



Aotearoa Urban Street Planning & Design Guide

December 2022



He Whenua, He Tangata

Preamble

He whenua, he whenua, he tangata, he tangata Aotearoa Streets

*Piki atu ki te taumata o tōku maunga,
Ka kite au i te mana,
I te ihi o te whenua nei nō ōku tūpuna.*

*I climb to the peak of my mountain,
Where I see the power,
And the ethos of my ancestors.*

*E tū ana ki te maunga,
e whakaaro ana;
He aha te taonga katoa?
He whenua, he whenua!*

*I stand above the mountain,
And I think;
What is most precious of all?
It is the land, it is the land!*

*Ka hōkio atu ki ngā raorao o te whenua,
Ka kite au i te harakeke e tipu ana,
He tohu o te oranga.*

*I descend down to the lands below,
I see the harakeke growing,
A symbol of life.*

*E whakaaro ana ano,
Unuhia te rito o te harakeke,
Kei hea te kōmako, e kō?
Rere ki uta, rere i tai.*

*I think again,
If we are to remove the centre of the harakeke
Where will the bellbird sing?
It will fly inland and fly seawards.*

*Kī mai koe ki au;
He aha te mea nui o tēnei ao?
Māku e kī atu;
He tangata, he tangata!*

*You would then ask me;
What is the greatest thing in this world?
I would say;
It is people, it is people!*

Tihei Mauri Ora!

Behold, the sneeze of life!

The above, reflects the interconnectedness of all things and the importance of both land and people. This is reflective of the vision for the Aotearoa Urban Street Planning and Design Guide - He Whenua, He Tangata where the whakataukī (proverb) embedded within, metaphorically represents the shared relationships between land, people and place. This relationship is built on the concept of whakapapa (genealogy), which is understanding the layers of the past for the betterment of the present and future.

He Whenua, He Tangata is how we respond to the way we live. This has provided an approach designing for people at the heart of street planning and design, and supports the system level changes needed to achieve Vision Zero/ Road to Zero New Zealand road safety strategy. Street design and street thinking at the spatial, network and local scale with a 'safe system' lens (see section 1.1) is also at the centre of a sustainable, multi-modal, land transport system where public transport, active and shared modes of transport are also part of our daily transport choice and experience.

The street guide has been developed as a point of reference for Waka Kotahi, its partners and sector. The guide has been established to create common ground in relation to the form and function of streets as part of the land transport system.

***Kī mai koe ki au; he aha te mea nui
i tēnei ao? Maku e kī atu;
He whenua, he whenua,
He tangata, he tangata***

***If I were to ask you; what is the greatest thing
in this world? You would respond;
It is the land, it is the land,
It is the people, it is the people***

BACKGROUND

Aotearoa Urban Street Planning and Design Guide

Waka Kotahi recognises, respects and honours Te Tiriti o Waitangi and is committed to upholding the principles of partnership, participation and protection. These principles underpin the relationship between tangata whenua and the crown. Waka Kotahi will work with tangata whenua to build strong, meaningful and enduring partnerships.

At its foundation this street guide establishes an ethos of 'He whenua, he tangata', which encapsulates the shared relationship between land, people and place. This is given effect through six objectives that bring together the wider objectives of a Safe System, inclusive access, environment, movement and place.

- **MAHI TAHI - Partnership and Engagement**
- **HE WHENUA ORA - A Living Environment**
- **TAONGA TUKU IHO - Places of Value & Meaning**
- **TĀTOU TĀTOU - Inclusivity for everyone**
- **TOIORA - Healthy & Safe Environments**
- **MAURI ORA - Prosperity and Vitality**

These protocols highlight opportunities the land transport system to contribute to well-functioning urban environments, transport movement, place function, and outcomes for communities.

Streets are part of the land transport system shaping the urban form of the towns and cities of Aotearoa. However, the dynamic and multi-functional use of streets has changed over time.

For Māori, streets were understood as ara (traditional pathways) connecting tangata and whenua (land and sea). Ara were formed by understanding the landscape. Early colonial settlements formed streets, some of which followed ara (A Brief History of Auckland's Urban Form, 2019), other through survey. Streets were a space for a mix of pedestrians, horses and carts and later trams. Users negotiated this space with limited regulation. The introduction of private motor vehicles in the 20th century gradually changed the use of streets as shared spaces to ones dominated by vehicles. Due to the risks associated with the increased speed and numbers of cars, pedestrians and place based activities for people became increasingly separated from the street.

As urban environments continue to change, a balanced approach to street planning and design must focus on:

- Safety for all road users and reducing harm overall
- Urban mobility and developing a multi-modal transport system
- Improved urban development, urban form and good urban access
- The provision of integrated transport and land use, and places for people that fits the context
- Environmental and sustainability outcomes such as addressing urban stormwater management, heat island and micro climate, better air quality and reduced emissions and connectivity
- Methods for movement network and place-based development that provide pathways to permanence that include adaptive urbanism and staged approaches
- Investment to optimise and make the best use of existing streets before creating new ones
- Partnerships (including with iwi) in developing the above
- Collaboration, and engagement with stakeholders and local communities

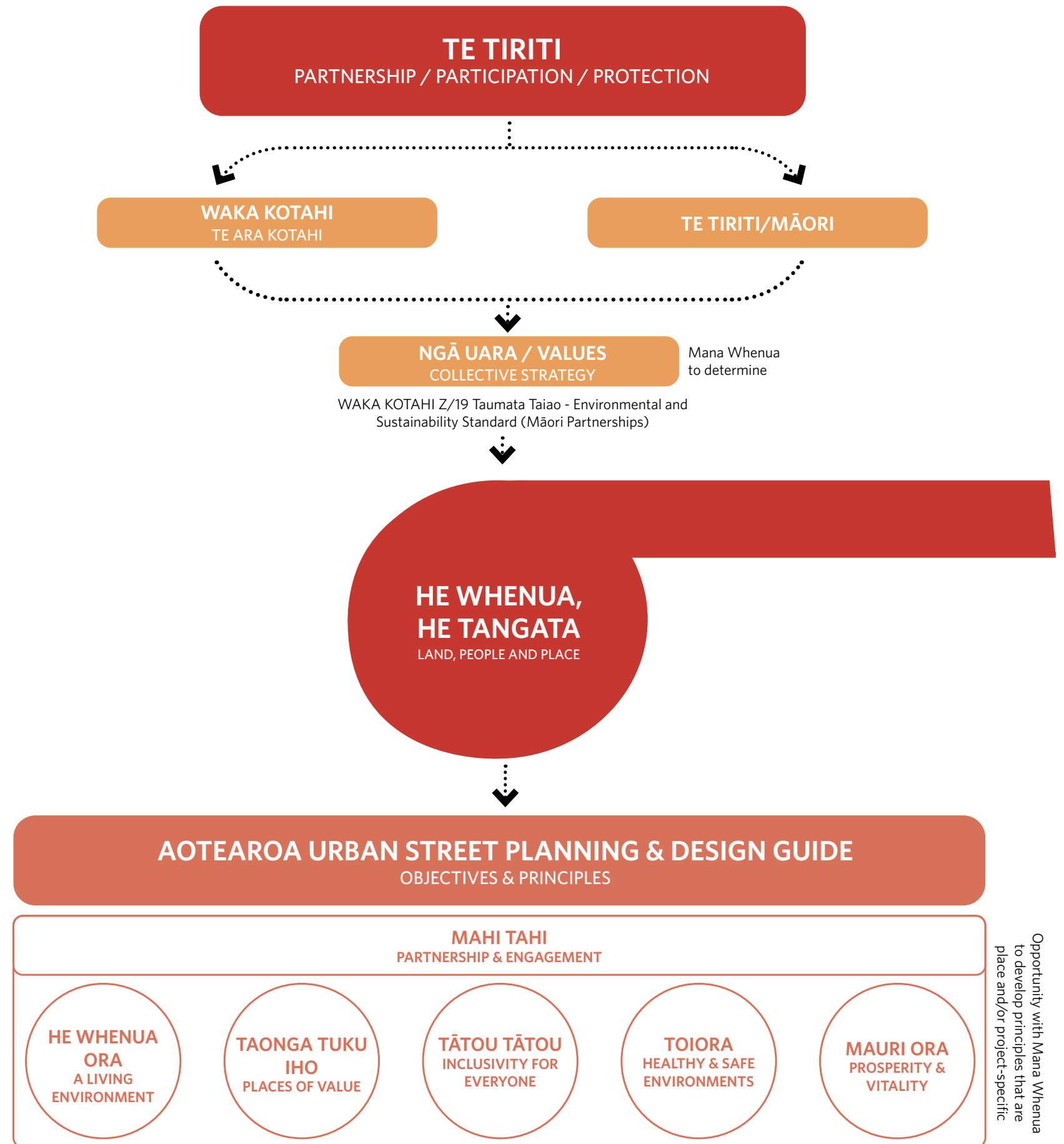


Figure 1: Te Tiriti o Waitangi and Aotearoa street objectives and principles, an overview.



1.0 Introduction

Urban Street Planning and Design Guide

Purpose

This guide sets out the policy context and criteria for planning, designing and evaluating streets. It is a practical tool to support good outcomes by linking high-level spatial planning and network planning, with planning and design for street space in urban centres and neighbourhoods.

The guide connects concepts of movement and place functions with decisions on what activities get prioritised where, as informed by Waka Kotahi's One Network Framework ("ONF") tool. It also makes linkages between transport network planning and the urban design of well-functioning urban environments that should inform street scale solutions.

The process and main components for planning and designing of streets, to support good practice is set out in this guide. It provides guidance on planning and investing in street change (via a pilot and using staged or adaptive changes, as well as permanent street change). The guide is a companion document to:

- **multi-modal guidelines**, including the pedestrian guide, cycling guide, public transport guide, and guides to using e-scooters and mobility devices
- **parking management guidelines**
- **adapting streets and tactical urbanism hand book.**

The guide supports safety guidance related to safe system principles:

- **Speed Management guidelines**
- **Standard safety interventions.**

This guide:

- aligns with the work Road Controlling Authorities are leading in street planning and design
- presents Waka Kotahi street planning and design objectives, methods and best practice
- builds on the a common language of the ONF for street planning and design, recognising movement and place function
- demonstrates how streets can support equitable outcomes for all including vulnerable road users
- improves understanding of how the government's Transport Outcomes Framework translates to, and can be realised by, changes at the street scale
- demonstrates how more integrated approaches to urban streets can contribute to a higher quality and more integrated urban form to create more sustainable and resilient urban places
- operationalises Waka Kotahi and government policy direction, in particular around safety, multi-modal transport, and the urban system shifts needed to address rapid environmental and social changes.

This guide also supports the development of further resources, case studies and toolkits by Waka Kotahi and central government and Road Controlling Authorities to focus in on their local plans, manuals and standards.

Who is this Guide for?

This guide is for anyone who participates in the planning, design, construction, operation and maintenance of street networks – clients, consultants, contractors, project managers, stakeholders and communities.

Waka Kotahi staff whose work and actions affect multi-modal and urban design outcomes will use this guide.

Waka Kotahi central and local government partners will use this guide in relation to public street network infrastructure in urban environments. Use of this guide on privately funded street projects may be appropriate with the agreement of the relevant road controlling authority, client or landowner.

Local government partners can use this guide to provide national direction on the context for change, principles to guide, and scope of considerations for the planning and design of urban streets. This sits alongside the use of Council plans and policies, design guidelines, manuals and codes/standards that provide the localised direction for urban streets that reflects the diversity of differing urban contexts and communities across the motu.

Like the ONF, at its heart this guide is designed to help practitioners to work collaboratively on street planning and design that addresses movement and place. This includes strategic transport planners, land use planners, urban designers, asset managers, traffic engineers and multi-modal specialists from both local and central government.



Urban Street Context

What a street is

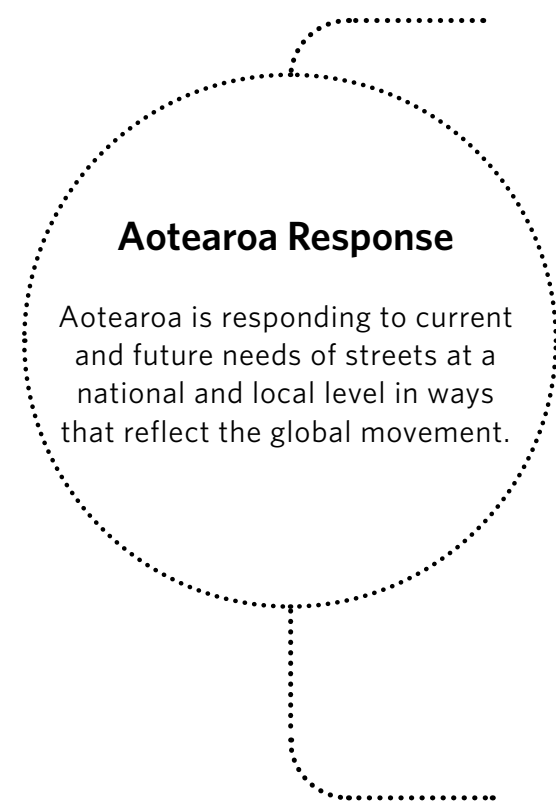
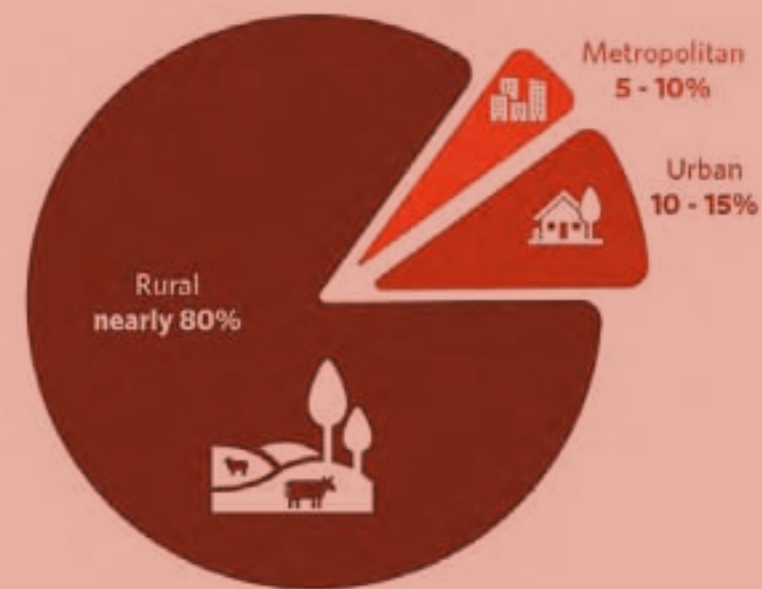
A street is the basic unit of urban space through which people experience an urban area. It is often thought of as the two-dimensional surface that vehicles drive on when moving from one place to another, however a street is a multi-dimensional space for people consisting of many surfaces and elements with connectivity considered along and across the street.

Streets stretch from one property line to another, including the building edges, land uses and setbacks that define each side of the property. They offer space for movement and access and facilitate a variety of uses and activities (day and night). Streets are dynamic spaces that can adapt over time to support the ways towns and cities change.

Urban streets in the context of the national network

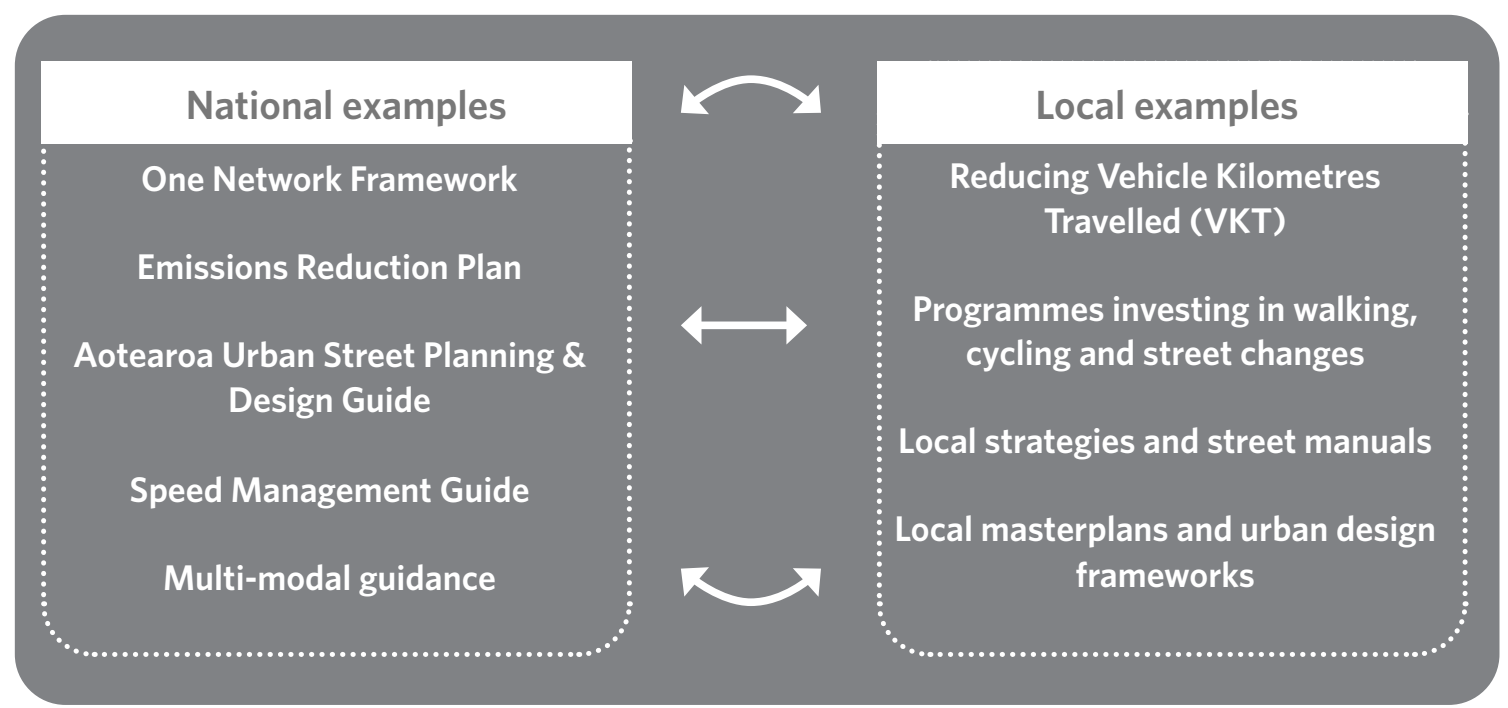
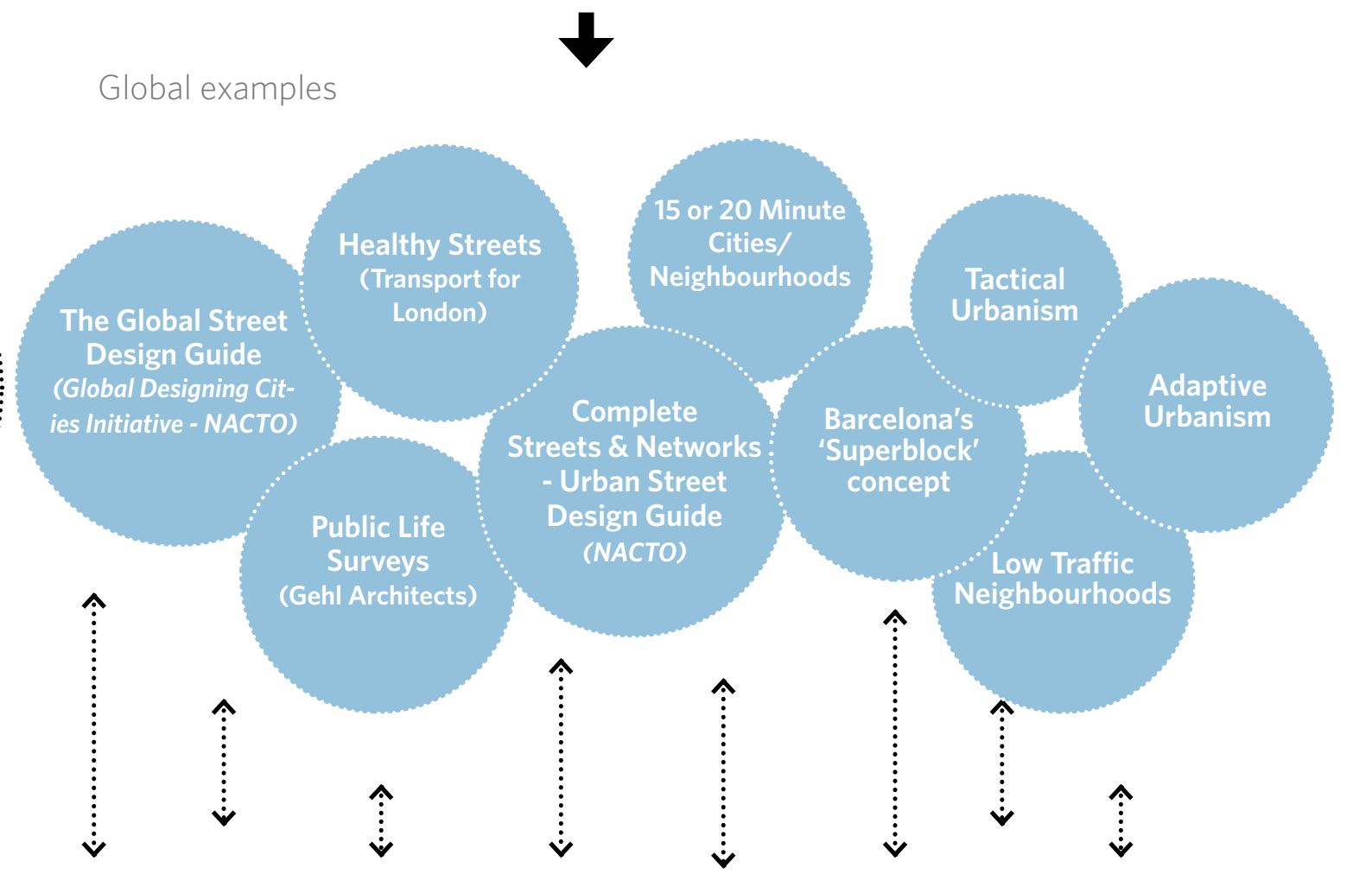
The Waka Kotahi One Network Framework (ONF) recognises that:

- 5-10% of the Aotearoa land transport network is in heavily urbanised metropolitan areas with limited corridor space, complex interactions and tensions between transport modes at different times of the day that need in-depth analysis
- another 10-15% of the network is in wider urban areas, mostly residential, with different scales of complexity
- most of the network (around 80%) is rural
- urban streets, while representing only a small proportion of New Zealand's total road network, play a critical role in supporting the majority of people in Aotearoa on any given day.



Global Street Scene

A global movement is redefining urban streets in the 21st century



Urban Street Users and Capacity

Global Street Design Guide (NACTO) User Hierarchy

The Global Street Design Guide (NACTO) establishes a street user hierarchy based on the vulnerability of users and spatial efficiency of mode and mobility choices to make a significant contribution to a safe, healthy and sustainable future.

The illustration (below) from the guide shows a street hierarchy that puts people first.

1. Pedestrians



2. Cyclists and Transit riders



3. People doing business and providing city services



4. People in Personal Motorised Vehicles



Figure 1: User hierarchy places the most vulnerable users as the top priority in street design. Image Source: Global Street Design Guide (NACTO)

People Capacity of Different Modes

The illustration (below) shows the hourly capacity of a 3m-wide lane (or equivalent width) by different modes at peak conditions with normal operations. Ranges relate to the type of vehicles, traffic signal timing, operation, and average occupancy.

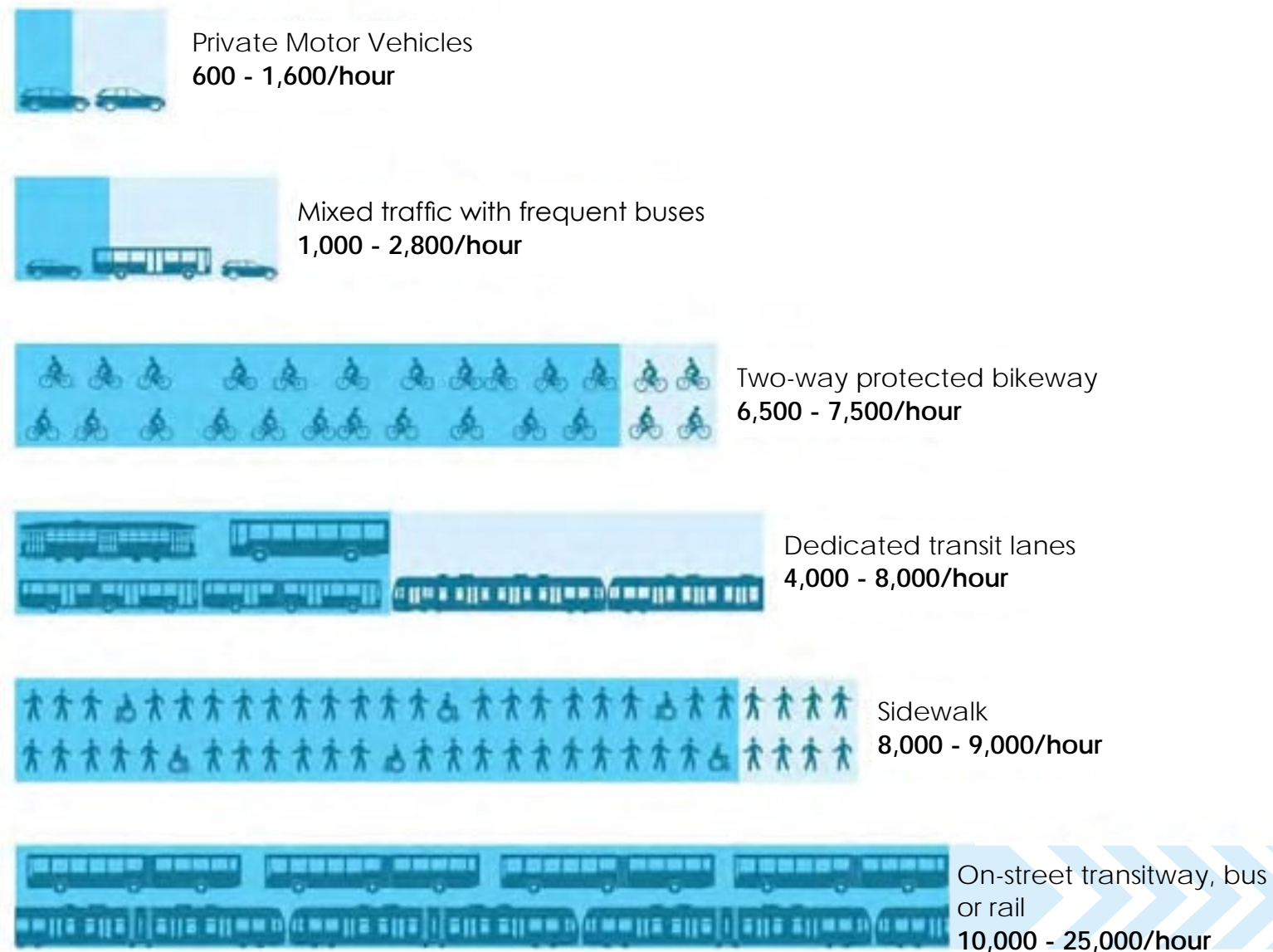


Figure 2: Capacity of modes. IMAGE SOURCE: Global Street Design Guide (NACTO)

Links

- [Safe System with Movement and Place for Vulnerable Road Users \(Austroads, 2020\)](#)
- [Global Street Design Guide \(NACTO, 2016\)](#)
- [Intervention Hierarchy \(Waka Kotahi, 2017\)](#)
- [Multi-modal Transport Planning \(Waka Kotahi, 2022\)](#)
- [Urban Mobility and Liveable Cities \(Waka Kotahi, 2022\)](#)





1.1 Policy and Direction

Government Direction Driving Street Change

Government Policy to Changing Urban Streets

The recent change in government policy direction focused on the impacts of the transport system on four important challenges:

- the safety and health of the population
- biodiversity and environmental sustainability
- climate change, particularly emissions
- aligning transport and land-use in urban development outcomes.

This section summarises the statutory and non-statutory policies and strategies that set this guide's direction for the future of urban streets in Aotearoa. For further detail on additional policy and frameworks see the links section.

The Government Policy Statement on Land Transport (GPS) sets out how money from the National Land Transport Fund is allocated towards achieving the Government's transport priorities. It defines funding ranges for activities such as public transport, state highway improvements, local and regional roads and road safety. These are called activity classes. Each GPS is reviewed and updated every three years and covers a 10-year period.

The GPS draws its priorities from the outcomes identified in the Ministry of Transport's Transport Outcomes framework. The 2021 GPS identifies that the "purpose of the transport system is to improve people's wellbeing and the liveability of places". Improving the way transport proposals better accommodate "place" is a tangible way of addressing this intent.

The most recent GPS on Land Transport 2021 identified four strategic priorities for investment:

- **safety** - developing a transport network where no-one is killed or seriously injured
- **better travel options** - providing people with better transport options to access social and economic opportunities
- **climate change** - developing a low carbon transport system that supports emissions reductions while improving safety and inclusive access
- **improving freight connections for economic development.**

Transport Outcomes Framework 2018

The Ministry of Transport's Transport Outcomes Framework 2018 sets a strategic approach for the government and the transport sector and defines a purpose for the transport system centred on the well-being of people and liveability of spaces. Five outcome areas contribute to the purpose: inclusive access, healthy and safe people, environmental sustainability, resilience and security and economic prosperity (see Figure 3). The changing urban policy landscape for these outcome areas as it relates to urban streets is described in the following pages.

Government Policy Statement on Land Transport



Inclusive access

Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.

Economic prosperity

Supporting economic activity via local, regional, and international connections, with efficient movements of people and products.

Environmental sustainability

Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

Healthy and safe people

Protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option.

Resilience and security

Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.

Figure 3: Transport Outcomes Framework 2018, Ministry of Transport, 2018.

Arataki

Arataki is the Waka Kotahi 10-year view of what is needed to deliver on the government's priorities and long-term objectives for the land transport system. It identifies the main drivers for change and the significant changes needed to deliver on the government's direction. (Figure 4.)



Figure 4: Arataki, Our Plan for the Land Transport System 2021-31, Waka Kotahi.

Links

- [Better Travel Choices \(Waka Kotahi, 2019\)](#)
- [Te Āhei ki te Whakamahi Ara - Accessible Streets \(Ministry of Transport, 2020\)](#)
- [Arataki \(Waka Kotahi, 2022\)](#)
- [Keeping Cities Moving \(Waka Kotahi, 2022\)](#)
- [Government Policy Statement on Land Transport \(Ministry of Transport, 2021\)](#)
- [Transport Outcomes Framework \(Ministry of Transport, 2018\)](#)

Healthy and Safe People

Vision Zero Approach

Vision Zero is an ethics-based approach to a safe transport system that was developed in Sweden in the 1990s and is having success globally. In Aotearoa, Vision Zero is underpinned by the Safe System approach to road safety (see Figure 5). Safe System is a holistic approach to addressing all facets of the transport system. It applies multiple layers of evidence-based measures to mitigate the effects of human error to avoid death and serious injury. Vision Zero acknowledges human error and fragility but doesn't accept that death or serious injury should be an inevitable or acceptable outcome of using the transport system. Using the system includes travelling and spending time in public environments such as streets, cycleways and footpaths, and accessing public transport.



Figure 5: Relationship of Waka Kotahi Safe System approach to Vision Zero.

Road to Zero: New Zealand's Road Safety Strategy for 2020 - 2030

The Road to Zero strategy sets out principles and focus areas to stop people being killed or injured in the transport system. It adopts Vision Zero, no death or serious injury from travelling on the roads is acceptable. (See Figure 6).

A three-year action plan beginning in 2020, outlines 15 initial actions across the focus areas to reach a target of a 40% reduction in deaths and serious injuries by 2030. The Road to Zero strategy makes the safety of people a priority through four principles:

- We promote good choices but plan for mistakes.
- We design for human vulnerability.
- We strengthen all parts of the transport system.
- We have a shared responsibility.

The strategy identifies the importance of updating guidance to reflect Road to Zero. The action plan includes a review of infrastructure standards and guidelines to embed the Safe System approach in them. The action plan points to a planning and design street guide as the mechanism to support this integration.

Figure 8 envisages the positive feedback system created through the Safe System approach. Streets become safer, healthier and more people-centred following design changes, which results in more people feeling comfortable walking, cycling and taking public transport. This contributes to ongoing reductions in vehicle kilometres travelled, compounding the associated benefits of reduced emissions and air pollution, and fewer crashes and fatalities. This feeds back into a safer, healthier and more people-centred environment and the cycle continues.

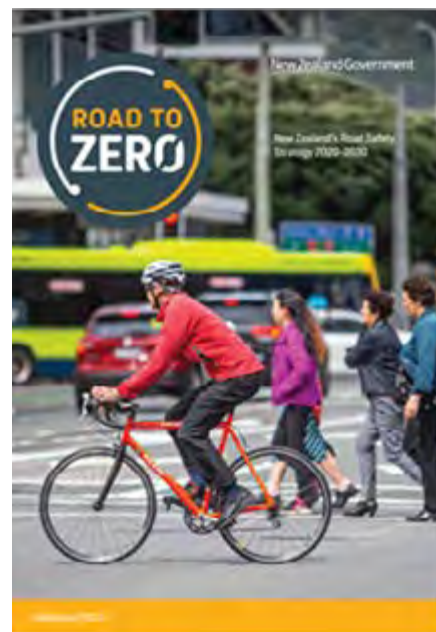


Figure 6: Road to Zero. 10 year road safety strategy for Aotearoa, (Waka Kotahi, 2019).



Figure 7: Infographic shows the Aotearoa Road to Zero framework (Waka Kotahi 2022, unpublished)

Links

- [Vision Zero for System Designers \(Waka Kotahi, 2022\)](#)
- [Vision Zero - Road to Zero \(Ministry of Transport, 2020\)](#)
- [Healthy Urban development \(Ministry of Health, 2022\)](#)
- [Air Quality \(Ministry of Health, 2020\)](#)
- [Integrating Safe System with Movement and Place for Vulnerable Road Users \(Austroads, 2020\)](#)

Health and Inclusive Access

Environmental and Health Benefits of a Safe System Approach

The following diagram illustrates the positive feedback cycle that can be generated by a Safe System approach to speeds.

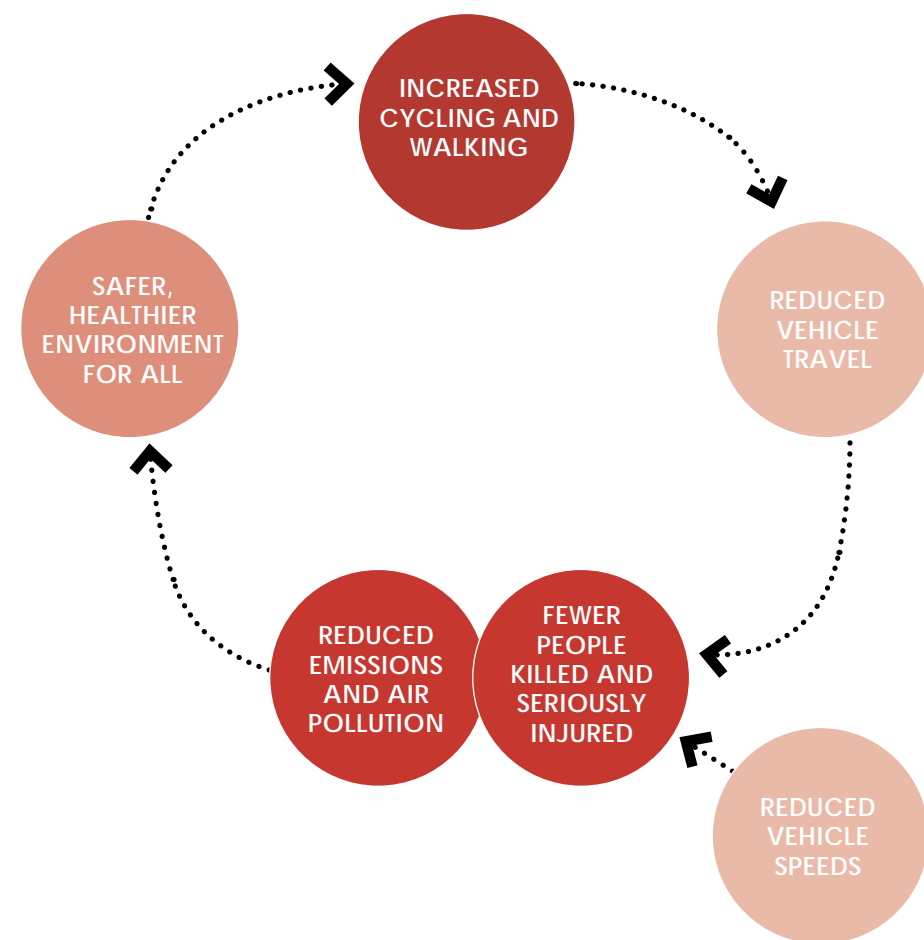


Figure 8: Environmental and health benefits of a Safe System Approach. Source: Waka Kotahi Speed Management Guide

Inclusive Access and Urban Design

A 'Safe System' approach recognises the importance of designing for all users.

Designing accessible streets for people, including disabled people, older people and children means:

- determining the movement and place function and street category
- identifying place factors
- determining land use priorities
- identifying movement
- determining the transport mode priority
- identifying and accessing Safe System requirements
- prioritising treatments
- integrating selected treatments with the surrounding network

While movement and place functions inform street categories, prioritisation, and space allocation for different modes of transport, the base level of determining accessibility and inclusive access should be consistent across all streets. For example, while some low movement areas such as 'shared spaces' can allow non-disabled pedestrians to move freely across the carriageway, an accessible path must still be provided for those less able or confident in crossing the carriageway.

Inclusive Access (Universal Design) and User Equality

Road users such as people who walk, wheel and cycle, or use electric scooters are more likely to suffer serious injury or death on our streets than vehicle drivers. This is due to historic street designs that expose them to conflict with vehicles. Waka Kotahi refers to these users as 'vulnerable road users'. Designing safe streets for all users is crucial for meeting the goals of the Road to Zero strategy and supporting increased walking and cycling, which in turn supports emissions reduction goals.

This guide supports safe and appropriate speed limits, safety interventions, space re-allocation and re-prioritisation for people by directing street designers to consider place as well as movement functions, and the needs for vulnerable road users.

Streets with higher place value can require less exposure to traffic and speeds to function which supports safer movement for active modes and the reallocation of space. Higher movement and speed streets may require separated facilities or alternative routes to protect active modes from conflicts.

A shift in emphasis to movement and place functions, and the safety of people is part of working towards the government's mode shift goals. Section 4.1 introduces the concept of walkable cities and catchments and how it should be a foundation when planning urban street networks.

Making streets work for active travel has the following benefits:

- long term sustainability
- improved health
- less noise
- lower emissions
- supports public transport
- supports social equity
- is space efficient
- is low risk to others

To develop your understanding further, see Austroads, Integrating Safe System with Movement and Place for Vulnerable Road Users: A process for integration (2020). [↗](#)

Crime Prevention Through Environmental Design

Crime Prevention through Environmental Design is a multidisciplinary approach to crime prevention through design and management of the built environment. The general principles of this approach align with and assist in the design of streets for all users. Specialist audits may be required where issues are identified in existing environments or to review street change proposals.

Links

- [Integrating Safe System with Movement and Place for Vulnerable Road Users \(Austroads, Dr Bruce Corben, 2020\)](#)
- [Integrating Safe System with Movement and Place for Vulnerable Road Users \(Austroads, 2020\)](#)
- [New Zealand Human Rights. Your Rights \(Human Rights Commission, 2022\)](#)
- [Healthy Urban development \(Ministry of Health, 2022\)](#)
- [Air Quality \(Ministry of Health, 2020\)](#)
- [National Guidelines for Crime Prevention through Environmental Design in New Zealand. \(Ministry of Justice, 2005\)](#)
- [Te Āhei ki te Whakamahi Ara: Accessible Streets \(Ministry of Transport, 2020\)](#)
- [Sustainable and Safe: A Vision and Guidance for Zero Road Deaths \(World Resources Institute, 2018\)](#)

Accessible Streets

The Accessible Streets regulatory package (“Accessible Streets”) proposes rule changes to clarify how people are permitted to use footpaths, shared paths, cycle paths, cycle lanes and roads. The proposals allow cyclists on the footpath, provided they follow behavioural requirements (such as giving way to pedestrians and following a speed limit), allow councils to make changes to spaces using resolutions (without the need for lengthier processes), and mandate a minimum overtaking gap for motor vehicles when passing cyclists, pedestrians, horse riders and others.

Accessible Streets is one of 15 actions proposed in the initial Road to Zero action plan and an important step in a Safe System approach to improving safety for road users.

Waka Kotahi consulted the public on these proposals in 2020. People were largely supportive but raised additional risks. The next steps for Waka Kotahi is to carry out additional analysis on the proposals considered high risk and to investigate changes that would limit the risks raised during consultation. This work is expected to include:

- completing a disability impact assessment about the proposals
- further work and potential changes to the proposed definitions of devices/vehicles (proposal 1)
- analysis of land allocation and potentially changing the proposed rules relating to footpath and shared path use
- investigating how berms are defined.

Once these tasks have been completed, Accessible Streets will progress as a full package.

Reshaping Streets

The Minister of Transport is currently proposing changes to legislation to make it easier for road controlling authorities (like councils) to make street changes that support public transport, active travel and placemaking. These proposals would enable road controlling authorities to make street changes more efficiently and provide new ways for communities to be involved in changes that affect them.

The proposed regulatory changes include:

- a new ‘Street Layouts’ land transport rule for local authorities, as road controlling authorities (RCAs), to use for changing street layouts, piloting street changes, restricting vehicles, establishing Community Streets and School Streets, and for deciding on other street changes
- amending sections in the Local Government Act 1974 (LGA1974) covering pedestrian malls, transport shelters (like bus shelters), and temporary road closures
- changes to other rules and regulations so that local authorities can reduce speed limits as part of pilots, trial Traffic Control Devices (TCDs) more effectively, and to make legislation more accessible.

The Minister of Transport and Cabinet will review feedback before finalising any proposals and deciding whether to progress any or all of these changes.

Environmental Sustainability

Climate Change Response

At Waka Kotahi we have an important role in caring for the environment. Our environment includes our people, places and planet. It's affected directly and indirectly by the activities we undertake, so we take our responsibilities seriously. Toitū sets out our approach to demonstrating our environmental and social responsibility in everything we do (Figure 9).

The land transport system impacts our environment but is also impacted by our environment. Toitū Te Taiao, our new sustainability action plan, supports Arataki by setting out the actions we will take to tackle climate change and create a sustainable land transport system.

Our vision is for a low carbon, safe and healthy land transport system. Toitū Te Taiao sets out how we will achieve this by reducing land transport emissions, helping to improve public health, reducing environmental harm and reducing our own corporate emissions.

This type of change will take time so we must start now if we are to meet our 2050 targets. Toitū is a long term, significant change programme that will be delivered in partnership with many others.

Toitū Te Taiao is supported by Aotearoa's Emissions Reduction Plan released by the Ministry for the Environment in May 2022, which focuses on three areas to reduce emissions from the transport system:

1. Reducing reliance on cars and supporting people to walk, cycle and use public transport.
2. Rapidly adopting low-emission vehicles and fuels
3. Beginning work now to de-carbonise heavy transport and freight.

Te Hiringa o te Taiao Our Resource Efficiency Strategy describes what we need to do to enable changes in behaviour, innovation and ways of doing business that drive sustainable sourcing and use of materials, waste minimisation and emissions reductions, while providing the same service benefit. This is all about how we use resources sustainably with minimal environmental impact. Waka Kotahi has committed to delivering land transport in a resource-efficient manner, which helps minimise environmental impacts, contributes to reducing carbon emissions and the potential to cut costs. There is a relationship between resource efficiency and emissions reductions goals, as indicated on the below graphic (Figure 10).

Urban Streets that Increase Resilience

Minimising and managing the risks from natural and human-made hazards is one of the five outcome areas of the Transport Outcomes Framework to improve wellbeing and liveability. The Aotearoa urban street system needs to adapt to changing climate and environmental conditions, with resilience measures that enable faster and more effective recovery from disruptive events and emerging threats and forces of change.

Our systems and networks for urban streets (planning, investment, operations) need to transition more rapidly and nimbly to the fast pace and wide reach of environmental and societal change we will continue to experience now and in the future.

The National Adaptation Plan supports all New Zealanders to adapt, live and thrive in a more damaging climate. It looks at the impacts of climate change with us now and into the future and sets out how Aotearoa can adapt. Different urban areas will face different risks from flooding, erosion, sea level rise, drought and other weather hazards. For urban streets, increasing climate resilience will mean adapting to rising sea levels and increased areas of frequent flooding. This underpins the importance of new standards and infrastructure to support the water management and blue-green infrastructure roles of streets in particular.



Using the Government Policy Statement on land transport 2021–2030.

Figure 9: How Waka Kotahi gives effect to environmental and sustainability policies, strategic objectives, outcomes and legal requirements

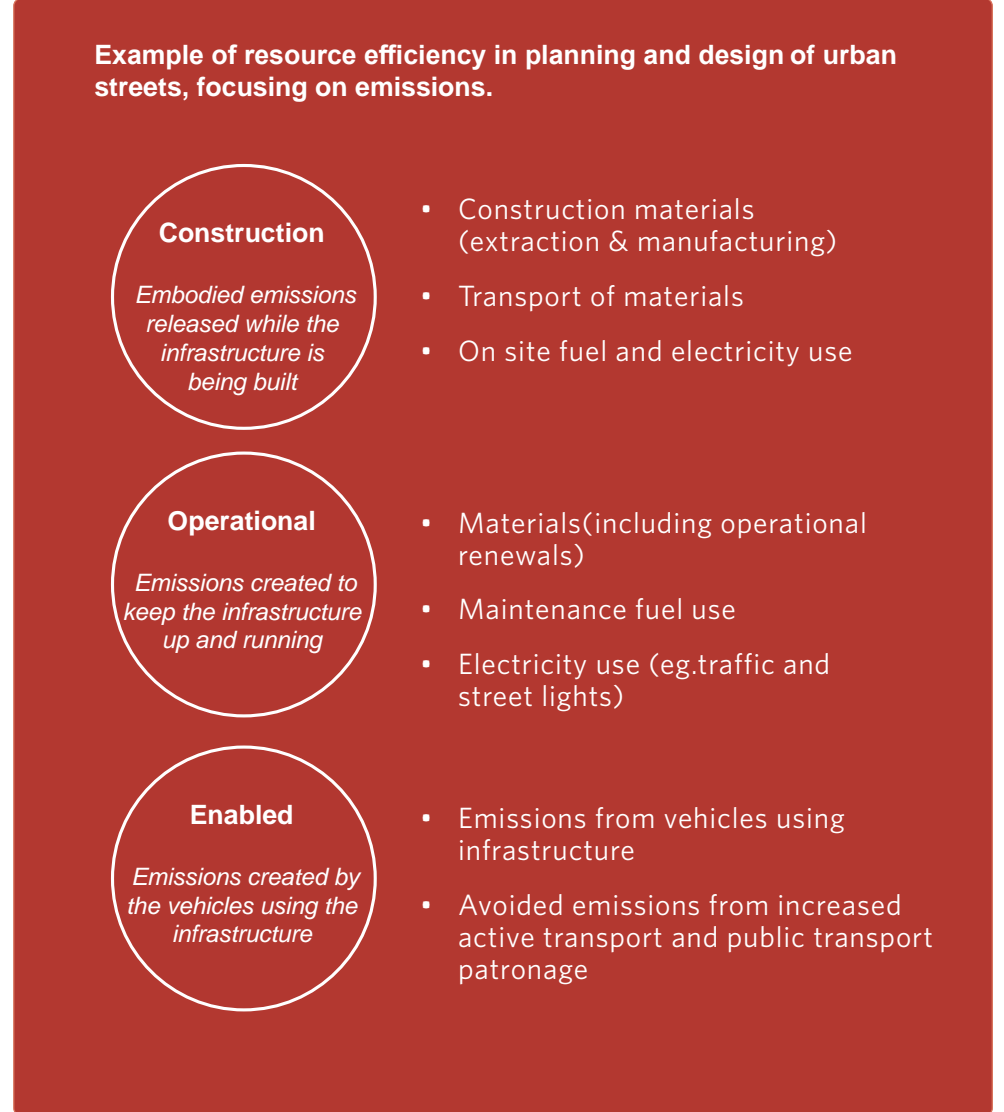


Figure 10: An understanding of addressing emissions reduction goals through applying a resource efficiency lens to urban streets.



Links

- [National Adaption Plan \(Ministry for the Environment, 2022\)](#)
- [Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy \(Department of Conservation, 2020\)](#)
- [Sustainability Rating Scheme Policy \(Waka Kotahi, 2020\)](#)
- [Te Hiringa o te Taiao - Our Resource Efficiency Strategy \(Waka Kotahi, 2021\)](#)
- [Toitū Te Taiao - Our Sustainability Action Plan Sustainability \(Waka Kotahi, 2022\)](#)
- [Z/19 Taumata Taiao - Environmental and Sustainability Standard \(Waka Kotahi, 2022\)](#)
- [Resource Efficiency Policy for Infrastructure Delivery & Maintenance \(Waka Kotahi, 2022\)](#)

Well Functioning Urban Environment

Urban development and planning policy in Aotearoa New Zealand is rapidly evolving and changing to address future growth projections and housing needs within the context of climate change. This changing urban policy landscape is illustrated in Figure 12. They point to the extent of widespread change and challenges in urban areas for the 21st century (Figure 13). The wide-ranging nature of this change underpins the need for this guide and the themes and guidance areas it addresses.

