, cycle parking, and seating
- Opportunity to incorporate narrative and artwork into the design of the furniture to provide a sense of place

Surface Treatments

- A mixture of concrete and segmental paving will be used through the town centre areas to create high quality and durable streetscapes
- Contrasting surface treatments will be used to delineate different modal areas

Activate Greenway and Stormwater edges

- Opportunity to utilise the proposed stormwater and recreational interfaces with the commercial centre to create a sense of place and activate both edges thereby improving connectivity and passive surveillance as well as providing multiple uses for areas of open space.

Context map



PAUSE POINT EXAMPLE ADJACENT TO GREENWAY

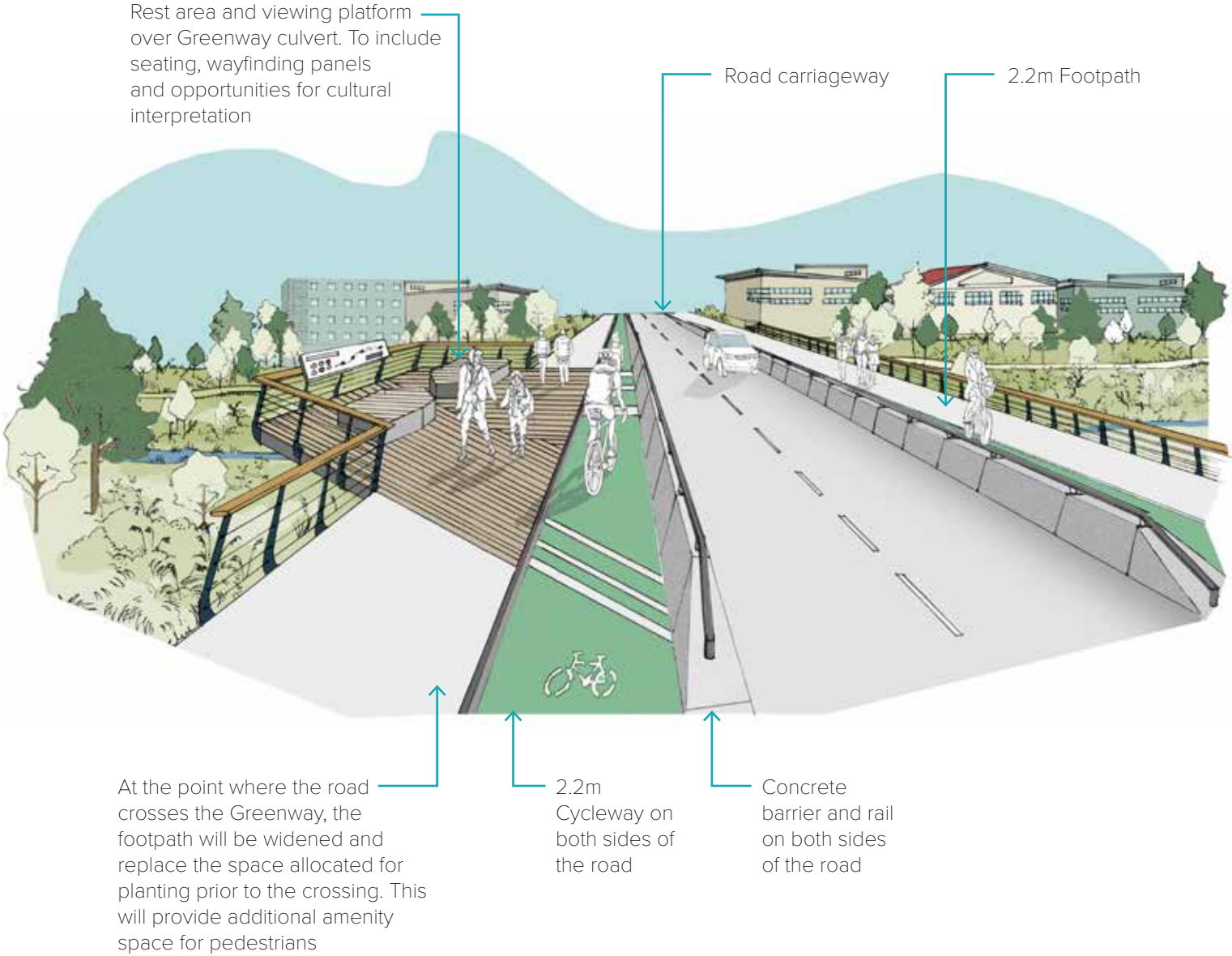


Figure 18. Greenway road crossing treatment typology sketch



Amenity spaces

- Viewing platform areas that allow people to rest and engage with the Greenway below. These spaces will allow for views to landmarks and significant sites around Rotokauri i.e significant ridgelines and ecological habitats located in the Greenway.
- these viewing platforms will help provide passive surveillance for the Greenway .