Particular areas relevant to urban streets where policy shifts have emerged include:

- closer integration between spatial planning and network planning in ways that set the relationship between modes (for example, walking and public transport use, which streets support public transport routes and which play an important role for traffic movement)
- changes in the distribution, scale and form urban development (e.g. greater density around public transport stations)
- the roles streets play in connecting development and transport as well as public space (in ways that put people in focus)

Aligning with the changes in climate change response and resilience planning, spatial planning and urban development, street planning and design will also need to provide ways to transition networks and streets through adaptive approaches. The Waka Kotahi Streets for People programme has been set up to help our communities more effectively transition in this adaptive way whilst building capability and communities of practice to enable more widespread change over time.

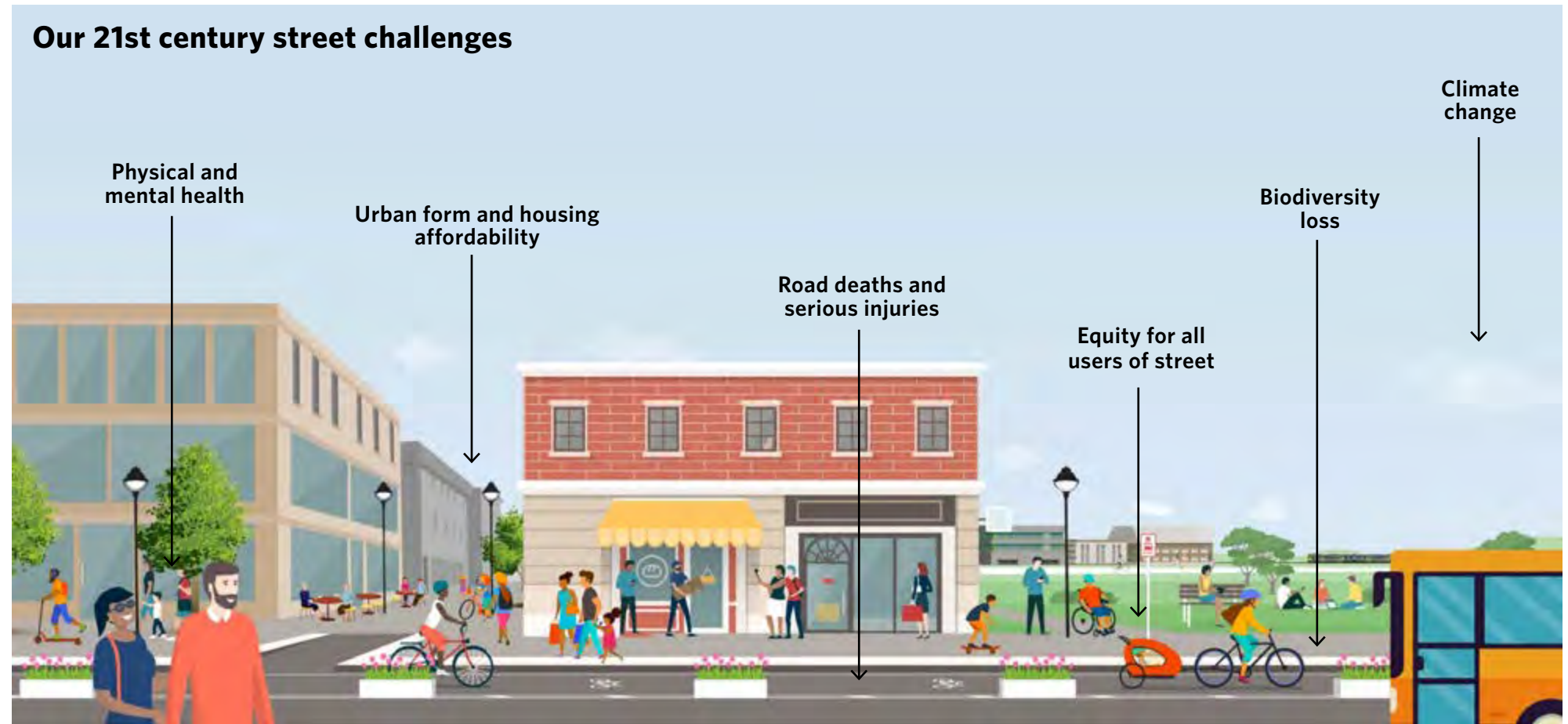


Figure 12: Urban Streets in the context of our 21st century challenges (modified Waka Kotahi graphic).

Urban Policy Influencing Well Functioning Urban Environments

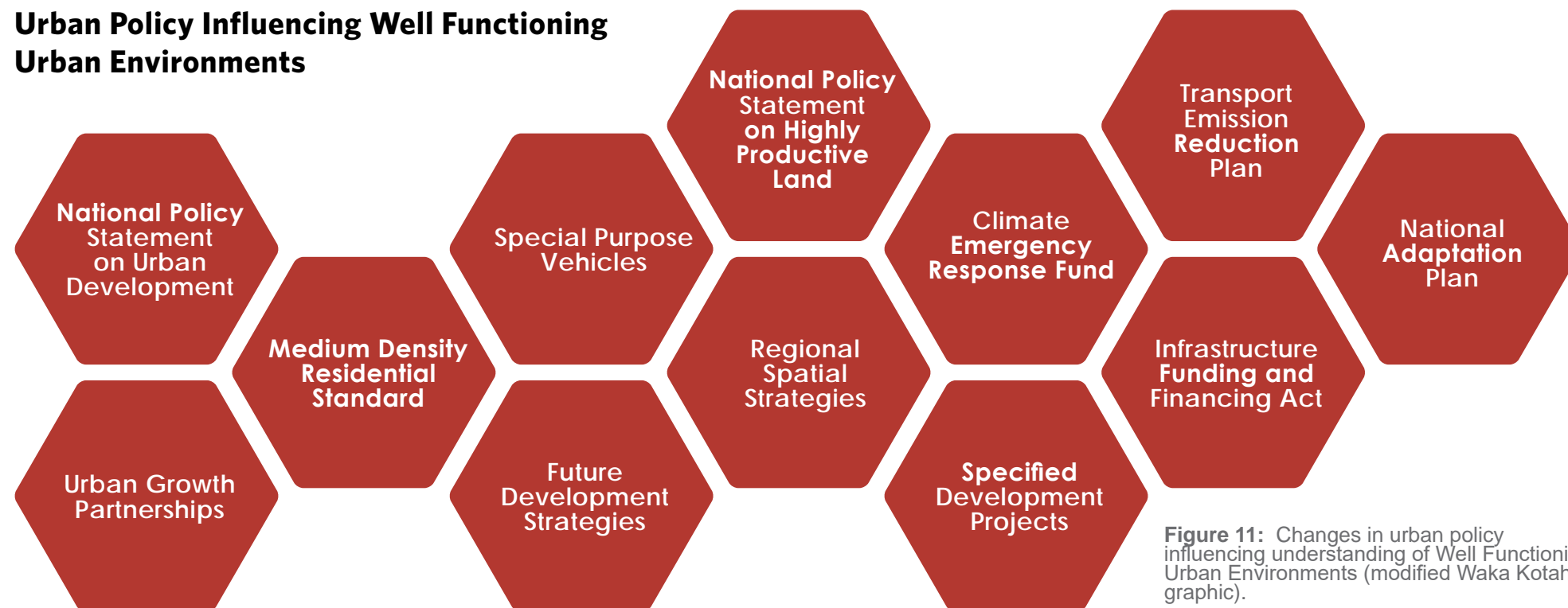


Figure 11: Changes in urban policy influencing understanding of Well Functioning Urban Environments (modified Waka Kotahi graphic).

Links

- [Emissions Reduction Plan \(Ministry for the Environment, 2022\)](#)
- [National Adaptation Plan \(Ministry for the Environment, 2022\)](#)
- [National Policy Statement on Urban Development, \(Ministry for the Environment, 2020\)](#)
- [Urban Development Act \(Ministry of Housing and Urban Development, 2020\)](#)

Movement and Place

One Network Framework

The One Network Framework ("ONF") is an evolution from the One Network Road Classification to take a movement and place approach to classifying roads and streets, recognising place and movement functions, as well as the surrounding context of the street.

The ONF provides a useful tool for transport planning, based on a five-point matrix that links place and movement functions to inform a set of street categories (see Figure 14). The Urban Street categories are based on movement and place function and this informs the requirements for the design of the street and what is prioritised as well as the safe and appropriate speed limit range.

A street category is defined as part of a bigger network context, and the Framework recognises a street network (or even a single corridor) can have multiple street categories along its length reflecting changes in its location and the form, function and activities of adjacent land uses.

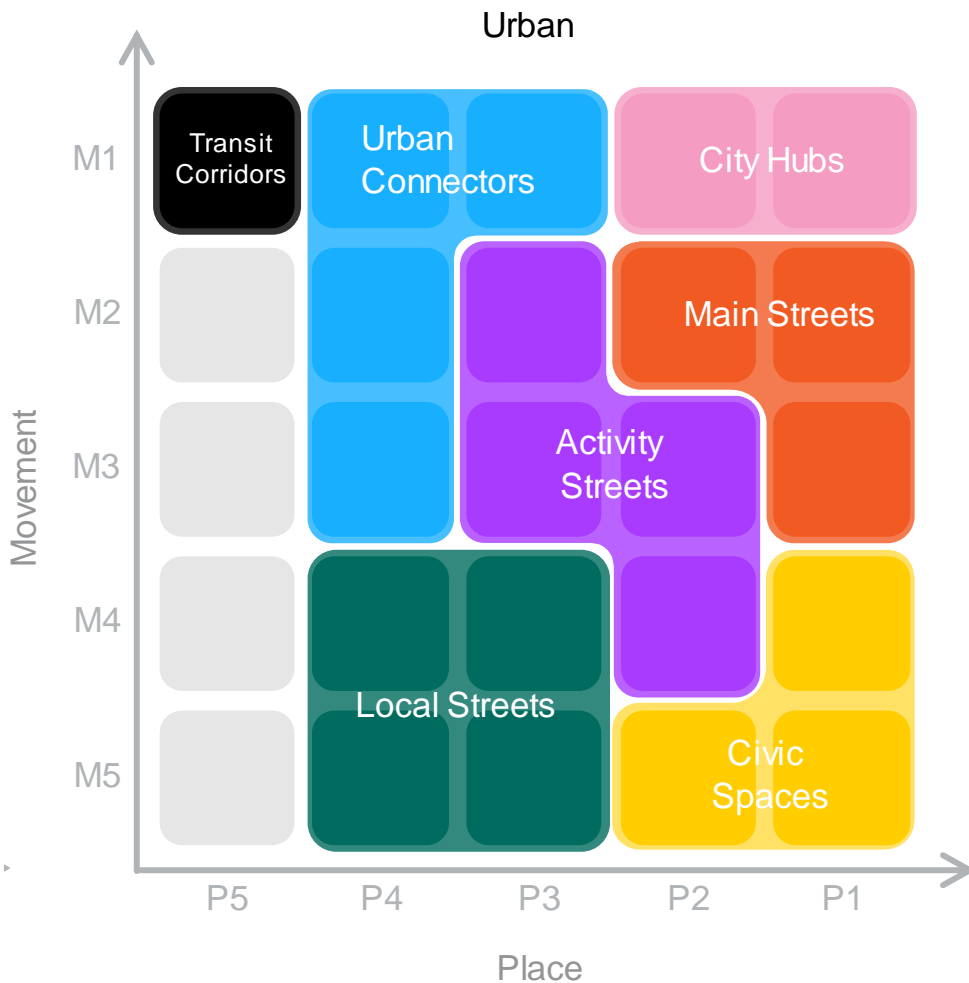
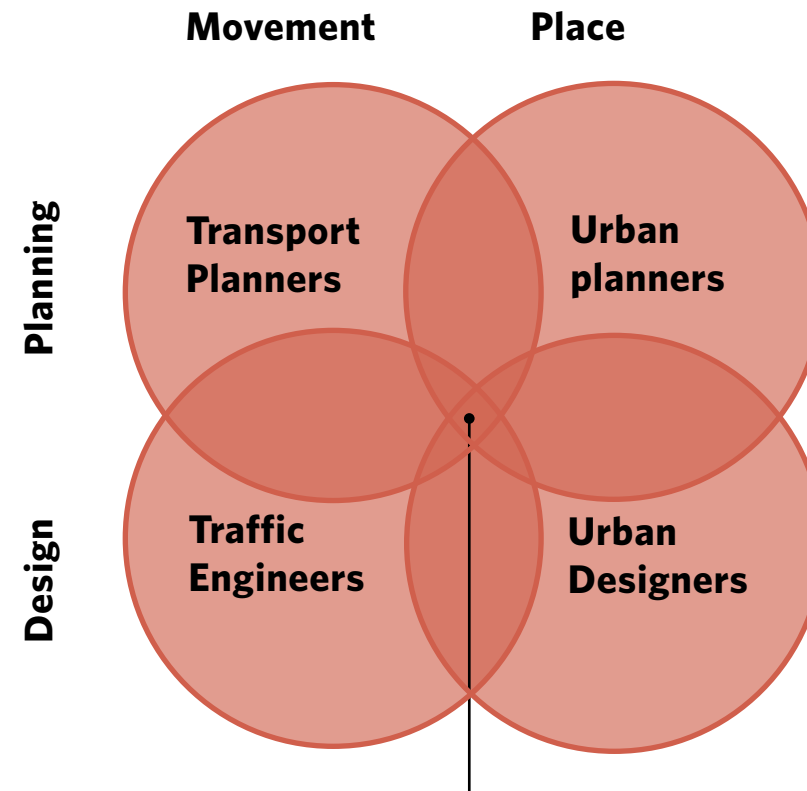
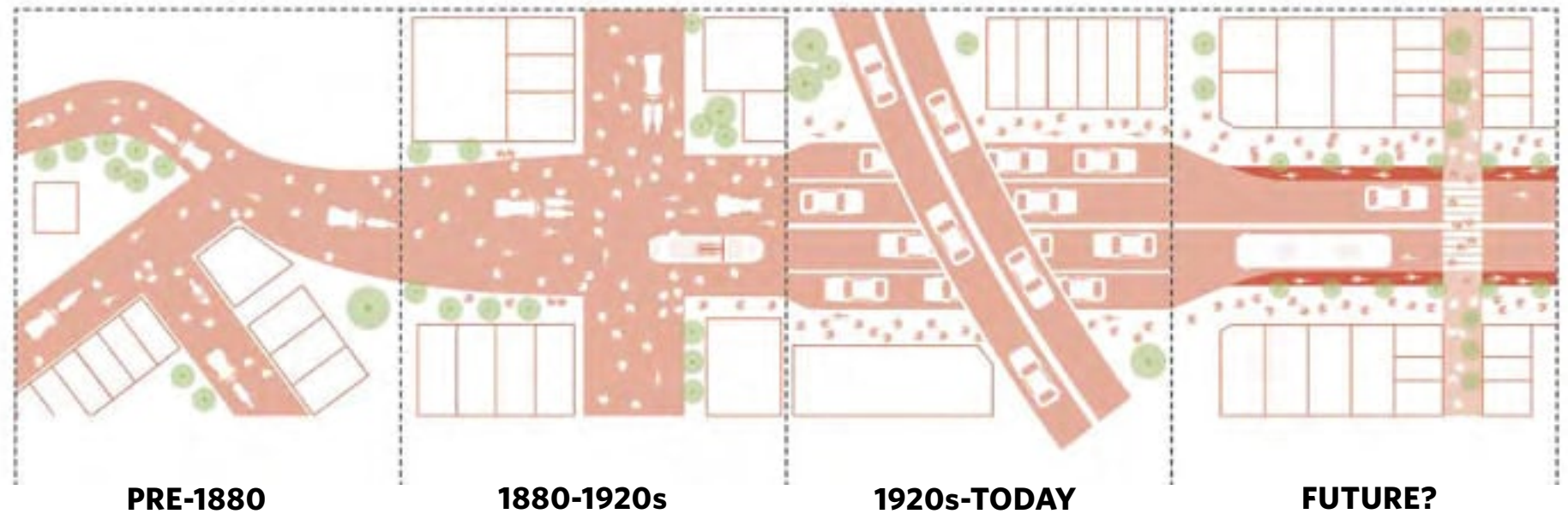


Figure 13: One Network Framework Place and Movement Matrix, Waka Kotahi and explanatory graphic of who the ONF is for.

The ONF is a planning tool for collaboration between practitioners



The Evolution of Streets - Movement and Place



Links

- [Integrating Safe System with Movement and Place for Vulnerable Road Users \(Austroads, 2020\)](#)
- [One Network Framework \(Waka Kotahi, 2022\)](#)



1.2 Why an Urban Street Guide

A guide to address the complexity of streets in urban places
















There is a lot to consider in planning and designing urban streets. Changing our streets to create a safe system, enabling more people to make more trips within the same space and time constraints and with fewer emissions, environmental and place impacts, streets that enable greater densities of urban development and cater more readily to everyday needs, and streets that continue to provide essential infrastructure and utilities that are resilient and adaptive to a changing climate; these all come together to create a closely inter-connected and complex set of considerations for street planning and design as well as street operations.

The spatial constraints of confined urban street corridors, and the increasing density of the built environments and people activity they sustain, especially in our biggest and busiest urban centres, accentuates the complexity of addressing this complexity.

Holistic planning and design approaches are the answer to addressing the challenges of accommodating so many interrelated functions within limited space. At the street scale, integrated spatial arrangements, within which elements that are multi-functional and that collectively deliver multiple co-benefits, are the way to harness the creative tension of this complexity to improve well-being and the environment.

Sections 2, 3, 4 and 5 of this guide provide resources and direction on how to address this complexity at the system, spatial and network planning scales and at the street level.

At a Street Level

 Walking	 Cycling	 Inclusive Access	 Public Transport	 Driving
 Loading and Deliveries	 People Doing Business	 Parking	 Play	 Health
 Safety	 Green Infrastructure	 Climate Change Response	 Utilities	 Urban Development

A considered approach is required to integrate multiple functions into spatially constrained street environments in ways that improve wellbeing and the environment.

Roles and Responsibilities for Street Planning and Design

The partnership between central government and local government (road controlling authorities) is important for street planning and design. Local government is responsible for improving, operating, regulating (aspects such as parking), and maintaining local networks and setting speed limits on local streets and roads. Central government has an interest in local street networks because the cost to build, operate and maintain local networks is shared between central government (through Waka Kotahi) and local councils. Central government also co-funds roading, public transport services, and walking and cycling infrastructure and improvements on national state highway networks (which include urban streets). The roles and responsibilities of this system are shared, and the partnership approach necessary to support well-functioning urban environments is shared.

Local government operates within the regulatory and funding context set by central government. This means that while local government has more control over the local street network than central government, central government support and influence the planning, design and management of local streets in partnership. This influence is achieved through rules, regulation, standards, guidelines and incentives.

Waka Kotahi is committed to working with its local partners at all scales from spatial planning to local network planning (under the One Network Framework), on projects (funded from the National Land Transport Fund and other sources), and through business cases using the street guide to connect these systems. (For further guidance on investing in urban streets, see 3.2: Establishing the case for change).

The street guide includes

- setting the scene globally, locally including the policy context
- principles in street planning and design
- key components to street planning and design
- direction on planning and design processes
- understanding street context for street design and planning
- the form and function for streets based on the One Network
- framework (urban street categories)
- shared challenges to streets
- case study guidance based around key street themes
- resources and links

The street guide is divided into six parts

Section 1.0 Introduction

Describes the Street Design Guide, its background and policy context

Purpose

1.1 Policy and Direction

1.2 Why an Urban Street Guide

Section 2.0 Design Principles

Establishes the design objectives and methods, principles and objectives that guide our approach to street design

Framework of Principles

Objectives

Principles

Section 3.0 Planning and Process

Sets out guidelines for how to plan and design streets

3.1: Planning and Design Process

3.2: Establishing the Case for Change

Section 4.0 Creating Good Urban Streets

Outlines how to understand and design a street network in urban areas and illustrates the different types of urban streets and how to design them.

The Urban Spectrum

Street Networks and Urban Places

ONF Urban Street Categories Guidance

4.1: Street Networks and Urban Places

4.2: ONF Urban Street Categories Guidance

Section 5.0 Putting it into Practice

Provides thematic guidance based on shared challenges to creating good urban streets.

Building a Community of Practice

Shared Challenges to Urban Streets

Thematic Case Study Guidance

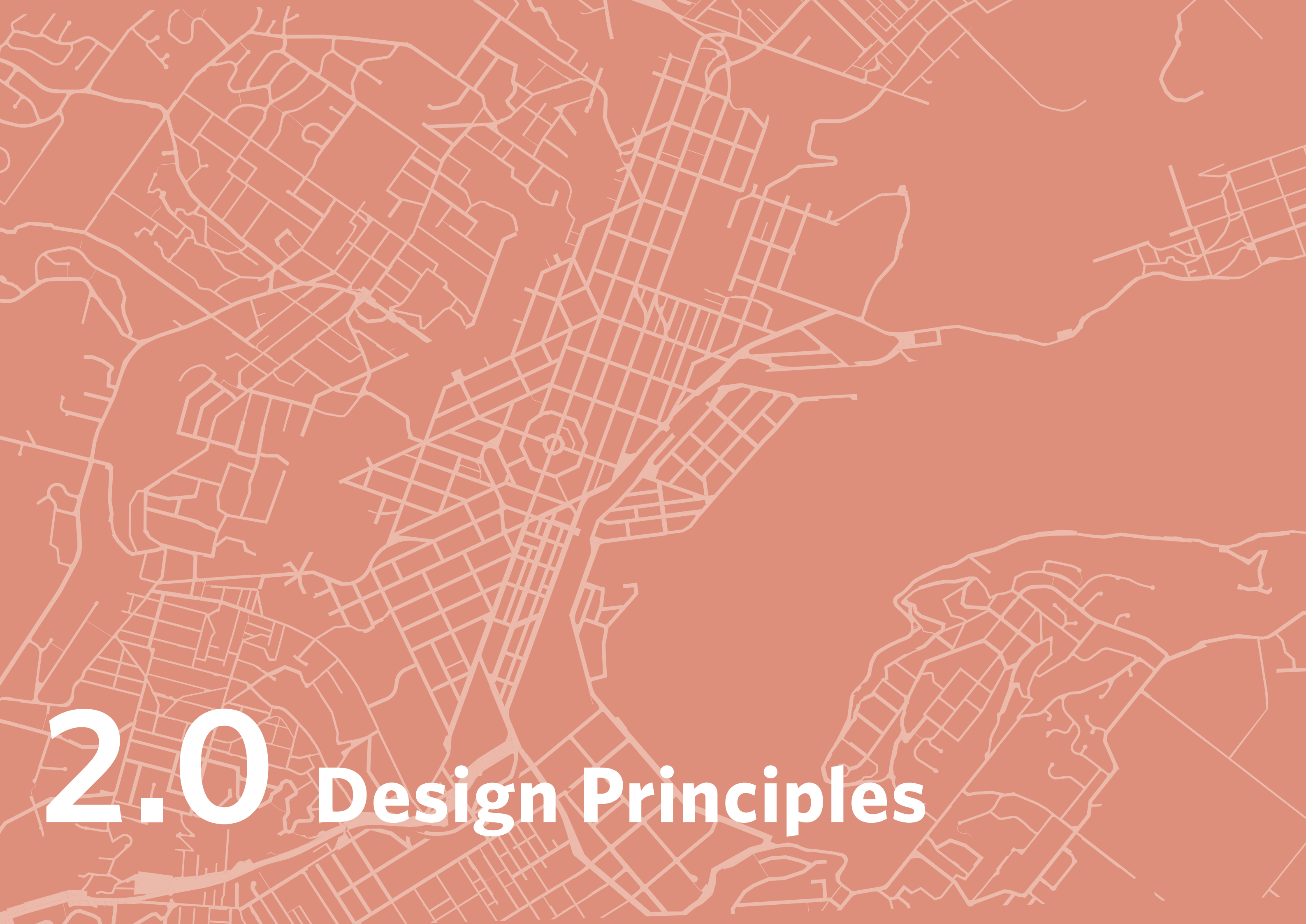
Appendices

i) Resources and Links

iii) Adaptive Urbanism

Through the objectives and methods set out in Section 2, the street guide sets out what the investment in our streets should be achieving.

The street guide does not include detailed design of specific streetscape treatments or a street specification

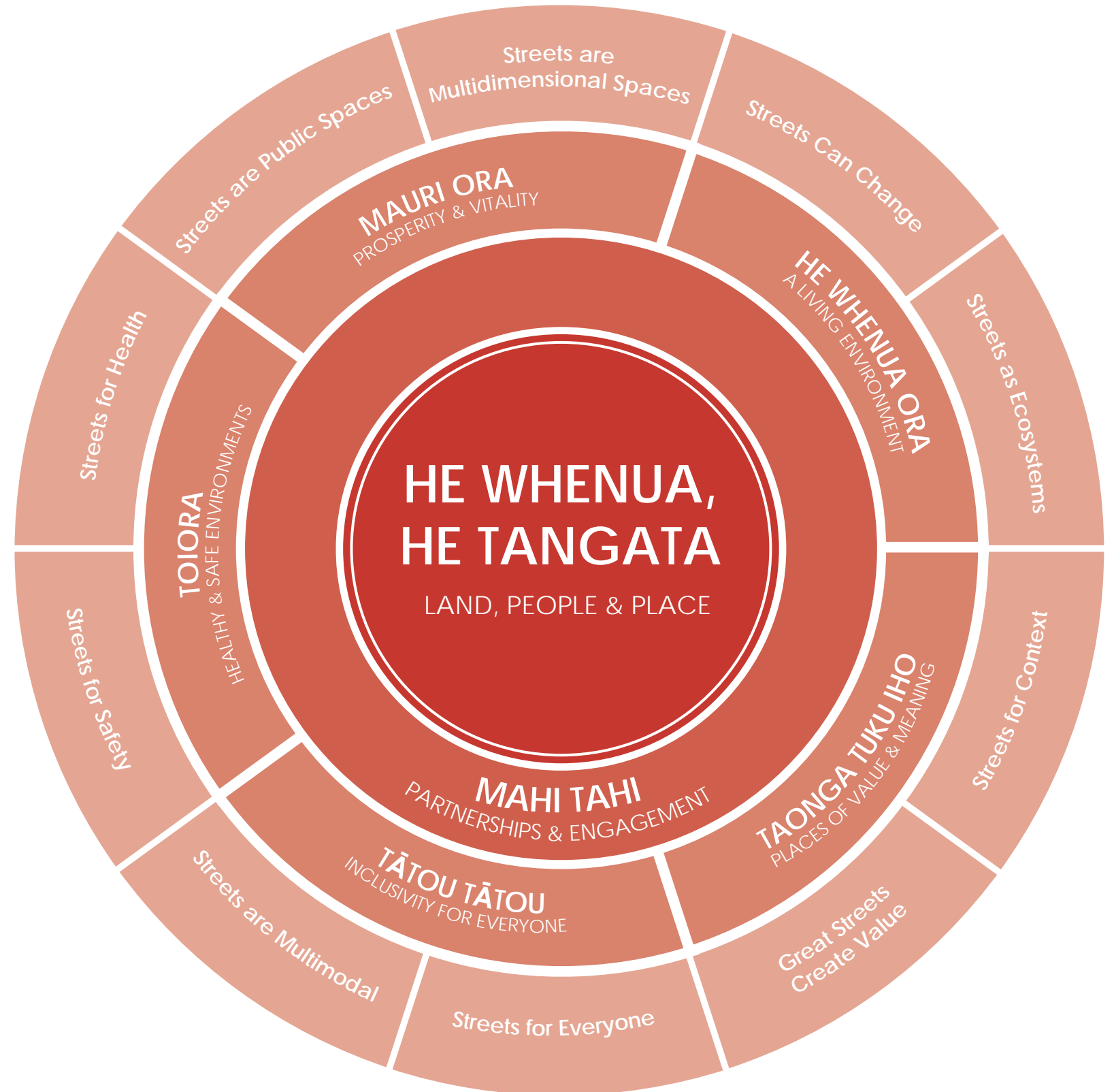
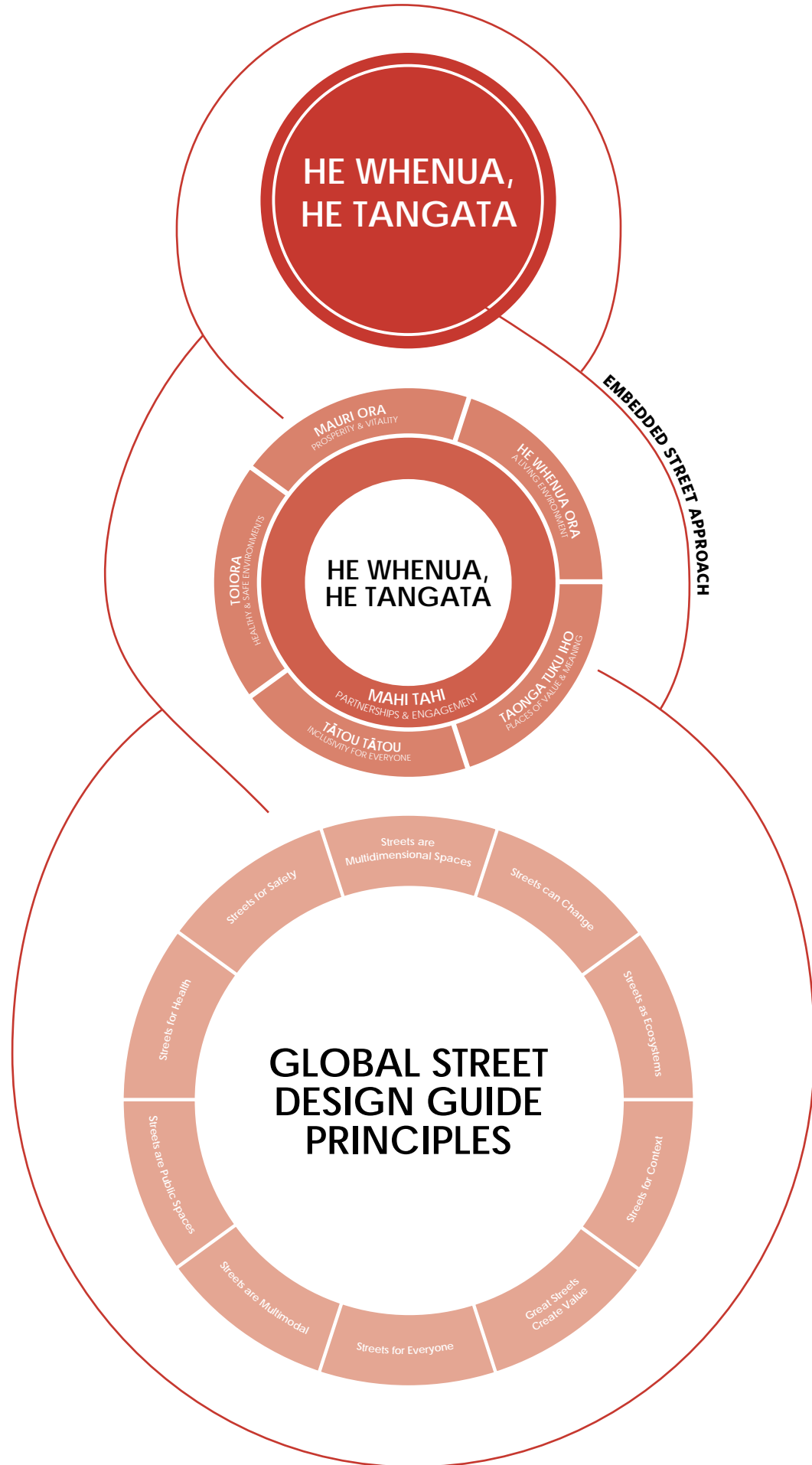


2.0 Design Principles

Aotearoa Urban Street Planning & Design Guide Principles

He Whenua, He Tangata Design Principles

The street guide uses the overarching ethos of He Whenua, He Tangata (introduced in preamble pg1) to set the framework for six objectives for streets, and 10 design principles under these objectives. These objectives and principles capture and integrate the collective aspirations and expectations for street planning and design in Aotearoa, and create a line of sight to best practice in global street design. The diagram to the left reflects this integrated approach and the synergies to designing healthy and liveable streets within Aotearoa.



Objectives

This guide defines six objectives for streets in Aotearoa. These objectives create a clear direction for delivering good practice outcomes that support the land transport system and strategies and action plans such as those for Road to Zero (and the Safe System approach [\[3\]](#)), mode shift, and the environment and sustainability. The objectives give effect to overarching policy, planning and investment drivers, transport planning (recognising movement and place functions) and urban integration. In addition, National Land Transport Fund investment decisions must also give effect to the strategic direction provided by the Government Policy

Statement on land transport. The street objectives are unique to Aotearoa so our streets are fit for context in the places where we work, live and play. Street design is informed by mātauranga Māori and is context specific. The formation of an iwi working group is critical for advise on implementating design based on mātauranga Māori. The unique relationship of iwi with the natural environment is celebrated and also informs the design of streets in Aotearoa, so streets look and feel like places of Aotearoa and reflect the unique identity.

He Whenua, He Tangata



MAHI TAHI PARTNERSHIP & ENGAGEMENT

Transport affects the daily lives of all New Zealanders. Mahi tahi refers to working together in collaboration to achieve shared outcomes and visions. This means both informing communities and stakeholders about proposed projects and decisions that have been made, and engaging with them as part of the Waka Kotahi decision-making process. In addition to engaging, 'Mahi tahi' is about partnering in a collaborative relationship with multiple organisations. Partnerships can unlock more comprehensive investment that considers all aspects of street form and function and how they affect people.



HE WHENUA ORA A LIVING ENVIRONMENT

As towns and cities change we adapt our living environments, and work with living systems and the natural environment. Spatial and system thinking is needed to connect the street to its neighbourhood and buildings, the neighbourhood to its city, and the city to its region.

Street planning and design optimises relationships between natural and built environments activating streets for activities and transport networks. It also recognises that towns and cities are part of a constantly evolving relationship between people, land, culture and the wider environment



TAONGA TUKU IHO PLACES OF VALUE

All environments have specific and unique contexts and value. Recognising these unique layers offer opportunities to connect our past with new relationships within our environments. Places of value reflect and enhance the distinctive character and culture of our urban environments.

Street planning and design recognises that character is dynamic and evolving, but also protects and manages our heritage, including buildings, landmarks, places and landscapes.



TĀTOU TĀTOU INCLUSIVITY FOR EVERYONE

Inclusive street environments cater for all ages, abilities and cultures. It is about recognising through 'Taonga Tuku Iho' that place provides context and value, and 'Tātou Tātou' provides inclusive access.

Connectivity and access is a positive way to foster this inclusivity and diversity, and offers people choice in the way they move in our towns and cities. This is reflected in the urban form, the transport choices provided, and in the form of streets. Providing flexible and adaptable design which meets the needs of all and anticipates future uses connecting to the past. Support distinctive place identity that is rooted in history to create resilient and robust urban places for everyone.



TOIORA HEALTHY & SAFE ENVIRONMENTS

The built environment needs to support safe and healthy communities. This expands on 'Tātou Tātou' which ensures that environments are inclusive. 'Toiora' is a safe system approach which supports the street design of peoples' physical, mental, spiritual, community and family wellbeing (Te Whare Tapa Wha).

Safe streets reduce harm, risks and help create enjoyable and public spaces and quality environments that are cared for, and a sense of ownership and responsibility in all residents and visitors.



MAURI ORA PROSPERITY & VITALITY

Understanding that streets are multidimensional and that 'Toiora' - a safe, efficient street network is essential to 'Mauri Ora' the vibrancy, social, cultural and economic health of a town, city or region. Street planning and design plays a role in facilitating access to formal and informal commerce and employment, and the movement of goods and services. During business case development, both during optioneering and detailed design, the benefits and whole of life costs of a street design should be considered.

Principles

The street guide reinforces the tactics and techniques being pioneered by the world's foremost urban engineers and designers, and adopts and endorses the Global Street Design Guide Principles of the National Association of City Transportation Officials (NACTO). These principles reflect the shared challenges and opportunities Aotearoa shares with countries around the world in planning and designing for better urban streets. Street design must meet the needs of people walking, cycling, taking public transport, lingering, playing, doing business, providing city services, and driving, all in a constrained space. The principles help to shape and inform this challenge. As we develop the

transport solutions we develop the places and spaces in which we live, work and play. As we develop our transport networks, we shape the urban form and function of streets. Therefore, streets provide a common point of reference for the necessary integration of the transport and land use systems in urban areas. Waka Kotahi supports the use of quality street design principles to inform planning, design, implementation and management and the way we engage with communities on street programmes and projects.

He Whenua, He Tangata

MAHI TAHI PARTNERSHIP & ENGAGEMENT

HE WHENUA ORA
A LIVING ENVIRONMENT

TAONGA TUKU IHO
PLACES OF VALUE

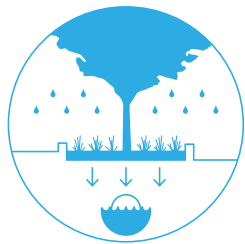
TĀTOU TĀTOU
INCLUSIVITY FOR EVERYONE

TOIORA
HEALTHY & SAFE ENVIRONMENTS

MAURI ORA
PROSPERITY & VITALITY

GLOBAL STREET DESIGN GUIDE PRINCIPLES (GSDG-NACTO)

**Edited Global Street Design Guide Principle*



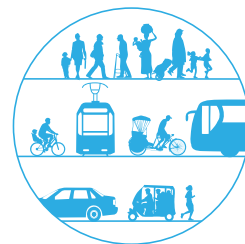
Streets as Ecosystems

Integrate contextual green infrastructure measures to improve the biodiversity and quality of the urban ecosystem. All designs should be informed by natural habitats, climate, topography, water bodies, and other natural features.



Streets for Context

Design streets to enhance and support the current and planned contexts at multiple scales. A street can traverse diverse urban environments, from low-density neighbourhoods to dense urban cores. As the context changes, land uses and densities place different pressures on the street, and inform the design priorities.



Streets are Multimodal

Design for a range of mobility choices, prioritizing active and sustainable modes of transport. Safe, efficient, and comfortable experiences for pedestrians, cyclists, and transit riders support access to critical services and destinations and increase the capacity of the street.

Recognise the role urban streets play in the freight network and provide appropriately for the wholesale movement of goods in ways that are safe and appropriate for all modes and urban context.



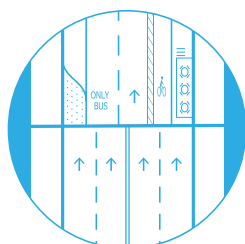
Streets for Health

Design streets to support healthy environments and lifestyle choices. Street designs that support active transportation and integrate green infrastructure strategies improve air and water quality, can reduce stress levels, and improve mental health.



Streets are Multidimensional Spaces

Design the street in space and time. Streets are multidimensional, dynamic spaces that people experience with all their senses. While the ground plane is critical, the edges and the canopy play a large role in shaping a great street environment.



Streets Can Change

Design streets to reflect a new set of priorities that ensures appropriate distribution of space among different users. Push boundaries, try new things, and think in creative ways. Implement projects quickly using low-cost materials to help inform public decision making, allowing people to experience and test the street in different ways.



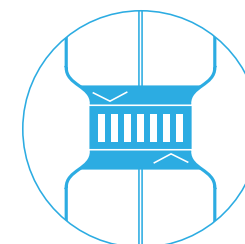
Great Streets Create Value

Design all streets to be social, cultural and economic assets as well as a functional element. Well designed streets create environments that entice people to stay and spend time, generating higher revenues for businesses and higher value for homeowners as well as increasing value in ways every street user benefits.



Streets for Everyone

Design streets to be equitable and inclusive, serving the needs and functions of diverse users with particular attention to people with disabilities, seniors, and children. Regardless of income, gender, culture, or language, whether one is moving or stationary, streets must always put people first.



Streets for Safety

Design streets to be safe and comfortable for all users. Prioritize the safety of pedestrians, cyclists, and the most vulnerable users among them: children, seniors, and people with disabilities. Safe streets have lower speeds to reduce conflicts, provide natural surveillance, and ensure spaces are safely lit and free of hazards.



Streets are Public Spaces

Design streets as quality public spaces, as well as pathways for movement. They play a big role in the public life of cities and communities, and should be designed as places for cultural expression, social interaction, celebration, and public demonstration.



links

- [Key Design Principles, Global Designing Cities Initiative \(NACTO, 2016\)](#)



3.0 Planning and Process

Planning and Process for Urban Streets in Aotearoa

In the previous section the objectives have been outlined, in this section the methods will be presented. Planning and process are critical to successfully delivering better urban street outcomes in Aotearoa. This starts with methods to gain an understanding of the current state and developing a vision of the future state with the community.

This section sets out guidance in three parts to improve planning and process for better urban street outcomes in Aotearoa.

SECTION 3.1 PLANNING AND DESIGN PROCESS

This section outlines the planning and design process cycle in broad terms using the three levels of investment as a basis for implementing change.

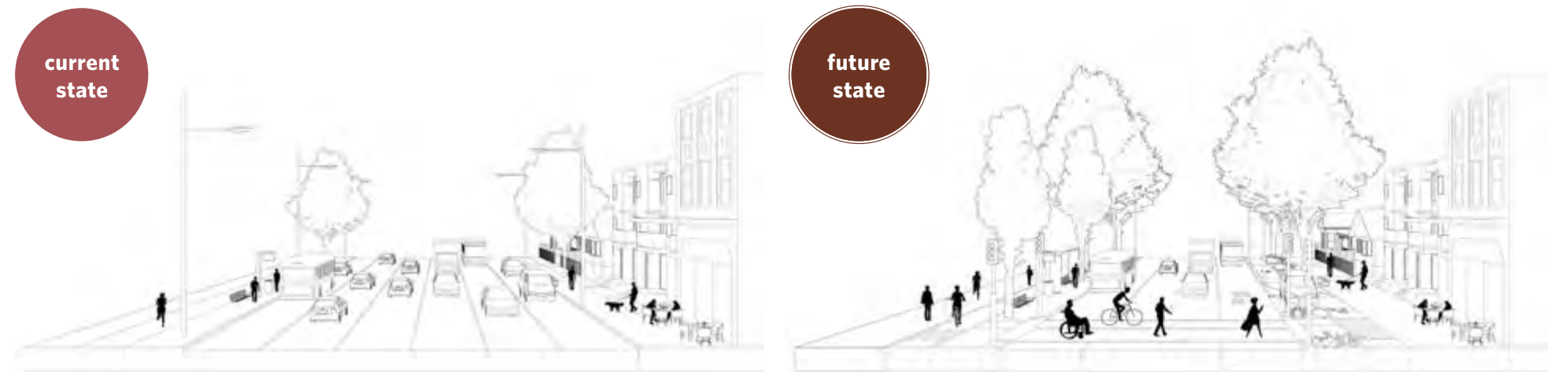
SECTION 3.2 ESTABLISHING THE CASE FOR CHANGE

Establishing the appropriate level of change required to deliver the desired future state is critical. This section identifies three broad levels of change that can be applied to existing and new streets:

- tactical urbanism and small-scale intervention
- staged network and streetscape development
- permanent changes including new streets or upgrade.



Outcomes sought Network planning Programmes and projects Grounded in place & fit for specific urban contexts →



street design →
Adaptive | Staged | Permanent



Hereford St

AA 人 车
SHARED
ZONE

3.1 Planning and Design Process

Planning and Designing Streets

Creating good urban streets is an iterative process. This guide organises the planning and process cycle into four development phases:

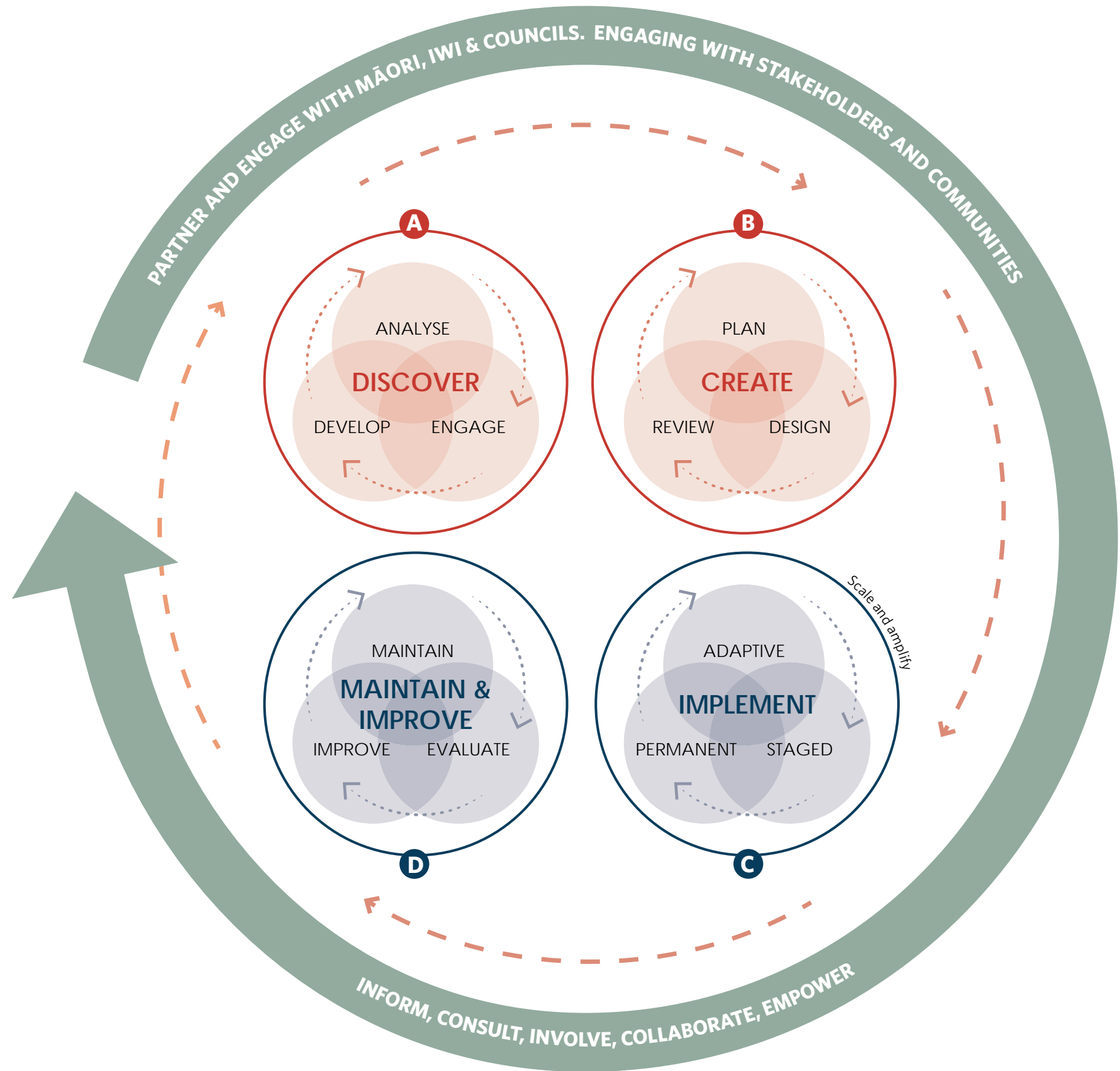
- Discover
- Create
- Implement
- Maintain and Improve

The planning, design, delivery, operate and maintain process cycle does not take the place of best practice project management but highlights the phases that are important to achieving successful outcomes through the end to end project life cycle of urban streets.

This cycle can be used for developing scopes and implementing a wide variety of policies, plans and programmes, as well as project briefs that result in physical changes to the urban street.

This guide focuses on the discover and create phases as the parts of the process most closely tied to the planning and design of urban streets.

Some phases will require more time than others and some will happen more than once as each phase has unique feedback loops. Projects can be amplified to 'right size' the process and scale of investment, remembering the tactical/ staged/ permanent pathways to the future state and enabling more rapid change in response to, for example, urgent safety, health and climate issues. The process (and feedback loops) around how the phases are carried out is important to achieving successful outcomes.



Partnership and Engagement

Partnership and engagement approaches are central to planning and design that creates a level of social licence and recognition of the need for change, as well as informing the design. Waka Kotahi uses the International Association of Public Participation framework (figure 12) to identify partners, stakeholders and community members and establish the level of engagement with each party at each stage in the planning, designing, implementing, maintain and operating streets, as set out on the following pages.

Increasing impact on the decision

	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place the final decision making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decisions.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decision to maximum extent possible.	We will implement what you decide.

Figure 12: IAP2 Spectrum of Public Participation

MĀORI PARTNERSHIPS

Honour the Tiriti Partnership.

Respect for and inclusion of Te Ao Māori and mātauranga Māori are at the heart of he whenua, he tāngata. In line with Tiriti principles of partnership, participation and protection this directs continuous partnership with iwi, tribal authorities, hapū and mātāwaka to shape aspirations, direction, options, design and implementation throughout the lifecycle of urban streets.

Recognise Mana, Māori Partnerships and Engagement.

Engaging and partnering with iwi is important in all urban street projects. An equal partnership between tangata whenua and tangata tiriti requires recognition of the mana of iwi, hapū, whānau and marae. Projects that have taken an equal partnership approach demonstrate how embedding iwi values into urban street programmes and projects provide for holistic outcomes and opportunities that benefit everyone.

Iwi Partnership Success.

Consider the development of project specific iwi partnership and associated management plans and measures to ensure successful iwi partnerships. Using project specific metrics developed in collaboration with iwi can give aspirational baseline measures to achieve over the project lifetime.

Advice on best practice engagement with Māori is enshrined in the Local Government Act 2002; in the engagement framework published by the Office for Māori Crown Relations Te Arawhiti; and in the Waka Kotahi Hononga ki te Iwi – Māori engagement framework that sits under the Te Ara Kotahi, the Waka Kotahi – Māori strategy. The first step in preparing for an engagement process with Māori is to clearly define the kaupapa (the issue or matter) and the purpose of the engagement so tangata whenua can determine what level of participation they want to have. This will help shape the engagement approach and methods, which are likely to change at each step of the process.

Checklist and Resources



Links

PARTNER AND ENGAGE

- Partner with tangata whenua

- [Working shoulder to shoulder \(Taituara \(SOLGM\), 2015\)](#)
- [Māori Engagement Framework \(Te Arawhiti, 2022\)](#)
- [Resources for Māori Partnerships \(Local Government New Zealand, 2017\)](#)
- [Te Ara Kotahi – Our Māori Strategy \(Waka Kotahi, 2020\)](#)

PARTNERING AND ENGAGEMENT

Take an Inclusive Approach.

No single organisation in Aotearoa can plan, design, build, maintain and improve all aspects of urban streets and their connections to the wider urban contexts and communities of which they are a part. It takes co-ordinated and collective effort. An inclusive approach to partnership and engagement is critical to success and they should be understood as a constant thread linking all steps in the process of delivering better urban streets for Aotearoa.

Share Lessons and Build Capability.

Communities of practice across different sectors and communities allow knowledge and lessons to be shared more widely than just among those involved in or with knowledge of individual project processes and outcomes.

ESTABLISH LEVEL OF ENGAGEMENT

Understand Who Should be Involved.

The International Association of Public Participation framework (figure 12) helps to identify partners, stakeholders and community members, and understand how they are or may be affected or why they are interested. It is important to implement this engagement plan at the start to ensure a diverse variety of people, opinions, perspectives and knowledge are brought to the project and to listen to and understand local priorities and themes, and how the street functions in its place and movement contexts.

Engage Stakeholders.

Engage with stakeholders to understand the full extent of the project and to align it with any existing and upcoming their interests in the project and alignment with existing plans and upcoming projects in the area, including for example urban development. Engaging with the local business community on the use of the street. Partnering and collaborating with other local and central government partners and Waka Kotahi is particularly important. It will help to found the planning and investment process on trust, clarity and accountability. It also gives effect to the drivers for change as reflected in the Government Policy Statement on land transport and other guiding documents of central and local government agencies.

Understand Stakeholders.

Use local knowledge and keep stakeholders involved throughout the project to make decisions together on the local priorities and themes for the street project while considering its wider place and movement context. Identifying and engaging early with key stakeholders and community groups allows local challenges, opportunities and aspirations to be uncovered and well understood from early in the project and as it develops.

Partner.

Waka Kotahi adopts a partnership approach to planning and investment decision-making, founded on trust, clarity and accountability. This approach and the investment principles and policies that guide Waka Kotahi provide a foundation for Waka Kotahi, its partners and stakeholders to work towards developing and implementing urban street solutions that give effect to the policy for change as reflected in the Government Policy Statement on land transport and other important guiding documents.

Collaborate.

For effective planning, development and maintenance of urban streets, a close collaborative approach to planning and investment between local government partners and Waka Kotahi is particularly important, given the myriad ways in which local communities rely on and use the streets in urban areas. Such an approach should be embedded early on in the engagement plan, ways that can maintain relationships and ways of collaborating that endure through the implementation and maintain and improve phases through a philosophy of ongoing care and stewardship.

Be Clear How People Can Participate.

The framework in figure 12 identifies the level of participation projects can work towards with different groups. It comes with corresponding promises to the public about what that participation means. A co-design approach to street projects can involve, collaborate or empower, with different methods and tools and the appropriate level of participation likely to change at each stage. It is important to be clear what level of participation the co-design model can offer, to reassess this at each stage and always communicate that promise clearly, to minimise confusion and frustration later. Engagement activities to help design the project can include surveys, enquiry by design workshops, place-making models, games and activities (refer to the Waka Kotahi Tactical urbanism handbook for more details).

SECTOR STAKEHOLDERS AND ONGOING INVOLVEMENT

Identify Sector Stakeholders.

In addition to partnering with iwi and engaging with local communities, identify the other sector stakeholders that should be identified for more targeted involvement in the process. These stakeholders include relevant central and local government agencies, professional institutes and industry bodies and special interest advocacy and community groups. These groups typically have more narrowly defined interests in street projects, which support a more targeted approach to their participation and engagement.

Establish a Community of Practice.

Foster a community of practice among diverse sector stakeholders involved with and invested in bettering urban streets for Aotearoa.

Front-Foot Change with Positive Communications.

Proposing changes to public spaces will always provoke a response and often involve emotional reactions or resistance to change. Front-foot your project with positive communications about the vision and the big picture, to explain how change can be positive progress.

Champion and Tell the Story.

Brief local media in advance and make sure you have opportunities to tell your story. Find champions in iwi partners, council, transport agencies and other respected community leaders who can show support and help activate support and voices from groups in the community who aren't usually heard, but will be interested in making positive changes and will help the more vocal and engaged appreciate the demographic diversity of the community.

Don't Require a Consensus to Move Forward.

At points in the engagement process groups will not agree. The outcome of engagement is not necessarily consensus. Don't let a lack of consensus lead to inaction, as this will result in the continuation of the 'status quo' of the current state which continues to result in significant health and safety issues. Frameworks to clearly and transparently guide decision making are important to taking steps forward consistent with objectives and outcomes sought that deliver measurable progress towards better urban streets for Aotearoa.

Enable Continuous Feedback Loops.

Enabling effective feedback and action helps to continuously adapt and evolve the development of urban streets and networks in response to ongoing feedback and data collection from stakeholders and the community. At each stage of the project or after public engagement sessions report back to everyone who has taken the time to contribute how their feedback has helped shape the next stage. Continue to report back as part of post-monitoring and evaluation phases.

CHECKLIST AND RESOURCES

PARTNER AND ENGAGE

- Develop a communication and engagement plan
- Identify and engage everyone affected or potentially affected from the outset
- Be clear and transparent about the level of participation and influence of each stakeholder group at each stage of the project
- Close the loop to show how people have influenced the outcomes at each stage

Links

- [Advancing the Practice of Public Participation: Resources \(IAP2, 2022\)](#)
- [Resources for Māori Partnerships \(Local Government New Zealand, 2017\)](#)
- [Working Shoulder to Shoulder \(Taituara \(SOLGM\), 2015\)](#)
- [Māori engagement framework \(Te Arawhiti, 2022\)](#)
- [Public Engagement Guidelines \(Waka Kotahi, 2016\)](#)
- [Te Ara Kotahi – Our Māori Strategy \(Waka Kotahi, 2020\)](#)
- [Investment Principles \(Waka Kotahi, 2018\)](#)
- [Tactical Urbanism Handbook \(Waka Kotahi, 2020\)](#)
- [How to Talk About Urban Mobility and Transport Shift – a Short Guide \(The Workshop, 2020\)](#)

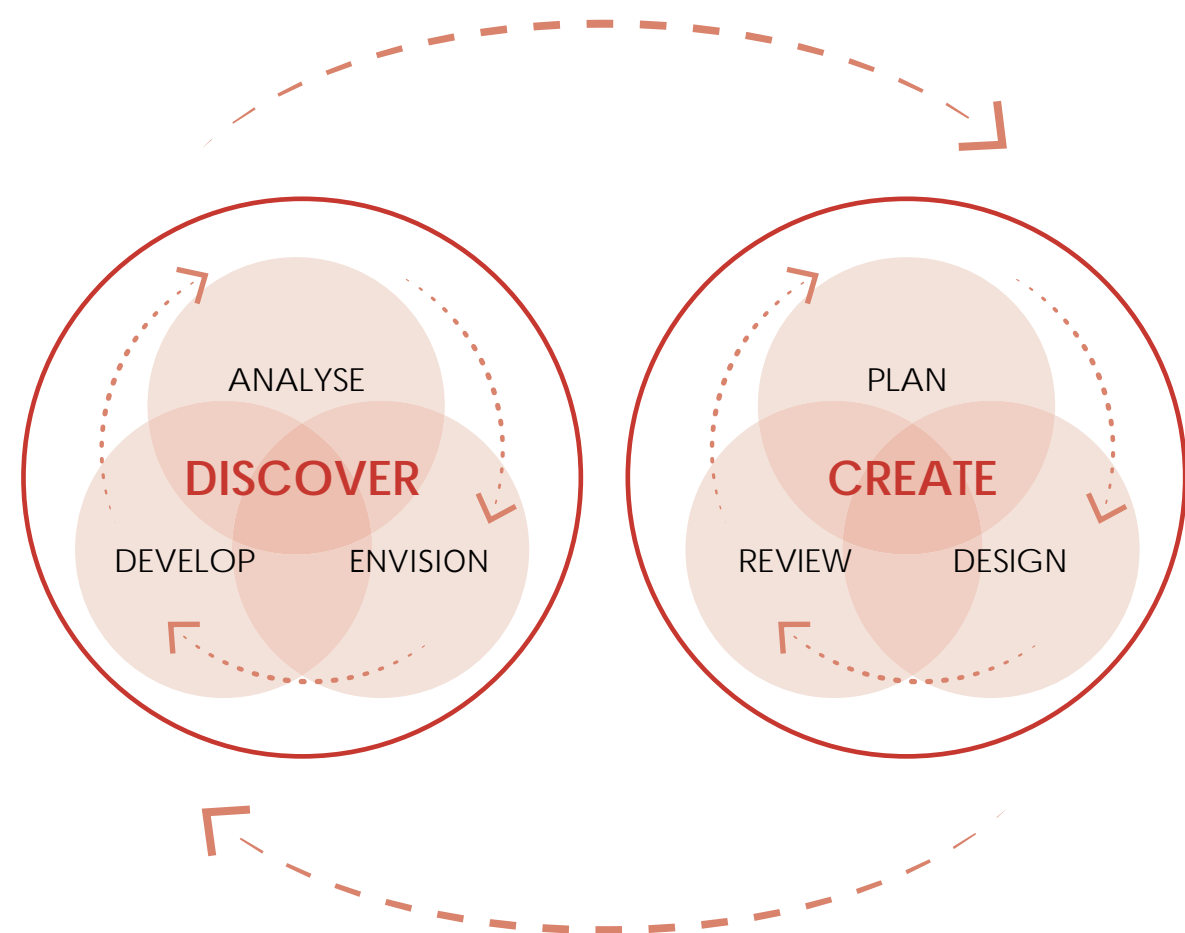
Discover and Create Phases

Street retrofits and rebuilds are usually part of the Local Government Act process and required meaningful and extensive consultation and engagement and communication with the community while streets being designed for greenfield developments are typically usually part of a statutory process (consenting).

Data can inform how street designs are more inclusive and universal, catering for all ages, groups, genders and mobility levels. Data can be collected and analysed to

- Measure diversity of participation
- Determine the proportion of mobility aid users out of all pedestrians, or of people accessing a place
- Compare actual safety with the perception of safety.
- Determine latent or suppressed demand – whether it is a desirable place to walk or whether there is there severance.
- Corresponding feedback themes on people’s values and aspirations

Additionally, data analysis is important to create a complete baseline and evidence base across the broader considerations for urban streets as identified by the policy drivers of change and section 2 principles in this guide.



The components of each step of the discover and create phases shown in the diagram (above) are expanded on over the following pages.

ANALYSE

Analyse Context.

Analyse and understand context including the social, cultural and heritage, environmental and the spatial constraints of the urban place and/or street at multiple scales. Identify how it functions as part of an urban context for example the role the street has within a metropolitan, suburban, or town centre context and scale as well as within movement networks.

Gather Data and Identify Gaps.

Gather data about all relevant modes and aspects of the transport network including walking, cycling, and public transport for which there is typically less baseline data than traffic volumes, speeds and car parking. Understand water systems, ecological functions and values, and environmental goals or guiding documents relevant to the project area. Use detailed surveys or GIS data that includes topography, catchment and stormwater as well as above and below ground services. Draw upon or gather social planning data to inform how people use and value public street space subject to change and how changes may affect people’s lives.

Understand Baseline and Trends but Focus on the Future.

Focus on planning and designing for the future we want as defined by strategic plans and visions and investment goals and objectives. Plan and design in ways that are not subject to status quo bias or assumptions around aspects of the street environment and function must be fixed or not re-visited.

Understand Changes in Future Street Users.

Understand the expected change from existing to future users (both numbers and types of use/activities). Consider conducting public life surveys to understand the street uses and functions, investigating desire lines, solar access and climatic factors such as wind and carrying out safety assessments including Crash Analysis System (CAS) data and Crime Prevention through Environmental Design (CPTED) to understand how people perceive and interact with the street space.

Assess Statutory and Broader Policy Implications.

Understand the legal, regulatory, statutory, and non-statutory guiding documents from your local or regional council, Waka Kotahi, including reference to the One Network Framework (ONF), and other national policy statements, in particular the NPS on Urban Development. Consider the role of integrated transport and land use planning and modal shift in facilitating greater urban densities and well-functioning urban environments through local movement and place frameworks.

Seek Direction from Existing Strategic Plans.

Review and distil strategic direction from relevant spatial plans (at all applicable scales) that relate to the urban place or street. Synthesise an integrated transport and movement context of relevant strategic network planning considerations and modal goals and priorities to guide the design and development of outcomes through the process.

Reduce Risks.

Integrate requirements for statutory planning and approvals into project planning and design processes and consider the role of early and innovative partnering and engagement approaches with stakeholders and communities to help reduce the risk of opposition and delays or failures of project delivery that can eventuate where projects are disrupting the status quo.

Establish a Project Governance Framework.

Identify key project stakeholders and delivery partners, and establish a strong governance framework which outlines roles, responsibility and relationships among project stakeholders, provides the project manager with a single point of accountability and decision making, creates a process for issue management and resolution; ensures information dissemination and transparent communication across the lifecycle of the project.

ENVISION

Utilise One Network Framework to Inform a Future State.

Utilise the ONF to assist with defining a future state of street movement and place function (that takes account of expected changes in transport networks, urban form and land use activity and street users).

Research Good Practice.

As part of visioning, look to global best practice and precedent street designs, then adapt to the local context. Such exemplars can be invaluable in developing a shared understanding of the vision and what success looks like for achieving better urban street outcomes. As case studies, they also often offer insights that can inform new projects at this early discovery phase.

Develop a Vision.

Building on the initial discovery phase of analysis of current state and future state street form and function, work with partners and stakeholders to develop a vision for the future of the street/s that supports integrated urban mobility, land use, and urban development outcomes. Apply the policy context, drivers of change and urban street design principles as set out in chapters 1 and 2.

Demonstrate and Communicate the Vision.

Bring engagement to life over the course of your project by demonstrating the positive changes you are seeking with 'experiential' events, highly visual graphics and great storytelling. Be creative and showcase the people, place and environmental aspirations of your corridor's ONF Street categories through video, pictures, media, models, pop-up activations and implementation trials, so people can see for themselves how things can be different.

Develop and Contextualise Objectives.

Project objectives should be based on contextual information gathered and should be able to help develop and assess proposed street designs. Establishing and socialising project objectives help demonstrate a mandate from the local community for what success will look like. Distinguish between higher level objectives and specific outcomes sought to provides greater clarity of what will be delivered that changes the form and function of the street.

PLAN AND DESIGN

Gather Input from a Variety of Specialists and Stakeholders.

Ensure the process of design development from concept to detailed design is collaborative, involves a multi-disciplinary team, and identifies multiple review points for planners, designers, technical specialists and decision-makers as well as iwi, stakeholders, and the community.

Test for Spatial Fit.

Ground options in spatial reality by developing and testing them in the 3Dimensional complexity of the built environment. Draw and analyse street proposals in plan, section and 3D models to test for spatial fit and sensitivities, inform greater depth of understanding of integration issues and opportunities earlier in process and how street solutions fit with adjacent urban form and function, land use activity and building edge considerations.

Prioritise Safety.

Address the drivers of an urban safe system approach and how this should guide the design and development of urban street outcomes through the process of project creation and implementation.

Accommodate All Users.

There are different design requirements for various modes. Design from the outset to accommodate all users' needs addressing the principles of inclusive access and road to zero and urban safe system outcomes in Section 2 and 4.

Be Specific in Working Towards Mode Shift Goals.

In consciously working towards mode shift to active modes and public transport, be clear how each mode will be catered for as the various facility types have different space requirements. Use network plans and the ONF to understand modal priorities and needs for streets with respect to place/movement values and how this translates to street space allocation.

Decarbonise and Embed Environmental Sustainability Outcomes.

Ensure plans, programmes and projects for urban streets develop objectives contribute towards national Emissions Reduction Plan targets to reduce carbon in the transport system and, consider when best to address this in a process. Recognise that while carbon can be reduced at any point in a delivery process, the greatest opportunities to reduce transport emissions (including embodied carbon, operational emissions and enabled emissions) are far greater the earlier you start in discover and create phases of project planning. For example, through integrated transport and land use planning for more compact urban design enabling fewer and shorter trips

Future-Proofing Street Changes.

Design sustainable future-proof solutions in terms of the fundamentals of spatial allocation, mode shift and climate change adaptation and response. Consider the relationship to future street user priorities and functions, local conditions, climate, maintenance, quality, and construction.

Maintenance and Design.

Low maintenance and whole of life value for money is critical component for planning and designing urban streets. Designs that integrate operation and maintenance thinking are generally more cost effective, successful, and resilient in the long term.

CHECKLIST AND RESOURCES

REFERENCE

- Spatial plans (all relevant scales/places)
- Mode-specific network plans
- Network operating framework

ANALYSE

- Street dimensions
- Space context
- Density and landuse context
- Topographical survey
- User intercept survey
- Public life survey or public life data
- Engineering studies (for example, services and ground conditions)
- Parking assessment
- Arboricultural assessment
- Stormwater management
- Speed limits and operating speed
- Maintenance and operations in design

ENVISION

- One Network Framework assessment
- Vision statement
- Objectives and outcomes sought
- Investment logic map

PLAN AND DESIGN

- Urban Design Framework
- Integrated Streetscape Drawing Packages (Concept Design > Developed Design > Detailed Design)

TEST AND ASSESS

Build The Case.

Recognising the full spectrum of outcomes for urban streets and their impacts on people and place may require innovations in measuring changes to streets and their future performance and user profile to build the case for investment in areas not traditionally captured through narrow transport planning and economic evaluation methodologies.

Develop Scenarios.

Identify quick and easy wins and consider tactical interventions to test the performance of the proposed design and help realise benefits sooner following the tactical and staged pathways of implementation that are informed by the international movement of tactical urbanism for streets. Develop different scenarios and solutions and communicate them with stakeholders using drawings, diagrams, and visualisations, with participatory co-design processes where these have been established at the discover phase.

Assess Options.

Most projects will be developed through the development of a business case which includes optioneering and the use of Multi Criteria Analysis. Smaller projects should also coordinate and agree on a suitable framework to assess the options developed during the design phase commensurate with the scale of the project investment and timeframes. This should be based on the project vision, objectives and outcomes sought and be informed by assessment tools that inform these, for example safe system assessment, health streets assessment and value of pedestrian improvement tools.

Reducing Carbon.

Use carbon calculators and other tools to inform assessment, testing and development of preferred options in relation to transport carbon emissions reduction. Identify and apply techniques to reduce embodied carbon on urban streets - such as through reduced structural solutions and use of hard construction materials and adaptive reuse.

Review Statutory Implications.

Confirm all relevant statutory planning components are integrated with business case and design development processes and engagement strategies to ensure aligned approaches to creating urban street proposals.

REVIEW AND APPROVE

Get Expert Review.

Ensure consideration is given to the need for and /or benefits of external as well as internal review processes. This may include peer review by independent planning, design and technical specialists, use of urban design panels and technical advisory groups providing place-based strategic guidance and design review of proposals in different urban jurisdictions across Aotearoa.

Keep Sight Of The Big Picture.

Project review and approval is a significant step for public sector organisations. Plan in time to respond to feedback received and ensure decisionmakers are equipped with frameworks, processes and reporting that keep sense of the bigger picture policy context and drivers of change for urban streets. Identify appropriate courses of action that avoid reactionary short-sighted decisions or compromised outcomes that do not adequately deliver on the intended outcomes for better urban streets. Where compromises must be made, ensure they are consistent with the project objectives and do not sacrifice the essential outcomes sought.

Understand Affordability and Deliverability.

It is important to gain a detailed understanding of project cost, affordability, delivery timelines, relevant stakeholder budget cycles and funding process, and related project scopes and dependencies. These are key components of project implementation planning and important considerations to inform council Long Term Plans and budgeting.

Set Project Milestones.

Build into planning and design processes the necessary and appropriate review and approval hold points and milestones to guide project development, taking account of community and stakeholder notification and communication, ongoing planning or other statutory approval requirements and professional best practice.

Plan Implementation.

The preparation of an implementation plan is an important tool in project realisation. The plan should explain the strategic goals and steps involved in the project, define the project completion timeline, and list the resources (including team members) necessary for a successful project. The plan helps to address project risk, creates a shared sense of vision and understanding and points toward a clearly defined goal. The plan can hold delivery partners and stakeholders accountable for action and provides an objective way to show the project has succeeded.

CHECKLIST AND RESOURCES

TEST AND ASSESS

- **Spatial Fit Sensitivity Analysis (Plan and Sectional Studies, 3D Modelling)**
- **Multi-criteria Analysis**
- **Safe System Assessment**
- **Healthy Streets Assessment**
- **Pedestrian Benefits and LOS tools**
- **Carbon calculators**

REVIEW AND APPROVE

- **Business Case Reporting**
- **Investment Advice**
- **Deign Review**



Links

- [Safe System Assessment Framework \(Austroads, 2016\)](#)
- [UK Guidance Document for PAS 2080 \(The Green Construction Board, 2016\)](#)
- [Engineering Standards \(Ministry of Business, Innovation and Employment, 2022\)](#)
- [Infrastructure Carbon Review \(UK HM Treasury, 2013\)](#)
- [Urban Design and Landscape Framework Guidelines \(Waka Kotahi, 2022\)](#)
- [Environmental and Social Responsibility Screen \(Waka Kotahi, 2022\)](#)
- [Crash Analysis System \(Waka Kotahi, 2021\)](#)
- [Modal Guidance: Pedestrian Planning, Cycling, Public Transport \(Waka Kotahi, 2022\)](#)
- [Business Case Approach Guidance \(Waka Kotahi, 2018\)](#)
- [Bridging the Gap: Urban Design Guidelines \(Waka Kotahi, 2013\)](#)
- [Project Emissions Estimation Tool \(PEET\) \(Waka Kotahi, 2022\)](#)
- [Operations and Maintenance, Urban Street Stormwater Guide, \(NACTO, 2017\)](#)



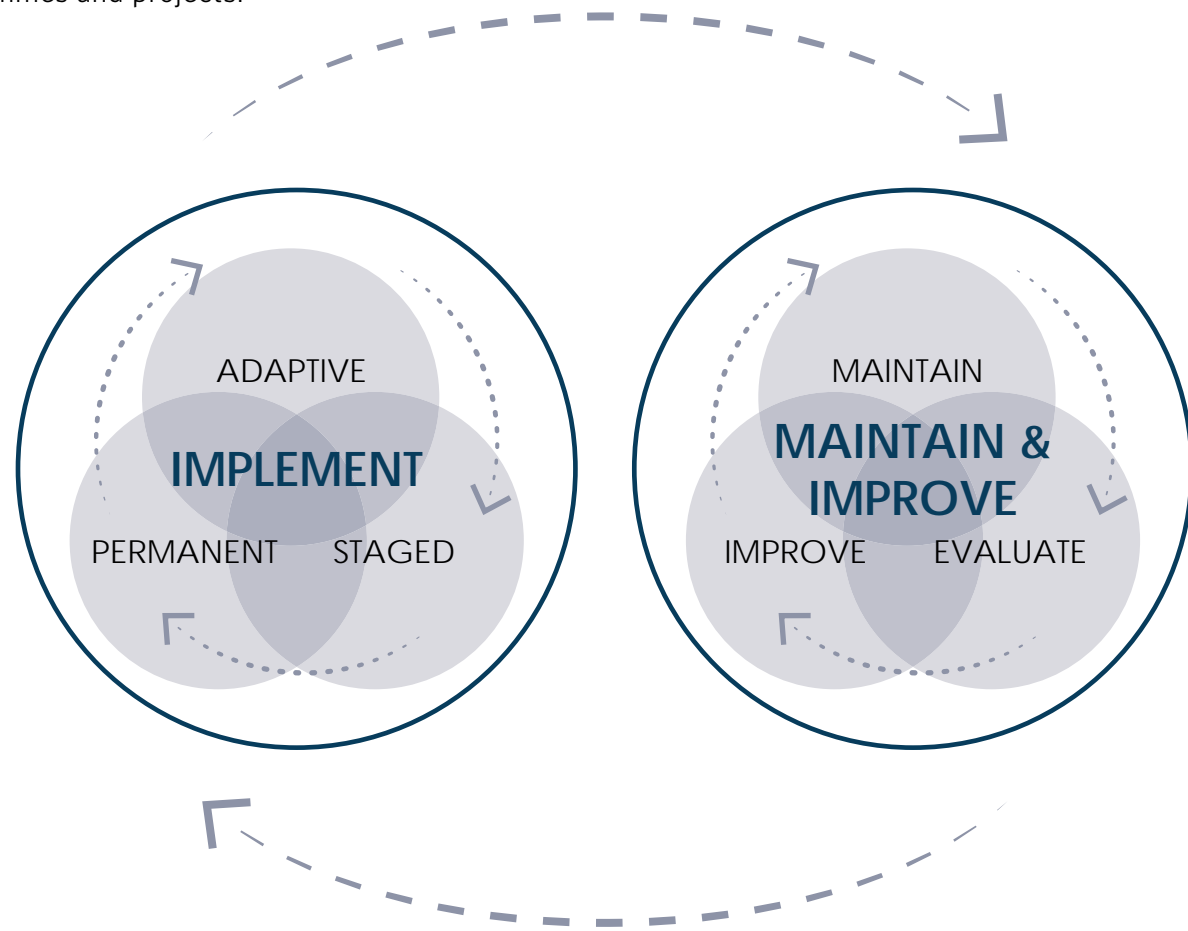
Recycling

Implement, Maintain and Improve Phases

Decisions made at the implement and improve phases ultimately have a big impact on the ability to continually deliver better urban streets for Aotearoa.

Implementing change on urban streets is inherently disruptive and often challenging and complex to plan and deliver. There are multiple pathways to implementation possible as captured in the graphic below. Consistent with global approaches as captured by NACTO's Global Street Design Guide, and our local Waka Kotahi Streets for People programme and Adaptive Urbanism approach, better implementation outcomes can often be achieved through applying a more strategic lens to implementing street changes with a pathway to permanence that considers, and where appropriate, adopts, adaptive and staged solutions to realise benefits sooner than would otherwise be possible.

Urban streets are constantly evolving, reflecting the urban environments and systems of which they are an integral part. A philosophy of continual improvement should guide the approach to maintaining and evaluating the performance of urban streets and contributing to new and improved policies, plans, programmes and projects.



Pathways to Implementation

ADAPTIVE URBANISM APPROACHES

STAGED APPROACHES

PERMANENT APPROACHES

ADAPTIVE URBANISM APPROACHES

Take an Adaptive Approach to Testing Outcomes.

Consider an adaptive urbanism approach to partner with iwi and communities to canvas and implement temporary installations of proposed changes on local streets. Tactical approaches should bear in mind the goal of becoming a pathway to permanence and be informed by a clear idea of longer-term desired outcomes informed by a strategic direction and processes on network change already in place. In this context it is likely adaptive approaches are about testing the details of that change and how to integrate it into a local context. Not all street trials and testing is physical – opportunities exist for example to trial city logistics such as alternate first/last mile freight solutions, operations of share schemes for cars, bicycle and micro-mobility modes time-based trials such as access management measures and part-time street closures.

Use Waka Kotahi Guidance and Tools.

The Streets for People programme is in the process of updating resources to support the adaptive urbanism approach. For now, the draft Tactical Urbanism Handbook can be referred to for detailed guidance on processes and tools for adaptive approaches. The handbook has been prepared as a tool to help councils and communities deliver adaptive urbanism projects to a high standard, using a collaborative best-practice approach. The handbook, learnings and outcomes from the Innovating Streets programme and a growing number of local Aotearoa case studies are creating a rich resource and community of practice locally about how to effectively plan, deliver and implement adaptive urbanism approaches to better urban streets in Aotearoa.

STAGED APPROACHES

Consider a Staged Approach.

Consider the ability to stage permanent outcomes to improve urban streets and networks sooner, to deliver on some project outcomes and deliver some benefits earlier than budgets and timeframes for full-scale permanent solutions can be realised. Consider opportunities in the context of available funding (including through operational budget lines of maintenance and renewals where appropriate and available) and budget prioritisation. While there are often some overlaps, staging is different to adaptive urbanism approaches in that they deliver permanent pieces of a bigger project in a considered and co-ordinated way that dovetails with and is future-proofed for future stages of investment. Common approaches to stages might be to prioritise geographically (for example developing the first of three street blocks in a corridor), or a combination of spatial and streetscape element prioritisation (for example reallocating kerbside space and developing a new cycleway prior to returning to re-construct new footpaths and add new street lighting and trees in a second stage investment).

Take an Integrated Approach.

Take an integrated and strategic approach to determining an optimal sequence of staging taking into account considerations such as inter-dependencies and integrated delivery with other projects, impacts to users and the community and the ability to maximise the early delivery of benefits.

PERMANENT APPROACHES

Deliver the Project Vision.

Implement street projects in full and for the long term carrying the project vision and intent through to the building phase.

Meet the Consent Requirements.

Ensure that whatever works are implemented are in accordance with consented designs and meet conditions of consent requirements where applicable.

Future Proof the Solution.

Invest in future-proof quality materials for long term sustainable environmental, social, and economical outcomes.

Maintain Engagement and Development Response Programmes.

Maintain engagement with local communities and stakeholders and proactively address and offset the disruption impacts of construction on local urban life. Put in place well-considered and fully integrated development response programmes from the beginning of construction that inform staging, construction management and temporary traffic management plans.

Pathways to Implementation

Ongoing partnering and engagement whichever implementation pathway

MAINTAIN

Take A Stewardship Approach.

Adopting a stewardship approach to maintenance and renewals programmes helps to ensuring continuing return on investment and the benefits envisaged for proposed street changes continue to be realised long after the implement phase. Such an approach also gives the ability to involve partners and stakeholders in a “living and breathing” approach to managing the street or streets within a given centre, urban precinct or neighbourhood. A stewardship approach also aids streets to more nimbly adapt and evolve to changing needs without the need for major new capital investment as the only intervention tool to realise change.

Remember Maintenance Equals Performance.

Ensure that ongoing maintenance and management is carried out in ways that support the intended quality and use. Streets are part of the public realm and maintenance is the most cost-effective way of ensuring performance and lifespan of the built project.

Account For Maintenance.

Consider project life cycle and whole of life costs as part of capital expenditure (capex) investment and operational expenditure (opex) including determinations of appropriate Levels of Service and asset management.

Different Streets, Different Needs.

Recognise that urban streets with high user numbers in city and town centres will need higher levels of service to reflect greater intensity of use. This is particularly so for city centre and metropolitan centre streets adjacent to and interfacing with rapid transit stations supporting the highest volumes of daily pedestrian flows.

EVALUATE

Measure And Evaluate Outcomes.

Continue to engage with the local community to measure the performance of the overall project. Using metrics before and after the implementation of the project can help to convey information to decision-makers, stakeholders and wider community when assessing the benefits, cost and quality of the project while informing future approaches and assisting building support for other projects. Invest in monitoring both prior to and post-implementation of changes to urban streets to obtain a robust baseline and measure change over time against key performance indicators.

Iwi Partnership Success.

Consider the development of project specific iwi partnership and associated management plans and measures to ensure successful Iwi partnerships. Using project specific metrics developed in collaboration with Iwi can give aspirational baseline measures to achieve over the project lifetime.

Invest In Technology.

Consider the role of smart cities technology and data capture and analytics in the monitoring and evaluation of the performance of urban streets and networks and changes to their user and activity profiles over time.

IMPROVE

Inform Future Policy Making, Street Standards And Guidance.

Recognise the need for continual improvement and use feedback from projects to revisit local and national policies, guidelines and to inform on the redevelopment of national guides and statutory planning documents and spatial plans.

Improve The Next Project.

Apply lessons learned to future projects and review and development of new policies and strategic planning documents. Share lessons within community of practice networks to improve projects and practitioner knowledge and expertise more broadly.

Update Future Decision-Making.

Ensure that new policies are based on the most recent guides, relevant precedents, and research available while considering the successes and failures of the past.

Maintain Relationships.

Ensure ongoing relationships with iwi and mana whenua are maintained and continue to be invested in as set out under Partner and Engage, allowing for rich spaces that tangata whenua and communities can enjoy and prosper within.

Identify Further Partnership Opportunities.

Identify partnerships with other agencies and community to deliver the best sustainable outcomes and eliminate barriers to implementing new approaches.

CHECKLIST AND RESOURCES

IMPLEMENT

- Implementation Pathways
- Communication and Engagement Plan
- Development Response Plan
- Staging Strategy / Staging Plans
- Construction Management Plans
- Temporary Traffic Management Plans

MAINTAIN

- Levels of Service
- Asset Management Plan

IMPROVE

- Post-Occupancy Survey
- Public Life Audit



Links

- [Handbook for Tactical Urbanism Aotearoa \(Waka Kotahi, 2020\)](#)
- [Streets for People \(Waka Kotahi, 2021\)](#)



3.2 Establishing the Case for Change

Establishing a Case for Change

The business case approach is the primary mechanism to explore the case for change and appropriate investment from a mode neutral perspective. The investment pathways to addressing the challenges of complex urban transport systems in the short, medium and long term includes street planning and design, and street change (including adaptive urbanism approaches).

Waka Kotahi works with its investment partners will apply an intervention hierarchy to optimise existing and proposed new investments in the land transport system. The intervention hierarchy should be applied when generating and considering alternatives and options. It promotes integrated planning, demand management and best use of the existing system ahead of new infrastructure solutions.

Examples of applying the intervention hierarchy include:

- optimisation activities such as the way streets are operated and accessed as means to change behaviours
- shaping streets for people through 'adaptive urbanism' approaches, undertaking pilots and installing temporary interventions
- traditional transport focussed business case via formal planning stages, with design frameworks to shape street design
- comprehensive urban regeneration and street upgrades associated with urban development and transport hubs.

Investing in Streets and Transport

The diagram below shows a holistic approach to street investments, moving from current state to future state and the shift in thinking about streets from movement only to an integrated understanding of movement and place. Streets have a significant role to play in the climate emergency. By urgently changing our approach to street investment and prioritising people over vehicle movement we can improve air quality, support health and reduced numbers with chronic diseases, reduce road deaths and injuries and mitigate climate disaster. Investing in streets now, is an investment in the future health of people. (Refer to Section 5 of this guide for further case study guidance of putting this into practice).

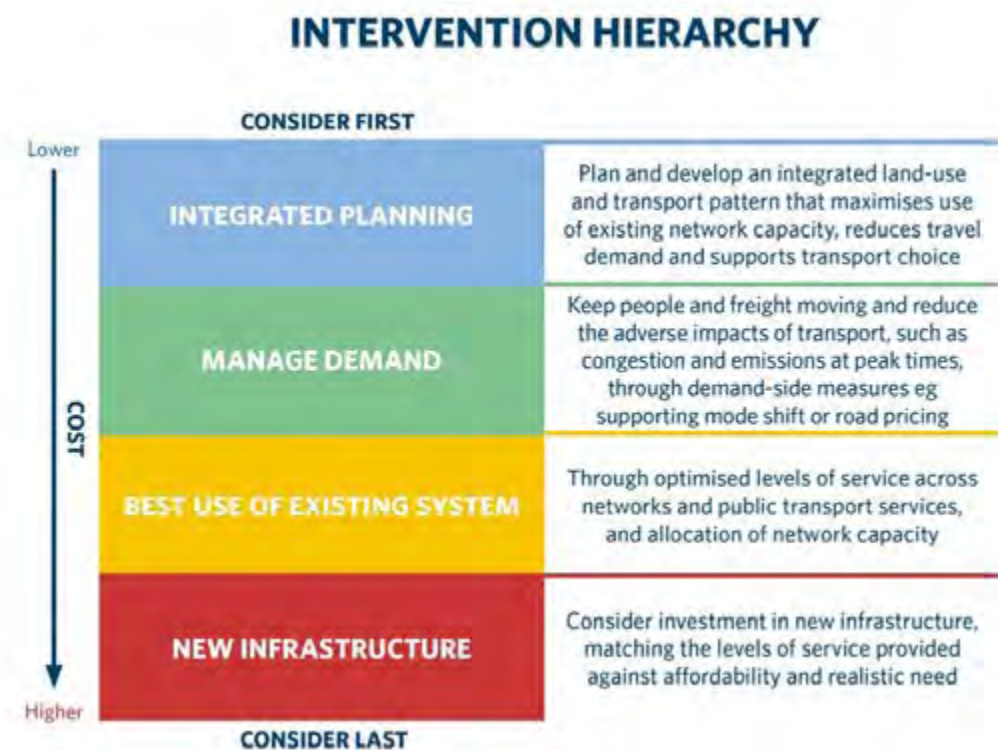
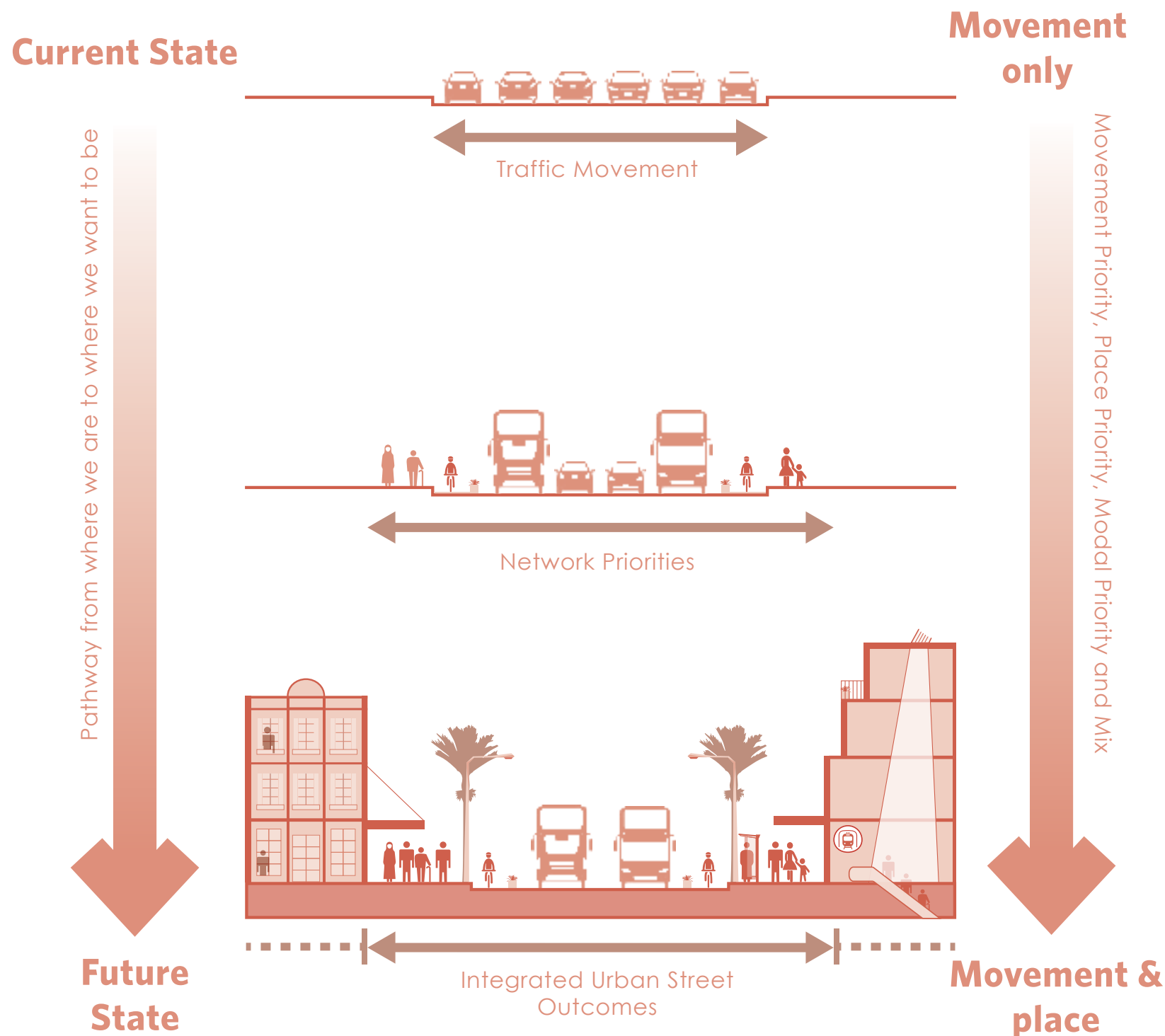


Figure 13: Waka Kotahi Intervention Hierarchy



A shift in focus to people, place and movement

In shaping street change it is useful to consider the following when undertaking a business case approach and street level thinking:

- the overarching context and the One Network Framework classification in any street changes needed at the network,
- the relationship between the network view and place function
- the role of the local street level facilities in relation to walking, cycling and public transport networks. Consider all modes and users, safety and accessibility to enable great outcomes.
- the land use context and activities that will need to occur on the street in the future (e.g. urban development)
- any sequencing with urban regeneration and major infrastructure in any street upgrade
- maintenance and renewals
- other mechanisms e.g. speed limit changes, parking management etc
- consents and approvals and the statutory requirements such as environmental compliance, stormwater requirements, utility relocation etc. These are largely unavoidable costs on components, they may vary with different options
- any partnership agreements and multi-party agreements. Where Waka Kotahi has specific obligations to partnerships (for example, under Te Tiriti o Waitangi Treaty of Waitangi, to central and local government), or where projects have multi-party agreements, consider what scope and investment is needed (this is on a case-by-case basis).

The way in which a street programme is delivered can also shape thinking for example:

- community led engagement and consideration of adaptive urbanism and small-scale interventions to shape best use of the existing networks
- developing the sequence of change with an understanding of how the level of disruption can influence activity, particularly in commercial centres

An overall vision and design framework can also help calibrate what is 'fit for context' and bring together the essential planning, design and delivery into a single place.

It is critical to link your street planning and investment proposals to what is "fit for the street in context", this means looking at the built environment context, the transport networks and land use rather than focusing on standardising the street according to its category in the One Network Framework. This means for example that a street project in a large town could look different to one in a metropolitan centre even if the street categories are the same, the context is different. Investment in streets is therefore considered on a case by case basis. The following are generally considered a priority for transport funding associated with:

- transport interventions, walking, cycling and public transport
- making the street safe and accessible
- consents and approvals
- making the project fit for context and community, including any partnership agreements (including with Iwi partners)
- the infrastructure of the street (e.g. stormwater, utilities etc)
- supporting green infrastructure (e.g. street trees particularly where they also provide strong visual cues to help enforce road safety, safe and appropriate speeds, or separation benefits for active mode users)
- robust materials which consider sustainability, maintenance, and carbon footprint.

Items which are often reviewed on a case by case basis include amenity elements, features and artworks. When integrated as part of a comprehensive urban design these elements can be seen as part of the transport investment in order for the project to be 'fit for context'. However some facilities fall outside of the transport related items and fall to local investment these include for example, facilities for an outdoor dining area or public art.



Figure 13: Waka Kotahi explanatory graphic of how to put the ONF into practice

Investing in Place

The Waka Kotahi investing in place policy clarifies Waka Kotahi's investment approach for integrating place into transport solutions when funding from the National Land Transport Fund (NLTF).

Waka Kotahi will consider reasonable or appropriate place costs through comparing place costs and treatment of place in other similar projects. Investment advisors encourage investment partners to consider other revenue sources for components that exceed what is reasonable or appropriate to request from the NLTF or reduce these components to the level that they can be funded from the NLTF.

Commitment to Urban Design

Waka Kotahi, as a signatory to the 2005 New Zealand Urban Design Protocol, are committed to planning, developing and promoting quality urban design. The Waka Kotahi document Bridging the Gap provides policy and guidance for Waka Kotahi projects, other projects funded by the agency, and planning as it relates to the integration of land use and transport.

Tools and guidance on processes for development and assessment are available on the Waka Kotahi website.

The Waka Kotahi investment advisors can assist in determining if items are necessary, fit for purpose, fit for context or if they sit within or outside transport funding rules (e.g. National Land Transport Fund). For full details of Waka Kotahi investment policies, see the Planning and Investment Knowledge Base. The appropriate investment pathways for street change are established here.



Links

- [New Zealand Urban Design Protocol \(Ministry for the Environment, 2005\)](#)
- [Bridging the gap, NZTA Urban Design Guidelines \(Waka Kotahi, 2013\)](#)
- [Investing in Place Policy \(Investing in Place, 2022\)](#)
- [Investment Principles \(Waka Kotahi, 2018\)](#)
- [Intervention Hierarchy \(Waka Kotahi, 2020\)](#)
- [Land Transport Benefits Framework and Management Approach Guidelines \(Waka Kotahi, 2021\)](#)
- [National Policy Statement on Urban Development, \(Ministry for the Environment, 2020\)](#)
- [One Network Framework \(Waka Kotahi, 2022\)](#)
- [Planning and Investment Knowledge Base \(Waka Kotahi, 2022\)](#)



Same Street, Different Options

Urban street outcomes through option development, evaluation and business case processes

How do we deal with difference in options? How through planning and design processes such as optioneering and business cases do we do better at identifying and developing preferred solutions that will lead to more holistic and integrated urban street outcomes for Aotearoa?

For better urban street outcomes Waka Kotahi and partners need to be able to navigate through the plethora of potential options to land on a future state that supports a much more holistic and integrated set of place and movement outcomes for any given urban street, that takes account of the differences in urban context and what is happening on the edge of the street in terms of adjacent land use and built form, and the needs and aspirations of street users and community who use it.

Urban streets are by their nature complex and constrained. This requires options that accommodate and enable multiple functions, or look wider to a network view to disperse activity to provide space (e.g. priority for through traffic may be prioritised on adjoining streets to create a civic space for example). Options need to consider spatially constrained corridors with diverse demands and the varied impacts on people, place and the environment.

At the street scale, how do we develop options that address this complexity, and are focused on all the outcomes we want for our urban streets in future?

Irrespective of how comprehensive and complete a set of investment objectives and outcomes sought, it is inevitable that challenges arise in delving into the specifics of street-scale solutions (and the space available). Through the option development and evaluation process, it is expected that a number of

different tensions and trade-offs may emerge between different types of outcomes sought. How this is addressed is the key to selecting options that offer the best integrated outcomes. The following should be considered as priorities:

- Options that pull together and synthesise a number of objectives
- Options which recognise the priority of place and manage movement needs
- Options which consider safe and accessible streets for people
- Options which have been tested and identified through partnering and engagement
- Options which avoid and reduce impacts upon human and environmental health.
- Options which deliver broader outcomes and benefits in areas

These should be considered in the context of the Waka Kotahi benefits management guidance.

To this end, the Discover and Create phases, as captured in the Section 3.1 planning and process subsection of this guide, provides some guidance on how to navigate the option development and evaluation phases of street planning and design. This guidance is applicable for taking options through the business case process, but equally applicable to smaller projects that may be developed within a simpler process of option development and evaluation to land on a preferred solution.

Important considerations for achieving holistic and integrated urban street outcomes through option development and evaluation processes include:

Starting out right Informants to option development before you start:

Partner with Māori -

To shape an understanding of values, aspirations, directions, option development and preferred designs in ways that will lead to inherently holistic and integrated outcomes. Refer section 3.1 of the guide in relation to Maori Partnerships.

Engagement early with communities and sector stakeholders -

To inform Discover and Create phases and establish how people can participate in the process of option development and selection to ensure consideration is given to the human dimension of how people use streets and are impacted and benefited by changes to streets in their urban communities.

Understand the “so what” from contextual analysis phases -

All option development should be informed by a contextual analysis to understand the physical, social and environmental contexts and the spatial constraints and demands on the urban street or place at multiple scales but it is critical that this is translated into the key takeaways (“the contextual so what”) that should inform development and evaluation of all options as well as supporting KPIs for investment objectives and outcomes sought.

Develop a vision, objectives and outcomes sought -

Ensure these address urban context and place values and factors as well as movement ones, as guided by the ONF, strategic plans and insights from early partnering and engagement activity.

Put multi-disciplinary teams in place from the outset -

Establish street design teams with expertise in urban design, landscape architecture, placemaking, environmental and cultural aspects of street design as well as transport planning and engineering.

Option Development Ensuring all options are developed in ways that can inform evaluation around all outcomes sought and understanding of their ability to achieve holistic and integrated outcomes.

Understand baseline and past trends but focus on future - Plan and design for the street we want as defined by strategic plans, visions and investment goals and objectives. Develop options through an urban design process, and in ways that are not subject to status quo bias and do not assume aspects of the street layout or function must be fixed because that is the way they have always been.

Capture contextual change along the length of street and at the edges -

Options should always draw in and take account of what is happening on the edges of the street section but don't forget to also consider changes in context and spatial constraints along the length of the street corridor to developing options that have a strong contextual and spatial fit.