Wayfinding and signage

- Opportunity to incorporate signage into the crossing points to highlight significant sites and help to express the design narrative and cultural interpretation.

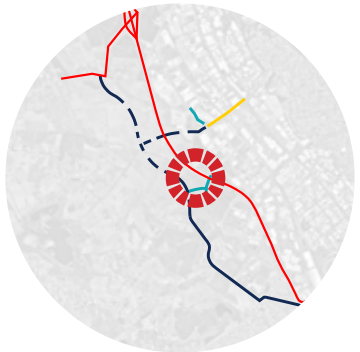
Street furniture

- Furniture and balustrade design will add amenity to the crossing point and provide space for people to stop and take in the surroundings.
- Opportunity for incorporation of narrative and artwork through furniture design.

Surface Treatments

- Surfaces to differentiate passive stopping spaces i.e. viewing platforms from the movement zones i.e. footpaths and cycleways.
- Opportunity for viewing platform surface treatments to incorporate narrative and artwork.

Context map



GATEWAY AND THRESHOLD APPROACH

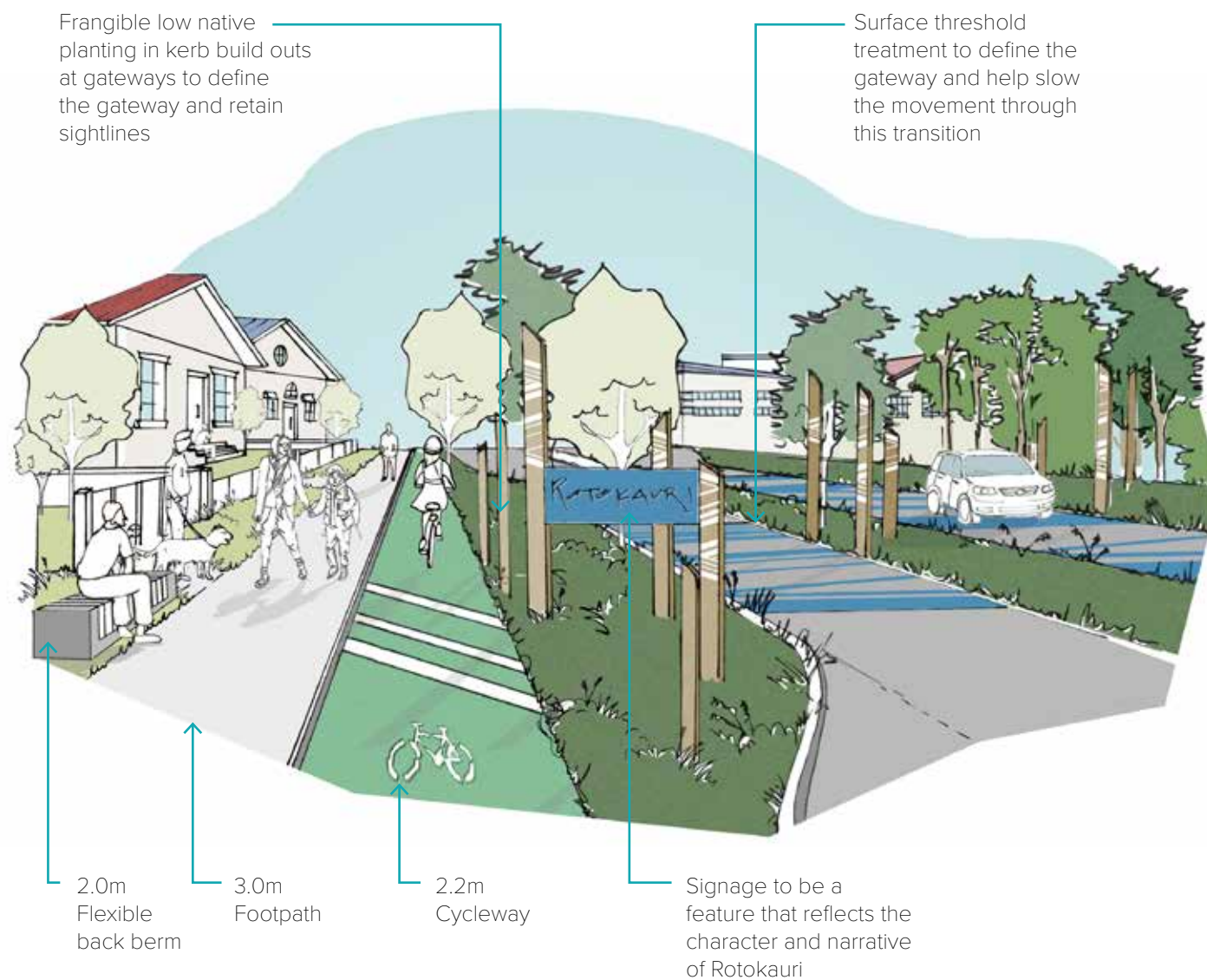


Figure 20. Gateway and threshold treatment typology sketch



Primary gateways at corridor intersections will provide opportunities for landmark buildings/ structures and planting which are often used to announce the sense of arrival and departure. Gateways will be an opportunity to define and reinforce the identity of the structure plan at key entries and exits, as well as an opportunity to signal a change in land use or speed.



Signage, artwork and wayfinding

- Gateway and wayfinding signage will respond to the local character and identity of Rotokauri while providing directions for multiple modes of transport to connect to key destinations as well as identify significant landmarks in the local area i.e. Lake Rotokauri, historic forest remnant etc



Planting and trees

- Native trees and planting of the Rotokauri area will be used to introduce visitors to the unique ecosystems and environment of Rotokauri while providing small patches for habitat.
- Planting and open space will be used to soften the entrance to Rotokauri and create a connection between both the rural and urban identity of Rotokauri.



Surface treatments

- Different road treatments will be used to act as a thresholds at the gateways of Rotokauri and small transition points between land uses. These treatments may identify the different zones of activity while acting as a traffic calming method along the main arterial roads.



- This treatment may be a different coloured treatment or pavement texture.

Bridge underpass abutment treatments

- Existing underpasses provide opportunity for artwork to add amenity and narrative to the spaces and enhance identity and sense of place.
- Lighting will be used to aid surveillance and add comfort for pedestrians and cyclists using the underpass.

Context map



5.