Address all modes but work towards mode shift goals -

Options for urban streets should generally be focused on enabling transport choice and mode shift towards access for people to walk, cycle and use public transport – this typically means a shift from current state to a future state allocating more street space to footpaths, cycleways and bus priority lanes for example. Whilst being clear how general traffic is being addressed, and how local access both to property and through kerbside management is to be provided with each option, also ensure option development has considered if moving general traffic entirely and/or restricting certain types of traffic is an option.

Realise the ideal cross-section probably won't fit -

In established urban areas (brownfields) it is rare that there is sufficient space to fit what might be considered the ideal cross-section providing the optimal space allocation for each mode, plus space allocation for public realm, placemaking and supporting adjacent land use activity. Options are going to need to work smarter or be bolder to achieve integration and prioritisation of outcomes.

Test what will fit robustly, guided by place and modal movement priorities

- Before jumping to corridor widening solutions, option development must comprehensively capture the range of potential space allocations and arrangements that could occur within the street width available.

Think about multi-functionality and co-benefits - Not all aspects must be translated into a dedicated space allocation or mono-functional requirement. To achieve strongly integrated outcomes in constrained urban streets demands considering and capturing how space allocation and street elements can be multi-functional and/or deliver multiple co-benefits.

Option Evaluation

Ensuring non-movement objectives and outcomes sought are thoroughly evaluated and assessed to identify preferred solutions that lead to more holistic and integrated urban outcomes.

Test for spatial fit sooner rather than later - Options should be tested in the spatial reality of the 3D dimensional built environment. This should inform an understanding of street width and space constraints in a street corridor relative to what is happening adjacent. Best practice is to draw and analyse street proposals in plan, section and 3D models to test for spatial fit and sensitivities, inform greater depth of understanding of integration. Issues and opportunities can then be understood earlier in the business case process and how street solutions fits with adjacent property boundaries, urban form and function, land use activity and building edge considerations. This spatial fit sensitivity analysis should be a key informant to evaluation of options against place criteria.

Make use of the broader business case tools available - Transport planning methodologies and tools are evolving and broadening to better capture the wider range of investment objectives and outcomes sought for urban streets. Be sure to make use of existing approved and well-established tools where relevant. This includes the Waka Kotahi Investment Assessment Framework (IAF) criteria, for investing and calculating the benefits of future outcomes for pedestrians, public realm / placemaking and environmental benefits and impacts on townscape - both public realm and adjacent land use / urban development interface.

Innovate where this adds insight around hard to quantify areas - Recognising the full spectrum of outcomes for urban streets and their impacts/benefits on people and place may require innovations in measuring changes. Work is still underway to build the case for investment in areas not well captured or catered for through established and approved evaluation tools and methodologies.

Prefer options that lend themselves to holistic and integrated urban outcomes - Weigh tensions and trade-offs against investment objectives and outcomes sought. Seek a preference through evaluation processes for options that best achieve the overall integrated vision and strategic direction. Ensure options are informed by insights from project partners, stakeholders and communities of interest and practice as well as the expertise of planning and design teams (specialist and technical advisors).

Keep the big picture in mind when evaluating options - Don't lose sight of the outcomes sought. Ensure evaluators and decision makers return to the overall vision and strategic objectives in recommending and approving preferred options for implementation phases. Consider what can be achieved, what can be future proofed and what future flexibility is needed.

Investing in streets that are fit for context

As described in the street planning and design guidance (Section 4.0 of this guide), option development for investing in streets should consider the urban context.

Developing a vision for streets, assessing the context, and developing the design principles and design framework is a critical step. Business case processes benefit from an analysis of the built environment to inform the determination of solutions that will be fit for context.

Urban design frameworks can assist here. Developed in accordance with the detailed guidance on the Waka Kotahi website, an urban design framework developed for a street programme or project can include, for example:

- An overall vision
- Analysis and assessments, including of the transport system, networks and built environment and urban development context, as well as the cultural and environmental setting
- An urban design strategy
- A spatial urban design framework or masterplan (e.g. in a city or town centre, making a place more walkable, implementing a multi-modal transport strategy, safety interventions)
- Establishing the pathways to addressing the challenges of street change and the wider network considerations in the short, medium and long term, which can be established through the One Network Framework (ONF).
- Urban regeneration and street upgrades, which could also be associated with urban development or infrastructure upgrades
- Sequencing, phases, or priority sites for pilot projects, and spatial and temporal strategies for temporary and staged/ phased street development
- Interventions coupled with maintenance and renewal activities
- Street change associated with major events.

Developing Performance Indicators For Urban Streets

A set of "complete urban streets" indicators is one additional tool that is becoming increasingly established and in-use internationally to help evaluate transport and streetscape options around a broader set of

measures for the outcomes sought and to be delivered by a preferred option. One example of this is the Healthy Streets Approach, first developed by Transport for London, recently adapted for Australia and sometimes being referenced, applied and used in an Aotearoa context. More information on the Healthy Streets Indicators and other approaches internationally are available in the links below.

A set of indicators for safe and healthy streets in Aotearoa are yet to be developed.

In the future, Waka Kotahi may consider the development of a set of urban street indicators appropriate for consistent application and use throughout Aotearoa. These could be developed and released through for example, future versions of this guide or related urban policy following a period of indicator development and engagement with a range of partners and sector stakeholders.

For now, reference and use of international indicators or development of bespoke sets of key performance indicators that draw upon international resources, tools and measures is appropriate to broaden the performance indicators being used to measure our future success of investing in and bettering urban street outcomes for Aotearoa.



A set of indicators for safe and healthy in Aotearoa are yet to be developed with the sector.



Links

- [Urban and Landscape Design Frameworks Guideline \(Waka Kotahi, 2009\)](#)
- [How to Measure Streets \(Global Designing Cities Initiative, 2016\)](#)
- [Safer City Streets: Global Benchmarking for Urban Road Safety, \(International Transport Forum, 2018\)](#)
- [Guide to the Healthy Streets Indicators \(Transport for London, 2017\)](#)
- [Evaluating Complete Streets Projects \(Smart Growth America, 2015\)](#)
- [Investment Assessment Framework \(Waka Kotahi, 2018\)](#)
- [Manuals, Guidelines and Tools \(Waka Kotahi, 2022\)](#)



4.0 Creating Good Urban Streets

Introduction

There are many factors that shape street planning and design in Aotearoa and change is needed at multiple scales. Section 4 is divided into two parts providing a framework for understanding and addressing street planning and design at the spatial planning/network integration scale as well as the street scale form and function. The following outlines the content of each of these sub-sections in Section 4.

Section 4.1: Street Networks and Urban Places provides guidance on network planning in different urban contexts addressing a wide spectrum from our largest city centres and metropolitan centres through to suburban neighbourhoods and small towns and townships separate from our main urban areas.

This contextually framed guidance addresses the need to integrate network planning for streets and transport with spatial planning at multiple scales to address a wide variety of factors including:

- the overall built environment including urban form, densities and distribution of land uses
- movement function and place function of street networks within this built environment and land use context
- an understanding of how the walkable catchments of urban centres and frequent public transport influence the street network
- How the different ONF urban street categories can work together to support urban development and land use integration
- How modal priorities as they translate to road space allocation and parking management for example, may vary across a local street network to support place as well as movement functions within a given urban centre or neighbourhood
- How integrated planning of street networks at a local place level supports activity, places for people and the public realm.

This place-based guidance aligns with the street-scale guidance of Section 4.2 that follows.

Section 4.2 ONF Street Categories Guidance provides integrated design guidance at the scale of an individual street. It addresses the application and street-scale translation of ONF network planning and urban street categories. It illustrates the different urban contexts and priorities for street networks that can influence the future state. The aim of this chapter is to establish planning and design guidance linked to the implementation of the One Network Framework (ONF), a Waka Kotahi strategic network planning tool which recognises movement function and place function for streets across Aotearoa.

The ONF established a broad set of urban street categories for application across Aotearoa. This section of the guide provides advice for shaping integrated outcomes for the future state of each street category in ways that align with the place-based guidance of Section 4.1. For each street category, guidance has been developed and visualised in ways that demonstrate integrated place and movement functions for the future state that are fit for context. The street categories covered are:

- City Hubs
- Civic Spaces
- Main Streets
- Activity Streets
- Urban Connectors
- Local Streets

The urban spectrum - addressing street planning and design in integrated ways at multiple scales

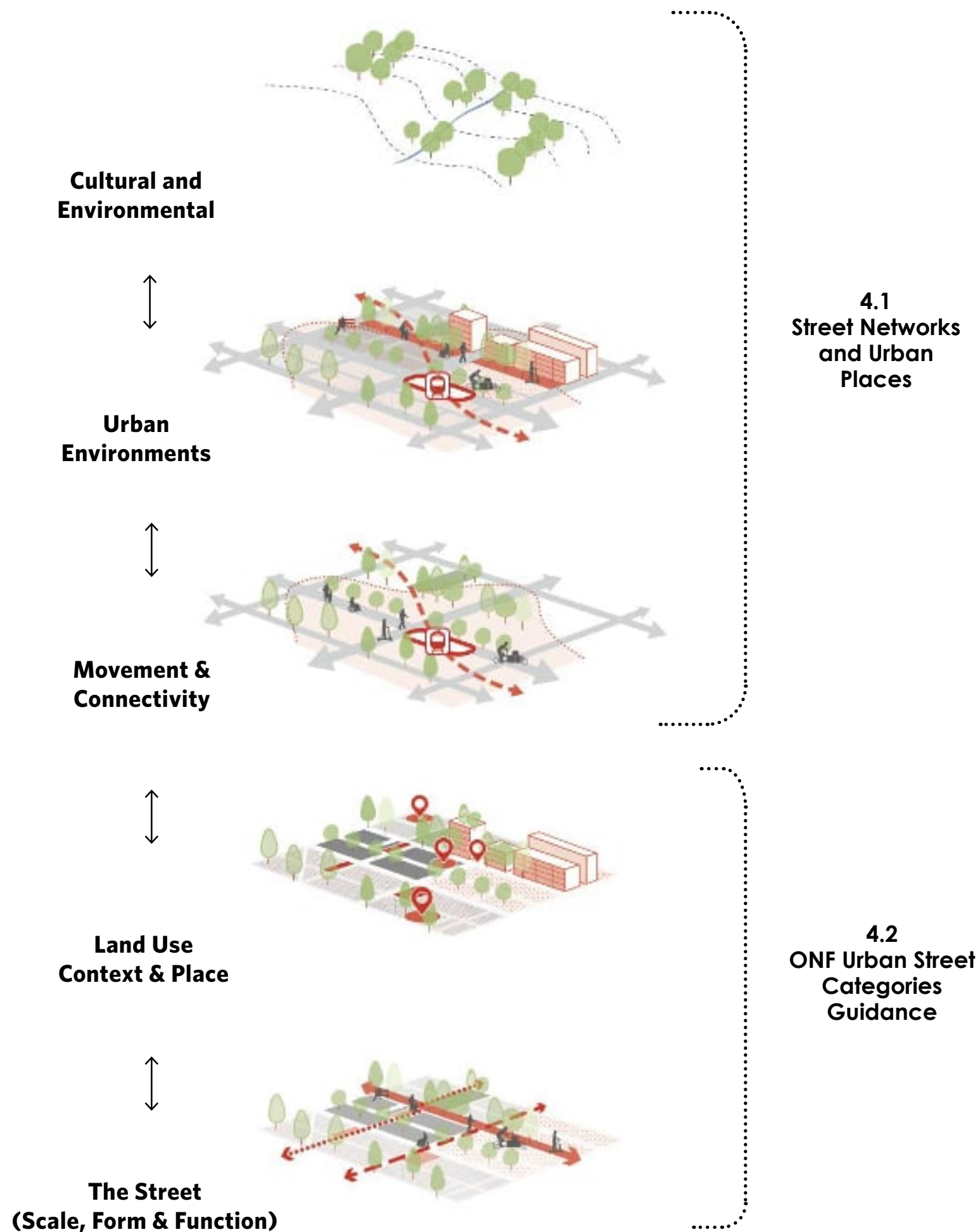
Achieving more integrated urban street outcomes requires a networked understanding of place and movement functions at multiple scales and across a spectrum of different urban contexts. These spatial scales range from the urban area as a whole (and regional and inter-regional scales beyond these), to more immediate catchments around centres and neighbourhoods, down to the scale of the individual street corridor or street block.

Context-wise this section of the guide makes reference to the three tiers of urban environment categorised by the National Policy Statement on Urban Development 2020. These are generally based on a combination of population size and growth rates, with some smaller but fast-growing urban areas such as Queenstown being categorised as Tier 2.

This guide has focused on providing integrated guidance for urban streets at the scale of urban centres and neighbourhoods (Section 4.1 Street Networks and Urban Places) and the street scale (Section 4.2 ONF Urban Street Categories Guidance). It is often necessary to move up and down scales to achieve integrated planning and design outcomes and the sub-sections of this guide have been developed to dovetail and align between the networks of streets within urban centres and neighbourhoods and the scale of the individual street and street block.

Section 4.1 of this guide takes a spatial planning approach to representative urban centres and residential neighbourhoods to demonstrate how place and movement can be integrated at the local level in ways tailored to different urban contexts.

Section 4.2 dovetails with this centres and neighbourhood approach and provides integrated guidance at the street scale that aligns with the ONF urban street categories. Integrated street outcomes for each category are illustrated and explained through indicative visualisations that reflect the key contextual characteristics, spatial arrangement, form and function of each category at the street block scale. For each category, additional expanded guidance is provided that demonstrates that there is more than one integrated street solution possible, with real-world examples provided of similar street types from Aotearoa and around the world.



Links

- [National Policy Statement on Urban Development, \(Ministry for the Environment, 2020\)](#)

Section 4.1 Street Networks and Urban Places

Integrated network and spatial planning for different urban contexts



City Centres & Metropolitan Centres



Suburban & Local Centres



Towns & Townships



Suburban Residential Neighbourhoods

Section 4.2 ONF Urban Street Categories Guidance

Street scale solutions that relate to urban contexts

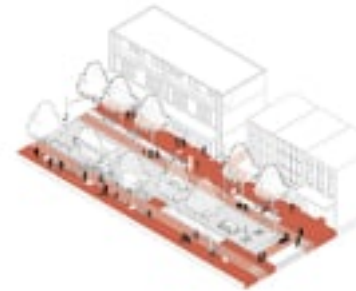
City Hubs



Civic Spaces



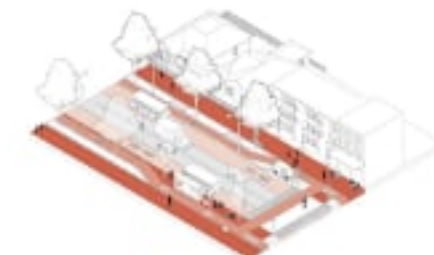
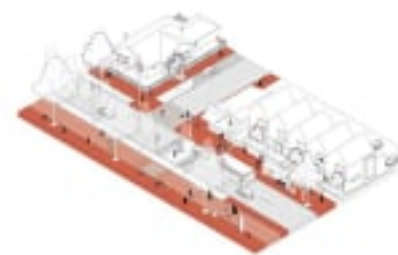
Main Streets



Activity Streets



Urban Connectors



Local Streets



6 Hair Stylists
256
OPEN 7 DAYS

Quality Household Bazaar 258

**We Deal in
Whole Sale & Ret**

Quality Household Bazaar 258
Kitchen Ware Wall Clock Fishing Gear Floor Lamps

(Manurewa)
Millennium Music 268

Millennium Music 268
Quality Lessons • Contemporary Music • Affordable Prices
www.millenniummusic.co.nz





4.1 Street Networks and Urban Places

Urban Places Covered in this Guide

Aotearoa Urban Catchments & Context

This guide uses four urban contexts to summarise the variety of urban conditions in different towns, cities and neighbourhoods across Aotearoa.

City Centres and Metropolitan Centres - representative of City and Metropolitan Centres in Tier 1 and 2 Urban Environments, as defined in the National Policy Statement on Urban Development 2020.

Urban Centres and Suburban Neighbourhood - representative across all urban environments, to highlight the unique characteristics and requirements of each context.

Towns and townships context - representative of the smaller urban settlements across Aotearoa which often face the unique challenge of being located along higher speed rural roads including state highways and typically not well served by public transport. They typically have less distinct land use patterns and street hierarchies but also often benefit from being inherently compact with people living in close proximity to a range of daily needs compared to the more dispersed patterns of larger urban areas.

None of these contexts are a perfect representation of a specific town or city but the elements in each context should reflect the situations and identify key challenges.

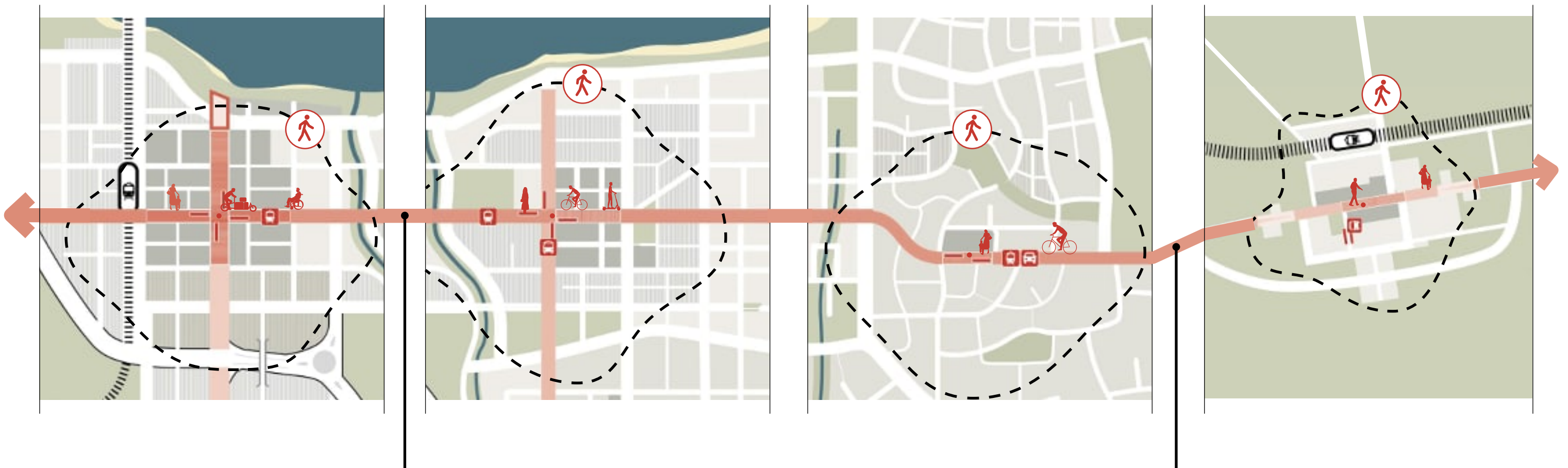
Specific street form and function guidance and the types of street in section 4.2 then provides the guidance detail on how streets can be adapted to address these challenges and meet the demands of their role in the wider street network and these urban contexts.

CITY CENTRES & METROPOLITAN CENTRES

SUBURBAN & LOCAL CENTRES

SUBURBAN NEIGHBOURHOODS

TOWN & TOWNSHIPS



URBAN CENTRE TRANSITION ZONE

Urban Gateways, Thresholds, Gateways Safe Systems, Speed Management

TOWNSHIP TRANSITION ZONE

Urban Gateways, Thresholds, Gateways Safe Systems, Speed Management

The diagram below shows the transition into each urban context with indication of built form, activities and street qualities present in each of the four representative urban contexts.



City Centres & Metropolitan Centres

City Centres and Metropolitan Centres are specific to Tier One and Two urban environments. These rapidly evolving places are our densest and busiest urban centres. They contain a diverse mix of land uses including commercial and government offices, a wide range of retail and entertainment, residential, community facilities, public open spaces and educational facilities including large tertiary campuses. The higher population and employment density places further pressure on streets to provide access for people, goods and deliveries, as well being part of the public open space network. Key to the success of these centres is many converging primary public transport routes, for which streets must be designed to allow for easy transfer between.

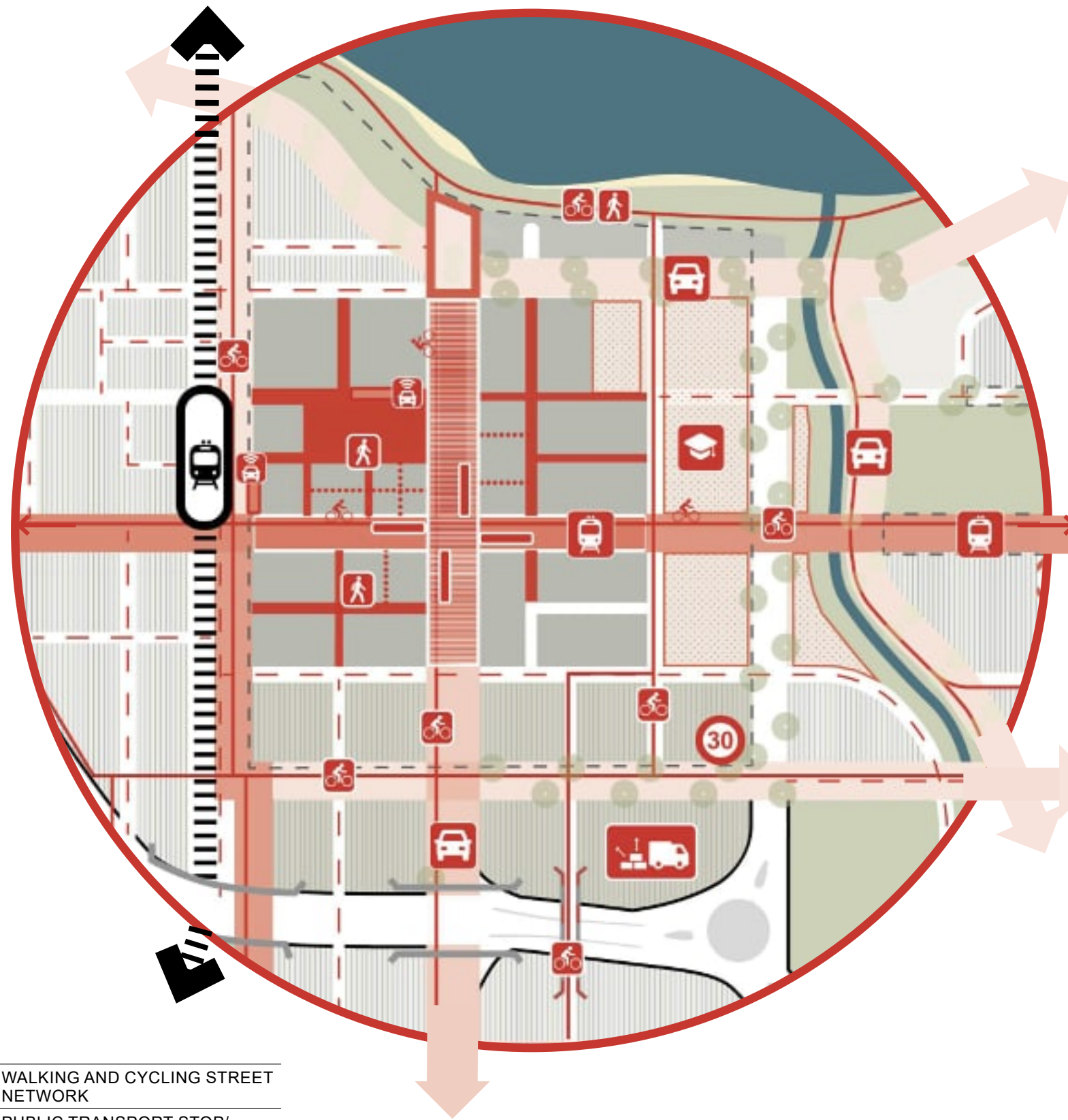
City and Metropolitan Centres are structured around very high movement and very high place value streets. They are generally amongst our oldest urban places with high concentrations of heritage buildings and elements within the street network that contribute to distinctive built character and sense of place. City Hubs provide for the very high movement function, allowing efficient movement of public transport and active modes. Activity Streets and Main Streets can allow for general traffic and business delivery access to the centre. They should also accommodate easy and safe walking and cycling connections to and through the city centre. Civic Spaces make up the rest of the grid and have a low movement function, prioritising place value, local business activity and walking.

LEGEND

	CENTRAL ACCESS ZONE (NO THROUGH TRAFFIC WITH MANAGED ACCESS ONLY)
	LOW SPEED LIMIT - 30KM OR LESS (OR LOW EMISSIONS ZONE)
	CIVIC SPACES PUBLIC SPACES
	MAIN STREETS
	CIVIC SPACES LANEWAYS & SHARED SPACES
	CITY HUBS
	URBAN CONNECTORS
	CYCLEWAY

	WALKING AND CYCLING STREET NETWORK
	PUBLIC TRANSPORT STOP/STATION
	TAXI / RIDE SHARE HUB
	LOGISTICS HUB

	THROUGH SITE LINK
	WALKABLE CATCHMENT WITHIN IMMEDIATE PROXIMITY OF CENTRES AND RAPID TRANSIT STATIONS ENABLING 6-STOREY DEVELOPMENT



TRANSPORT PLANNING FOR WELL FUNCTIONING URBAN ENVIRONMENTS

- Through movement of general traffic is avoided or minimised to prioritise walking, cycling and public transport as sustainable and space-efficient modes in our densest and busiest urban centres with greatest constraints and demands.
- All streets provide for active modes.
- Private vehicle traffic is redirected around rather than through the centre.
- Direct and convenient connections between public transport stops and stations accompanied by legible wayfinding.
- Mobility parking located convenient to key destinations.
- Logistics hubs at the accessible outskirts of the centre provide opportunities for lighter delivery vehicles as last mile solutions interchanging with freight networks
- Deliveries are restricted through circulation planning and/or timed based access reducing negative impact on streets of high place value.
- Safe and appropriate speed limits for street context such as low speeds through the centre.













This page is intended to provide high-level guidance and an indication of what integrated street planning and design outcomes look like at the neighbourhood scale. It has been tailored to be applicable to an imagined typical urban place representative of a type commonly found within our urban environments nationally, with the outcomes and guidance provided aligned to the NPS-UD and national planning direction as well as the ONF.

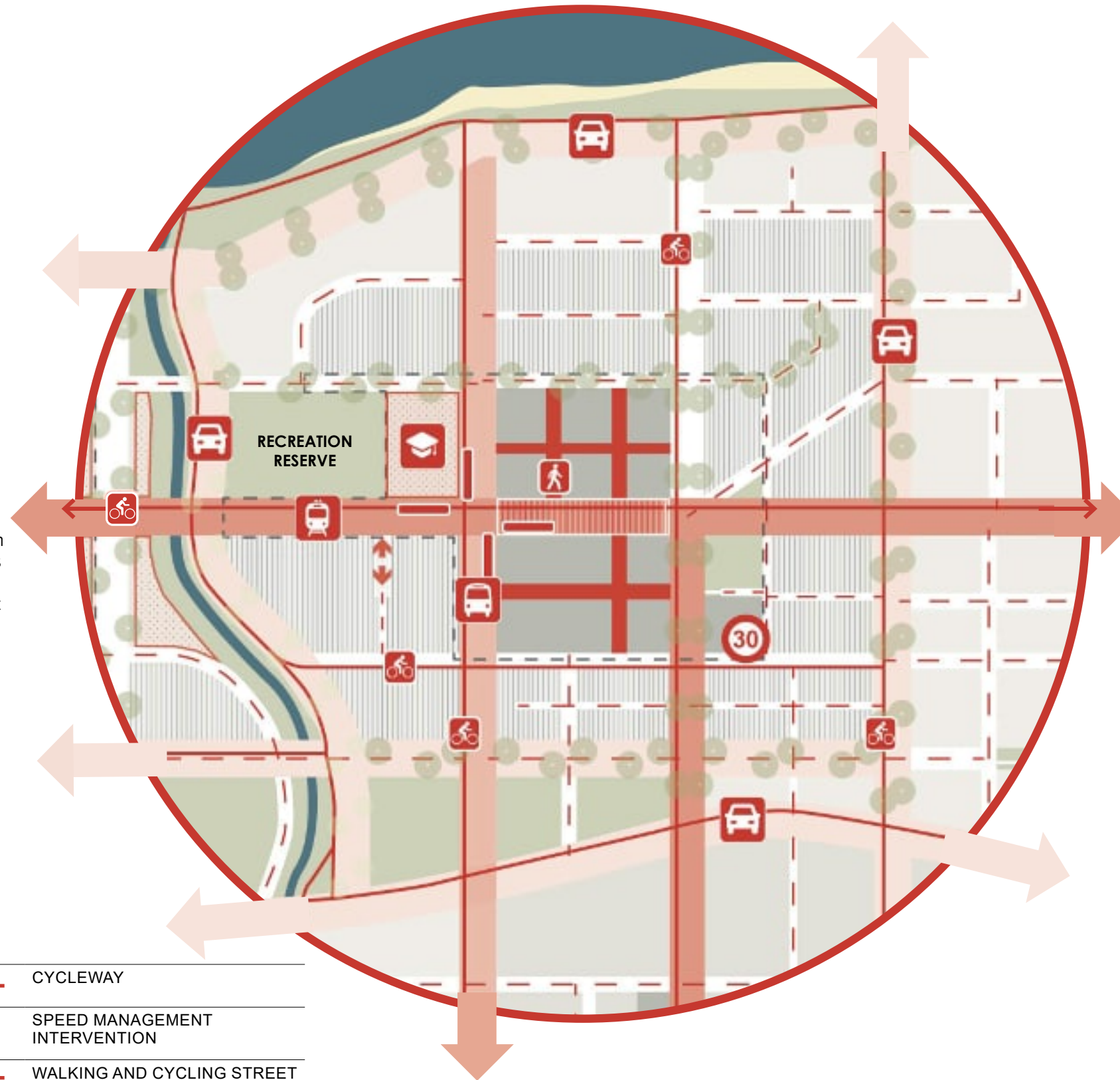
Suburban & Local Centres

A broad spectrum of urban, town and local centres exist across all urban areas of Aotearoa. They are the heart of our towns and townships and serve the suburban communities of our larger Tier 1 and 2 cities. As such, suburban and local centres vary widely in their scale, density, and activity mix, usually serving a mix of local and regional visitors. Integrated planning that provides for a vertical mix of uses including residential and office with commercial activities on ground floors can create a more vibrant centre that people visit for different purposes and different times in the day. The street network is the backbone of the public open space network for urban centres, which can also include civic squares and spaces, parks, playgrounds, and waterfronts.

Suburban and Local Centres can typically consist of one or more Main Streets and/or Activity Streets under the ONF classification as well as a network of smaller Civic Spaces. The Main Streets may be a continuation of an Urban Connector but within the town centre the function of the street changes to reflect the greater place function with lower speeds, more space dedicated to pedestrians, people on bikes and the public realm. Re-prioritising street networks to better reflect the ONF place/movement value and network functions of centres through traffic circulation planning, is often needed to support desired outcomes at the street scale. Due to spatial constraints, to accommodate different modes and functions, different corridors and streets play different roles within the centre.

LEGEND

	CENTRAL ACCESS ZONE (NO THROUGH TRAFFIC WITH MANAGED ACCESS ONLY)		CYCLEWAY
	LOW SPEED LIMIT - 30KM OR LESS (OR LOW EMISSIONS ZONE)		SPEED MANAGEMENT INTERVENTION
	CIVIC SPACES		WALKING AND CYCLING STREET NETWORK
	MAIN STREETS		PUBLIC TRANSPORT STOP/STATION
	CIVIC SPACES LANEWAY STREETS & SHARED SPACES		WALKABLE CATCHMENT WITHIN IMMEDIATE PROXIMITY OF CENTRES AND RAPID TRANSIT STATIONS ENABLING 6-STOREY DEVELOPMENT
	CITY HUBS		
	URBAN CONNECTORS		



TRANSPORT PLANNING FOR WELL FUNCTIONING URBAN ENVIRONMENTS

- Urban centres should have a high level of access by public transport, walking and cycling facilities should be provided to support lower emissions and better air quality in the centre.
- Allow for a high level of walkability and cycling access to local destinations within the urban centre and nearby, including public transport stops and stations.
- All streets within urban centres are to be designed for safe and appropriate speeds.
- Safe and appropriate speed limits aligned with land uses such as schools, community centres or libraries.
- Kerbside prioritisation of walking, cycling, public transport, and services and deliveries to prioritise local access and space-efficient modes.
- Limited parking is managed to enable the success of the centre. Levers to manage parking include time restrictions (short stay), paid parking, side or parallel streets to the main street or off-street parking (excluding mobility parking)
- Support and manage small Passenger Service Vehicles (PSV), for example, taxi and ride share services.

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Suburban Residential Neighbourhoods

Suburban neighbourhoods are predominantly residential areas with supporting land uses such as neighbourhood shops, schools and community facilities including parks and green spaces. They can feature a range of typologies from standalone houses, terraced housing, and low-rise apartments. The mix of housing types caters for different demographics which supports higher levels of amenity, local businesses, and better public transport services. The value of streets as public open space and creating the fabric of a community should not be overlooked, streets in suburban neighbourhoods should be spaces where residents can connect and socialise while children can play safely due to low traffic volume and speeds.

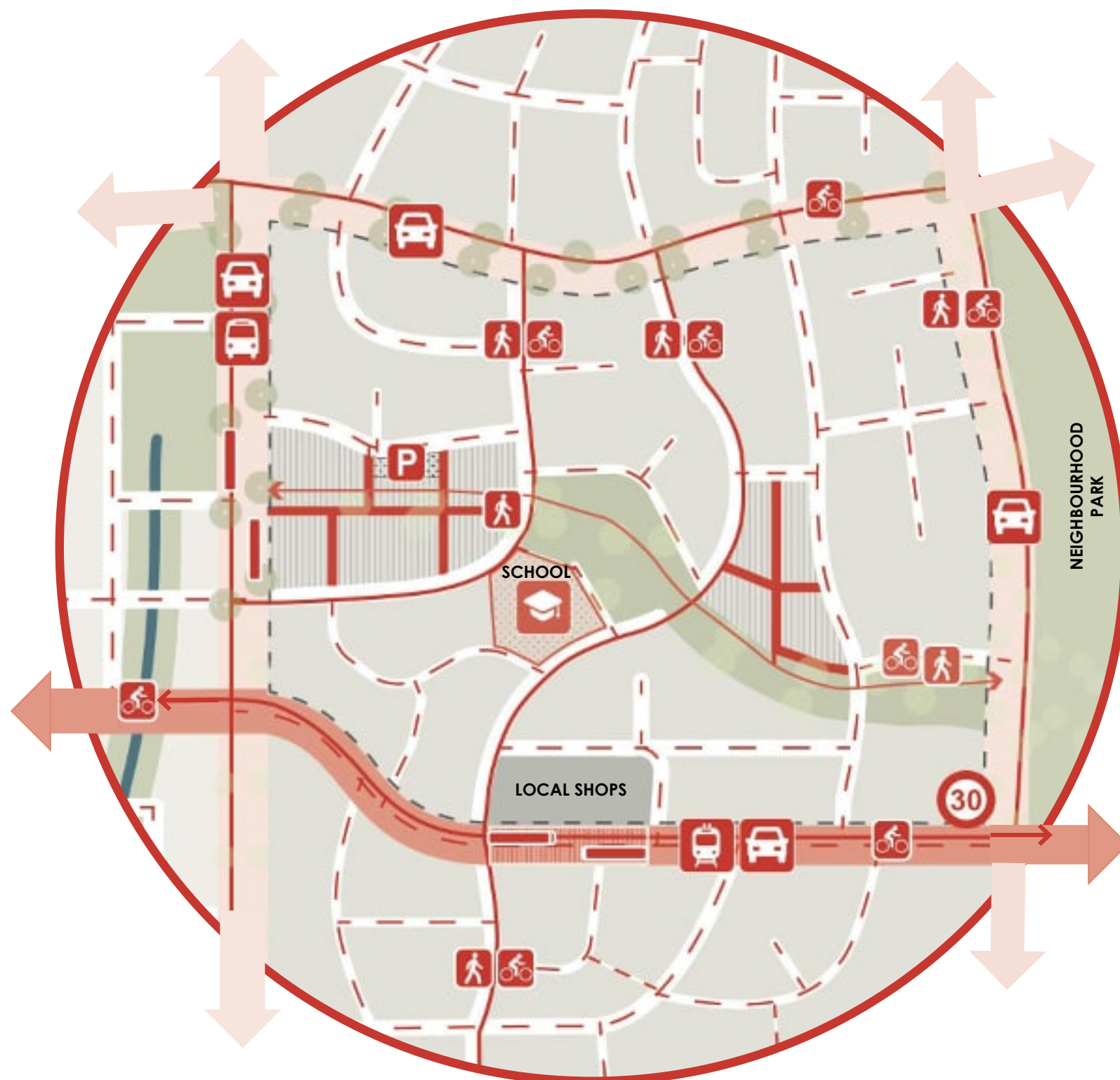
Suburban Neighbourhoods primarily consist of networks of Local Streets, providing slow vehicle access to residential properties, bounded by Urban Connectors, Activity Streets or Main Streets where the neighbourhood borders a centre. The area within the neighbourhood should have low traffic speeds and volumes, provided by restricting through traffic to create Low Traffic Neighbourhoods. This allows the streets be used for walking, cycling, social interactions and as informal play spaces by residents, having a focus on place value and amenity. Urban Connectors at the edge of the neighbourhood provide for higher volumes of traffic, access to the wider urban area and provide public transport routes. Suburban neighbourhoods should be walkable and cyclable to a Town or Local Centre.

LEGEND

	LOW SPEED LIMIT - 30KM OR LESS (OR LOW EMISSIONS ZONE)
	MAIN STREETS
	LOCAL STREETS (NEW OR REDEVELOPED TO SUPPORT URBAN REDEVELOPMENT)
	URBAN CONNECTORS
	CYCLEWAY
	WALKING AND CYCLING STREET NETWORK
	SPEED MANAGEMENT INTERVENTION

	STREET NETWORK IMPROVEMENTS
	PUBLIC TRANSPORT STOP/STATION

	COMPREHENSIVE URBAN REDEVELOPMENT
	PARKING CONSOLIDATION TO ENABLE PEDESTRIAN FOCUSED AMENITY WITHIN RESIDENTIAL DEVELOPMENTS



TRANSPORT PLANNING FOR WELL FUNCTIONING URBAN ENVIRONMENTS

- Streets within Suburban Residential Neighbourhoods should have safe speeds with a maximum of 30kmph with some shared residential streets being designed for 10kmph.
- Reduced traffic volumes and safe and appropriate speed limits allows for safe walking and cycling without separated infrastructure.
- Allow for a high level of walkability to local destinations within the neighbourhood and nearby, including public transport stops and stations.
- Street and neighbourhood design to encourage walking, cycling and micromobility for local journeys reducing emissions.
- Narrower carriageways mean streets can become multipurpose spaces where people can socialise, and kids can play.
- On-street parking should be minimised in new streets, and replaced on existing streets in favour of other modal priorities and place outcomes where this supports more liveable and healthier neighbourhoods.

This page is intended to provide high-level guidance and an indication of what integrated street planning and design outcomes look like at the neighbourhood scale. It has been tailored to be applicable to an imagined typical urban place representative of a type commonly found within our urban environments nationally, with the outcomes and guidance provided aligned to the NPS-UD and national planning direction as well as the ONF.

Towns & Townships

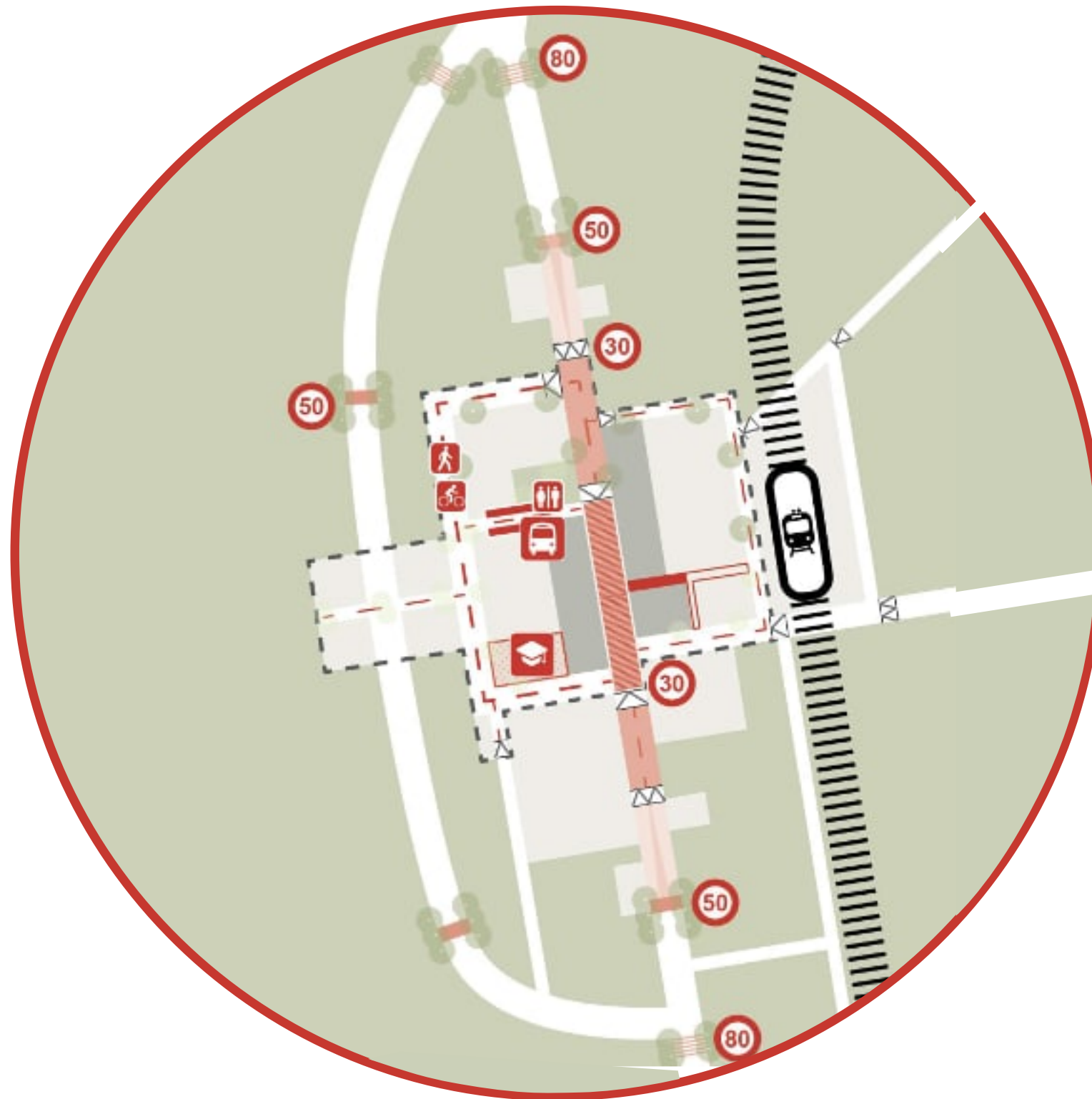
Towns and townships are smaller urban environments within predominantly rural communities across Aotearoa. They support rural communities and regional and inter-regional movement throughout the country. Towns and townships often function relatively independently depending on their relative size and proximity. They are generally supported by larger Tier 1, 2 and 3 urban environments for some services and functions. They vary widely in their scale, density and activity mix but typically feature a healthy mix of commercial, local council offices, retail and entertainment, residential, heritage buildings, community facilities, public open spaces and civic spaces. In this sense, they are often good examples of 'complete communities' with a wide range of destinations and land use activities within compact, walkable catchments.

Towns and townships are connected to cities and other centres through highways, rail and regional bus services. Speed strategies need to be implemented to provide communities with safe access within towns and townships and address the safety and severance issues of national and regional transport corridors.

Active transport modes and safe speeds can make it safe for communities to access schools and amenities and encourage walking and cycling within the town. State highway or other critical transport routes often carry freight and movement of goods through towns and townships and this requires additional speed considerations and environmental design cues where there is no alternative to bypass the centre of town.

LEGEND

	HIGHWAY SPEED TRANSITION
	URBAN SAFE SPEED TRANSITION
	30KM ZONE
	SPEED MANAGEMENT INTERVENTION
	MAIN STREETS
	WALKING AND CYCLING STREET NETWORK



TRANSPORT PLANNING FOR WELL FUNCTIONING URBAN ENVIRONMENTS

- Freight directed around towns and townships to improve safety.
- Multiple speed thresholds implemented on approach to urban area.
- Allow for a high level of walking and cycling within the towns and townships reflecting the often short distances between residential streets and all destinations.
- Streets within towns and townships are to be designed for safe speeds providing safe access to schools and community facilities.
- Allows for easy visitor access to the main street environment.
- Safe and appropriate speed limits for street context such as low speeds through the centre.

This page is intended to provide high-level guidance and an indication of what integrated street planning and design outcomes look like at the neighbourhood scale. It has been tailored to be applicable to an imagined typical urban place representative of a type commonly found within our urban environments nationally, with the outcomes and guidance provided aligned to the NPS-UD and national planning direction as well as the ONF.

Urban Streets and Walkable Catchments

Shaping Streets and Urban Development

Well functioning urban environments, within walkable catchments connected to rapid transit/ fast and frequent public transport has been embedded within the National Policy Statement on Urban Development.

These concepts of walkability and co-locating density and public transport are key to the design of more sustainable cities. Our urban street networks have a fundamental role to play in achieving these urban planning outcomes for sustainable transport and land use integration.

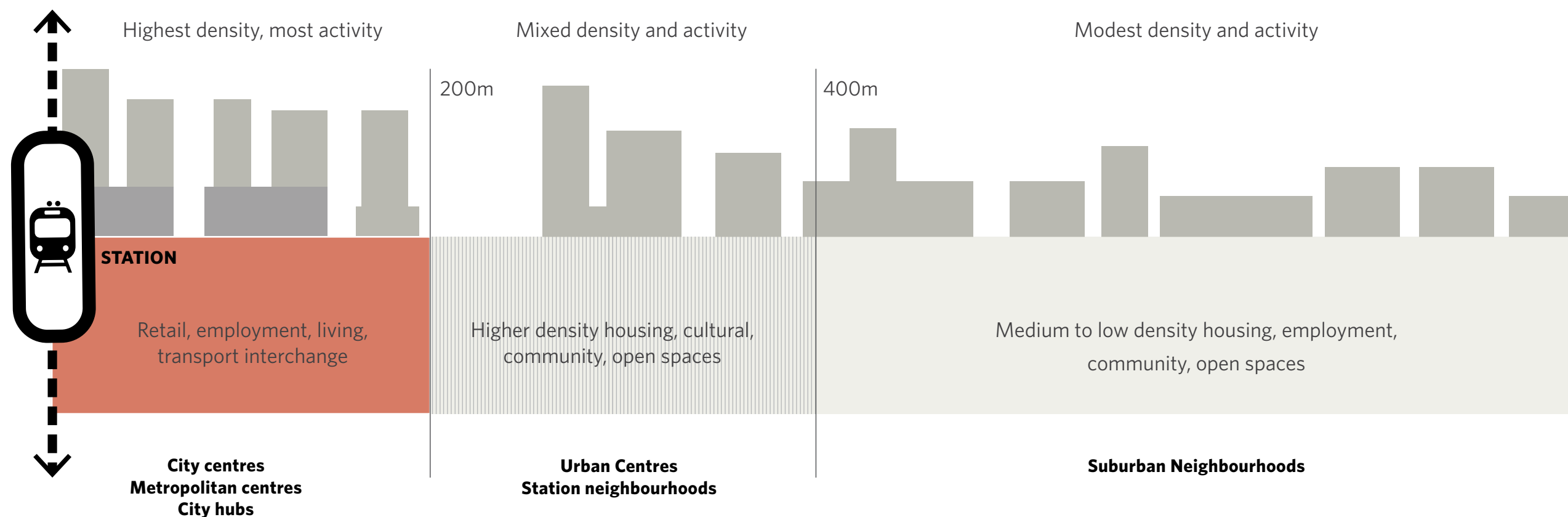
Centres and Transit-Oriented Development (TOD)

Urban Centres of all scales (from top tier city centres and metropolitan centres through to town and local neighbourhood centres) as well as Transit-Oriented Development nodes (TODs) require a comprehensive approach to all elements of urban planning and development. This includes block structure and street network layout, movement patterns for all transport modes, urban form and densities, distribution of land use activities, and building forms and public realm design to actively 'orient' towards a transport hub / station as the highest priority movement mode for accessing the centre. Key civic spaces and other pedestrian-focused destinations within centres are also important nodal points for pedestrian-prioritised network planning.

Street Network Planning: Block Shapes and Sizes

Street network layout and design is key to effective walkable catchment planning. A highly connected grid of closely spaced streets is an example of an urban form which is easy to access. Factors to consider at early stages of spatial and land use planning include:

- Closely spaced streets increase choice of routes for walking and cycling, enhance land value by increasing saleable active frontage, and increase the quality of street experience
- Larger blocks resulting from wider street spacing should be located further from centres
- Street spacing and urban block sizes should be tested robustly to ensure adaptability of land use.



Links

- [Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development \(Ministry for the Environment, 2020\)](#)

Catchment Planning for All Active Modes

Walking and cycling catchments represent the optimal pattern of access to centres and public transport stations. Prioritising space-efficient modes means streets can both cost less to deliver and achieve better urban integration. In planning and designing streets:

- Walking and cycling catchments from a public transport station or central city hub (for example central public space heart or main street location) can be simplified to circles based on travel time or distance that people find acceptable
- Actual catchments are determined by street/path network connectivity and layout including: intersections, the space allocation and priority given to walking and cycling along and across the street, and the quality of the pedestrian and cycling environment (influenced strongly by built form and land use activity factors adjacent to the street as well as transport factors) the quality of infrastructure, and the priority given to modes as well as influencing factors including topography
- International practice applies 800m (10 minutes) walking catchment at either end of a rail journey. Research in Auckland suggests passengers in New Zealand may walk further - up to 1200m on a quality route
- Street network layouts and their mode priority should maximise the area and convenience of walking and cycling catchments.

The levels of use by people of walking and cycling routes in the catchment is strongly connected to the quality of the urban environment. Routes should feature streets and land uses which are interesting for people on foot or on cycles with attractive spaces, high levels of passive surveillance, quality lighting, and an environment which clearly supports personal safety.

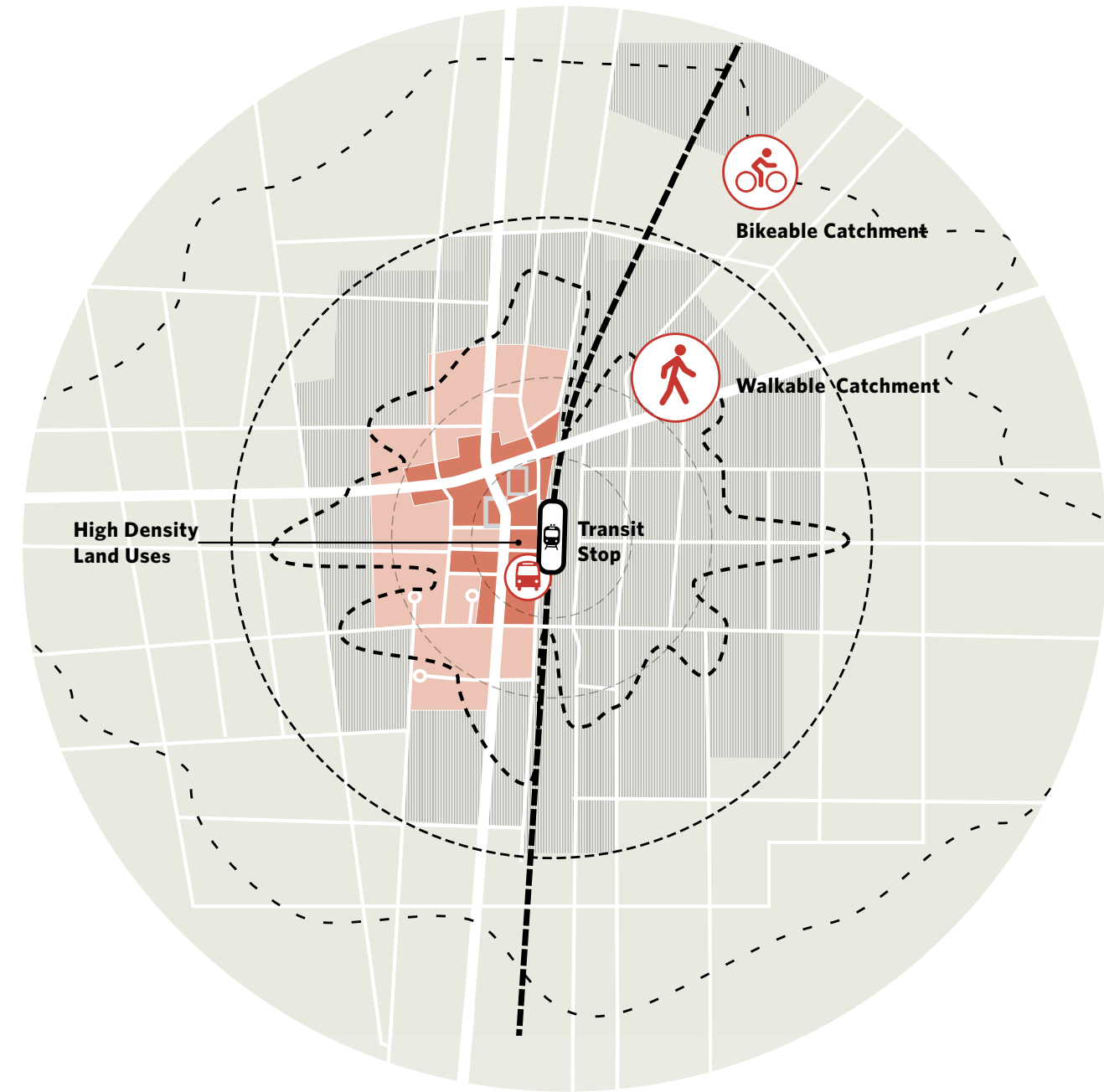
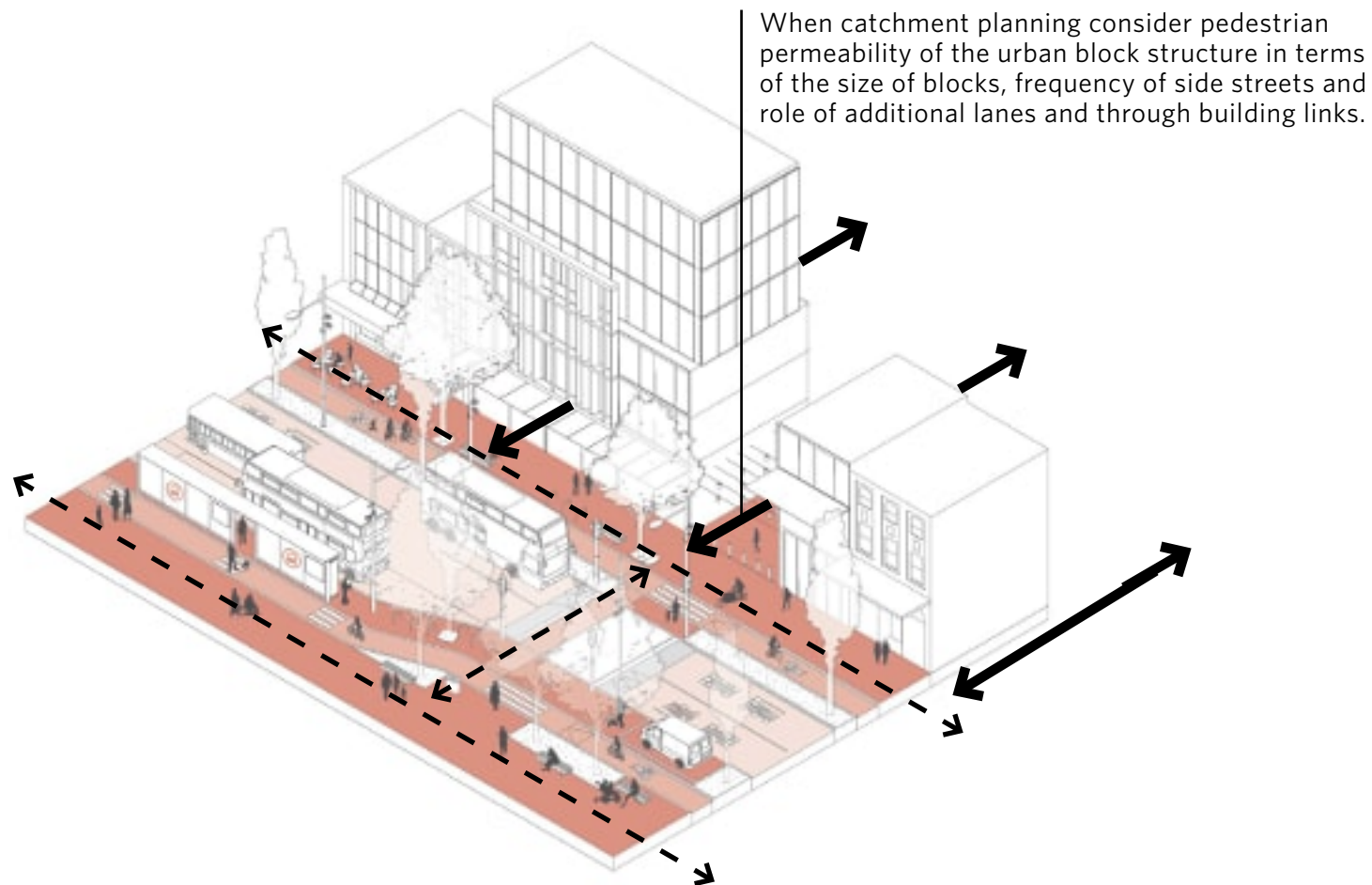


Figure 15: Active mode catchments are often expressed as basic 400m and 800m circles from transit stops and stations. However, the example above shows more accurate walking and cycling catchment analysis which is influenced by the urban street grid, different land use and densities. The NPS-UD suggests an 800m minimum walkable catchment from frequent transit stops and stations. Higher density urban development is enabled in these catchments to create compact, walkable urban form.
Source: Waka Kotahi: edited graphic

Urban Streets and Green Infrastructure

What is green infrastructure?

Green infrastructure refers to any vegetative infrastructure system which enhances the natural environment through direct or indirect means. The main components of this approach include stormwater management, climate adaptation, the reduction of heat stress, increasing biodiversity, food production, better air quality, sustainable energy production, clean water, and healthy soils, as well as more anthropocentric functions, such as increased quality of life through recreation and the provision of shade and shelter in and around towns and cities.

What are the benefits to integrating green infrastructure into urban streets?

Green infrastructure components within urban streets provide and connect vital ecosystem services and strengthen ecological networks and frameworks within urban areas. In doing so green infrastructure in urban streets can provide multiple co-benefits linking human health with liveability benefits and safe systems to create sustainable, resilient and inclusive neighbourhoods. Increasing green infrastructure within streets can work towards improving social, economic and environmental health of urban environments that are often experiencing a rapid reduction in valuable existing green infrastructure.

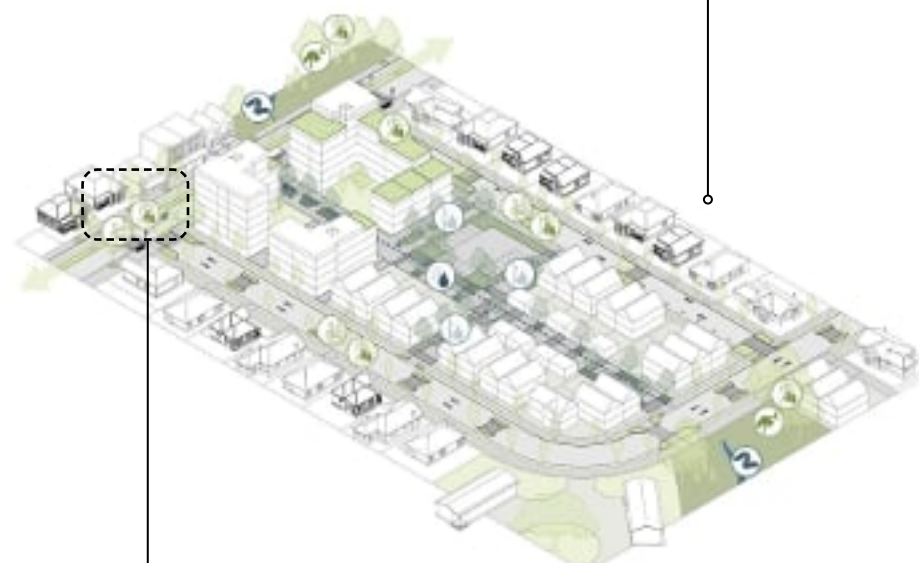
Green infrastructure planning and design connects street level solutions to the bigger picture of network planning at the larger neighbourhood and catchment scales. Green infrastructure in urban streets increases biodiversity, harvests, cleans and recycles water, supports carbon sequestration, and reduces urban heat island effects. Just like in transportation planning, working towards the “network effect” of increased coverage and connectivity creates agglomeration benefits to urban environments that add up to more than the sum of individual stormwater devices and areas of planting.

Green infrastructure and the benefits it affords are often not distributed equitably across our existing urban environments. For example, Auckland’s Urban Ngāhere (Forest) Strategy found that the most deprived parts of the city also have the lowest levels of existing urban tree canopy coverage. Further investment in green infrastructure should be linked with social equity goals and investment approaches rather than reinforcing a status quo condition of unequal access to nature and greenery within streets and neighbourhoods.

Green infrastructure in urban streets complements traditional piped water drainage systems. Vegetation, soils, and natural processes capture and infiltrate or evaporate water before it enters the piped system. Green infrastructure can help reduce flooding and water pollution by absorbing and filtering stormwater. It simultaneously provides a natural relief to the built environment, improves the street aesthetic, and delivers benefits to the community.

At the core of any green infrastructure strategy is the goal to build resilience into the system. As climate change and other environmental threats impact urban forests and green infrastructure, their viability ultimately hinges on their durability and adaptability. Traditionally, many cities have concentrated on planting a handful of species within urban streets, rendering them vulnerable to pests, disease, and extreme weather. Species selection and increased diversity to street plantings is central to creating resilience.

Green infrastructure for urban streets at different scales



Urban network level - ‘catchment connectivity’

- Green infrastructure function of urban street networks as a fundamental component of integrated spatial planning and catchment connectivity solutions for blue and green networks.
- Greener streets form ecological corridors acting as key ‘conduits’ connecting otherwise isolated green spaces and ecological areas within built environments.
- Green infrastructure within street networks to retain and increase catchment biodiversity and ecological values and benefits.

Neighbourhood level - ‘local network level’

- Integrated street and open space networks to manage increased stormwater runoff and dealing with increased frequency and severity of flooding and coastal inundation events.
- Neighbourhood-scale spatial planning to review consolidated or dispersed approaches to dealing with increased water
- Living street environments are key connectors of local public parks, greenways and ecological areas.
- Increase urban tree canopy coverage of street networks to reduce urban heat island effect and offset loss within private property through increasing and incremental urban intensification.
- Utilise street trees and planting within street networks to reinforce legibility, wayfinding and identity through neighbourhoods and other spatial planning objectives.
- Trees and planting within streets to bring human health and liveability benefits to everyday lives of people who use neighbourhoods.

Street level - ‘devices + solutions’

- Street level green infrastructure solutions to wider catchment issues. For example porous paving, rain gardens, urban swales and soakage trenches to address catchment flooding.
- Street space allocation and arrangement to provide room for trees, planting and vegetated stormwater management functions.
- Streets that include pollinator species contribute to connected pollinator pathways.
- Greater number and larger scale street trees to contribute to increased tree canopy coverage in line with strategies, goals and targets for local urban environments.

The Multiple Co-Benefits of Green Infrastructure in Urban Streets

Reduce the urban heat island effect - Increasing the biomass in streets from trees and planting directly cools urban environments as we see hotter temperatures more frequently, making streets more comfortable for people and reducing building cooling requirements and associated energy costs.

Improve air quality - Planting in streets can improve air quality by removing air pollutants and absorb gases harmful to humans.

Carbon sequestration - Soil and planting in our urban streets reduces carbon dioxide (CO₂) in the atmosphere through sequestering carbon.

Reduce flooding risks - Increasing green infrastructure in urban streets reduces, filtrates, and slows urban runoff and placing less pressure on stormwater systems.

Improve mental health and wellbeing - Greater access to nature within streets can reduce stress, improve mental health and promote wellbeing, whilst tree lined streets have been shown to encourage walking.

Cultural heritage - Native planting in urban streets is important for mātauranga Māori (knowledge and understanding), enhances mauri and creates cultural connections.

Comfort - Trees in urban streets provide shade and shelter and relief from sun and rain.

Education - Green infrastructure in urban streets promotes environmental awareness and encourage and facilitate learning.

Reduce environmental exposure - Green infrastructure such as street trees provide shade and protect people from harmful ultraviolet radiation, in turn reducing the risk of heat stroke, sunburn and melanoma.

Enhance visual amenity - Low planting and trees visually enhances a street, can be character-defining and nurture a sense of pride in the area.

Ancillary transport benefits - Green infrastructure provides traffic 'calming', legibility of road network, protection of assets, legibility in street structure, street type and character.

Enhance urban biodiversity - Healthy planting in urban street networks enriches biodiversity and provides opportunities for connected habitats that support wildlife.

Water quality benefits - Planting in streets capture rainwater and filter the volume of pollutants being washed from hard surfaces into the stormwater system and watercourses.

Enhance ecological connections - Green infrastructure transforms streets into ecological corridors linking public parks, greenways and ecological areas into connected cross-catchment networks.

Adaptation and resilience - Using nature-based solutions in urban streets alongside technology provides resilience to adapt and respond to fast-changing futures.

Soil quality - By increasing soil volumes and diversity, green infrastructure provides greater ecological benefits and supports healthy plant growth.

Actively reduce carbon footprint - retaining existing vegetation and enhancing green infrastructure can help reduce the extent of high-carbon elements in streets and level of embodied emissions.



Low Impact, Water Sensitive Design and Nature-Based Solutions

A multitude of terms have been developed in different parts of the world at different times to reflect the same or similar sets of ideas and approaches to green infrastructure, as well as the broader ecosystem-based approaches to addressing environmental sustainability challenges of which green infrastructure is a part.

Blue-Green Infrastructure puts as much emphasis on the use of blue elements (water and role of ponds, wetlands, rivers, lakes and waterways) as it does green elements (plants). This is also sometimes referred to as "Sustainable Drainage Systems" or "Sustainable Urban Drainage Systems" (SuDS or SUDS) or "Water Sensitive Urban Design (WSUD), Low Impact Urban Design and Development (LIUDD), or "Low Impact Development" (LID).

All of these are closely related terms to green infrastructure that should be considered interchangeable concepts or ideas in the context of this guide. They all reinforce the benefit of taking integrated planning and design approaches to managing water quantity and quality, in ways that provide enhancements to climate, environment, biodiversity and people. In planning and designing streets, Low Impact or Water Sensitive Design approaches reinforce the need to take an inter-disciplinary design approach, which considers stormwater management in parallel with ecology, the site context, best practice urban design, and community values.

In the bigger picture, green infrastructure can be understood to be a subset of Nature-Based Solutions as well as what is sometimes termed Sustainable and Resilient Infrastructure. Nature Based Solutions is a broad group of strategies that use ecosystems as an aid in managing environmental challenges. Nature Based Solutions take actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits (IUCN 2016).

Links

- [Urban Street Stormwater Guide, \(NACTO, 2017\)](#)
- [Global Standard for Nature-based Solutions \(IUCN, 2020\)](#)
- [GDO4 Water Sensitive Design for Stormwater \(Auckland Council, 2015\)](#)
- [Auckland's Urban Ngahere \(Forest\) Strategy \(Auckland Council, 2019\)](#)
- [The Integration of Low Impact Design, Urban Design and Urban Form \(Boffa Miskell for Auckland Regional Council, 2010\)](#)
- [WSD-for-Stormwater: Treatment Device Design Guideline \(Wellington City Council, 2019\)](#)



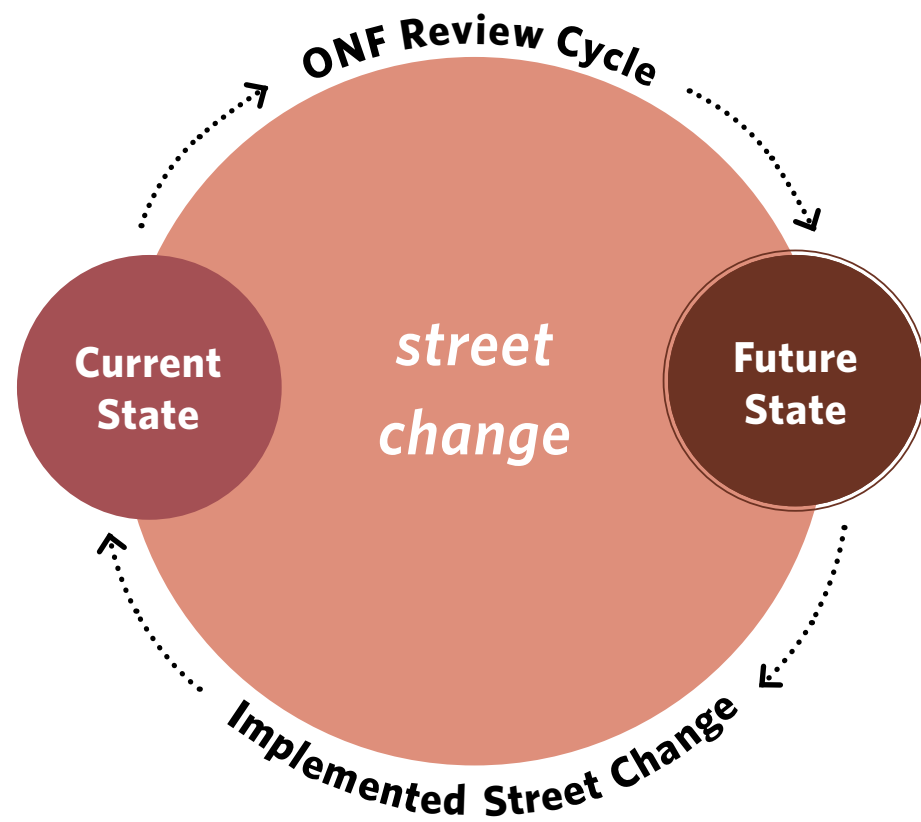
4.2 ONF Urban Street Categories Guidance

Street Design Guidance from Current to Future State

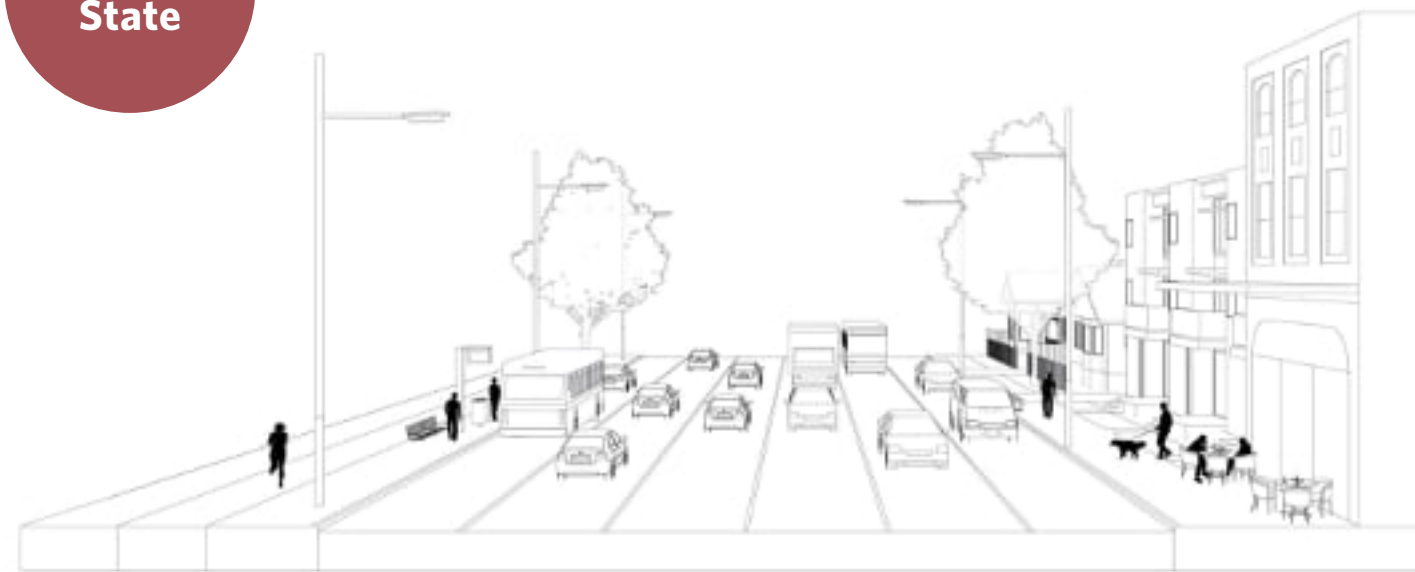
The street design guidance that follows presents simplified typical cross sectional spatial arrangement for each of the seven street category types. The treatments illustrated have been consciously developed to demonstrate comprehensive future state outcomes that show how more holistic and integrated urban streets can deliver upon a wider range of urban planning and place-based objectives and outcomes.

The integrated spatial street design guidance for each street category is not intended to suggest that every urban street within each ONF street category will need to be the subject of a comprehensive redesign and rebuild from street edge to street edge.

This street guide recognises that there is often a significant gulf between the current state and optimal future state for an urban street within any given ONF street category. Bridging this gulf is often likely to be the function of iterative cycles of planning and investment in street change. There are multiple pathways to permanence (adaptive, staged, permanent) and targeted investment and interventions to deliver outcomes for prioritised modes, public realm and place-based outcomes or specific street user groups are of course possible and often desirable to deliver identified future state benefits sooner, as provided for through adaptive urbanism and staged approaches to delivering street change.



Current State



Future State



Adaptive Urbanism | Staged | Permanent

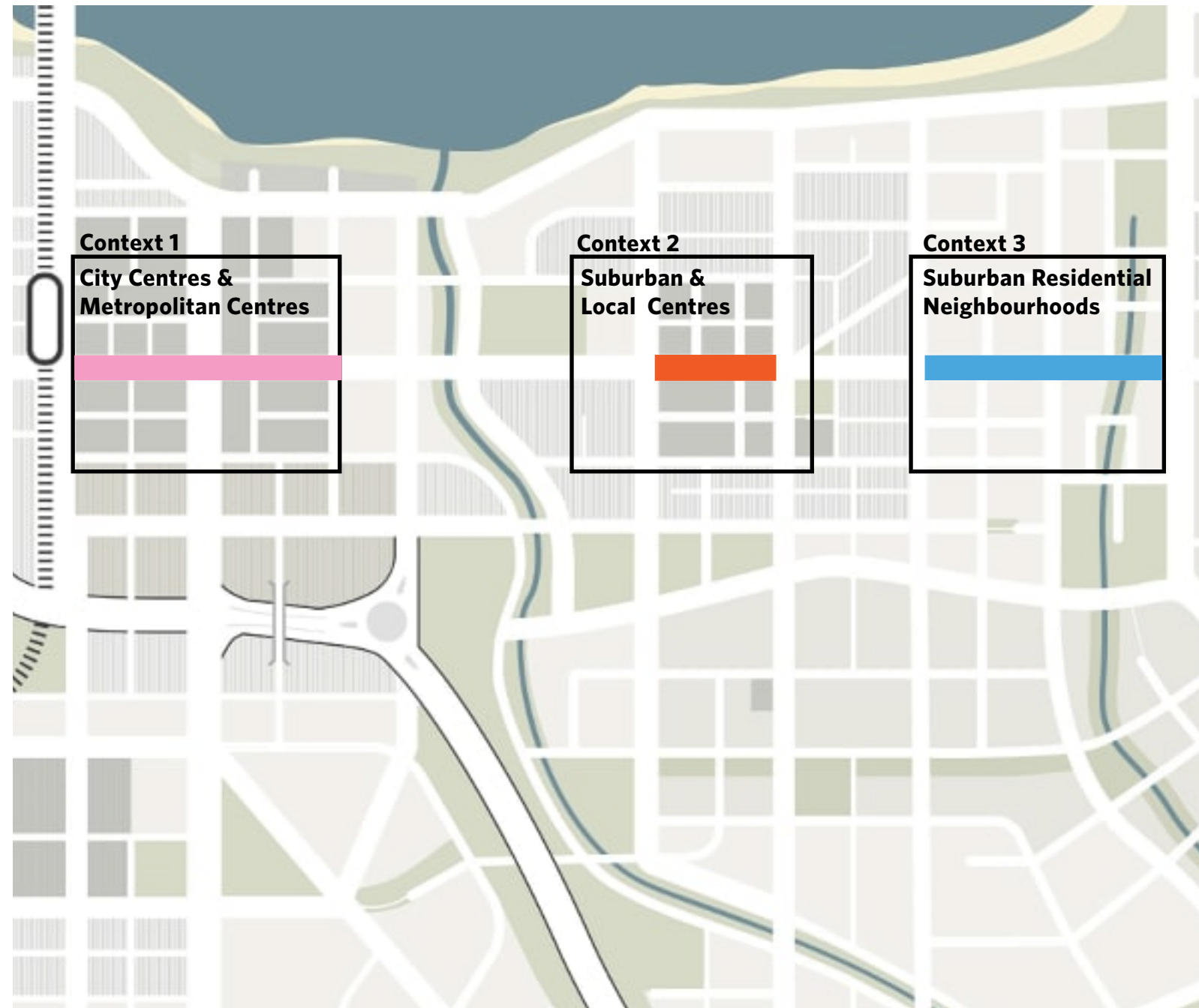
street design

Same Street, Different Contexts

Taking Account of Urban Context Change Along the Street

Context is a crucial, yet often overlooked, factor in designing streets. Densities, land uses, and travel characteristics can shift as the street traverses the city from one neighbourhood to another. Street design should respond to and affect the desired character of the public realm. As the needs and uses along a street change, street designs should respond and adjust accordingly. The One Network Framework provides guidance on how to classify street corridors based on their 'place' and 'movement' contexts to define the street category.

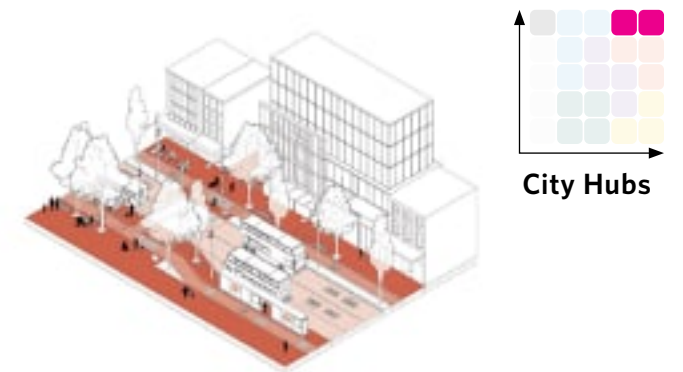
Below, a single street is illustrated at three points along its length, depicting three different potential street category designs that respond to the adjacent contexts.



Context 1 - City Centres & Metropolitan Centres

- The street transitions into a city hub with public transport priority in a high-density context, serving large volumes of pedestrians.
- Commercial activity extends from storefronts, and new street furniture supports a high-quality public realm.
- Collective transport moves through the space at slow speeds, allowing all users to safely navigate the mall.
- A mix of uses keeps the space active and engaging through the day and evening.

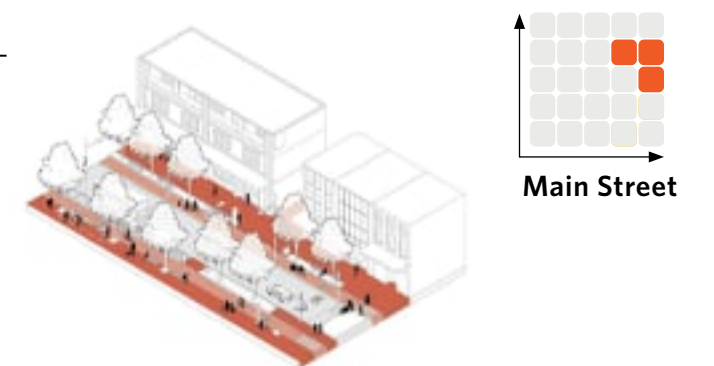
Street Category - City Hubs



Context 2 - Urban Centres

- A mix of residential and commercial ground floor uses line each side of the street in a low-to-mid density context.
- Public transport is provided in mixed traffic.
- Dedicated cycleways are created in both directions.
- Lower and appropriate speeds through urban centre.
- Green infrastructure and trees are present
- Public transport stops are provided on boarding islands.

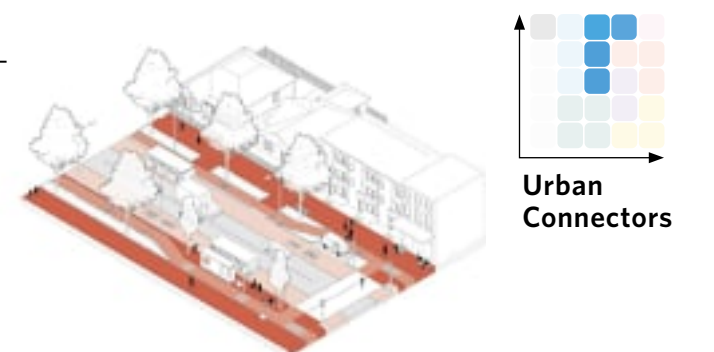
Street Family - Main Street



Context 3 - Suburban Neighbourhoods

- A mix of residential and commercial ground floor uses line each side of the street in a low-to-mid density context.
- Public transport runs dedicated lanes.
- Dedicated cycle lanes are created in both directions.
- Green infrastructure and trees are added.
- Public transport stops are provided on boarding islands.

Street Family - Urban Connectors



Same Street, Different Modes

Designing for Different Users

The content below is adapted from the *Global Street Design Guide (NACTO)* and provides an understanding of key considerations and outcomes for each street user group within the overall hierarchy that puts people first. Links to *Waka Kotahi* and *Austrroads* guidance where relevant provides further resources for each street user within an Aotearoa context.



Pedestrians

Pedestrians include people of all abilities and ages, sitting, walking, pausing, and resting within urban streets. Designing for pedestrians means making streets accessible to the most vulnerable users. Design safe spaces with continuous unobstructed footpaths. Include visual variety, engage building frontages, design for human scale and incorporate protection from extreme weather to ensure an enjoyable street experience. In a safe system, vehicle speeds are to be safe and appropriate to pedestrian environment.



Links

- [Pedestrian Network Guidance, \(Waka Kotahi, 2021\)](#)



Cyclists

Cyclists include people on bicycles, cycle-rickshaws, and cargo bikes. Facilities should be safe, direct, intuitive, clearly delineated, and part of a cohesive, connected network to encourage use by people of all ages and confidence levels. Cycleways that create an effective division from traffic, are well coordinated with signal timing, and are incorporated in intersection design form the basis of an accessible and connected cycle network. In a safe system, vehicle speeds where cyclists share the road should be 30km/h or lower. At higher speeds or locations with particularly high traffic volumes, dedicated infrastructure should be provided.



Links

- [Cycling Network Guidance \(Waka Kotahi, 2022\)](#)



Public Transport Passengers

Public transport passengers are people using collective transport such as rail, bus, or small collective vehicles. This sustainable mode of transportation dramatically increases the overall capacity and efficiency of the street. Dedicated space for public transport supports convenient, reliable, and predictable service for riders. Accessible boarding areas promote safe and equitable use. The space dedicated to a public transport network should be aligned with demand including active mode access to meet service needs without sacrificing streetscape quality.



Links

- [Te Āhei ki te Whakamahi Ara - Accessible Streets \(Ministry of Transport, 2022\)](#)
- [Public Transport Design Guidelines \(Waka Kotahi, 2022\)](#)



Motorists

Motorists are people driving personal motor vehicles for on-demand, point-to-point transportation. This includes drivers of private cars, for-hire vehicles, and motorized two- and three-wheelers. Streets and intersections must be designed to facilitate safe movement and manage interactions between motor vehicles, pedestrians, and cyclists.



Links

- [Austrroads Guides \(Austrroads, 2022\)](#)
- [Road Engineering \(Waka Kotahi, 2022\)](#)
- [Speed Management Guide \(Waka Kotahi, 2022\)](#)
- [Road to Zero \(Waka Kotahi, 2020\)](#)
- [Safe System audit guidelines, \(Waka Kotahi, 2022\)](#)



Loading and Deliveries

Freight operators and service providers are people driving vehicles that move goods or conduct critical city services. These users benefit from dedicated kerb access and allocation of space for easy loading and unloading as well as dedicated routes and hours of operation. Emergency responders and cleaning vehicles need adequate space to operate, which must be accommodated while ensuring the safety of all other street users.



Links

- [National Parking Management Guidance \(Waka Kotahi, 2020\)](#)



Activation Zone/ Supporting Adjacent Land Uses

People doing business include vendors, street stall operators, and owners or renters of commercial storefronts. These users provide important services that support vibrant, active, and engaging street environments. Adequate space should be allocated to these uses. Provide regular cleaning, maintenance schedules, power, and water to support commercial activity and improve local quality of life.



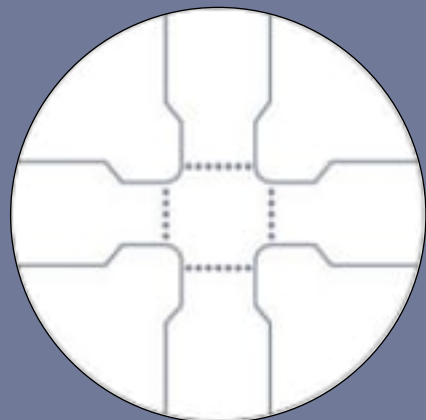
Furniture and Fixtures

Furniture and fixtures serve important street functions and support street life for a diverse range of users at all times of the day and night. Furniture and fixtures include street lights, pedestrian lighting, wayfinding signage, bus stop infrastructure and rubbish and recycling bins as well as seating. Designing for furniture and fixtures at an early phase helps support the integration of infrastructure requirements and ensures legible street layout in ways that can reduce street clutter, improving the experience for active mode users and enhanced provision for street trees and green infrastructure.

Same Street, Different Intersection Approach

Intersection planning and design is part of creating great streets and considered early in any optioneering. Decisions on the location and form of intersections can help shape the 'movement function' and 'place function' of a network. It can also influence the form of midblock street layouts and prioritise access for different modes. Well-designed intersection can support desire lines and connectivity, the location of stops, support safer speeds and reduce the need for new infrastructure by optimising the network efficiency. Poorly located and designed intersections can create safety problems, and severance effects impacting all users at the intersection and on adjoining streets.

Intersection Principles for Street Planning and Design

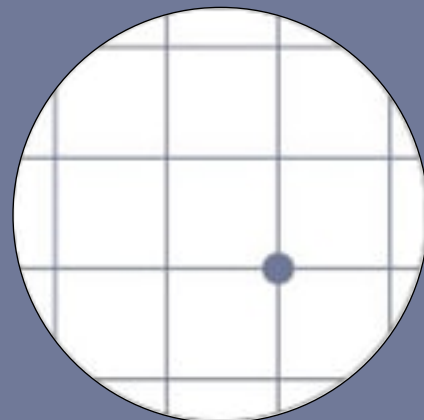


Design Intersections to be as Compact as Possible

Compact intersection reduce pedestrian exposure, slow traffic near conflict points, and increase visibility for all users.

Limiting the addition of dedicated turn lanes, and slip lanes can also assist in making an intersection compact.

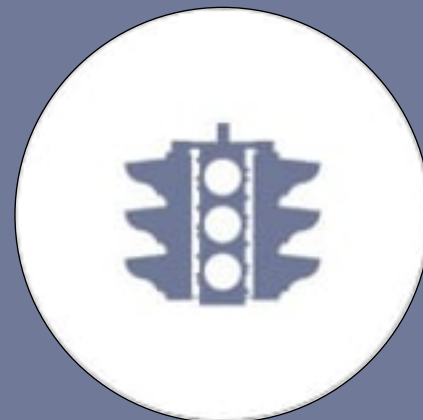
Large, complex intersections can often be divided into a series of smaller spaces.



Analyse Intersections as Part of a Network, not in Isolation

Consider how each intersection would operate on a network level. Solutions can be developed in relation to the 'movement function' and 'place function'. Trade-offs can often be made when the 'whole of network' view is taken.

Pedestrian behaviour and desire lines are a key planning tool to create 'connection' and orient the design for intersections.



Integrate Time and Space

Reconfiguring how intersections operate at certain times of the day can provide solutions to solve delay or congestion, prioritise modes and reduce waiting times for pedestrians.

Intersection design strategies help shape spatial, temporal and access options. Strategies can also help reduce the need for widening roads by employing 'smart' technologies to make operating intersection more efficient.



Intersections are Shared Spaces

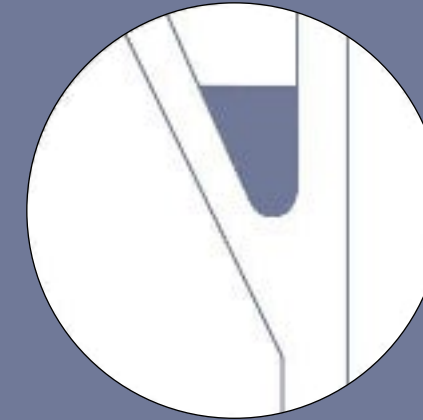
The location and space created in intersection planning and design should consider the following:

Does the layout create space in which users are mutually aware of one another? Are actions predictable?

Is the layout clear for users, and visible?

Is the space uncluttered (to avoid distraction)?

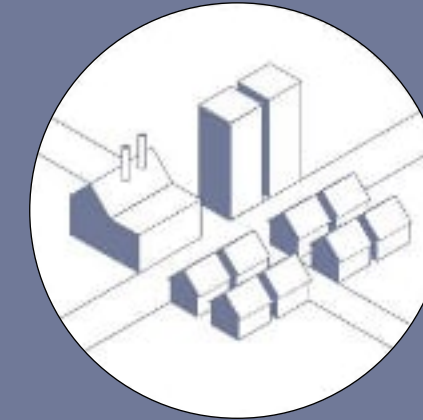
Does the intersection form create an environment where safe system speeds are achieved for all users, reducing the overall rate and severity of crashes?



Utilize Excess Space as Public Space

Streets are part of the public space in towns and cities. Interim or new public space can be created at intersection, aided by safety interventions and speed reductions.

Areas which were once underutilised can be enhanced to support public life.



Design for the Future

Intersection design should account for existing and future land uses as well as demand for all users.

Land use changes can increase pedestrian movement which can inform the location and form of intersection.

Considering the future context and urban development can shape decisions about an intersection and what desire lines, modes of travel and objectives will best serve the surrounding community.

For urban streets.. "to meet the needs and demands of everyone using them, intersections—both large and small—need to function as safely and efficiently as possible. Good intersection design, however, goes beyond making streets safer. Well-designed intersections use street space to bring people together and invigorate a city, while making traffic more intuitive, seamless, and predictable for those passing through" NACTO.org

Content adapted from urban street design guide, publishes by Island Press

Source: <https://nacto.org/publication/urban-street-design-guide/intersections/intersection-design-principles/>



Links

- [High Risk Intersection Guide \(Waka Kotahi, 2013\)](#)
- [Standard Safety Intervention Toolkit \(Waka Kotahi, 2021\)](#)
- [Multi-modal Design Guidance \(Waka Kotahi, 2022\)](#)
- [Intersection Design Principles , Urban Street Design Guide \(NACTO, 2013\)](#)
- [Road Design: Intersections and Crossings \(Austroads, 2021\)](#)

Design Guidance for One Network Framework Categories

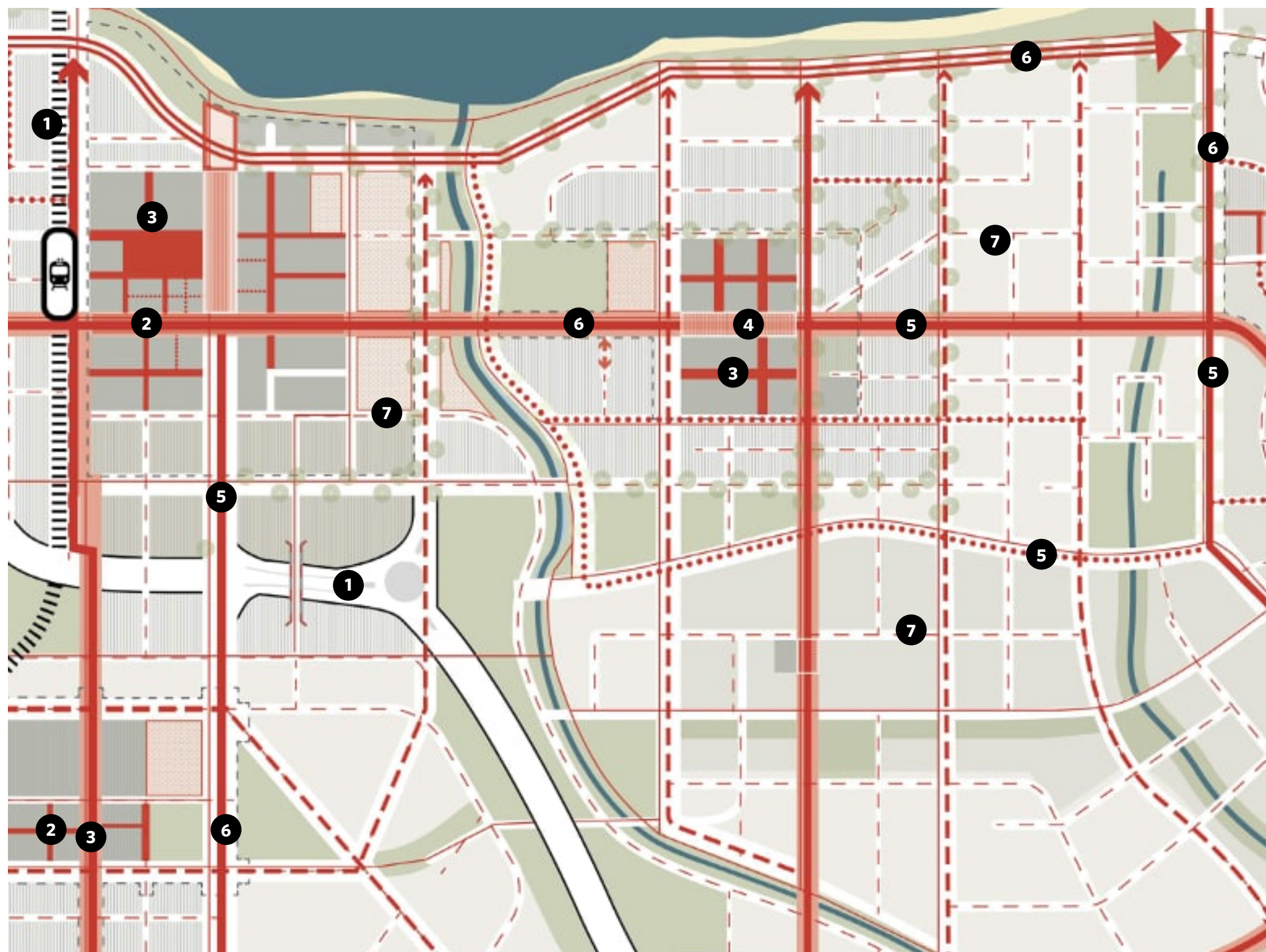
Section 4.2 provides more detailed street design guidance for six of the seven street categories within the urban street family as defined by the One Network Framework (ONF). The seventh category - Transit Corridors - encompassing segregated urban motorways and railway corridors with restricted access are not considered urban streets to be addressed in detail by this guide. Transit corridors do pose important street network integration and severance issues to be addressed within urban contexts, as indicated on the map opposite. Bridging the Gap, the Waka Kotahi urban design guidelines, should be referred to in seeking guidance on these matters.

Section 4.2 of the guidance is where everything comes together, demonstrating how a co-ordinated and integrated approach to the planning and design of streets is grounded in specific streets responding to particular place and movement functions in ways that respond appropriately to their urban context. The design guidance for ONF Urban Street Categories have been developed as exemplar integrated solutions for the different place and movement priorities of each as identified by the ONF. Each of the street categories responds to differing urban contexts on the spectrum of City Centres & Metropolitan Centres to smaller Urban Centres, Towns & Townships and Suburban Neighbourhoods.

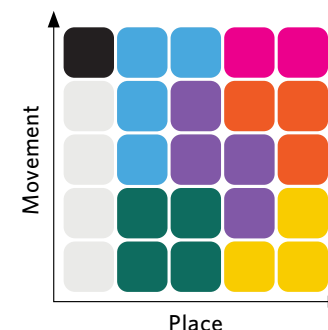
The street-level guidance demonstrates how street design is a multi-faceted and demanding endeavour to translate multi-disciplinary safe system thinking and place and movement considerations into well integrated solutions. Ensuring these street solutions serve functions in ways that are also a good form and spatial fit in often constrained places is a particular challenge. In this way, the guidance in this section documents how to apply the ONF, as well as the objectives and design principles in chapter 2 of this guide, that demonstrate how we now think differently about urban streets consistent with the policy and government direction of Section 1 of the guide. Guidance for each of these street categories has been developed in ways that align with the four urban places in the preceding Section 4.3. For each street, the guidance highlights links to more specialist and detailed modal guidance and other resources where relevant.

There can never be a 'one size fits all' solution and the urban street category guidance in this section demonstrates how to translate the place and movement priorities of the ONF into streets of varying widths and urban contexts. The accompanying diversifying the street category pages demonstrate how through the option development process there are multiple possible differentiated street typologies and design responses able to take account of local context and community considerations and characteristics.

Use the guidance in this section to identify opportunities for street transformations. The exemplar streets are placed in contexts to help illustrate how street categories work together to form a comprehensive network.

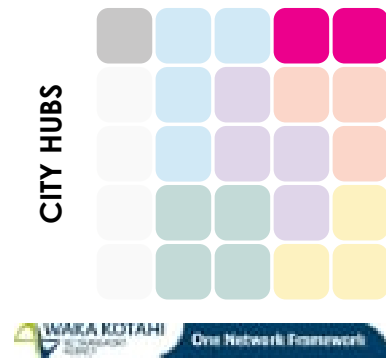


- 1** Transit Corridors
- 2** City Hubs
- 3** Civic Spaces
- 4** Main Streets
- 5** Urban Connector
- 6** Activity Streets
- 7** Local Streets



• [One Network Framework \(Waka Kotahi, 2022\)](#)

City Hubs



Typical Street Width: 20m
Typical Speed Limit: 30km/h
Typical Land Use Context:
City Centres and Metropolitan Centres

City Hubs are designed to accommodate high-frequency, high-quality public transport services through areas with very high pedestrian numbers and the densest concentration of activities. City hubs are public transport streets, designed to maximise the space for people, creating places where people want to visit, spend time and money supporting the local businesses and meet and gather. This supports civic spaces and the public and social life of our city centres and metropolitan centres day and night.