APPENDICES

5.1 APPENDIX 1 - DEVELOPER MASTERPLANS
ROTOKAURI RISE (NOVEMBER 2016)

1.4 Illustrative Master Plan

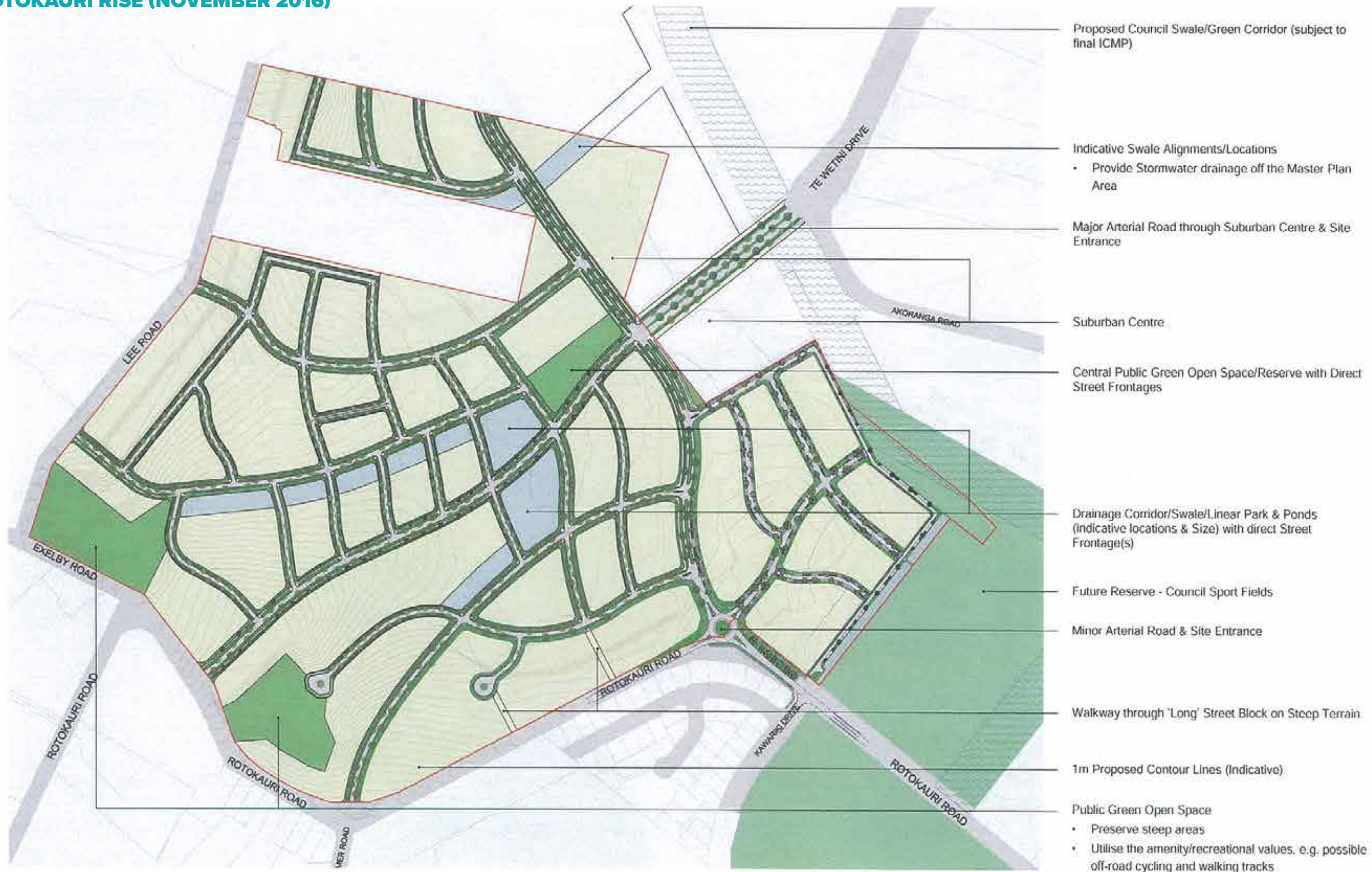


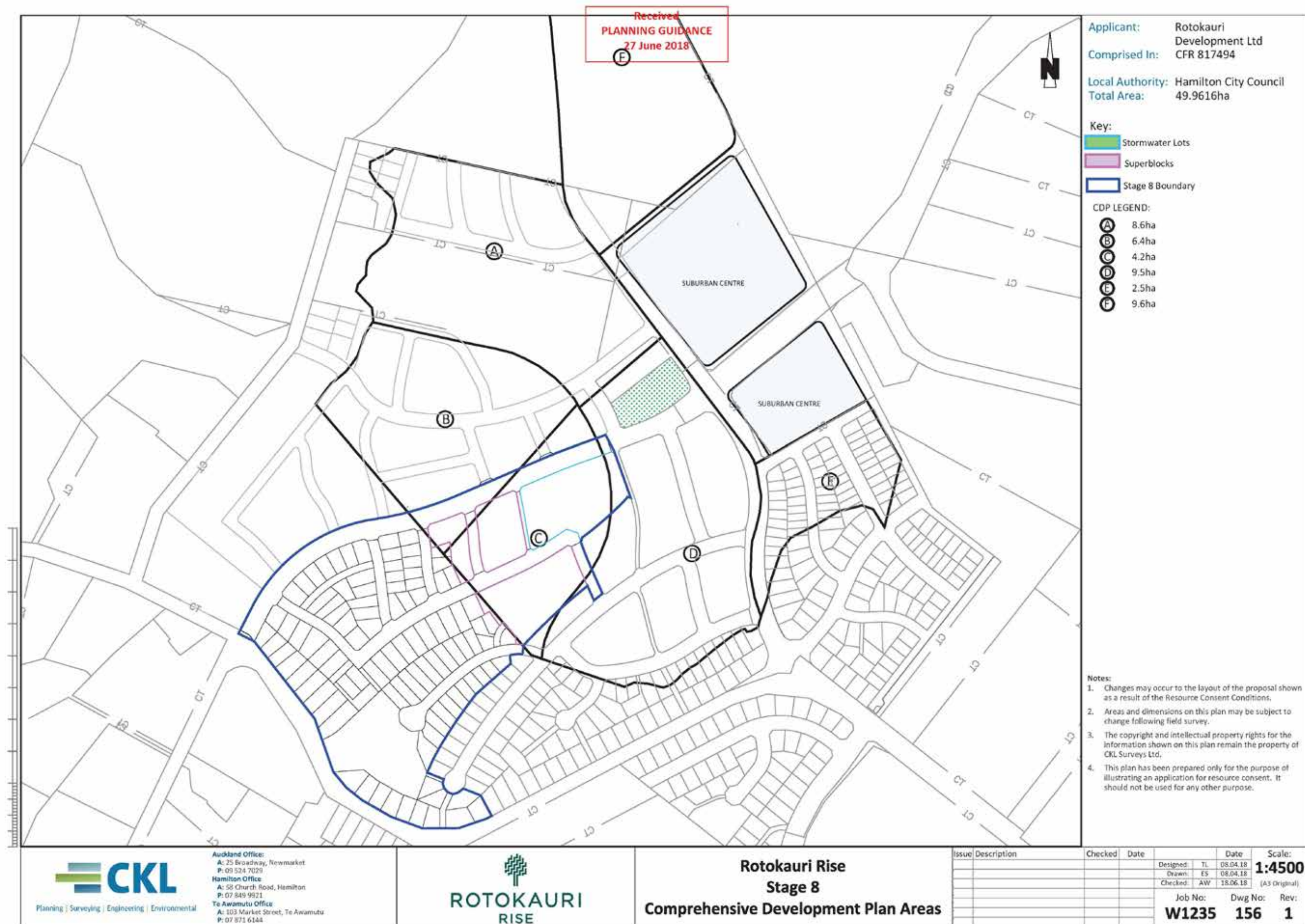
Fig. 4: Illustrative Master Plan, refer to Appendix - UD-1.101