Network and Operations Guidance

- General traffic is limited by bus-only lane designations and banning or mandating certain turning movements before the bus only section, supported by an access and traffic circulation plan for the wider area to support the public transport street.
- Public transport streets can be achieved by traffic restrictions and do not require full streetscape and stop upgrades.
- Public transport streets have a design and speed limit of 30kph.
- While the street may experience high bus volumes, narrow kerb to kerb distances and formal crossing at key intersections allow for easy crossing of the corridor.
- Public transport streets provide the opportunity to close minor side streets to traffic allowing for easier pedestrian movements and the creation of new pedestrian plazas.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths. Service and delivery activities should be managed with access limited to certain times of day.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders. General parking should not be located on a City Hub.

Upright street trees can be accommodated in public transport streets, meeting the clearance requirements for double decker bus operations and support the comfort of people using the street and waiting public transport passengers.

Signalised bus priority through intersections on the lead-in to the bus only section to support reliability and travel times.

>> **Public Transport Design Guidance**

Cycleways are continuous, clearly defined from pedestrian paths and separated from Public transport vehicles. This creates safe and accessible routes for people cycling and scootering and minimise conflicts with other users.

>> **Cycling Network Guidance**

Bus Stops are off-set or provided in-line to allow appropriate space allocation for bus stop requirements. This means uninterrupted cycleways, wider footpaths and public space, recognising that high place values demand space allocation for more than just public transport services.

>> **Public Transport Design Guidance**

Distinguish cycleways from pedestrian paths to minimise user conflict between pedestrians and cyclists, utilising changes in materials, level changes and road markings.

>> **Cycling Network Guidance**

Formal crossings are required near stops, on pedestrian desire lines and at key areas of demand where users may need assistance.

>> **Pedestrian Network Guidance**

Places for stopping through seating within trees providing shade an shelter, climate resilience, improved air quality and amenity.

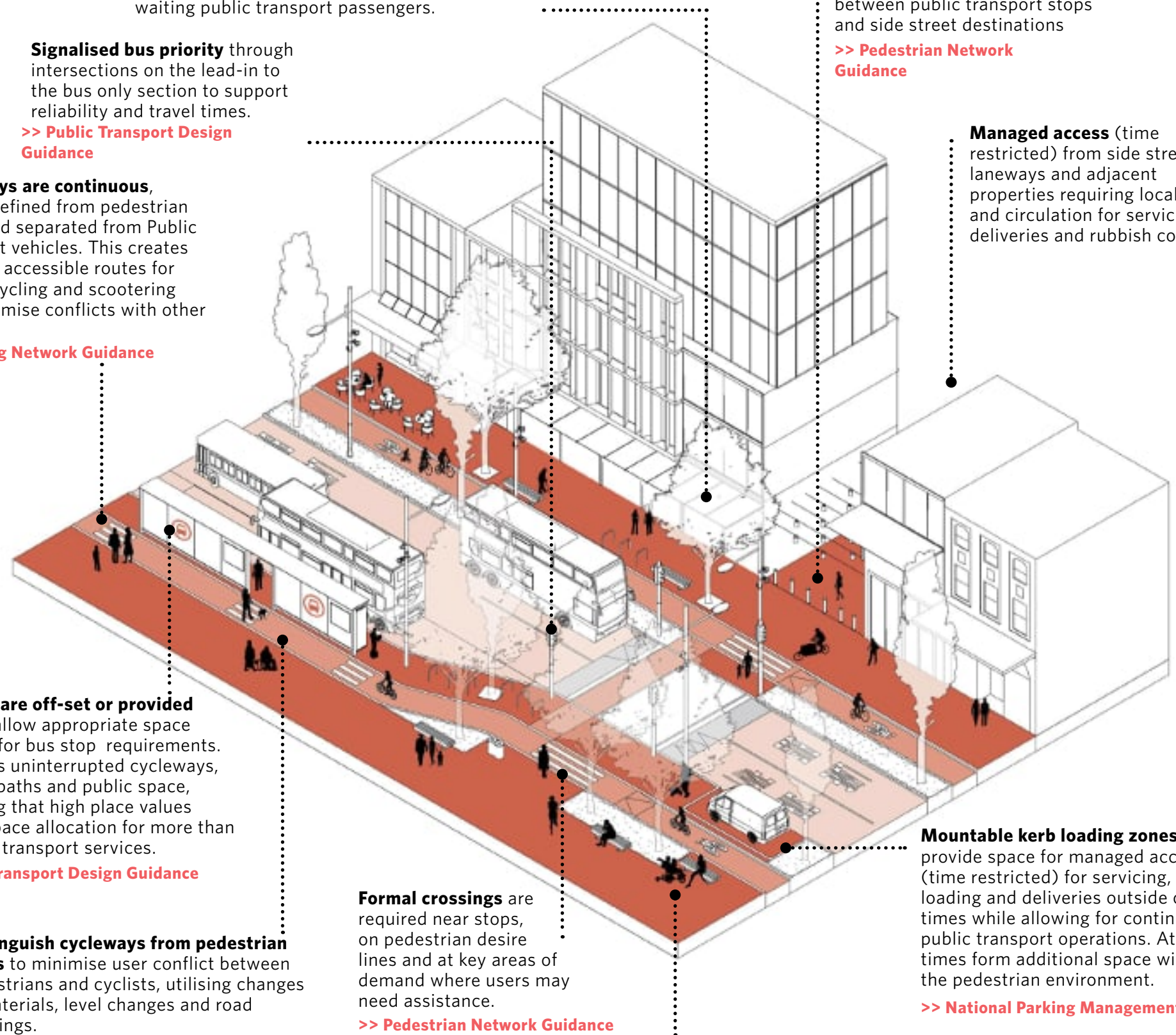
Pedestrian through-site links are generous and legible, add permeability and enhance links between public transport stops and side street destinations

>> **Pedestrian Network Guidance**

Managed access (time restricted) from side streets, laneways and adjacent properties requiring local access and circulation for servicing, deliveries and rubbish collection.

Mountable kerb loading zones provide space for managed access (time restricted) for servicing, loading and deliveries outside of peak times while allowing for continued public transport operations. At other times form additional space within the pedestrian environment.

>> **National Parking Management Guidance**



Building frontage zone provides allocated space within the overall footpath width for building access, shop frontage and sheltering functions on the edge of through route for pedestrian movement.

>> **Pedestrian Network Guidance**

Public life and outdoor dining through flexible street space and activities supporting place value within the high movement street.

Through route for pedestrian movement aligned to building edge, width to cater for very high volumes from amenity and public transport stops and stations.

>> **Pedestrian Network Guidance**

Low amenity planting

protecting active mode users from the carriageway while encouraging pedestrians to cross at safe crossing points.

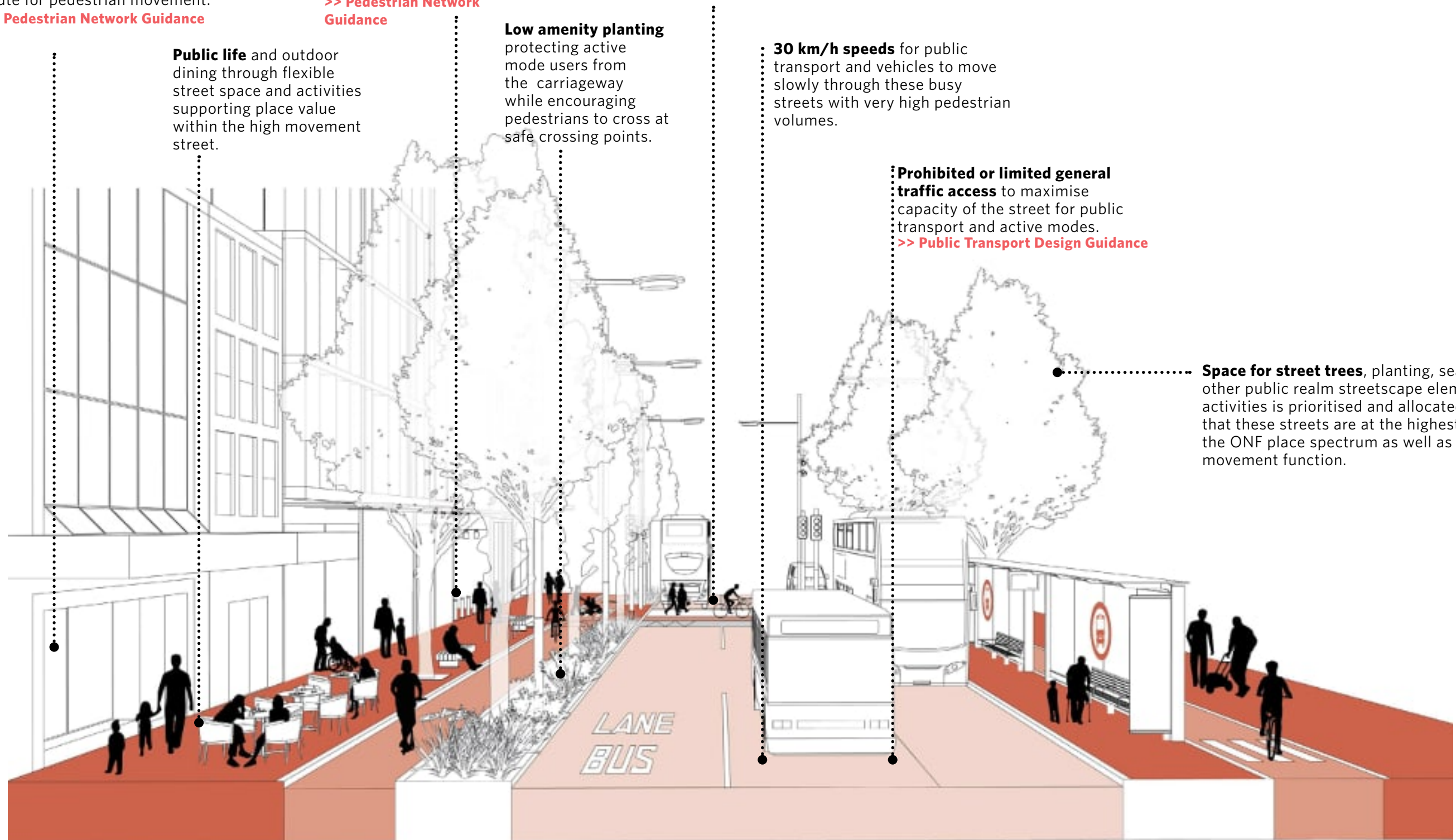
Carriageway width is as narrow as possible to achieve safe operating speeds and make it easier to cross the road, while accounting for clearance for manoeuvring and bus tail swing (including double deckers).

30 km/h speeds for public transport and vehicles to move slowly through these busy streets with very high pedestrian volumes.

Prohibited or limited general traffic access to maximise capacity of the street for public transport and active modes.

>> **Public Transport Design Guidance**

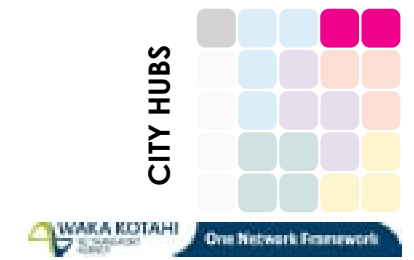
Space for street trees, planting, seating and other public realm streetscape elements and activities is prioritised and allocated, reflecting that these streets are at the highest end of the ONF place spectrum as well as highest movement function.



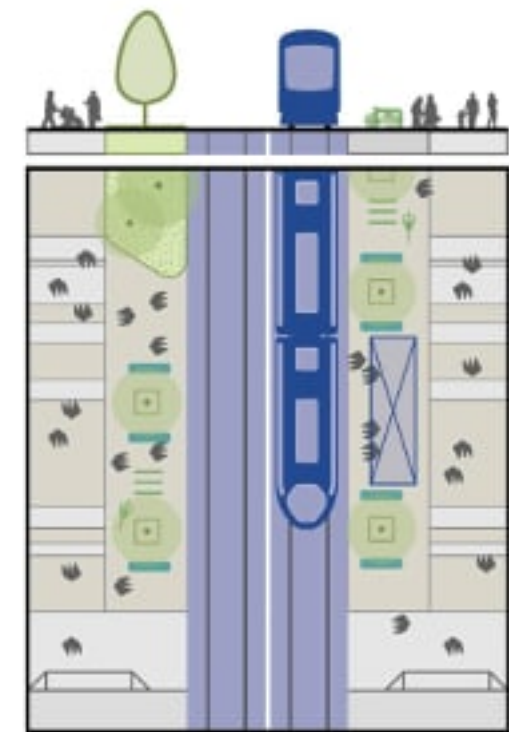
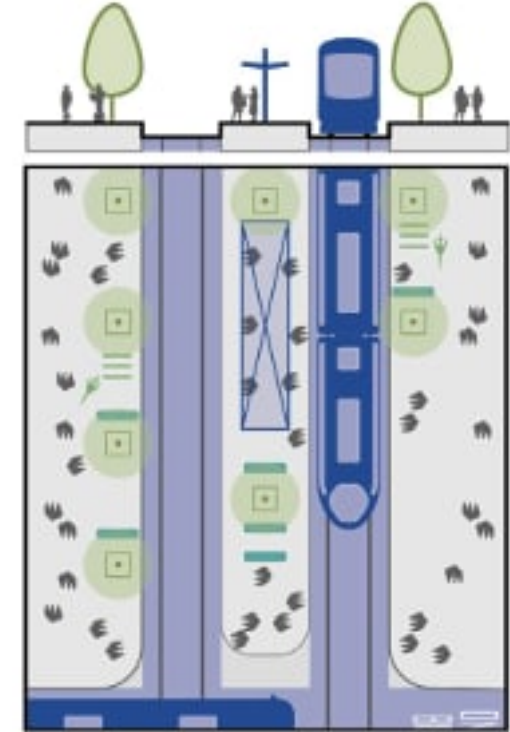
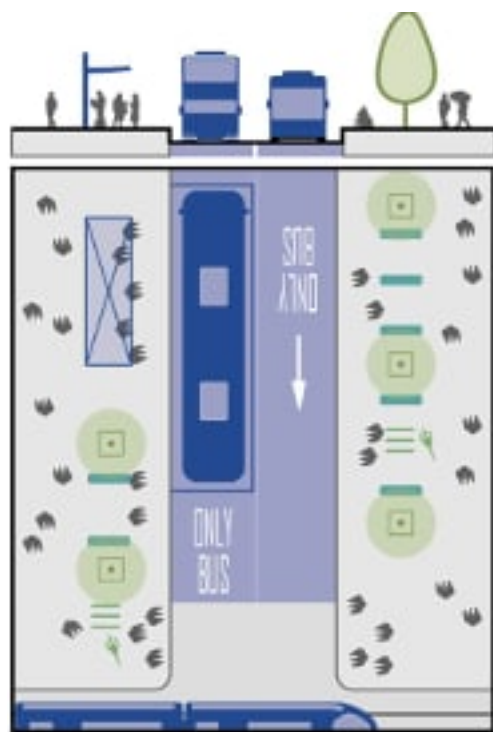
City Hubs

Diversifying the Street Category

Within any given One Network Framework street category, there is more than one integrated street solution. These pages provide indicative examples of the sorts of differentiated design responses to be explored through option development, as well as examples of similar street types from Aotearoa and around the world. This is intended to demonstrate that there's a diverse range of street types and integrated street design solutions possible within the broad umbrella of each ONF Street Category.



A range of potential integrated street solutions, to be explored through option development, for example



Kerb-Running Public Transport Street

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Facilitates integrated, safe access for high frequency PT (bus) services into areas of highest activity and demand
- Supports high density of commercial, retail and residential activity and intense on-street activity across the day
- Maximises pedestrian space around active frontages.
- Provides potential for service vehicle access during times of lowest pedestrian activity (early AM/late evening)
- Provides street furniture that supports street activities and pedestrian movement

Centre-Running Public Transport Street

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Facilitates integrated, safe access for high volume/frequency PT (light rail) that can move high numbers of people along the street with frequent opportunities to stop
- Supports high density of commercial, retail and residential activity and intense on-street activity across the day
- Provides separation between high volumes of PT stops and street edges in high volume pedestrian areas
- Provides street furniture that supports street activities and pedestrian movement

Pedestrian Mall with Centre-Running Public Transport

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Facilitates PT connections into areas of highest activity and demand
- Supports high density of commercial, retail and residential activity and intense on-street activity across the day
- Prioritises pedestrian movement over all other modes
- Provides street furniture that supports street activities and pedestrian movement
- Integrates landscape treatments that complement street size and character

City Hubs

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example

Kerb-Running Public Transport Street



Local Examples:

- Wellesley Street, Tāmaki Makaurau Auckland
- Courtenay Place, Pōneke Wellington
- Manchester Street, Ōtautahi Christchurch

Centre-Running Public Transport Street



Local Examples:

- Future Auckland Light Rail
- Future Wellington Mass Rapid Transit

Pedestrian Mall with Centre-Running Public Transport



Local Examples:

- Auckland Previous Queen Street Proposal



Global Examples:

- Oxford Street, London UK



Global Examples:

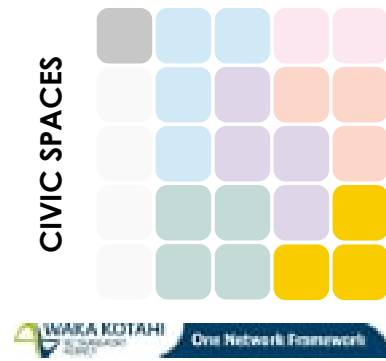
- Devonshire Street, Sydney Australia
- Swanston Street, Melbourne, Australia



Global Examples:

- George Street, Sydney Australia
- Bourke Street Mall, Melbourne, Australia

Civic Spaces



Typical Street Width: 6m - 14m
Typical Speed Limit: 10-20km/h
Typical Land Use Context: Urban Centres

Laneway Streets and Shared Spaces prioritise pedestrians and city activities using traffic circulation and vehicle management strategies. They relate to streets with high place and low movement values, and often play important civic space function as human-scaled streets that prioritise pedestrians and the street-trading retail and hospitality businesses that typically line them at street level. This reflects their place in the ONF in locations with high place and low movement values.

Network and Operations Guidance

- Pedestrians are prioritised. Where vehicles and pedestrians mix, the speed should be no more than 10kph.
- Key movement function is to provide local access.
- Remove unnecessary through traffic by wider traffic circulation changes to ensure volumes are low enough for pedestrians to safely use the street carriageway.
- Provide appropriately for emergency access but do not otherwise compromise pedestrian and place-focused street design for access by large vehicles which should only require access on rare occasions.
- Removal of general parking reduces cruising traffic. General parking is provided in nearby off-street facilities or in strategic areas where kerbside activity is less important.
- Service and delivery parking (loading zones) are located close to destinations but in places that do not compromise public space and walking paths. As pedestrian demands increase service and delivery can be limited to certain times of day.
- Disabled parking should be located convenient to key destinations determined through consultation with stakeholders.

Flexible programming and space allocation to support day and night time economy on the street e.g. overnight/early morning loading zones can be converted to outdoor dining space during middle of day and evening.

Pedestrian-priority street designs such as shared spaces enable people freedom to stroll, wander and explore along and across entire street, promoting more connected and vibrant destination streets with two-sided retail, hospitality and place-making activities.

>> **Pedestrian Network Guidance**

Street trees of varying species are placed along street to provide a legible structure of spatial zones, slow traffic and provide greening in city streets.

Co-locate seating with planting to create programmed pockets of public space or people 'pause points' to provide comfort and promote lingering and spending time in space

Planting, furniture, artworks and other place-making elements can contribute to a sense of place and character and space should be found even on the narrowest streets.

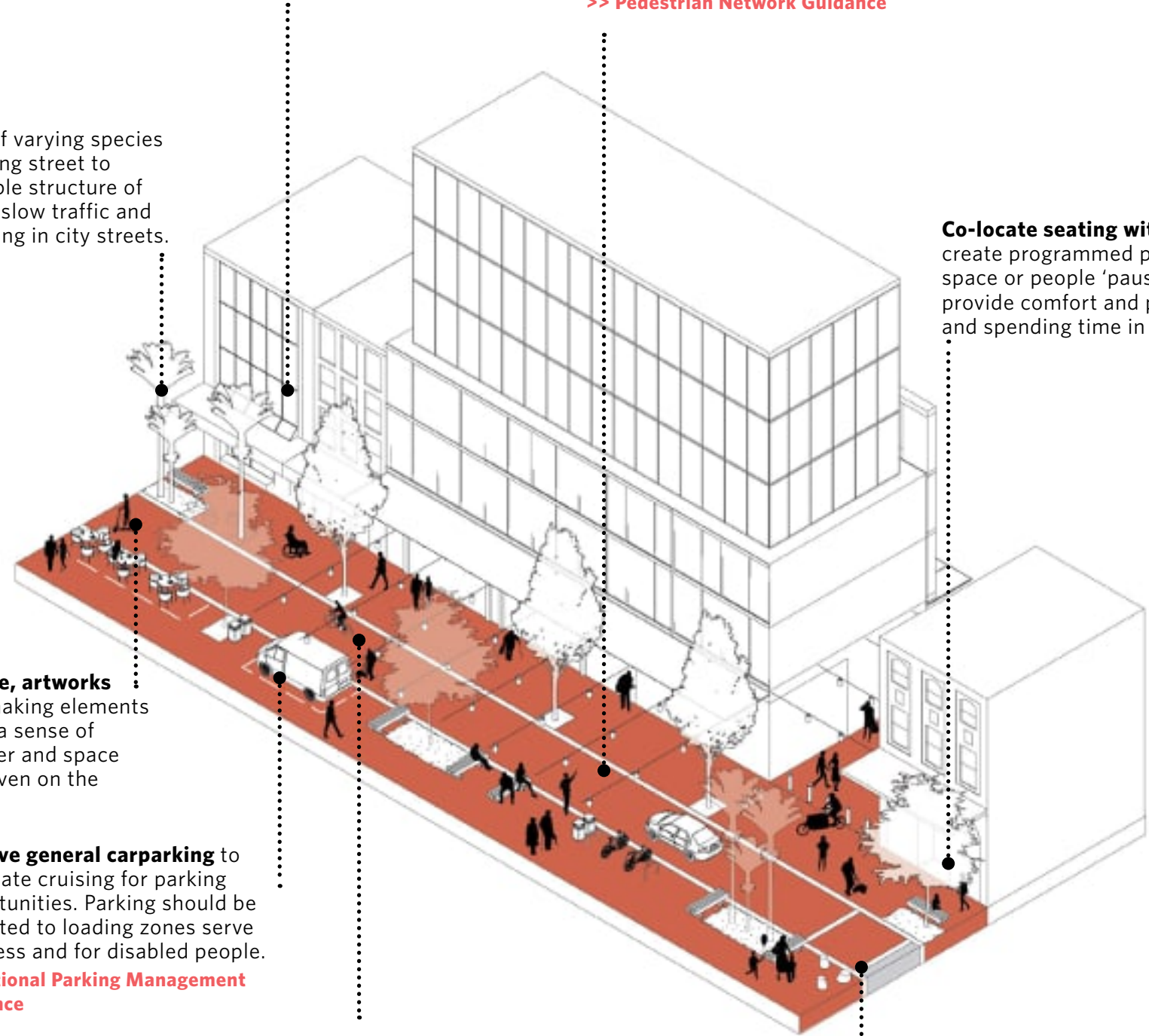
Remove general carparking to eliminate cruising for parking opportunities. Parking should be allocated to loading zones serve business and for disabled people.

>> **National Parking Management Guidance**

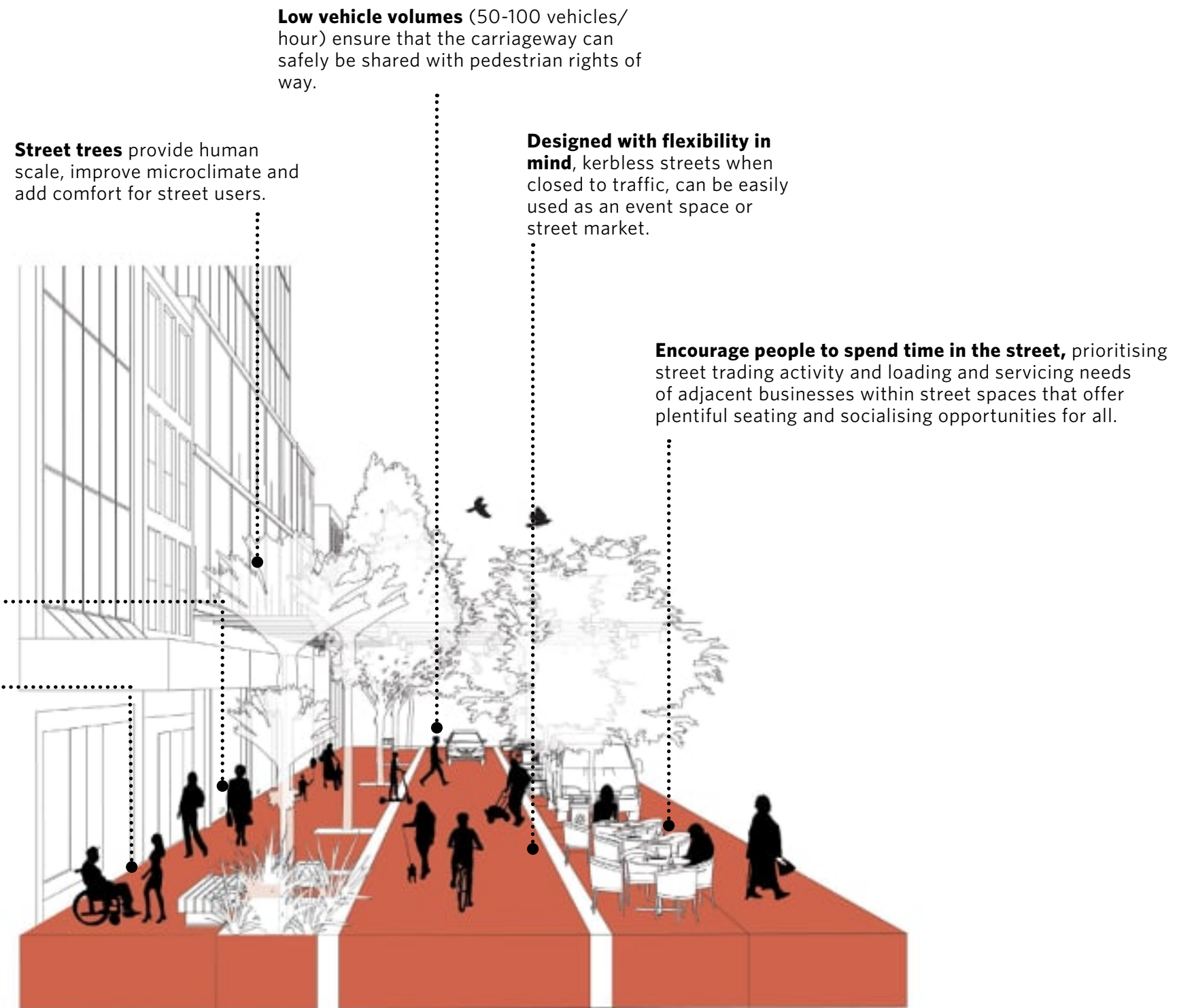
Cycling and scooting in both directions should be enabled through planning and design to make all laneways and shared spaces safe even when vehicular traffic is one way. Entry signage should clearly articulate active mode priorities (including cyclists and micromobility users) at both ends of the street.

>> **Cycling Network Guidance**

Entry thresholds including a ramp, rumble strip and 10 kph sign to a laneway or shared zone slows vehicles and adds a clear threshold to indicate a changing street context.



Illustrations and associated guidance are indicative only.



Low vehicle volumes (50-100 vehicles/hour) ensure that the carriageway can safely be shared with pedestrian rights of way.

Street trees provide human scale, improve microclimate and add comfort for street users.

Designed with flexibility in mind, kerbless streets when closed to traffic, can be easily used as an event space or street market.

Encourage people to spend time in the street, prioritising street trading activity and loading and servicing needs of adjacent businesses within street spaces that offer plentiful seating and socialising opportunities for all.

People priority streets maximise space for people, creating places where people want to visit, spend time and money supporting the local businesses.

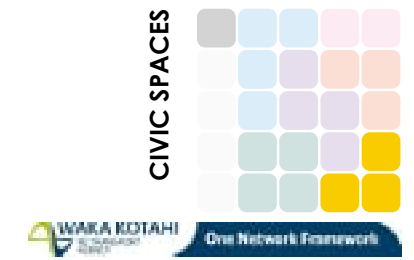
A clear and accessible path along the building line is required for visually impaired people and pedestrians who do not want to share the carriageway.

>> **Pedestrian Network Guidance**

Civic Spaces

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Pedestrian Laneway

Priorities:



Safe and Appropriate Speed Limit:

Essential access only

Key Features:

- Building edge to building edge solutions
- Continuous paved surface treatments
- Bollard or street furniture elements to restrict vehicular access
- Public life emphasis
- Potential outdoor dining / hospitality focus
- Distinctive placemaking opportunities, public arts and culture, public life and greening opportunities



Pedestrianised Streets

Priorities:

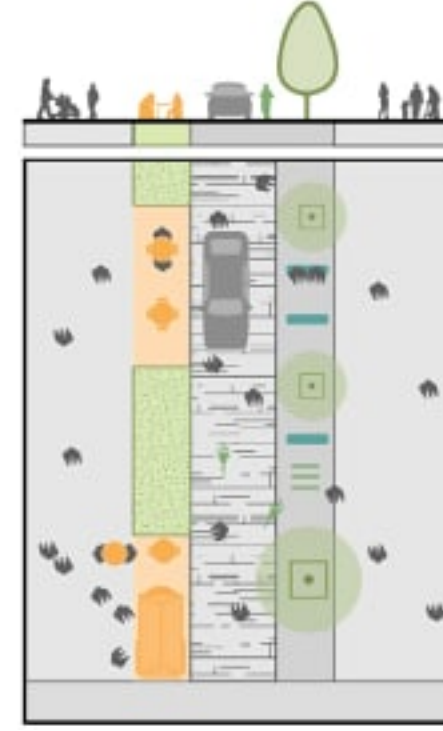


Safe and Appropriate Speed Limit:

Essential access only

Key Features:

- Street generally closed to all traffic at most times of the day
- Essential vehicle access by operable bollard / managed access regime
- Bollard or street furniture elements to restrict vehicular access



Shared Spaces

Priorities:

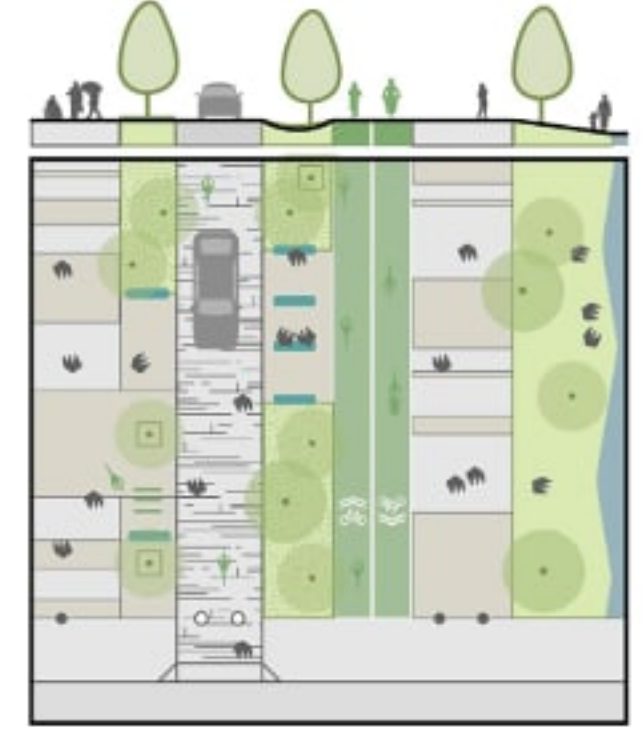


Safe and Appropriate Speed Limit:

10 - 20 Low and slow

Key Features:

- Kerb separated carriageway or level surface design solutions
- Spatial arrangement and elements support safe cycling in both directions



Blue / Green Street Edges

Priorities:



Safe and Appropriate Speed Limit:

10 Essential access only

Key Features:

- More generous active mode and public space edges integrating with adjacent open spaces such as coastal edges, parklands, lakes and waterways.
- Kerb separated carriageway or level surface design solutions
- Supports natural land-uses such as beaches, parkland, rivers and lakes
- Separation of through cycling routes and areas of gathering and activity where possible
- Street furniture that supports pedestrian movement and places to dwell
- Carriageway construction and surface treatments that can support service and utility vehicle access when required

Civic Spaces

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Pedestrian Laneway



Local Examples:

- Vulcan Lane, Tāmaki Makaurau Auckland
- Plimmer Steps, Pōneke Wellington
- Riverside Lanes, Ōtautahi Christchurch

Pedestrianised Streets



Local Examples:

- Top of Trafalgar Street, Whakatu Nelson
- Cashel Mall, Ōtautahi Christchurch

Shared Spaces



Local Examples:

- O'Connell Street, Tāmaki Makaurau Auckland
- High Street, Ōtautahi Christchurch

Blue / Green Street Edges



Local Examples:

- Lake Terrace Shared Path, Taupō
- Oxford Terrace, Ōtautahi Christchurch
- Garrett Street, Pōneke Wellington



Global Examples:

- Centre Place Lane, Melbourne



Global Examples:

- Rundle Mall, Adelaide Australia
- Queen Street Mall, Brisbane Australia



Global Examples:

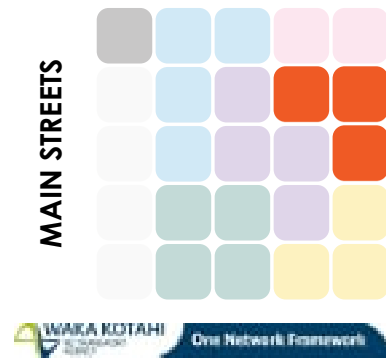
- Old Bond / Carnaby Streets, London UK
- Camden Place London, UK (Greened Shared Space exemplar)



Global Examples:

- Pasealeku Berria, San Sebastian, Spain

Main Streets



Typical Street Width: 20m
Typical Speed Limit: 30km/h
Typical Land Use Context: Urban Centres

Main streets serve as the centre of community life and should prioritise local walking trips and access to public transport. Main streets support a high concentration of commercial, retail, cultural and residential activity. They also serve as busy transport corridors.

Network and Operations Guidance

- Main street balances the competing demands of local activities and important movement requirements. Prioritising pedestrians creates places where people want to visit, spend time and money supporting the local businesses.
- Main streets are tasked with two sometimes conflicting functions - providing a through-traffic function and being a central place for public life and local economic activity. Prioritising people and place activity require slowing traffic speed limits to 30km/h, enabling safe places to cross the street and design elements like street trees. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from main streets and onto highways to allow place value functions to take priority.
- General parking should be minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths. Consider a range of transport activities that require parking like food delivery e-bikes.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders.

Bus priority measures where required give buses a head start on the approach and exit to the Main Street, supporting public transport reliability and travel times.

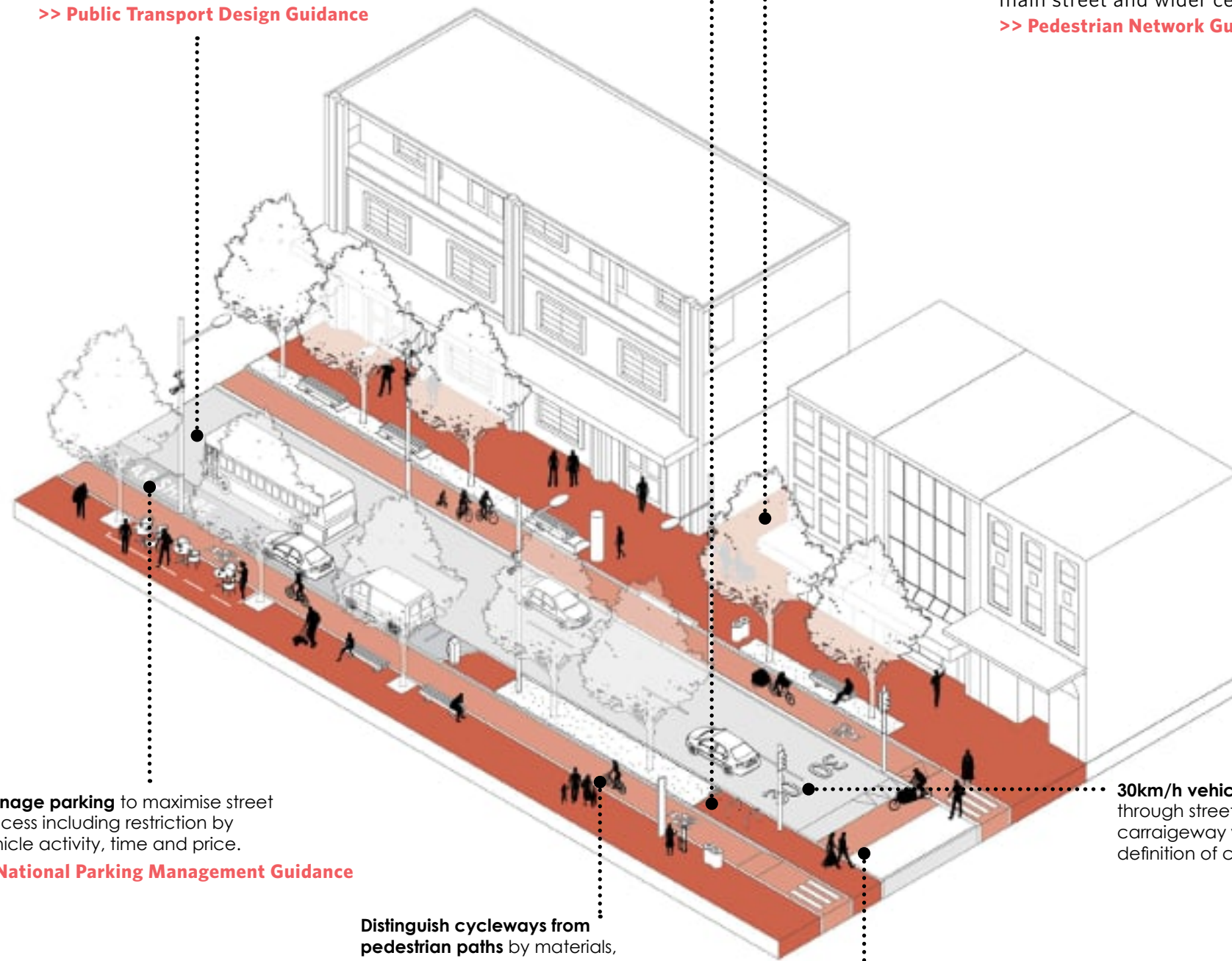
>> **Public Transport Design Guidance**

Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements.

>> **Cycling Network Guidance**

Laneways and Through Site Links to improve walkability between the main street and wider centre.

>> **Pedestrian Network Guidance**



Manage parking to maximise street success including restriction by vehicle activity, time and price.

>> **National Parking Management Guidance**

Distinguish cycleways from pedestrian paths by materials, level changes and road markings to minimise user conflict in busy urban centres.

>> **Cycling Network Guidance**

30km/h vehicle speeds enforced through street design including carriageway width, narrow lanes, and definition of carriageway features.

Formal crossings are required near bus stops and in areas with high demand. Allow for easy walking with pedestrian priority on raised tables at minor side street crossings and safe signalised crossings at major intersections and on key cross corridor desire lines along the Main Street.

>> **Pedestrian Network Guidance**

Street trees give structure and clear legibility to main streets and help to manage speeds and driver behaviour, with canopy cover and street greening providing many co-benefits for people, place and planet in ways that enhance air quality and microclimate and the mauri ora of urban centres.

Bus stops can be shifted a short distance from the spatially constrained sections of the Main Street, to free up space for cycling and/or public realm uses.

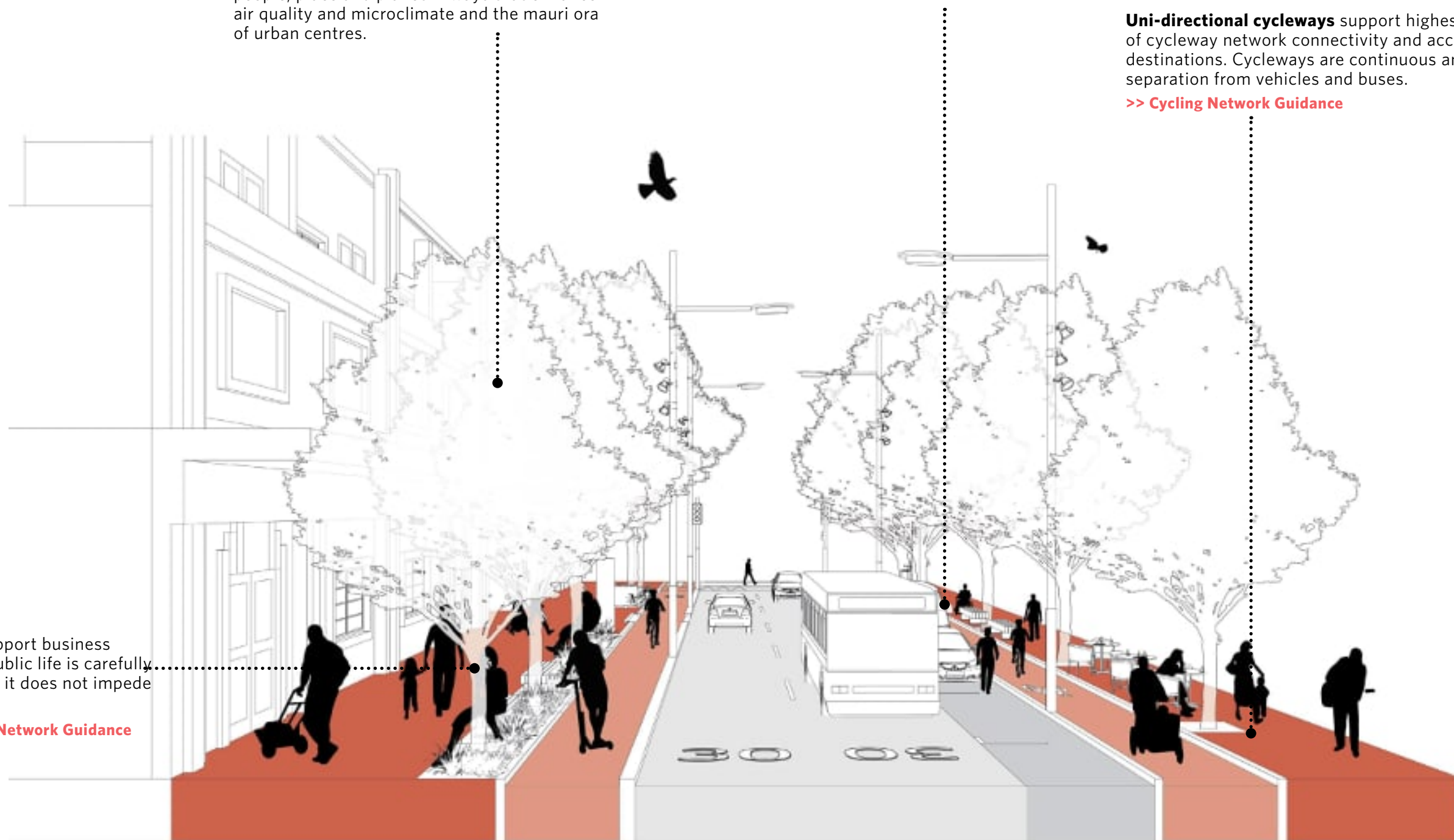
>> **Public Transport Design Guidance**

Uni-directional cycleways support highest level of cycleway network connectivity and access to destinations. Cycleways are continuous and provide separation from vehicles and buses.

>> **Cycling Network Guidance**

Seating to support business activity and public life is carefully located where it does not impede pedestrians.

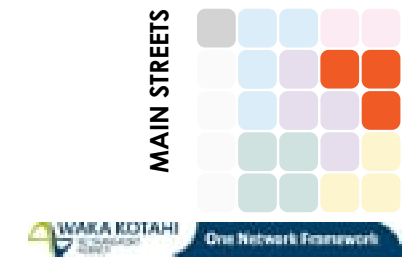
>> **Pedestrian Network Guidance**



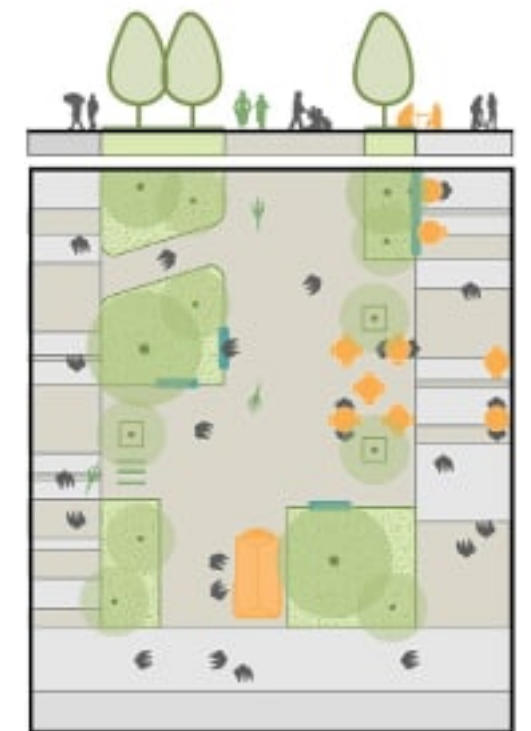
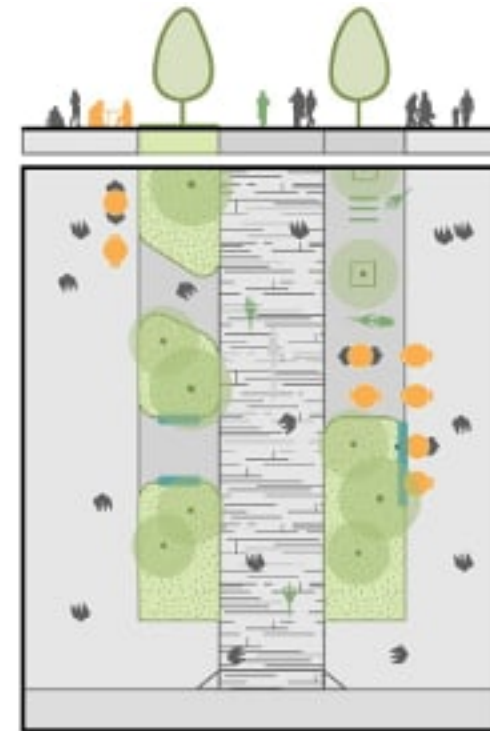
Main Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



One-way, Retail Priority

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Kerb extensions for footpath dining and retailed commerce
- Minimal direct on-street loading areas and on street parking.
- Designed for slow vehicle movement to serve localised land uses
- Trees and low maintenance planting
- Entry treatments and close proximity to public transport services
- Enhance local distinctiveness by providing flexible landscape treatments at key locations.

Dining Priority

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Opportunities for on-street dining, including in converted on-street car parking spaces.
- Prioritise pedestrian movement across and along the length of the street
- Provide sustainable transport priority, incorporating wide footpaths and bicycle parking facilities.
- Entry treatments to provide a sense of arrival and lower speed environments
- Designed for slow vehicle movement to serve localised land uses
- Minimal direct on-street loading areas and on street parking
- Integrate Water Sensitive Urban Design systems at a pedestrian scale

Shared Space

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Kerb separated carriageway or level surface design solutions
- Spatial arrangement and elements support safe cycling in both directions
- Street furniture to support a range of place functions Restricted vehicle access - temporal servicing and delivery regimes

Pedestrianised Streets / Malls

Priorities:



Safe and Appropriate Speed Limit:

Essential access only

Key Features:

- Street generally closed to all traffic at most times of the day
- Essential vehicle access by operable bollard / managed access regime
- Bollard or street furniture elements to restrict vehicular access
- Prioritise very-high volumes of pedestrian moving across and along the street
- Supports a high density of commercial, retail and residential land-use

Main Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



One-way, Retail Priority



Local Examples:

- George Street, Otepoti Dunedin

Dining Priority



Local Examples:

- Hurstmere Road, Takapuna
- Devonport Road, Tauranga
- Victoria Street, Kirikiriroa Hamilton

Shared Space



Local Examples:

- Emerson Street, Ahuriri Napier
- Esk Street, Invercargill

Pedestrianised Streets / Malls



Local Examples:

- Cashel Mall, Otautahi Christchurch
- Beach Street, Queenstown



Global Examples:

- Monmouth Street, London, United Kingdom



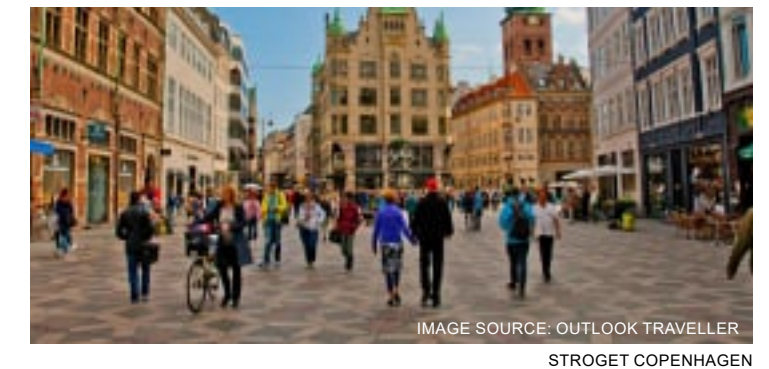
Global Examples:

- Musk Avenue, Kelvin Grove, Brisbane, Australia



Global Examples:

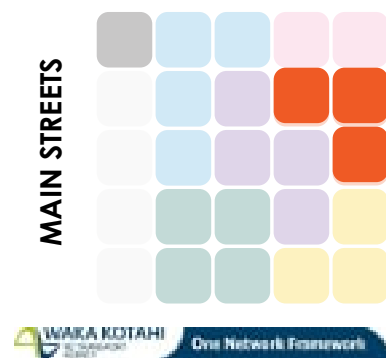
- New Road, Brighton UK



Global Examples:

- Stroget, Copenhagen

Main Streets



Typical Street Width: 20m

Typical Speed Limit: 30km/h

Typical Land Use Context: Towns and Townships

Main streets in towns and townships are the hub of community life. Often they also serve as part of the regional highway network and so they must balance the competing demands of local activities and important movement requirements. Even in the smallest places, a safe walking environment and crossing opportunities are priorities for main streets. Providing for this creates the foundation for more vibrant places where people want to visit, spend time and money supporting the local businesses.

Network and Operations Guidance

- Main streets in Towns are often tasked with two sometimes conflicting functions - providing a long-distance arterial function and being a central place for public life and local economic activity.
- Prioritising people and place activities requires slowing traffic speed limit to 30km/h, enabling safe places to cross the street and design elements like street trees. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from main streets and onto highways and bypasses to allow place value functions to take priority.
- Main streets are places with numbers of pedestrians where traffic speeds should be reduced to 30kph. At major intersection free-flowing traffic should not exceed 50kph.
- General parking is an important provision for towns and townships (especially for larger towns that lack public transport) but may require management by timing or pricing to provide turnover to support local businesses. Kerbside activity can be managed in different ways across the day.
- Service and delivery parking are located close to destinations but in places that do not compromise public space and walking paths.
- Disabled parking should be located convenient to key destinations in determination with key stakeholders.

Off-street carparks and streets 'one block back' from main street can provide plentiful parking close to the centre to support allocating more space for walkability and public realm enhancements on the main street itself.

>> **National Parking Management Guidance**

Driveway crossings should not interrupt continuity of the footpath for pedestrian movement along the main street, reinforced through materiality, levels and hierarchy of delineation.

>> **Pedestrian Network Guidance**

Respect and celebrate built heritage settings and partner with iwi and specialists to identify opportunities to interpret, reveal, amplify or celebrate the stories of a place within the main street.

Gateways and supporting interventions are required to lower vehicles speeds and modify driver behaviour through environmental design cues before arriving at the main street.

>> **Bridging The Gap Urban Design Guide**

EV Charging Stations in street can support smaller towns, townships and their broad rural community catchments transition to electric vehicle uptake supporting national climate change goals.

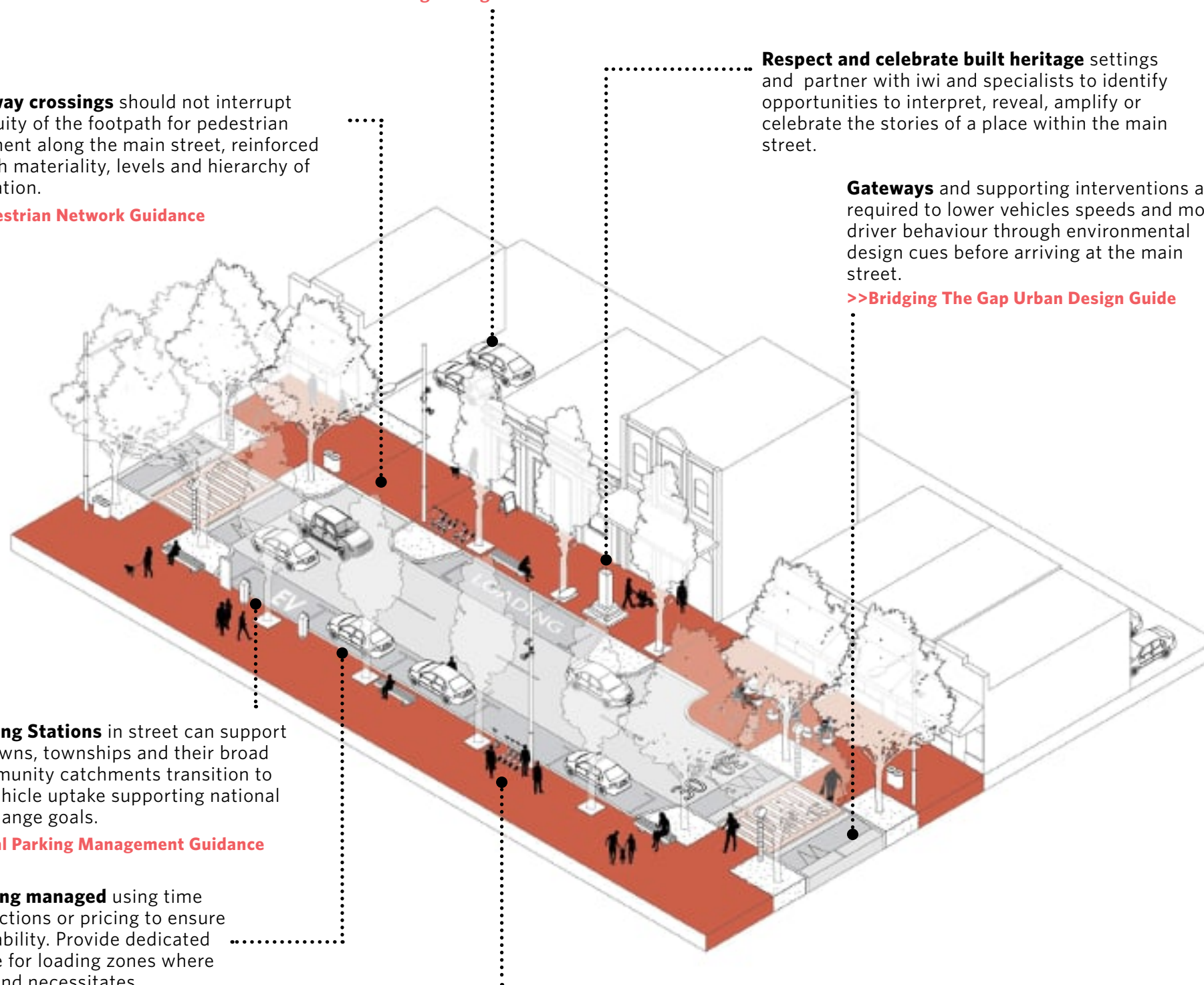
>> **National Parking Management Guidance**

Parking managed using time restrictions or pricing to ensure availability. Provide dedicated space for loading zones where demand necessitates.

>> **National Parking Management Guidance**

Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements.

>> **Cycling Network Guidance**



Formal crossings are required at key points along the main street to support pedestrian safety and two-sided functioning of the centre for retail, businesses and carparking.

>> **Pedestrian Network Guidance**

Safe and appropriate vehicle speeds enforced through street design including carriageway width, narrow lanes, and definition of carriageway features.

Street trees give structure and clear legibility to main streets and help to manage speeds and driver behaviour, with canopy cover and street greening providing many co-benefits for people, place and planet in ways that enhance air quality and microclimate and the mauri ora of main streets.

Seating to support business activity and public life is carefully located where it does not impede pedestrians. Co-locate with trees for comfort and socially-focused pause points supporting place function of the main street.

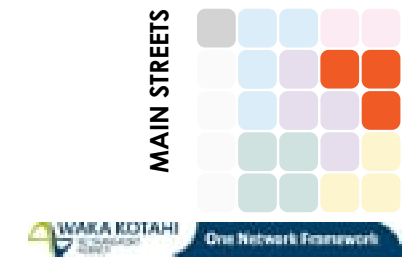
>> **Pedestrian Network Guidance**



Main Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Towns and Townships Main Street

Priorities:

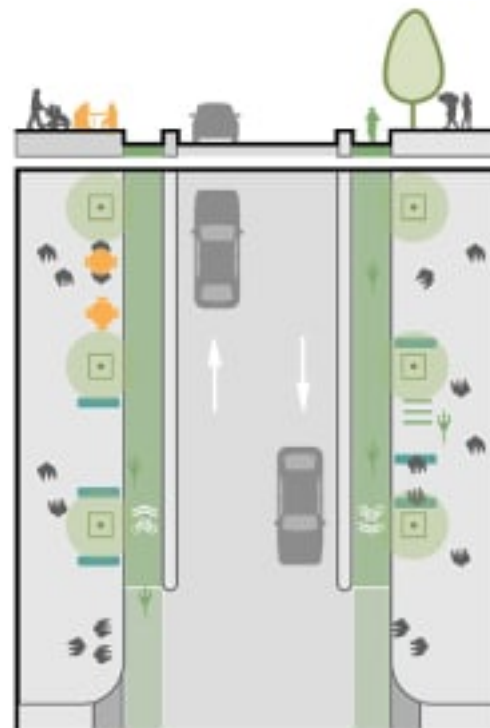


Safe and Appropriate Speed Limit:



Key Features:

- Pedestrian and cargo bikes loading and deliveries
- Narrow outdoor dining
- Facilitate slow vehicle movement to serve local land uses
- Prioritise on-street activity through maximum pedestrian space adjacent to active frontages
- Provide many crossing locations, formal and informal



Towns and Townships Bike Priority

Priorities:

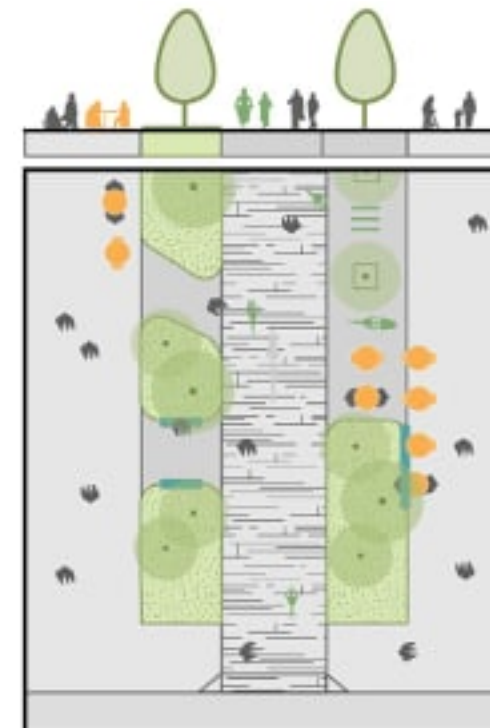


Safe and Appropriate Speed Limit:



Key Features:

- Pedestrian and cargo bikes loading and deliveries
- Narrow outdoor dining
- Provide separated, protected cycle facilities
- Facilitates both local and through cycle access, with on-street parking and end of trip facilities
- Minimises on-street parking, encourage service vehicle access from rear of properties where possible, or outside of times of peak cycling demand



Towns and Townships Pedestrian Priority

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Pedestrian and cargo bikes loading and deliveries
- Narrow outdoor dining
- Pedestrian and cycling access only
- Separation of through cycling routes and areas of gathering and activity where possible
- Street furniture that supports pedestrian movement and places to dwell
- Carriageway construction and surface treatments that can support service and utility vehicle access when required



Towns and Townships Wide Main Street

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Wide
- Central Medians with angled central parking, street greening and monuments
- Facilitate slow vehicle movement to serve local land uses
- Provide street furniture and planting to support local character and ensure additional space not allocated to vehicle storage

Main Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Towns and Townships Main Street



Local Examples:

- Commercial Street, Takaka
- Buckingham Street, Arrowtown

Towns and Townships Bike Priority



Local Examples:

- Cycling Street, Surry Hills, Sydney, Australia

Towns and Townships Pedestrian Priority



Local Examples:

- Burnett and Tancred Streets, Hakatere Ashburton

Towns and Townships Wide Main Street



Local Examples:

- Broadway, Matamata
- Jellicoe Street, Te Puke



Global Examples:

- Lonsdale Street, Dandenong, Australia



Global Examples:

- Belvidere Street, Belmont, WA Australia



Global Examples:

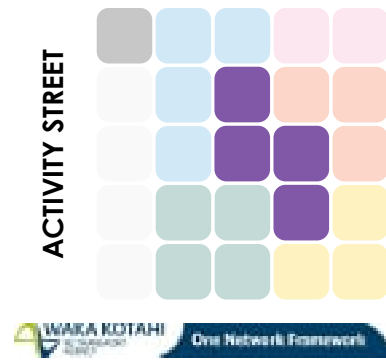
- Princes Highway, Wollongong, Australia



Global Examples:

- Pall Mall, Bendigo, Australia

Activity Streets

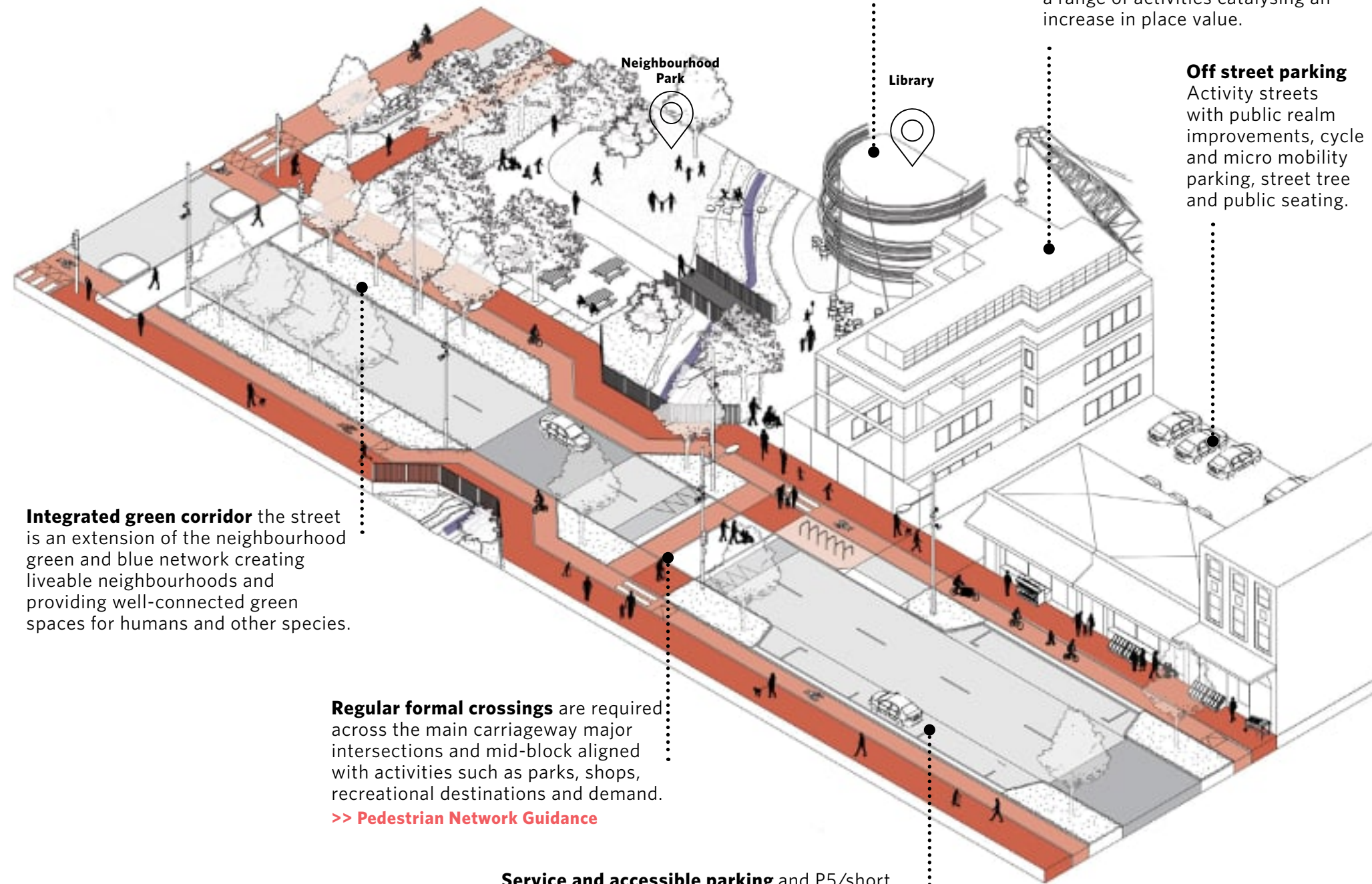


Typical Street Width: Varies (18 - 20m depicted)
Typical Speed Limit: 30 - 40km/h
Typical Land Use Context: Neighbourhood amenity

Activity Streets provide access to shops and services by all modes. There is significant demand for movement as well as place with a need to manage competing demands within the available road space. Activity Streets aim to ensure a high quality public realm with a strong focus on supporting businesses, traders and neighbourhood life. Activity streets are where people spend a significant amount of time, working, shopping, eating, residing, and undertaking recreation. Examples range from neighbourhood shopping centres to waterfront esplanades.

Network and Operations Guidance

- Versions of this street type can be delivered in tactical or incremental ways saving time and money from a complete streetscape upgrade.
- Where adjacent land uses support transitioning connector streets to more place-focused activity streets and people-friendly places they provide the opportunity for additional local serving business and public places, even for short stretches or local spots such as outside neighbourhood shops or parks.
- Reducing traffic, lowering traffic speeds generation and higher quality, more engaging urban development on sites adjacent activity streets.
- Design and enforce traffic speeds of 30kph to provide safe and liveable neighbourhoods.
- General parking should be minimised and management strategies of time restrictions and pricing should be implemented to increase the liveability of the street.



Support community facilities along Activity Streets with public realm improvements, cycle and micro mobility parking, street tree and public seating.

Changing densities with residential apartments developing adjacent to a range of activities catalysing an increase in place value.

Off street parking Activity streets with public realm improvements, cycle and micro mobility parking, street tree and public seating.

Integrated green corridor the street is an extension of the neighbourhood green and blue network creating liveable neighbourhoods and providing well-connected green spaces for humans and other species.

Regular formal crossings are required across the main carriageway major intersections and mid-block aligned with activities such as parks, shops, recreational destinations and demand.

>> **Pedestrian Network Guidance**

Service and accessible parking and P5/short stay parking can be provided by mountable kerb solutions outside shops and other destinations on busy urban connectors with no kerbside parking, designed in ways that do not compromise walking paths or cycleways.

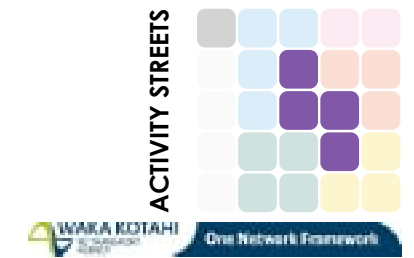
>> **National Parking Management Guidance**

Illustrations and associated guidance are indicative only.

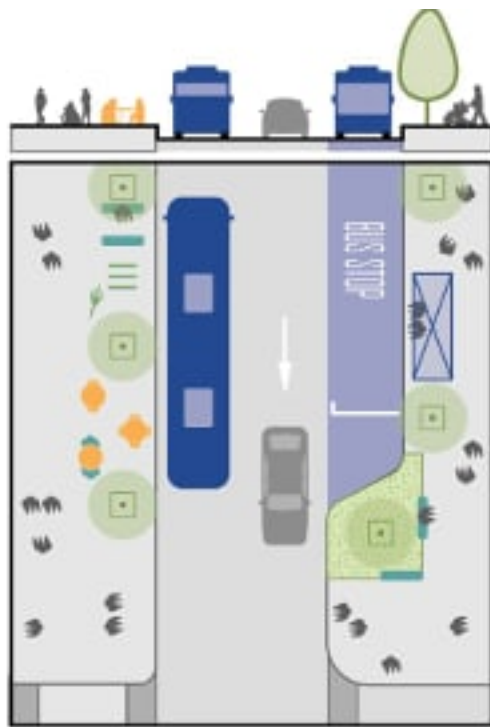
Activity Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Mixed-use

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises the movement of people, and supports mixed-use land uses
- Calm traffic with narrowed lanes, pavement markings, signage and tree pits
- Encourage vibrant on-street activity and amenity for workers, residents and visitors through flexible street furniture
- Provides access for all transport modes, with sustainable transport priority
- Removal of on-street parking and slip lanes, simplify intersections

Commercial

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises people walking and sustainable transport with frequent, integrated public transport stops and local low-speed vehicle access
- Strengthens access to local community facilities, including retail, commercial, social and medical services and recreation.
- Incorporates wide footpaths and on-street dining space, encourages dwelling, social interaction and a sense of community.
- Extended kerbs to shorten crossing distance and provide extra green space.

School

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises safety and access for people walking, connects to high amenity local walking networks, school bus and public transport facilities located nearby.
- Provides extended footpaths, planting for shelter and shade and seating.
- Incorporates extended kerbs and gateway treatments to slow traffic and create safe and continuous walking access.
- Provides for low-speed local traffic and servicing access, no kerbside parking in pedestrian priority areas, but some on-street short-term parking in close proximity.

Park

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises active transport with treatments to slow traffic and provide green buffers between vehicles and people walking and cycling.
- Provides for some on-street parking and low speed local vehicle access.
- Enhances native ecology through continuous green connections, and opportunities for play and interaction on-street.
- Integrates blue-green infrastructure where possible.
- Provides opportunities to involve the local community in placemaking design.

Activity Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Mixed-use



IMAGE SOURCE: BOFFA MISKELL
MASCOT AVENUE, MANGERE, AUCKLAND

Local Examples:

- Mascot Avenue, Mangere, Auckland

Commercial



IMAGE SOURCE: GOOGLE EARTH
VICTORIA STREET, CHRISTCHURCH

Local Examples:

- Victoria Street, Otautahi Christchurch
- Carlton Gore Road, Newmarket, Auckland

School



IMAGE SOURCE: BOFFA MISKELL
MASCOT AVENUE, MANGERE, TAMAKI MAKAU AUCKLAND

Local Examples:

- Mascot Avenue, Mangere, Auckland

Park



IMAGE SOURCE: BOFFA MISKELL
DAVIES AVENUE, MANUKAU, AUCKLAND

Local Examples:

- Davies Avenue, Manukau, Auckland



IMAGE SOURCE: GEORGE WEEKS
LONDON UNITED KINGDOM

Global Examples:

- Francis Road, London, United Kingdom



IMAGE SOURCE: BOFFA MISKELL
BARANGAROO AVENUE, SYDNEY, AUSTRALIA

Global Examples:

- 10th Avenue, Vancouver, Canada
- Barangaroo Avenue, Sydney, Australia



IMAGE SOURCE: GOOGLE EARTH
PARLIAMENT STREET, REGENT PARK, TORONTO, CANADA

Global Examples:

- Parliament Street, Regent Park, Toronto, Canada

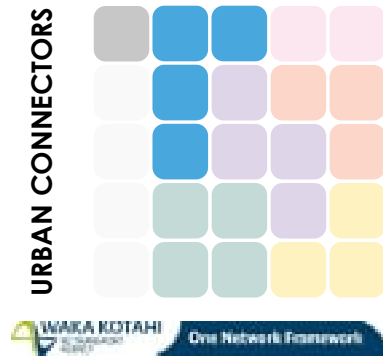


IMAGE SOURCE: BOFFA MISKELL
PROMENADE DES ANGLAIS, NICE, FRANCE

Global Examples:

- Promenade des Anglais, Nice, France

Urban Connectors



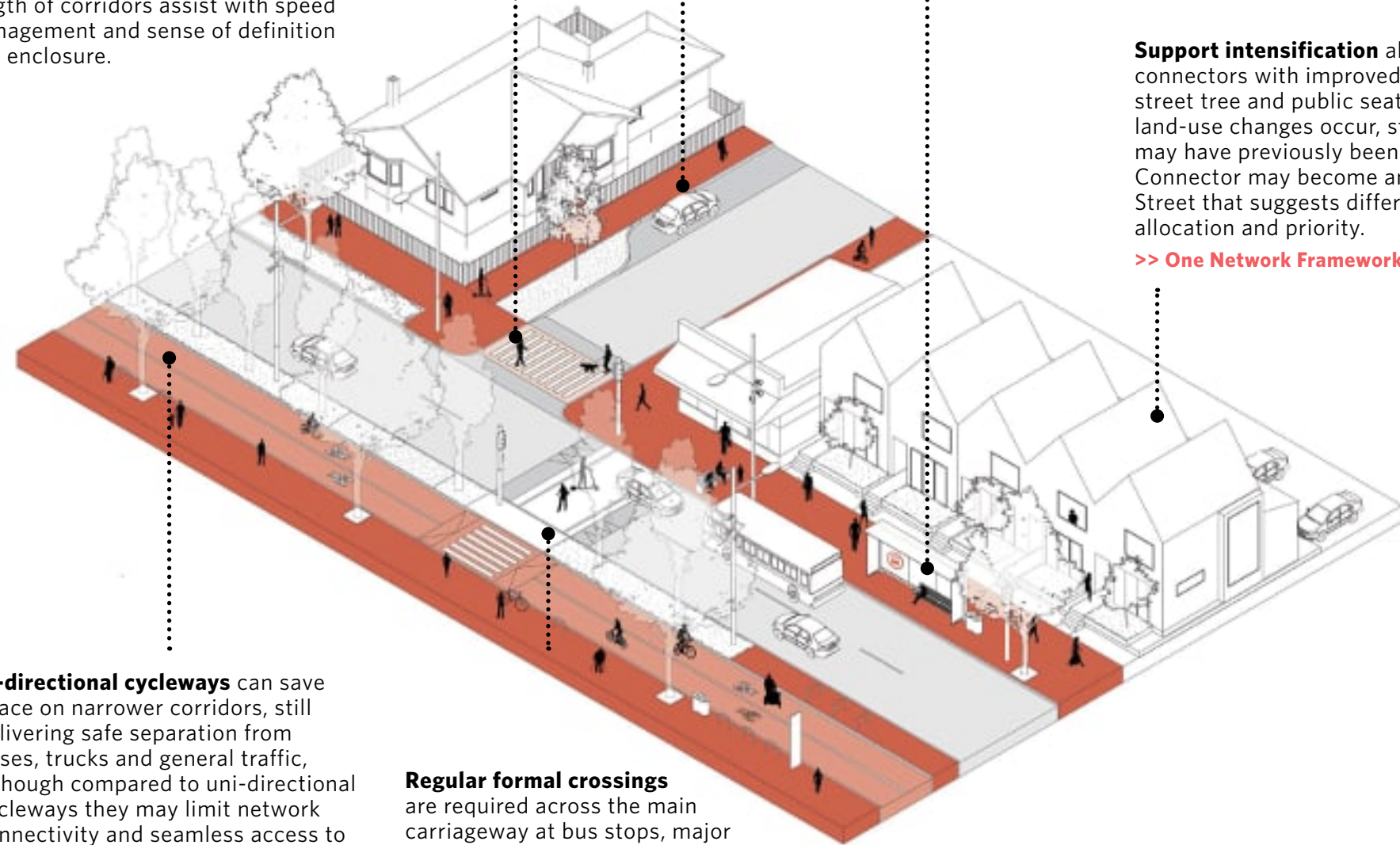
Typical Street Width: Varies (18 - 20m depicted)
Typical Speed Limit: 40 - 60km/h
Typical Land Use Context:
Residential and neighbourhood shops

Connectors are long, contiguous streets that have higher levels of vehicle traffic. Their access function is typically less intense than the mains streets they lead into.

Network and Operations Guidance

- Where adjacent land uses support transitioning connector streets to more place-focused activity streets and people-friendly places they provide the opportunity for additional local serving business and public places, even for short stretches or local spots such as outside neighbourhood shops or parks.
- Reducing traffic, lowering traffic speed limits to 40-60km/h, and improving public transport may stimulate urban regeneration and higher quality, more engaging urban development on sites adjacent urban connectors.
- Connector streets are movement focused though they should not sever communities or be a barrier to public transport access. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from the connector and onto highways.
- General parking should be removed minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day to provide for peak period bus lanes for example.
- Service and delivery parking are located close to destinations but in places that do not compromise walking paths or cycleways.
- Versions of this street type can be delivered in tactical or incremental ways saving time and money from a complete streetscape upgrade.

Street trees mediate temperature, provide shade, and reduce heat island effect and planted regularly along the length of corridors assist with speed management and sense of definition and enclosure.



Parking can be re-located to side streets with time or price restrictions in place. One-way side streets can provide additional parking in an angle layout.
>> National Parking Management Guidance

Raised zebra crossings of minor side streets allow for easy and safe walking journeys along the street including to access public transport and nearby centres.
>> Pedestrian Network Guidance

Bus stops should be located in-line to save space, allow for more efficient operations and be close to a pedestrian crossing.
>> Public Transport Design Guidance

Support intensification along urban connectors with improved footpaths, street tree and public seating. As land-use changes occur, streets that may have previously been an Urban Connector may become an Activity Street that suggests different space allocation and priority.
>> One Network Framework

Bi-directional cycleways can save space on narrower corridors, still delivering safe separation from buses, trucks and general traffic, although compared to uni-directional cycleways they may limit network connectivity and seamless access to destinations.
>> Cycling Network Guidance

Regular formal crossings are required across the main carriageway at bus stops, major intersections and mid-block where activities such as schools, shops, parks and recreational destinations demand.
>> Pedestrian Network Guidance

No parking on narrow urban connectors to minimise carriageway width and prioritise traffic flow functions for urban connector routes while creating space for cycleways, bus stops, trees and planting in ways that don't impinge on pedestrian environment.

>> **National Parking Management Guidance**

Two traffic lane space allocation solutions on narrower urban connectors where street space is limited, help provide wider footpath space for bus stops, street trees, and where activity supports, bench seating and outdoor dining / street trading, in ways that best support local shops and businesses while not impeding pedestrian movement.

>> **Pedestrian Network Guidance**

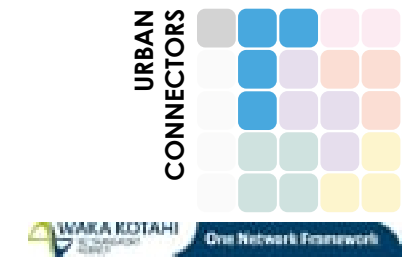
Grass berms, rain gardens or low planting are enabled by lower pedestrian volumes than town and local centres enabling suburban corridors to offer different types of street greening than in dense pedestrian-oriented centres.



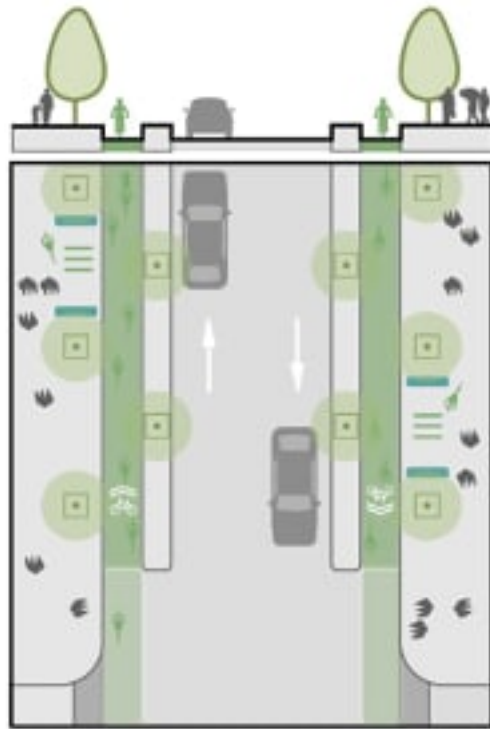
Urban Connectors

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Cycling Priority

Priorities:

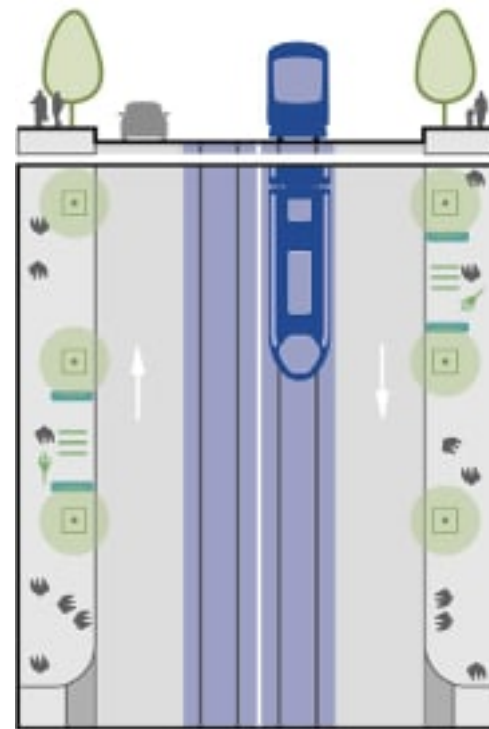


Safe and Appropriate Speed Limit:

40 - 60

Key Features:

- Separated cycleways and safe, separated crossings for people on bikes and two wheels
- Bus volumes do not require dedicated bus lanes
- Enables safe, separated cycling movement along strategic corridors
- Provides for high volumes of through movement by cyclists
- Supports local origins and destinations through on-street bicycle parking and end of trip facilities



MRT Corridor

Priorities:



Safe and Appropriate Speed Limit:

40 - 60

Key Features:

- Prioritises the most space efficient modes to move high volumes of people across the urban area
- Removes on-street parking and slip lanes, simplifies intersections
- Supports local pedestrian movement and crossings where appropriate
- Integrates landscape treatments that provide a buffer to adjacent land uses and improve urban amenity



Green Cycling Street

Priorities:



Safe and Appropriate Speed Limit:

40 - 60

Key Features:

- Prioritises active transport through separated off-street cycling facilities
- Provides green buffers between vehicles and people walking and cycling
- Enhances native ecology through continuous green connections
- Infill planting to create low-maintenance/high-amenity corridors

Urban Connectors

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example

Cycling Priority



Local Examples:

- Mascot Avenue, Mangere, Auckland

MRT Corridor



Local Examples:

- Future Auckland MRT
- Future Wellington MRT

Green Cycling Street



Local Examples:

- Linwood Ave, Ōtautahi Christchurch
- Cumberland Street, Ōtepoti Dunedin



Global Examples:

- Dunsmuir Street, Vancouver, Canada



Global Examples:

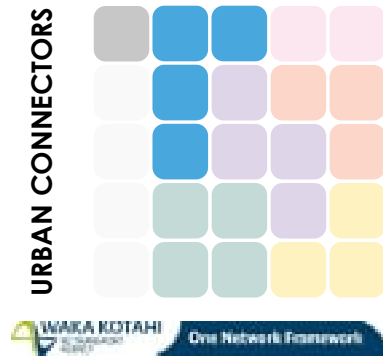
- Devonshire Street, Surry Hills, Sydney Australia



Global Examples:

- Bourke Street, Surry Hills, Sydney Australia

Urban Connectors

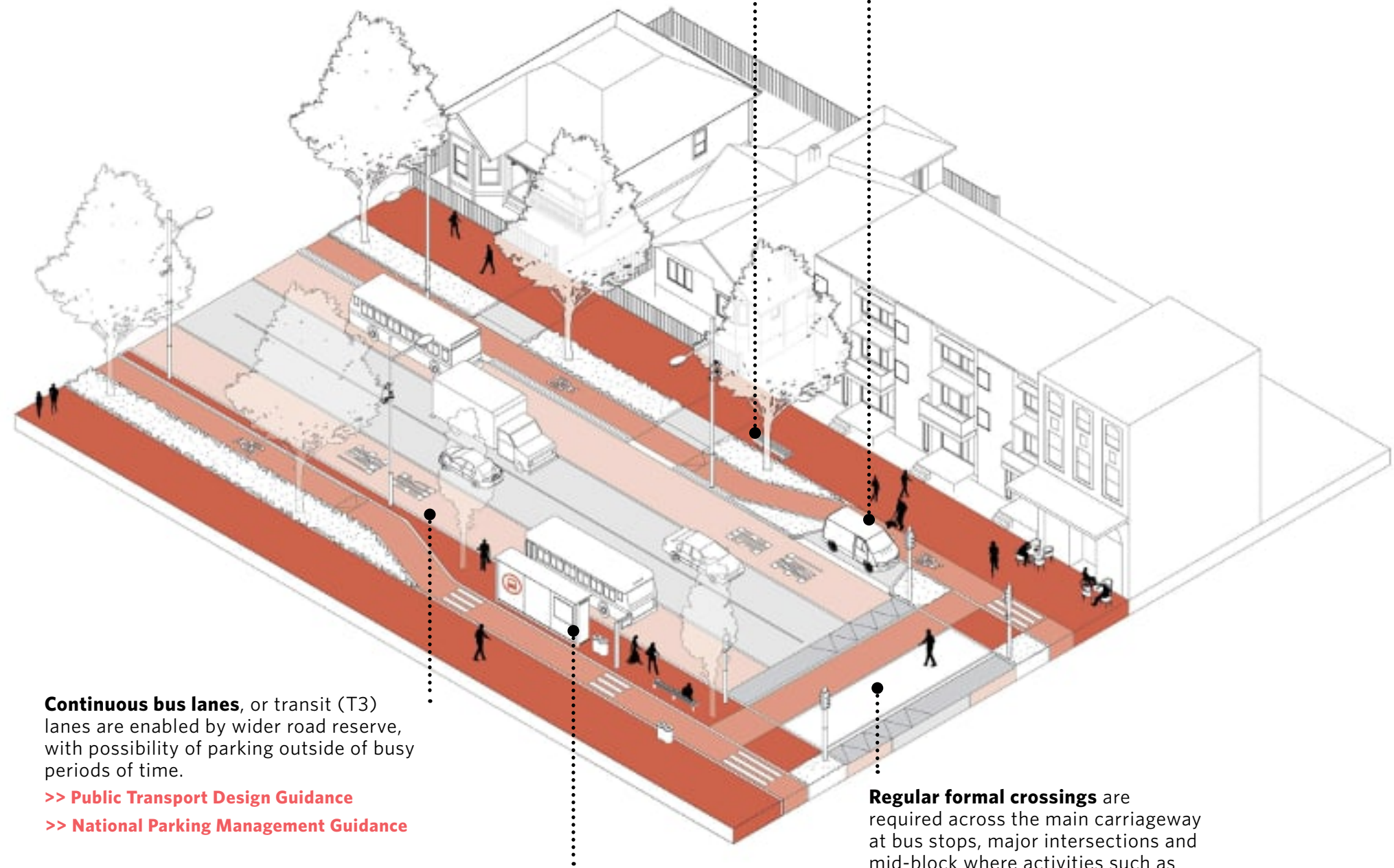


Typical Street Width: Varies (27 - 30m depicted)
Typical Speed Limit: 40 -60km/h
Typical Land Use Context:
Residential and neighbourhood shops

Connectors are long, contiguous streets that have higher levels of vehicle traffic. Their access function is typically less intense than the mains streets they lead into.

Network and Operations Guidance

- Versions of this street type can be delivered in tactical or incremental ways saving time and money from a complete streetscape upgrade.
- Where adjacent land uses support transitioning connector streets to more place-focused activity streets and people-friendly places they provide the opportunity for additional local serving business and public places, even for short stretches or local spots such as outside neighbourhood shops or parks.
- Reducing traffic, lowering traffic speed limits to 40 - 60km/h, and improving public transport may stimulate urban regeneration and higher quality, more engaging urban development on sites adjacent urban connectors.
- Connector streets are movement focused though they should not sever communities or be a barrier to public transport access. Where possible long-distance traffic should be reduced by re-routing vehicle traffic away from the connector and onto highways.
- General parking should be removed minimised and managed by timing or pricing. Kerbside activity can be managed in different ways across the day to provide for peak period bus lanes for example.
- Parking can be re-located to side streets with time or price restrictions in place. One-way side streets can provide additional parking in an angle layout.



Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements.

>> **Cycling Network Guidance**

Service and delivery parking and P5/short stay parking can be provided by mountable kerb solutions outside shops and other destinations on busy urban connectors with no kerbside parking, designed in ways that do not compromise walking paths or cycleways.

>> **National Parking Management Guidance**

Continuous bus lanes, or transit (T3) lanes are enabled by wider road reserve, with possibility of parking outside of busy periods of time.

>> **Public Transport Design Guidance**

>> **National Parking Management Guidance**

Bus stops can be located at the beginning of a bus lane segment or at the approach to a signal where priority can be provided with a bus advance signal. In lane bus stops can improve PT efficiency by avoiding delays merging back into traffic lane.

>> **Public Transport Design Guidance**

Regular formal crossings are required across the main carriageway at bus stops, major intersections and mid-block where activities such as schools, shops, parks and recreational destinations demand.

>> **Pedestrian Network Guidance**

Illustrations and associated guidance are indicative only.

Street trees are an essential part of climate change response on urban connectors, mediating temperature to reduce heat island effect and providing ecological corridor stepping stones across suburbs.

Uni-directional cycleways combined with regular safe crossing opportunities can seamlessly connect wider cycle networks with local destinations on wider urban connectors where width exists for the additional separation requirements.

>> **Cycling Network Guidance**

Street furniture is carefully located where space is available and on side streets. While space is limited, street trees should be provided wherever possible with relocated or renewed underground infrastructure enabling greater opportunities over time.

Support intensification along urban connectors with improved footpaths, street tree and public seating. As land-use changes occur, streets that may have previously been an Urban Connector may become an Activity Street that suggests different space allocation and priority.

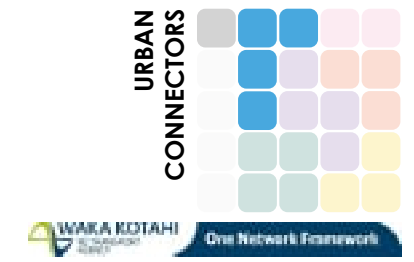
>> **One Network Framework**



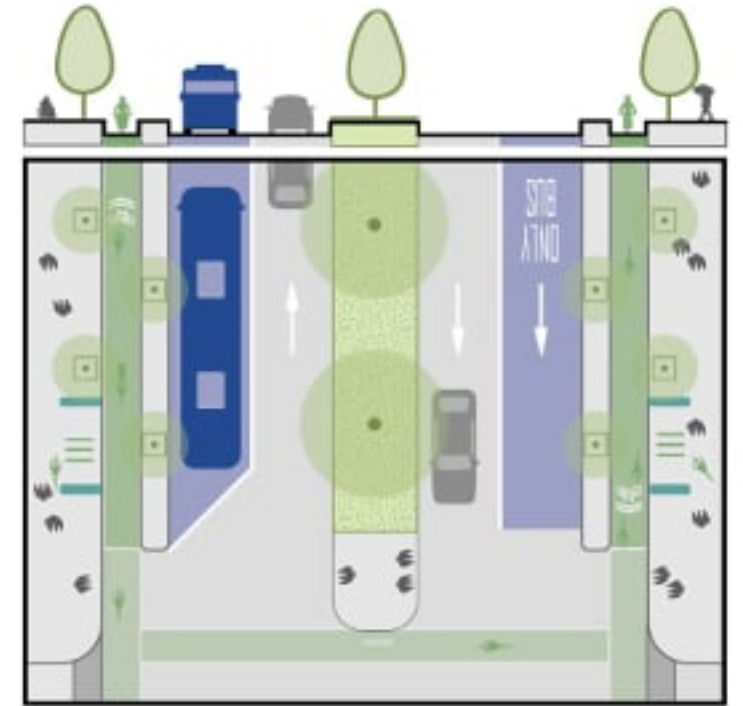
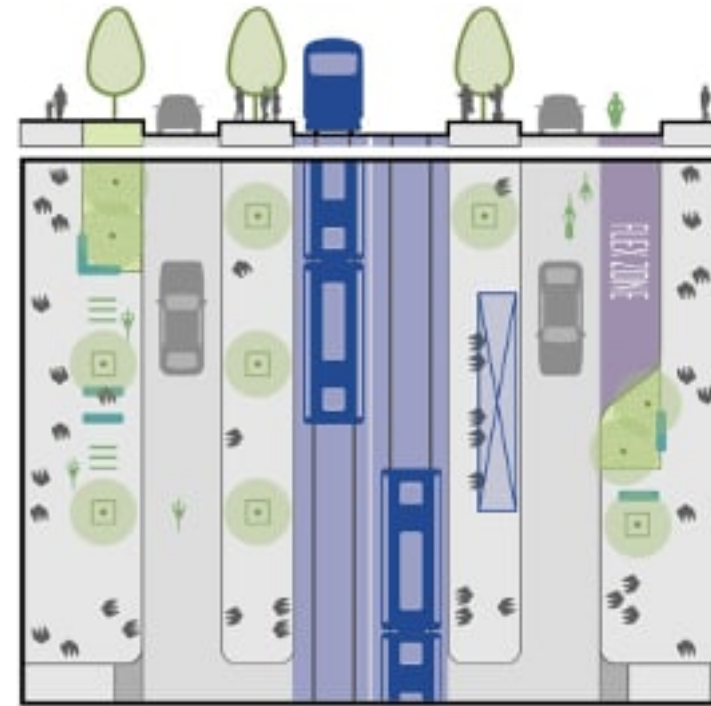
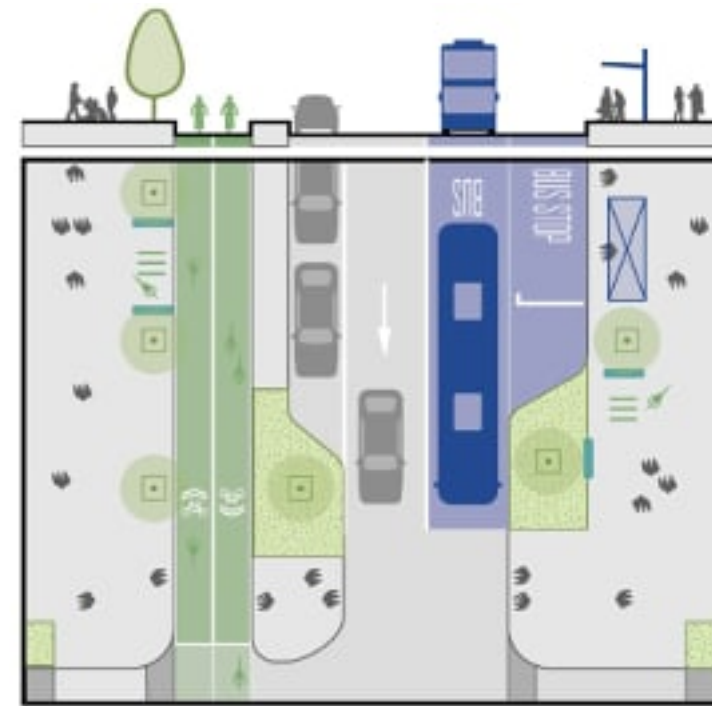
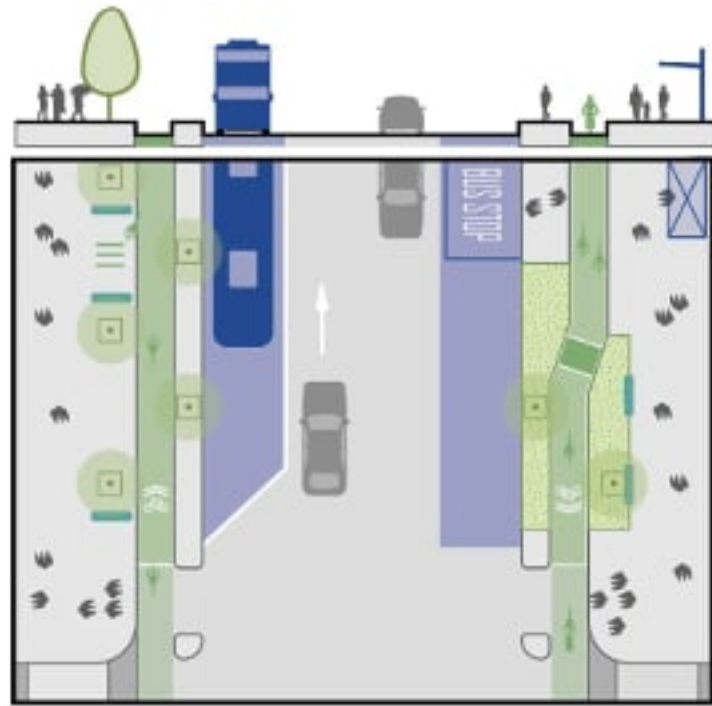
Urban Connectors

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Bus and Bike Connector

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises the movement of space efficient modes, through dedicated bus lanes and protected cycle facilities
- Encourage vibrant on-street activity and amenity for workers, residents and visitors through flexible street furniture, landscape buffers and WSUD
- Removal of on-street parking and slip lanes, simplify intersections

Enhanced One-way

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Extend the kerb to shorten crossing distance and provide extra space for on-street amenities such as seating, utilities infrastructure and planting
- Enables safe, separated cycling movement along strategic corridors and supports local access through on-street bicycle parking and end of trip facilities

MRT Corridor

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises the most space efficient modes to move high volumes of people across the urban area, provides for pedestrian priority and access around MRT stops
- Add signalised, mid-block crossings at MRT stops allowing people who walk and cycle to safely cross
- Removes on-street parking and right-turns at some intersections to enable MRT priority
- Integrates landscape treatments that provide a buffer to adjacent land uses and improve urban amenity

Green Connector

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises movement of sustainable and active transport through dedicated bus lanes and separate off-street cycling facilities
- Provides green buffers between vehicles and people walking and cycling
- Enhances native ecology through continuous green connections
- Infill planting to create low-maintenance/high-amenity movement corridors

Urban Connectors

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A range of potential integrated street solutions, to be explored through option development, for example

Bus and Bike Connector



IMAGE SOURCE: AUCKLAND TRANSPORT
KARANGAHAPE ROAD

Local Examples:

- Karangahape Road, Tāmaki Makaurau Auckland
- Great North Road Grey Lynn, Tāmaki Makaurau Auckland
- The Parade, Island Bay, Pōneke Wellington

Enhanced One-way



IMAGE SOURCE: WAKA KOTAHU
CUMBERLAND STREET

Local Examples:

- Tuam Street, Ōtautahi Christchurch
- Cumberland Street, Ōtepoti Dunedin

MRT Corridor



IMAGE SOURCE: RNZ
AUCKLAND LIGHT RAIL

Local Examples:

- Future Auckland Light Rail
- Future Wellington MRT

Green Connector



IMAGE SOURCE: AURECON
CAMERON ROAD MULTI-MODAL UPGRADE, TAURANGA

Local Examples:

- Franklin Road, Tāmaki Makaurau Auckland
- Fenton Street, Rotorua
- Fitzherbert Avenue, Te Papaioea Palmerston North
- Riccarton Avenue, Ōtautahi Christchurch



IMAGE SOURCE: BOFFA MISKELL
MILLBANK, LONDON, UK

Global Examples:

- Millbank, London, UK



IMAGE SOURCE: FLICKR / PWKRUEGER
UNION STREET, VANCOUVER, CANADA

Global Examples:

- Union Street, Vancouver, Canada



IMAGE SOURCE: GOOGLE EARTH
HAMMARBY ALLE, STOCKHOLM

Global Examples:

- Hammarby Alle, Stockholm, Sweden



IMAGE SOURCE: LANDEZINE
SAN PASSEIG DE SAINT JOAN BOULEVARD, BARCELONA, SPAIN

Global Examples:

- San Passeig de Saint Joan Boulevard, Barcelona, Spain

Local Streets

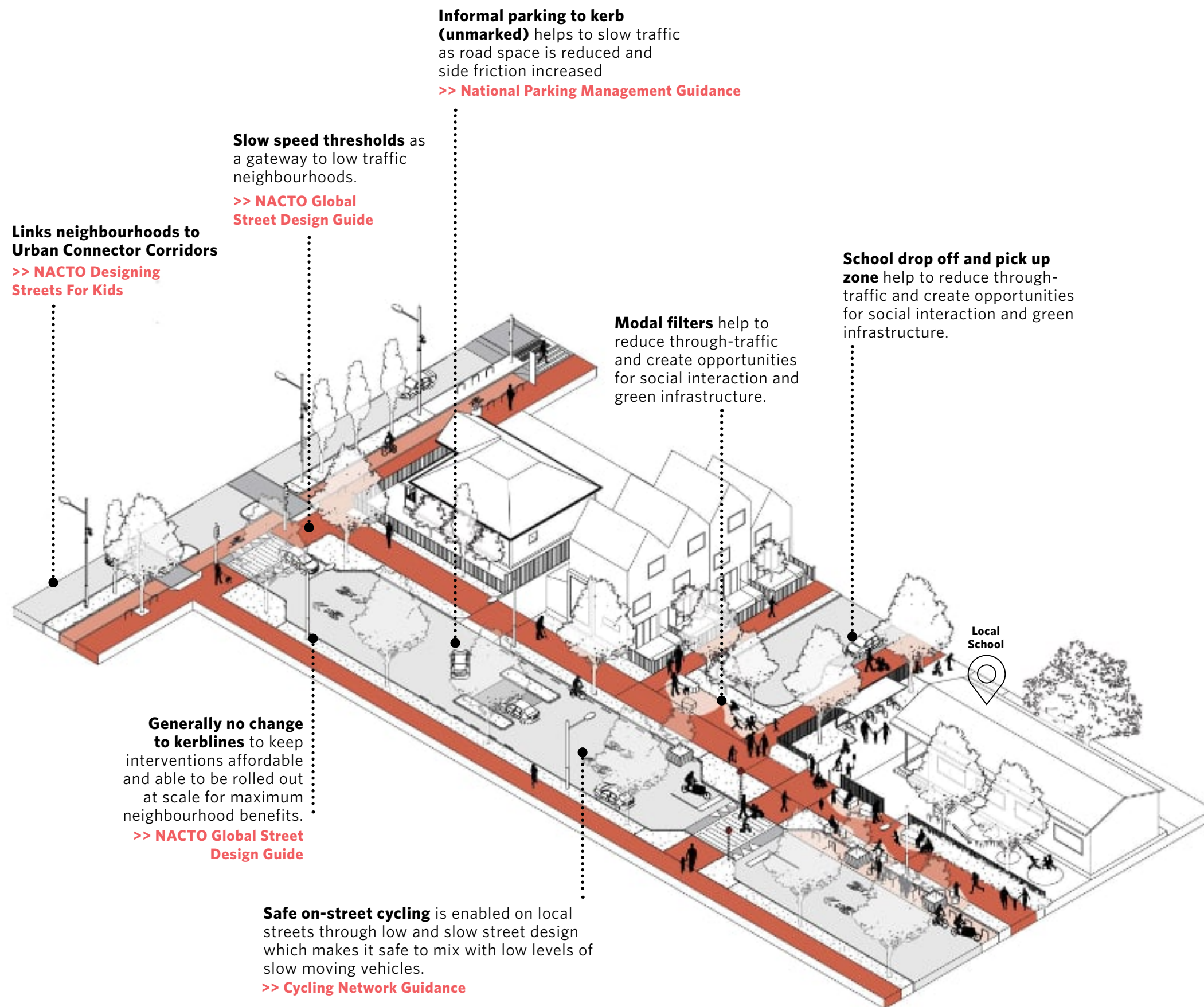


Typical Street Width: 20m
Typical Speed Limit: 30km/h
Typical Land Use Context:
Residential and neighbourhood amenity

Residential Connector streets have low traffic volumes and slow speeds. Their role in the network is to connect Suburban Residential Streets to Urban Connectors. They are largely residential with neighbourhood activities such as schools, community facilities and neighbourhood shops.