4.1 Masterplan
HOUNSELL (2018)

- 1. Village grid housing
- 2. Hillside housing
- 3. Neighbourhood Park
- 4. Stormwater treatment / open space
- 5. Drainage corridor / open space
- 6. Primary School
- 7. Secondary School
- 8. Employment lands
- 9. Suburban Centre
- 10. Future playing fields





5.2 APPENDIX 2 - DESIGN MEASURES



1.0 DESIGN FOR PEOPLE

1.1 Promote health and active living

- Provide a convenient and comfortable network of active transport options. The transport network design can influence the lifestyle choices people make around how they socialise, exercise and travel ultimately contributing to people’s physical and mental health.

Measures:

- Transport for London (TfL) Healthy Streets Assessment (see <https://healthystreets.com/home/about/> for information).
- Accessibility Review.

Provide safe and inclusive corridors

1.2

- Provide a safe and inclusive network of walking and cycling routes accessible to people of all ages, life stages and abilities. A safe transport network will support a greater level of active transport movement and activity that promotes a sense of personal safety.
- A key focus area of both HCC policy (Access Hamilton) and Waka Kotahi NZ Transport Agency (Arataki 30-year strategic plan) in the Waikato region is to increase safety outcomes and reduce significant harm. Increased safety outcomes include perceived and actual safety improvements.

Measures:

- Clear and legible mixed modal zones, including separated walking and cycling facilities.
- Design treatments that supports CPTED outcomes. Reference AS1428.1 or RTS 14 .
- Buildings interfacing directly with the corridor network will address passive surveillance opportunities to deter criminal or antisocial behaviour.
- Regular, direct and legible crossing points at regular intervals (max. 400m intervals along the minor arterial) with increasing frequency around the suburban centre (max. 100m intervals).
- Pedestrian barriers or fences to be limited in length and height to prevent areas of entrapment and increase passive surveillance. Avoid large blank walls / fences along the corridors to avoid graffiti.
- Appropriate planting design utilizing low grow species to maintain sightlines at key nodes and intersections.
- Separated facilities and infrastructure improvements in areas with significant levels of walking and cycling.
- Human scale corridors with appropriate investment in the public realm to support safety outcomes.
- Safety treatments targeting high-risk intersections.



2.0 SUSTAINABLE ENVIRONMENTS

2.1 Support sustainable ecosystems

- Seek opportunities to add new open space areas that achieve positive ecological and biodiversity outcomes. This will help to offset the effects of noise and pollution on the environment including habitat and water quality.

Measures:

- Design the landscape and select plant species to contribute to biodiversity, help restore the natural environment, and enhance environmental health.
- Protection and enhancement of significant ecological areas (SEA’s).
- Reduce impervious and hardstand areas to support habitat for local biodiversity outcomes along the road corridors.
- Tree planting corridors to feature locally sourced endemic species that will be suitable shade trees and provide habitat value and food sources throughout the year for local birds.
- Achieve tree canopy closure along corridors (walking and cycling routes).
- Plant native groundcovers and avoid turf, unless functionally required for access or swale treatment.
- **Contribute to overall betterment of water quality management when discharging from urban developments to Lake Rotokauri.**

Provide adaptive street corridors

- Demonstrate flexibility throughout the transport network to respond to changes in function and physical interfaces. Consider an adaptive approach in the way corridors are designed to be able to respond to future changes in land use, the way we move around or utilise technology over time.

Measures:

2.2

- Utility and tree planting trenches standardized across the corridor network with appropriate buffers, reducing conflicts and giving certainty to expansion and future development within corridor.
- Provision of space function for non-transport functions such as water management and recreation as well as ecological diversity i.e varied plant species or varied treatments for different areas that respond to the adjacent landuses i.e. rain gardens, swales and tree planting.
- Corridor configuration that does not preclude the growth and expansion of active modes or public transport in the future.



3.0 INTEGRATED DESIGN

3.1 Support sustainable land uses

- Facilitate integration of the various land uses that make up the Rotokauri area. It is the integration of these land uses that will encourage a more sustainable network that provides multi modal choice and therefore, a higher level of amenity for neighbourhoods.
- Integrate and support the future viability of the Rotokauri suburban centre through a corridor design that supports desired place and future land use functions. It is critical that the design of the corridor responds to adjacent land uses and supports density through appropriate corridor typologies.
- Future development of any residual land along the corridor edges. The corridor planning and design process will result in residual space despite best efforts to minimise residual space through the design process. These residual spaces can in some places provide good placemaking or urban design outcomes i.e. back berms, or corner sites that are unable to be sold or developed. The ULDF aims to provide options for how these spaces may be better utilised.

Measures:

- Higher investment in amenity focused on the edges of the corridor to encourage placemaking and active transport outcomes.
- Support Council's vision for sustainable growth through corridor design that optimises the potential for future development of residual land that is well connected to existing neighbourhoods through pedestrian, cycle, laneway and local road networks.
- Footpath widths will respond to the adjacent land uses (i.e. wider 4-5m wide footpaths, along primary frontages to support businesses and safety outcomes for e.g. adjacent to the commercial centre and 2-3m wide footpaths everywhere else.
- Design bus stops and large structures associated with the public transport corridor to provide and / or enable active frontages to public spaces and a variety of uses in those spaces.
- Review opportunities for charging stations and secure bicycle parking or storage at key nodes and bus interchanges to connect modes and encourage use of the public transport corridor.
- Planted medians and landscaping of residual land will be planted with robust, locally sourced, low maintenance native species with low water requirements.

3.2 Support desired built form outcomes

- Support the desired built form typologies of a sustainable community through transport network design. Public transport stops and active transport connections are best located within walking distance of higher density development to facilitate modal shift, support commercial and mixed use centres and contribute to vibrant active urban environments.

Measures:

- Corridors aligned to areas of higher density
- Scale is appropriate to the local context
- Supports appropriate public private interfaces
- Appropriate and positive influence on future urban form
- Provides connectivity at a fine grain (pedestrian) level

3.3 Facilitate active frontage

- Create a positive relationship between built form, open space and the transport corridor by providing a clear, direct, overlooked, well connected edge that serves the needs of multiple users and adjacent land uses.
- Facilitate opportunities for place (for e.g. retail/shopping, alfresco dining, play, public art, cultural landmark), as well as movement functions in corridors.

Measures:

- The corridor will respond to the primary and secondary frontages identified in the district plan where the interface between buildings and the street or public space is considered particularly important. Along these frontages at ground floor level, retail activity should predominate and buildings must relate closely to the street – providing activity, interest and vitality. Verandahs are required for all active frontages.
- Stormwater conveyance with pipes where practical, particularly in suburban centre location shall be piped to conserve space and improve access.



4.0 CHARACTER AND AMENITY

4.1 Create and enhance identity and sense of place

- Acknowledge the identity or sense of place as unique to the inherent built, natural and cultural qualities of a place. Responding to identity in the location and type of the new corridor can provide a sense of continuity and contribute to our collective memory.

Measures:

- Responds to the underlying topography and natural characteristics of a place.
- Contributes to the placemaking drivers of its context.
- Public spaces, new buildings and structures are designed to acknowledge and celebrate the historic, cultural and environmental narratives of Rotokauri.
- A 'whole of journey' experience that combines consistent design of common elements along the corridor with variety in the treatment of special spaces along the route.
- The corridor creates, maintains and enhances views and vistas to landmarks and significant sites, including from public spaces, greenway bridges, at bus stops, and at waiting areas and exits to transport hub(s) /nodes(s)
- Public art to be 'designed in' either as standalone work within public spaces, or integrated with the form and finish of structures that spatially define them
- 'Green' the arterial transport corridor and local streets created through the project to reinforce the well-established planted character, soften the interface with adjoining uses, reduce the apparent width of the corridor, and define and focus views towards landmarks and key nodes
- Design the landscape and select plant species to contribute to biodiversity, help restore the natural environment, and enhance environmental health
- Provide an attractive setting for the environs and future development by creating a positive relationship between built form, open space, the transport corridors and the local networks that connect to it.
- Contribute to a well patronised public transport corridor through providing a high quality, high amenity pedestrian and cycle network that feels safe, comfortable and inviting to use.
- Optimise the width of pedestrian and cycle paths for safe passing. (Refer to active frontages)
- Provide information and directional signage at decision points, public spaces, bus stops and stations including real-time bus arrival information (and walking distances and approximate timings to key destinations).
- Prioritise pedestrian and cycle movements at intersections with local and arterial roads and at road crossings adjacent to bus stops.
- Provide well-lit and highly visible, all weather shelter at bus stops; entries to bus stations, and any information points along the corridor.
- Design the edges and undersides of structures visible at close range to be visually interesting, contribute to a safe walking environment and assist (rather than obscure) wayfinding.
- Primary gateways at corridor intersections will provide opportunities for landmark buildings/ structures and planting which are often used to announce the sense of arrival and departure. Gateways will be an opportunity to define and reinforce the identity of the structure plan at key entries and exits, as well as an opportunity to signal a change in land use or speed.
- It is therefore important that the gateway features be carefully designed so that views can terminate upon them. The exact form of the Gateway features has yet to be determined and will

be developed as part of the concept design. Council's Public Art Plan will be a key reference point.

- Balance any noise mitigation requirements against residential amenity and the amenity and desired character of the public realm.
- Pedestrian railings for directing pedestrian flows and fences for safety and fall protection to be restricted to a maximum height of 1.2m. Safety fencing should be open to allow views while be being "non-penetrable" and "non-climbable" structures.

4.2 Respect the cultural landscape

- Acknowledge significant sites and features in the layout of the transport network including Waahi Tapu sites and viewsheds to significant landmarks. Protecting or featuring these vistas or landmarks acknowledges the wider cultural or natural landscape and provides context and orientation for people who are either moving through or living within an area.

Measures:

- Receive endorsement from Mana Whenua partners to adopt the Te Aranga Design Principles for this project, as a process to engage with and reflect cultural landscape through appropriate design responses.
- Location of corridor and associated infrastructure considers, respects and/or enhances significant sites and features.
- Establishes or acknowledges viewshafts and terminating vistas.



5.0 CONNECTED

Provide legible, accessible and safe connections between residential neighbourhoods, suburban centres, recreational areas and transit stops for pedestrians, cyclists and local road users. Provide a high level of cross corridor connectivity between the city and the suburb, identified activity nodes and residential neighbourhoods. Prioritise active modes and transport and provide choice in travel and the ability to connect at interchanges between modes.

5.1 Enhancing integrated crossing points to better engage with the Greenway

- A number of new road crossings over the Rotokauri Greenway will be required, to connect the suburb with the city. While the structure of these crossings is yet to be determined, they will be important thresholds and gateways to the suburb and will be visible elements along the open space network for residents and users of the Greenway as well as visitors entering the suburb by road. It is therefore important to establish a vision statement and principles for these crossings:
- “a family of simple, well detailed structures that fit unassertively within the Rotokauri Greenway, and that suit the cultural and low-level suburban context of the area”

Measures:

- Structures to be designed to comply with the NZTA Bridge Manual and Bridging the gap: Urban design guidelines to the appearance or aesthetics of the structure (including Location; Context; Views; Crossing experience; Form and proportion; Colour; Lighting and drainage; Maintenance; Barriers; Abutments; and Headstock).
- Provide a consistent level of walking and cycling facilities over each crossing that connect seamlessly with the surrounding corridor facilities.
- Walking and cycling facilities across each crossing are separated and generous in width, with viewing platforms, and clear and inviting connections to existing and proposed open spaces.
- Locate and detail utilities so they are integrated into the design of the structure and not visible from the Greenway or road users.
- The detailing of balustrades shall consider the incorporation of lighting and artwork and look for opportunities to reflect the cultural context.

5.2 Connect nodes

- Provide high quality active transport links between identified activity nodes and community facilities. The corridor should provide direct and legible connections between key destinations. Each corridor should have a clear function and consider connectivity for all modes (walking, cycling, public transport, freight transport and private vehicle). Connect between areas as well as through central corridors.

Measures:

- A wayfinding strategy that identifies key community destinations and connects them with residential developments through the arterial road network and greenway.
- Active transport networks that are continuous, safe and convenient between residential and community facilities (schools, parks, transport hubs etc).

5.3 Connect modes

- Provide for choice in travel and the ability to connect at interchanges between modes. Provide access to multiple travel modes. Corridors can contribute to outcomes for a wider cross section of the community (including elderly, children and mobility-impaired users) when they support safe, comfortable and attractive multi-modal transport for all users.

Measures:

- Modal connections and interchange is accommodated.
- Transition between modes is easy, convenient and safe (consistent levels of service are provided through the between modes i.e. modal priority)
- Park and ride facilities are considered
- Public Transport nodes have safe and good quality bike storage including e-bike/scooter charging stations.
- Locate and design the approaches and entries to bus stops at or close to through connections and / or activity nodes.

5.4 Support legible corridor function

- Consider how areas can be clearly navigated and understood by all users, in particular vulnerable users including pedestrians and cyclists moving with the transport network. .

Measures:

- Minimise the potential for conflicts between pedestrians and cyclists on shared paths and crossings of footpaths and separated cycle paths, and between cyclists and vehicles at intersections.
- Make pedestrian and cycle routes, particularly through large complex intersections, as simple and direct as possible to reflect desire lines.
- Design for wayfinding by drawing on visual cues in the natural and built environment particularly at decision points for drivers and active modes.
- Provides clear gateways into areas.
- Provide direct connections between destinations that support desire lines.
- Corridor configuration provides clear modal interactions and priorities.
- A signage wayfinding strategy that aligns with the requirements and design formula of the Hamilton City Brand manual. Wayfinding signage within will provide a well-designed signage suite that achieves clear communication for council facilities, amenities and services to the public, and will form a distinctive part of the Rotokauri brand with an emphasis on Te Reo, with the Maori place name having primary position on the signage.

5.5 Prioritise active modes and public transport

- Provide quality active mode networks and dedicated public transport corridor to enable a modal shift away from private vehicle use. Dedicated and connected active mode networks provide choices for people walking and cycling, reduces land consumption, and improves overall network efficiency. Dedicated and efficient public transport corridors provide modal choice to a larger number of users and reduces the impact on the environment.

Measures:

- Connectivity and quality of active paths.
- Prioritised network for public and active transport i.e. intersection treatments that prioritise pedestrian and cycle movement through timing.

5.6 Support sustainable land uses

- Provide alternative and efficient access to areas of employment.

Measures:

- Provides a tangible connectivity to areas of employment and industry

5.3 APPENDIX 3 - WELLNESS BUSINESS CASE

CONCEPTUAL IMPRESSIONS

Artist impression's were created as part of the 'Wellness Business Case' submitted by Beca that conceptualise what parts of Rotokauri developments may look like based on the proposed masterplans submitted by developers. Viewpoints where these impressions were taken from are identified on the map below.

The "Wellness Business Case" was completed prior to the commencement of this framework and has not been within the scope of the work produced in this document.



Artist's impression 1 - Viewpoint looking north-west towards the commercial centre



Artist's impression 2 - Viewpoint looking south-west towards Greenway crossing



Artist's impression 3 - Viewpoint looking south-west towards the employment zone and adjacent wetland



Artist's impression 4 - Viewpoint looking from the greenway towards the employment zone and adjacent wetland