Network and Operations Guidance

- Residential streets support access to housing and support public and community activity and walking to destinations and transit stops.
- Residential Connector streets are part of the local traffic movement network and through traffic is managed through network design.
- Residential streets act as open spaces providing space for play, gathering places, and recreation such as walking and cycling.
- Design and enforce traffic speeds of 30kph to provide safe and liveable neighbourhoods.
- Streets outside schools may consider additional speed management including potentially time-limited restrictions at pickup and dropoff times, subject to the outcomes of the Reshaping Streets rule changes
- Modal filters can provide permeable connectivity for active modes while removing unnecessary through traffic, both contributing to more liveable residential neighbourhoods.
- Comprehensive parking management strategies of time restrictions and pricing should be implemented to increase the liveability of the street.



Links neighbourhoods to Urban Connector Corridors
 >> **NACTO Designing Streets For Kids**

Slow speed thresholds as a gateway to low traffic neighbourhoods.
 >> **NACTO Global Street Design Guide**

Informal parking to kerb (unmarked) helps to slow traffic as road space is reduced and side friction increased
 >> **National Parking Management Guidance**

Modal filters help to reduce through-traffic and create opportunities for social interaction and green infrastructure.

School drop off and pick up zone help to reduce through-traffic and create opportunities for social interaction and green infrastructure.

Generally no change to kerblines to keep interventions affordable and able to be rolled out at scale for maximum neighbourhood benefits.
 >> **NACTO Global Street Design Guide**

Safe on-street cycling is enabled on local streets through low and slow street design which makes it safe to mix with low levels of slow moving vehicles.
 >> **Cycling Network Guidance**

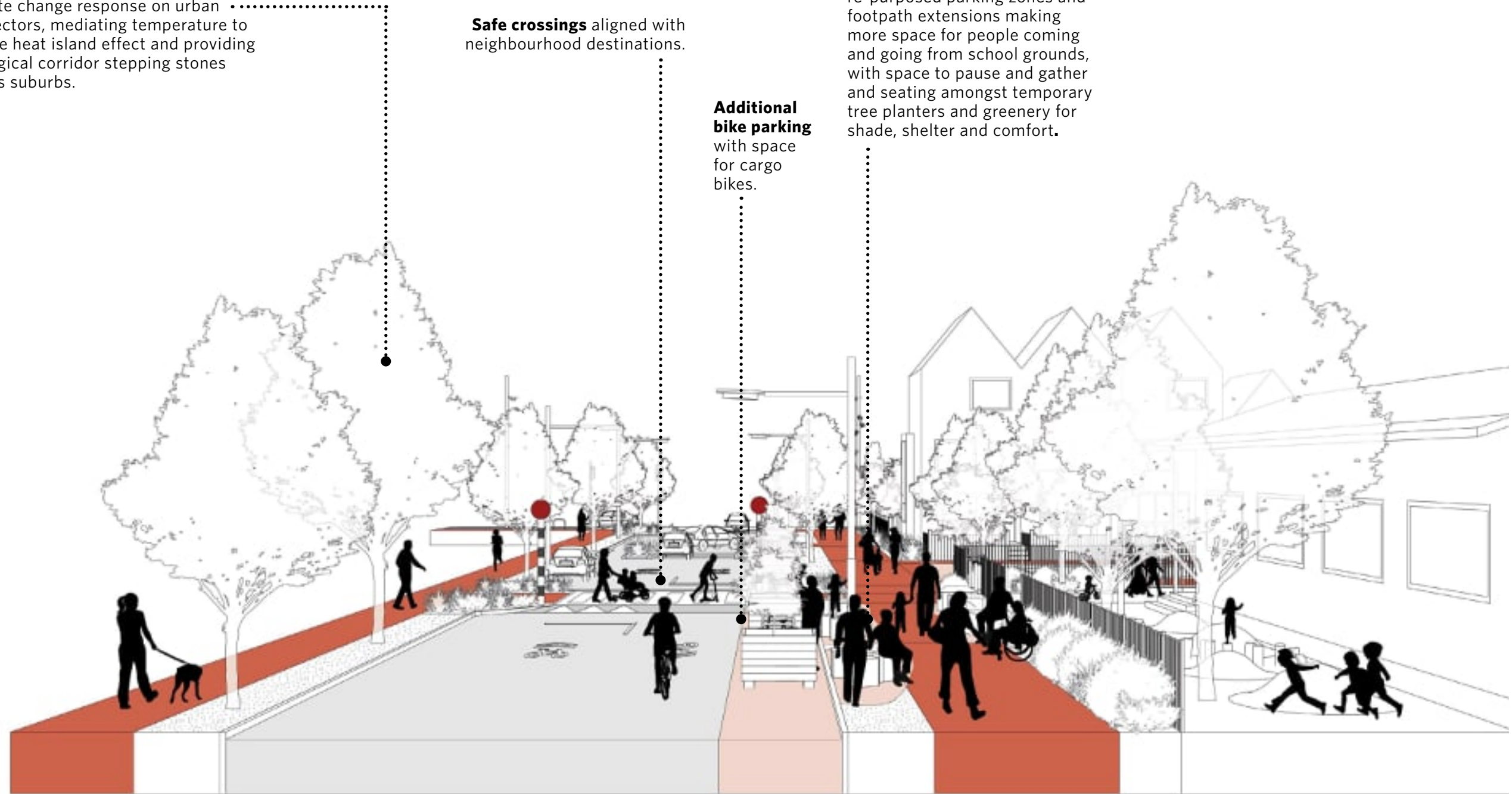
Illustrations and associated guidance are indicative only.

Street trees are an essential part of climate change response on urban connectors, mediating temperature to reduce heat island effect and providing ecological corridor stepping stones across suburbs.

Safe crossings aligned with neighbourhood destinations.

Additional bike parking with space for cargo bikes.

Tactical place-making with re-purposed parking zones and footpath extensions making more space for people coming and going from school grounds, with space to pause and gather and seating amongst temporary tree planters and greenery for shade, shelter and comfort.



Local Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Neighbourhood Activity Priority

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Targeted investment
- Prioritises people walking and cycling, supports local low-speed vehicle access
- Strengthens access to community facilities, including schools, childcare, social and medical services and recreation
- Encourages dwelling, social interaction and a sense of community
- Extended kerbs to shorten crossing distance and provide extra green space



Local Bus Service

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Prioritises sustainable transport with frequent, integrated public transport stops and high amenity, well-connected local walking networks
- Provides safe local cycling movement through low-speed shared facilities and on-street bicycle parking and end of trip facilities
- Incorporates extended kerbs and gateway treatments to slow traffic and create safe and continuous walking access



Low Traffic Neighbourhood

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Support residential and public land use, encourages local active transport access
- Treatments to slow traffic and provide green buffers between vehicles and people walking and cycling
- Gateway treatments to form a continuous footpath and enhance walking access and safety, as well as a sense of arrival into the local street
- One-way vehicle access can act as a modal filter, reducing private vehicle users while maintaining cycling in both directions



Neighbourhood Greenway

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Provides for some on-street parking and low speed local vehicle access
- Enhances native ecology through continuous green connections, and opportunities for play and interaction on-street
- Integrates blue-green infrastructure where possible
- Provides opportunities to involve the local community in placemaking design to reflect local character and encourage a sense of ownership

Local Streets

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A range of potential integrated street solutions, to be explored through option development, for example 

Neighbourhood Activity Priority



IMAGE SOURCE: GOOGLE EARTH
HOBSONVILLE POINT ROAD, AUCKLAND

Local Examples:

- Hobsonville Point Road, Auckland

Local Bus Service



IMAGE SOURCE: BOFFA MISKELL
HOBSONVILLE POINT ROAD, AUCKLAND

Local Examples:

- Hobsonville Point Road, Auckland

Low Traffic Neighbourhood



IMAGE SOURCE: CYCLING CHRISTCHURCH
RAPANUI CYCLEWAY AT FITZGERALD AVENUE, CHRISTCHURCH

Local Examples:

- Rapanui Cycleway, Christchurch

Neighbourhood Greenway



IMAGE SOURCE: GOOGLE EARTH
BUCKLEY AVENUE, HOBSONVILLE, AUCKLAND

Local Examples:

- Buckley Avenue, Hobsonville, Auckland



IMAGE SOURCE: BOFFA MISKELL
SACKVILLE STREET, REGENT PARK, TORONTO, CANADA

Global Examples:

- Sackville Street, Regent Park, Toronto, Canada



IMAGE SOURCE: BOFFA MISKELL
PARLIAMENT STREET, REGENT PARK, TORONTO, CANADA

Global Examples:

- Parliament Street, Regent Park, Toronto, Canada



IMAGE SOURCE: CITY OF VANCOUVER
10TH AVENUE, VANCOUVER, CANADA

Global Examples:

- 10th Avenue, Vancouver, Canada



IMAGE SOURCE: BOFFA MISKELL
HAROLD PARK, SYDNEY, AUSTRALIA

Global Examples:

- Harold Park, Sydney, Australia

Roadway narrowing and material changes are needed as a threshold treatment at the entrance to the residential street. This indicates a change in urban environment requiring a change in vehicle behaviour.

>> **NACTO Global Street Design Guide**

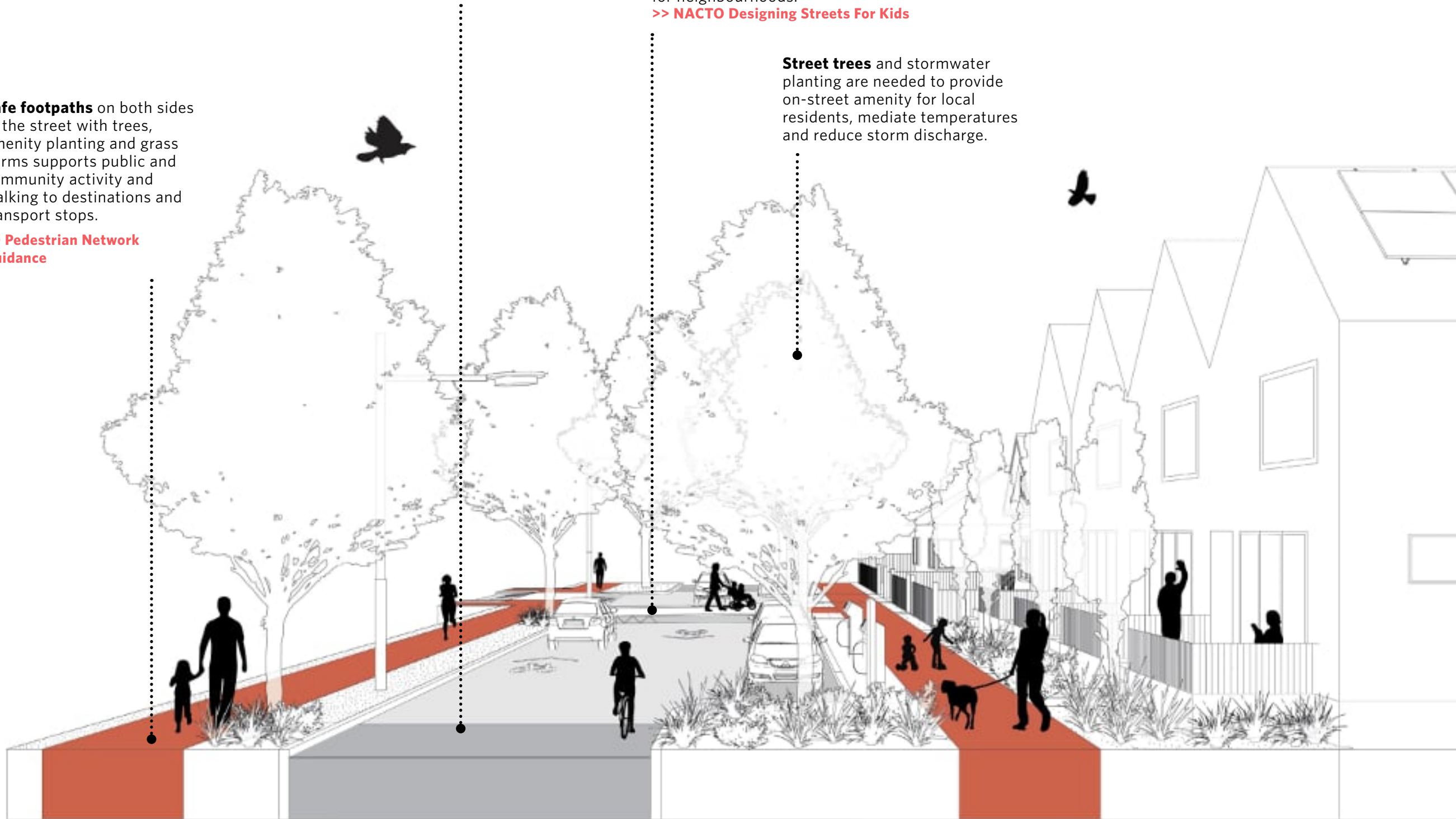
Slow street design (low traffic neighbourhood) provide more informal play and social spaces for neighbourhoods.

>> **NACTO Designing Streets For Kids**

Safe footpaths on both sides of the street with trees, amenity planting and grass berms supports public and community activity and walking to destinations and transport stops.

>> **Pedestrian Network Guidance**

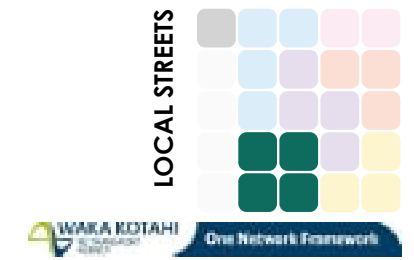
Street trees and stormwater planting are needed to provide on-street amenity for local residents, mediate temperatures and reduce storm discharge.



Local Streets

Diversifying the Street Category

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A range of potential integrated street solutions, to be explored through option development, for example



Cul de Sac Modal Filter

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Targeted investment
- Prioritises people walking and cycling, supports local low-speed vehicle access and shared mobility services
- Incorporates entry treatments and continuous footpaths for enhanced walking safety and access, along with landscaping and green buffers
- Encourages dwelling, social interaction and a sense of community
- Extended kerb to shorten crossing distance and provide extra green space



Neighbourhood Play

Priorities:

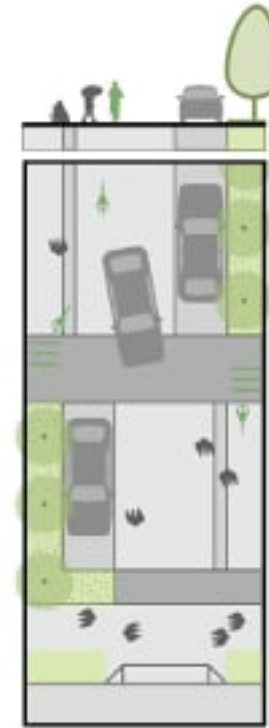


Safe and Appropriate Speed Limit:



Key Features:

- Supports and strengthens access to community facilities, including schools, childcare, social and medical services and recreation
- Provides safe local cycling movement through low-speed shared facilities and on-street bicycle parking and end of trip facilities
- Enhances native ecology through continuous green connections, and provides space for play and interaction on-street
- Provides opportunities to involve the local community in placemaking design to reflect local character and encourage a sense of ownership



Woonerf / Home Zone / Living Street

Priorities:

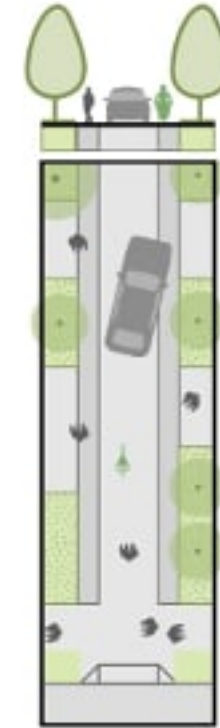


Safe and Appropriate Speed Limit:



Key Features:

- Provides space for the local community to interact, rest and play
- Sharing of movement space across modes, with treatments to slow traffic and provide enhanced access and safety for people walking and cycling
- Support and respect medium density residential land use and the role of streets in providing public space



Urban Residential Lane

Priorities:



Safe and Appropriate Speed Limit:



Key Features:

- Supports low speed vehicle access to properties, with sharing of space between transport modes with street greening and WSUD features to support amenity
- Raised entry treatments to provide continuous and safe local walking access

Local Streets

Diversifying the Street Category

Within any given One Network Framework street category, there is more than one integrated street solution. These pages provide indicative examples of the sorts of differentiated design responses to be explored through option development, as well as examples of similar street types from Aotearoa and around the world. This is intended to demonstrate that there's a diverse range of street types and integrated street design solutions possible within the broad umbrella of each ONF Street Category.

A range of potential integrated street solutions, to be explored through option development, for example



Cul de Sac Modal Filter



IMAGE SOURCE: GOOGLE EARTH

WARRINGTON AND FORFAR STREETS, CHRISTCHURCH

Local Examples:

- Warrington and Forfar Streets, Christchurch

Neighbourhood Play



IMAGE SOURCE: WAKA KOTAHI

LOCAL PLAY STREET, AUCKLAND

Local Examples:

- Local Play Street, Example, Waka Kotahi

Woonerf / Home Zone / Living Street



IMAGE SOURCE: ARCHITECTUS

BEDFORD LANE, CHRISTCHURCH

Local Examples:

- Bedford Lane, Christchurch

Urban Residential Lane



IMAGE SOURCE: GOOGLE EARTH

191 CASHEL STREET, CHRISTCHURCH

Local Examples:

- Christchurch East Frame



IMAGE SOURCE: BOFFA MISKELL

WINDSOR, MELBOURNE, AUSTRALIA

Global Examples:

- Windsor, Melbourne, Australia



IMAGE SOURCE: NACTO

NACTO PLAY STREET EXAMPLE

Global Examples:

- Global streets for kids example, NACTO



IMAGE SOURCE: ELAINE KRAMER

VAN GOGH WALK, LONDON

Global Examples:

- Van Gogh Walk, London



IMAGE SOURCE: BOFFA MISKELL

AMSTERDAM, THE NETHERLANDS

Global Examples:

- Amsterdam, The Netherlands



5.0 Putting it into Practice

Building a Community of Practice

Through the engagement phase in the development of the street planning and design guide a number of commonly shared challenges for achieving better urban streets in Aotearoa emerged (see overleaf). These challenges highlighted that a more joined-up approach is needed across the country. The concept of a community of practice - as has been established and fostered for example through the Waka Kotahi Innovating Streets Programme - emerged as one way to share these challenges and build upon the practice of street design to address them.

What Is A Community Of Practice?

Put simply a community of practice for streets is a group of people who share a common goal around the transport system and streets.

It is a way to share best practices and support continual improvement, research and develop new knowledge to advance street design in Aotearoa. Importantly this is undertaken on an ongoing basis, in a virtuous cycle of continual learning and improvement both for practitioners and for the way in which we plan, design and implement changes to urban streets.

In addition to the Innovating Streets Programme, other communities of practice have been successfully developed and fostered in the multi-modal transportation and urban design fields. The intention would be to bring these strands together to achieve the following outcomes:

- connect people for peer to peer discussion on street design
- provide a common language and shared context for streets and a communication channel for sharing information, stories, insights and experiences as part of continual improvement
- enable innovation and ways to explore new possibilities, solve problems and challenges, and identify and realise opportunities that achieve broader outcomes
- support sector learning, and share existing knowledge to help people improve their practice
- provide a forum for resources to address common problems and a process to collect and evaluate practices to determine best practice
- support collaborative processes and the creative free flow of ideas and information sharing

Organisational Support from Waka Kotahi

The intention is to develop this community of practice alongside the implementation of the street guide, and the supporting suite of mode specific, urban design and safe system guidance.

- Subject matter expertise for waka Kotahi projects and partner projects
- Dedicated email address for Street planning and design questions monitored by the core Waka Kotahi team: streets@nzta.govt.nz
- Technical guidance and workshops
- Online guidance (including good practice, technical design recommendations, case studies and evidence) with regular updates based on sector needs
- A community of practice to connect people and knowledge within and outside of the sector
- Webinars or sector workshops focused on capability-building, peer-to-peer support

If you are interested in participating, please email streets@nzta.govt.nz

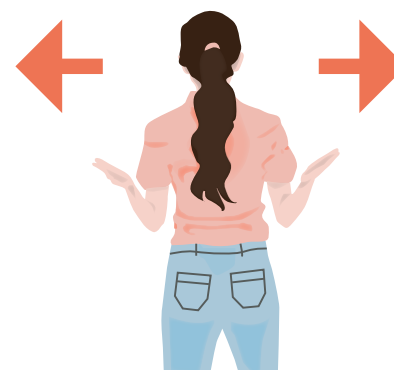
IS IT THE RIGHT TIME TO EVALUATE SUCCESS?



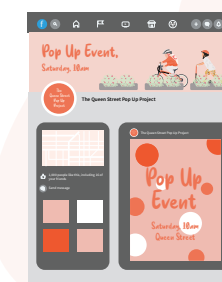
DEBRIEF THE TEAM



WHAT'S NEXT?



SHARE RESULTS WITH THE COMMUNITY



SHARE LESSONS LEARNED WITH PEERS



Figure 13: Examples of community of practice activities and approach from Waka Kotahi Draft Tactical Urbanism Handbook. The guide was developed to help councils and communities deliver tactical urbanism projects using a collaborative best-practice approach that support a community of practice. IMAGE SOURCE: Handbook for Tactical Urbanism in Aotearoa, Waka Kotahi.



links

- [Tactical Urbanism Handbook \(Waka Kotahi, 2020\)](#)

Shared Challenges to Creating Good Urban Streets

Developing a shared awareness and common understanding of the key challenges in planning and designing urban streets in Aotearoa can lead to more continual improvement and consistently successful outcomes. While each project will to some degree face its own set of unique challenges, the issues captured here are commonly experienced and have been identified by sector. A collective community of practice approach to understanding and overcoming challenges can assist project teams in identifying and developing the project-specific opportunities and solutions to address them.

Raising the awareness of the important roles that streets play in shaping the built environment and improving urban life

- Streets are often overlooked as the basic urban fabric of towns and cities, shaping urban form and the character and amenity of the built environment.
- Streets are public space and play a crucial role as places for social interaction, civic engagement, play, and events.
- Streets are important for access and connectivity. Streets have a major impact on human health and well-being. They influence how often people walk, wheel, cycle, and take public transport, which then affects the accessibility and vitality of urban environments.
- Streets need to reflect their unique sense of place by embedding historical and cultural features in the design.
- Universal design and inclusive access factors are often overlooked.
- Street planning and design is fundamental to transport and land use integration and supports transport mode shift objectives.

Gaining community support for street changes

- Most streets in Aotearoa have been made to prioritise the movement and parking of private motorised vehicles. Changing streets to improve safety, enable mode shift and support denser urban living means many streets need to change. This challenges what many people are used to.
- Communities are seldom universally united when it comes to changing existing streets. Some people can strongly resist changes, especially when this involves reallocating street space. It is important to showcase examples, evidence and work with communities to build the momentum or pathways for change.
- Travel by car is currently seen as the 'normal' way to move in urban areas. A mindset shift requires ensuring access and choice to break people's current travel habits.

Allocating space for different functions and modes in constrained urban contexts and corridors

- Urban street space is limited. Certain activities and modes must be prioritised to make choice possible.
- Transport and streetside activities are in competition for space and this conflict is most pronounced in urban centres.
- Reallocation of street space is needed to prioritise use of the street by pedestrians and support mode shift.
- Pedestrian numbers are increasing due to investment in public transport and higher density urban developments. Space needs to be reallocated in urban centres to accommodate this increased footfall.

Retrofitting within the existing built environment

- Widening street corridors is rarely feasible due to cost (e.g. property acquisition) and complexity. Reallocation of space presents opportunities to support mode shift and placemaking within the existing right-of-way.
- Maintaining access, services and activities while retrofitting streets means considering project disruption, phasing, and staging. This requires collaborative engagement with businesses and community members.
- Utility and services infrastructure can be a constraint in street planning, design, and delivery. Underground utilities can limit what is possible above ground, for example plantings and street trees. Coordinating street upgrades with utility upgrades and renewals provides opportunities to enhance outcomes.

Designing for a safe system (including safe and appropriate speeds)

- For speeds to be 'safe and appropriate', the operational speeds need to be designed into street elements, rather than just relying on speed limits and signage.
- Safety interventions and streetscape design elements that support safe speeds and active modes can sometimes be considered hazards when viewed from the perspective of highway and road engineering.
- Conventional practice and design standards are influenced by a strong car focus (e.g. highway and road designs standards). This often leads to inappropriate operating speeds for streets when considering the safety of all users, including pedestrians and cyclists.
- Designs must be inclusive, equitable and welcoming. This means considering people of different ages, gender identity, abilities, socio-economic status, ethnicity and national origin, culture, religion and lived experience.

Prioritising and managing limited kerbside space for more efficient pick-up/drop-off of passengers and products while ensuring inclusive access

- The demand and use of kerbside space is evolving. Transport innovations including Taxi ride hail, freight logistics and distribution including customer delivery services, and EV charging are some of the new uses contending for limited kerbside space.
- Access to streets and kerbs for some vehicles and services can be managed and restricted according to different days/times, or through planning service lanes and entries.
- Changes to vehicle access and street space allocation may adversely affect disabled people and people who use mobility devices. Measures are needed to ensure access for these groups is retained.

Network optimisation, managing the tension between movement and place

- There is little distinction in the design of different types of street, despite their different functions. Design changes are needed to support the different needs and functions of streets within urban street families and rural street families.
- Many urban streets are failing to provide for both movement and place functions. Traffic saturation or network design have produced streets which serve movement functions that are inappropriate for the context and hinder development of a street's place function.
- Taking a network optimisation approach considers maximising access on existing networks, while considering mode specific networks and what would be 'fit for the context'.
- Strategic multi-modal network planning involves establishing what mode to prioritise on what street, while accounting for active mode connectivity across the network.
- Transport appraisal tools and conventional practice prioritises movements, for example travel times savings for cars and freight. Evidence related to multi-modal transport and use of streets is still developing, and is often not captured adequately.

Achieving increased greening of streets for human health, liveability and climate change response

- While typical suburban streets in Aotearoa have always had grass berms and often street trees, increased urbanisation and underground services has diminished street greening over time.
- Green infrastructure can sometimes be de-prioritised or not delivered in the face of other urban street priorities for limited street space or project funding. Green infrastructure needs to be valued as an integral part of urban streets with many synergies with hard infrastructure.
- Urban streets must play a critical role in adapting our urban environments to changing climate, reducing urban heat island effect as our climate gets hotter, and managing increased stormwater as our climate gets wetter.
- Valuing the role of street trees and green infrastructure elements requires allocating street space and budgets to investing in these outcomes as part of integrated urban streetcape projects. Establish better data/ information on the role of urban trees and street trees in the transport system, safe system and as green infrastructure.

Car-oriented streets, urban sprawl and dispersal makes it more difficult to create multi-modal, healthy streets and address environmental issues

- Sprawl and dispersed car-oriented urban development increases distances between homes, workplaces, schools, services, and amenities. This makes it difficult to access places by walking, cycling or public transport.
- A history of car-oriented urban areas has created the expectation of car-prioritisation and the provision of on-street parking.
- Mixed-use urban intensification, in contrast, requires streets that support slower traffic speeds, travel by walking, cycling, or public transport, and public spaces to make urban environments comfortable and attractive.
- Disconnected street networks limit walkability and are difficult to serve with public transport. In these situations, the car can be the only transport choice.
- Enabling mode shift and mitigating the effects of climate change such as storms greater intensity, requires rethinking street layouts and functions.

Managing communications and engagement effectively

- Early and ongoing engagement with communities is often overlooked or seen as an add-on to the development process. This engagement is a vital stage of the planning, design, and development process.
- A shared vision with clear rationale and objectives can provide direction as projects progress. This strategic direction can often get lost when facing process complexity.
- Listening and understanding the different perspectives and the impacts the changes may have on different street users is key.

Thematic Guidance

Applying the guidance to deliver better urban street outcomes for Aotearoa

The following pages set out thematic case study guidance that further address shared challenges around urban streets. They provide additional focused guidance on key themes for the future of urban streets that demonstrate the value of addressing the diversity of street users and incorporating multiple street functions in more integrated and innovative ways to achieve better urban streets for Aotearoa.

The thematic case studies developed are:

- Streets for Health, Wellbeing and Equity
- Green Infrastructure in Streets
- Streets with Access for All
- Streets for Play
- Street Space management
- Streets for Services and Utilities.

The intent is for this section of the guide to become a living resource that Waka Kotahi will continue to develop over time, in partnership with others. Forthcoming topics may include, for example:

- Low carbon streets
- Retrofitting streets for low traffic neighbourhoods
- Intersection designs that recognise and support place values.

Streets for Health, Wellbeing and Equity

This guidance has been prepared in collaboration with Manatū Hauora (Ministry of Health) to demonstrate how street planning and design relates to health outcomes.

Healthy Urban Development

Built environments, including transport systems and streets, shape people's health and wellbeing. Well planned and designed streets support people to be healthy by enabling daily physical activity, social and community interaction and reducing the harms of pollution and road danger.

A well-functioning and accessible transport network can enhance access to services, amenities, employment, education, culturally significant places, leisure, and increase opportunities for social interaction. Increasing opportunities for physical activity through streets that serve active transport and public recreation spaces also contributes to better mental wellbeing. Designing streets with a people-centred health focus is important for health, wellbeing, and equity outcomes.

Street space itself can be inviting for people, activity and spending time to help address healthy environments, or uninviting and unhealthy. For example, the transport system shapes how convenient physical activity is for people accessing public transport, walking and cycling. This is just as important to human health as other built environment considerations such as exposures to second-hand tobacco smoke, and access to alcohol and healthy food options in the local centre.

The main health impacts to consider in urban street environments are categorised into four groups: mental wellbeing, non-communicable disease, environmental exposures and infectious disease.

These health impacts can be improved or mitigated by incorporating the Ministry of Health's principles for healthy urban development which are:

- healthy, safe and resilient communities
- wai ora (healthy environments)
- equity
- mitigating and adapting to climate change.

Combining the principles for health urban development with community-driven planning enables communities to make choices around their own health outcomes, and the empowerment achieved through meaningful participation can itself improve wellbeing.



Links

- [What is Environment Health? \(EHINZ, 2022\)](#)
- [Health and Air Pollution in New Zealand 2016 \(HAPINZ 3.0\)](#)
- [Making Streets Healthy Places for Everyone \(Healthy Streets, 2022\)](#)
- [The Individual, Place, and Wellbeing – a Network Analysis. \(McElroy, 2021\)](#)
- [Findings and implications \(Ministry for the Environment, 2022\)](#)
- [Major Causes of Death \(Ministry of Health, 2018\)](#)
- [Urban Development \(Ministry of Health, 2022\)](#)

Health Impact	Components
Mental Wellbeing	<p>Mental wellbeing means being able to adapt and cope with life and life's challenges, feeling that your life has meaning, as well as experiencing feelings of contentment or general happiness. People are most likely to experience positive mental wellbeing when they feel safe, connected, valued, worthy and accepted and have a sense of belonging, identity and hope for the future. Mental wellbeing can be experienced at different scales, such as in our homes, in our communities and beyond.</p> <p>The urban environment and street design can impact mental wellbeing positively or negatively. For example, noise pollution can cause excess stress and is connected to cognitive challenges, but it can be mitigated through urban planning and land use, therefore creating a more positive health impact (Humpheson, 2019).</p>
Non-Communicable Diseases	<p>Non-communicable diseases (also known as 'long-term conditions' and 'chronic conditions') can be defined as any ongoing, long term or recurring conditions that can have a significant impact on people's lives. The World Health Organization (WHO) estimates that in 2015, 40 million of the 56 million global deaths were due to long-term conditions (WHO, 2020).</p> <p>Despite that many long-term conditions are preventable; they are the leading cause of mortality globally. Long-term conditions include conditions such as cardiovascular diseases (eg heart attacks and strokes), cancers, respiratory diseases (such as chronic obstructive pulmonary disease and asthma), diabetes, mental disorders, chronic pain, chronic kidney disease and dementia. About 80 percent of premature heart disease, stroke and diabetes can be prevented (WHO, 2018a).</p> <p>The scientific consensus is that our urban environments and associated lifestyles contribute to the rates of long-term conditions in communities (Canterbury DHB, 2016). Our built environments influence our behaviours and our exposure to factors that increase the risk of developing various health conditions (Kochitzky, et al., 2006).</p>
Environmental Exposures	<p>The environment can directly impact our health and wellbeing both negatively and positively. To ensure positive outcomes and sustain wellbeing, we need safe, healthy and supporting environments for example:</p> <ul style="list-style-type: none"> • Drinking water • stormwater and sewerage • recreation • housing • air quality • noise • road safety • urban climate and heat • ultraviolet exposure and shade • biosecurity and pest and vector control • security and crime prevention through environmental design. <p>Each type of environmental exposure can have varying health outcomes. However, many can be improved or mitigated with healthy urban planning and design.</p>
Infectious Disease	<p>Infectious diseases are those that can spread from one person to another (Ministry of Health, 2020c). They are caused by microorganisms such as bacteria, viruses, parasites and fungi, and include diseases such as the common flu or the more recent COVID-19.</p> <p>Infectious diseases are common in our urban environments. There are simple precautions that individuals and whānau can take at work, educational places, and community centres to stop the spread of infectious disease (Ministry of Health, 2021b).</p> <p>There are ways we can minimise infectious disease spread in our wider urban environments. For example, throughout the Covid-19 pandemic we have learned that physical distancing can prevent spread of diseases. We can reallocate street space into a more equitable use of space by allowing wider footpath and bicycle lanes for example.</p>

Healthy Streets

The Healthy Streets Approach¹² is a framework for decision making in relation to planning transport and streets that is a growing movement internationally. The framework is based on 10 Healthy Streets Indicators (see Figure 1 for Indicators). These Indicators are human-centred and encompass many of the public health, socio-economic and environmental challenges for how our streets are designed and managed. The indicators align with the Ministry of Health principles of urban development for the Aotearoa context.

The Healthy Streets Approach focuses on delivering improvements on existing conditions rather than seeking a fixed end goal. The Healthy Streets Indicators can be improved in different ways in different places depending on factors such as public support, political ambition, existing geography and climate, resources available, cultural context, and the legislative and policy framework.

There are a range of tools to enable practitioners to apply the Healthy Streets Approach in design and evaluation of projects. The Healthy Streets Design Check is tailored to each national context. Ministry of Health and Waka Kotahi are exploring the development of urban streets indicators appropriate for consistent application and use throughout Aotearoa New Zealand. For now, reference and use of international indicators, such as the Australian tool referenced in Figures 1 and 2, is broadly applicable for demonstrating measurement of how well a street design prioritises the 10 Healthy Streets Indicators.



Figure 1: The 10 Healthy Streets indicators and scoring criteria
<https://www.healthystreets.com/resources>

Metric	Everyone feels welcome	Easy to cross	Shade and shelter	Places to stop and rest	Not too noisy	People choose to walk and cycle	People feel safe	Things to see and do	People feel relaxed	Clean air
1 Traffic speed	●	●			●	●	●		●	●
2 Volume of motorised traffic	●	●			●	●	●		●	●
3 Mix of vehicles	●	●			●	●	●		●	●
4 Conflict between cycles and turning vehicles	●					●	●		●	
5 Turning speeds at side-street intersections	●	●				●	●		●	
6 Ease of crossing mid block	●	●				●	●		●	
7 Priority of crossing at intersections	●	●				●	●		●	
8 Quality of the footpath	●					●			●	
9 Space for walking	●			●		●	●		●	
10 Appropriate separation of people walking from traffic	●				●	●	●		●	
11 Space for cycling	●			●		●	●		●	
12 Lighting	●					●	●		●	
13 Availability of drinking water	●			●		●	●	●	●	
14 Public seating	●			●		●		●	●	
15 Cycle parking	●			●		●			●	
16 Shade for walking	●		●			●		●	●	
17 Shade for cycling	●		●			●		●	●	
18 Reducing through traffic	●	●			●	●			●	
19 Bus stops	●		●	●		●			●	

Figure 2: Healthy Streets score generator, demonstrating the relationship between 19 key metrics and making streets healthier for people across the 10 indicators
<https://www.healthystreets.com/what-is-healthy-streets>

Healthy Streets can Positively Impact the Climate

The World Health Organisation has stated that climate change is the biggest threat to humanity in this century. Human health is a pivotal part of that. Healthy urban street environments provide climate response and adaptation solutions to support the health of our planet.

The Aotearoa New Zealand Emissions Reduction Plan recognises the positive environmental contribution to our national climate response from supporting people to walk, cycle and use public transport. Specific actions that enable this are:

- street change, such as accelerating widespread changes to support public transport, active travel and placemaking
- making school travel greener and healthier through setting targets for active school travel, improving walking and cycling infrastructure and ensuring safe speeds around schools.
- Implementing accessibility for streets nationwide to support safe walking, cycling, scootering and other active modes.

A key component of healthy streets is supporting a reduction in trips by private vehicles, such as the integrated transport and land use planning approaches. This initiative promotes Travel Demand Management (TDM) through local access to services, jobs, education, shopping and recreation and encourages local trips on sustainable transport modes.

Providing a hierarchy of activity centres, from neighbourhood, to local, regional and CBD linked by walking, cycling and public transport networks provides transport choices. When combined with effective street management and design, this can encourage people to switch to making trips using sustainable travel methods. This type of system provides a broad range of health benefits and is recognised in the Streets design principles, the Healthy Streets approach outlined.

Health in Street Design:

- Inclusive: Are informed by mātauranga Māori ensure appropriate engagement with Māori, iwi, hapū and Pacific peoples in the development processes and outcomes
- Reduce harm: the safety of all street users should be paramount in any street design. The safety of streets can be improved through safe design, land-use integration and transport operations. Provide the safest and most direct routes between key origins and destinations such as open space, public transport services and external networks.
- Create a sense of place to connect to: respect and acknowledge the different physical and cultural heritages across our urban environments.
- Physical activity: support health and wellbeing by making walking, cycling and public transport more appealing, as well as integrating measures to improve greenery, air and water quality. Identify safe, attractive and connected walking and cycling networks with a high level of service.
- Connect to the environment: ecosystems that integrate the built environment with green and blue infrastructure measures to improve tree canopy, water run-off, pollution, improve biodiversity and enhance resilience to heat, storms and a changing climate. Incorporate green networks, water sensitive urban design (WSUD) features, shade and materials to minimise urban heat island effect
- Provide a range of transport options: promoting travel choice incorporate with integrated transport and land use planning components to provide 15min cities and promote sustainable transport behaviour

Green Infrastructure in Streets

The multiple benefits of integrating green infrastructure with urban street networks are increasingly recognised but the barriers to doing so remain high. A lack of awareness of all the things that can be done, and when in the planning and design process they should be being considered, is also an issue.

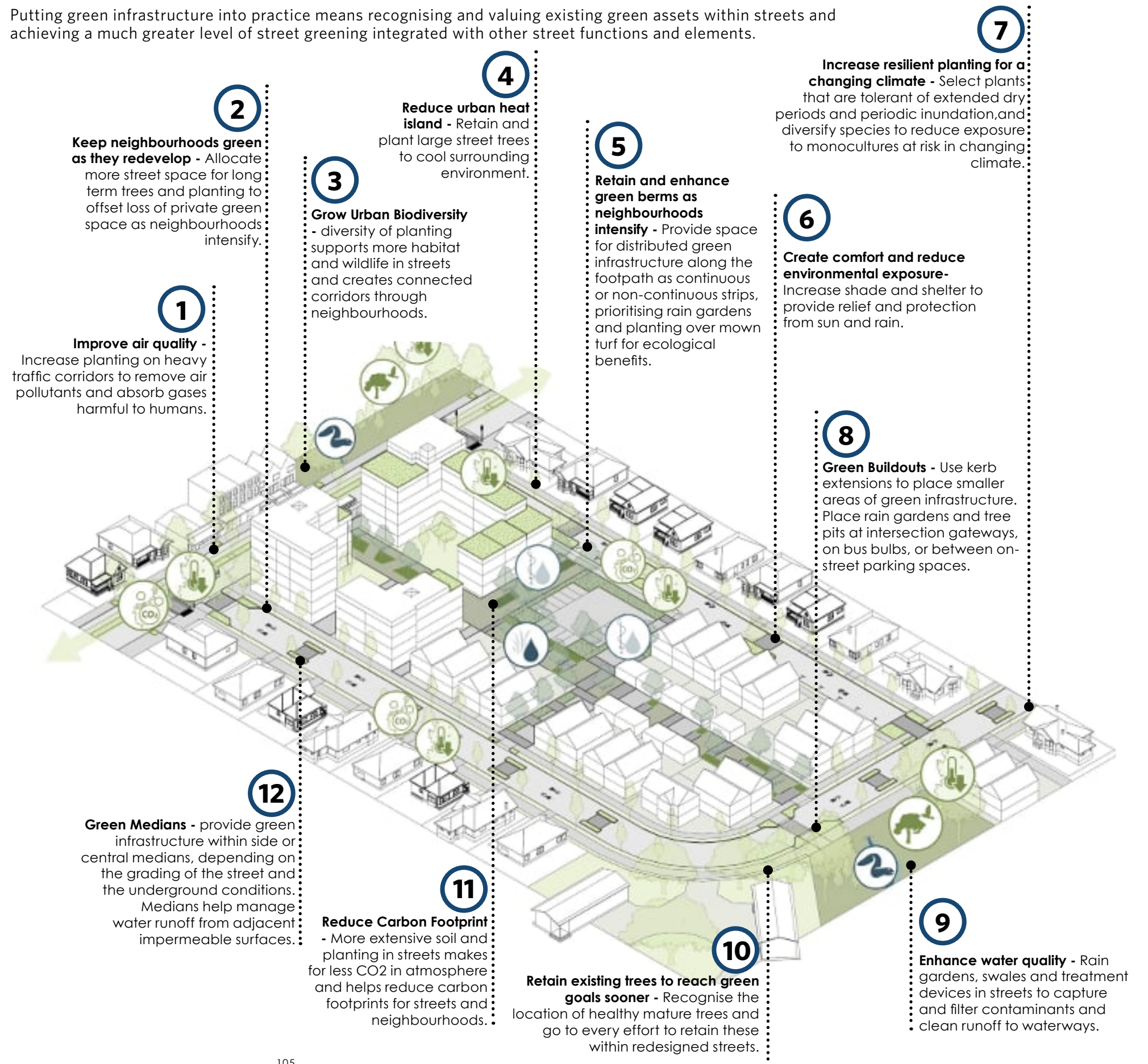
Some of the most important things for integrating green infrastructure into the planning, design and delivery of urban streets are:

- Ensure our decision-making gives sufficient consideration and weight to the value of the natural environment and its role in delivering outcomes
- Identify green infrastructure opportunities at the early stages of any development. This is important to ensure existing natural systems are enhanced rather than replaced, and to maximise the integration of other functions, such as public amenity and active transport opportunities
- Engage with local communities to provide the strong sense of collective ownership that supports acceptance of solutions that endure and thrive over the long-term
- Minimise tree removal (especially seeking to retain mature trees in good health) and ensure sufficient new street planting to contribute to increased urban tree canopy coverage over time to meet targets and policy goals
- Plan and design streets utilising Water Sensitive Design approaches (including the requirement for an interdisciplinary approach to solving problems and developing solutions)
- Embed nature-based solutions as part of our response to reducing transport emissions and improving climate adaptation and biodiversity outcomes in our urban streets
- Material selection that considers and understands carbon footprint and function as well as water sensitive properties and functions and increase impervious surfaces in urban streets through planting and material selections wherever possible
- Use green infrastructure to deliver greater resilience, long-term cost savings and quality environmental outcomes and value these benefits better through business case and decision-making processes.

The infographics opposite seek to make putting green infrastructure into practice for urban streets more tangible and readily understood at both the neighbourhood and the street scale.

Green Infrastructure at the Neighbourhood Scale

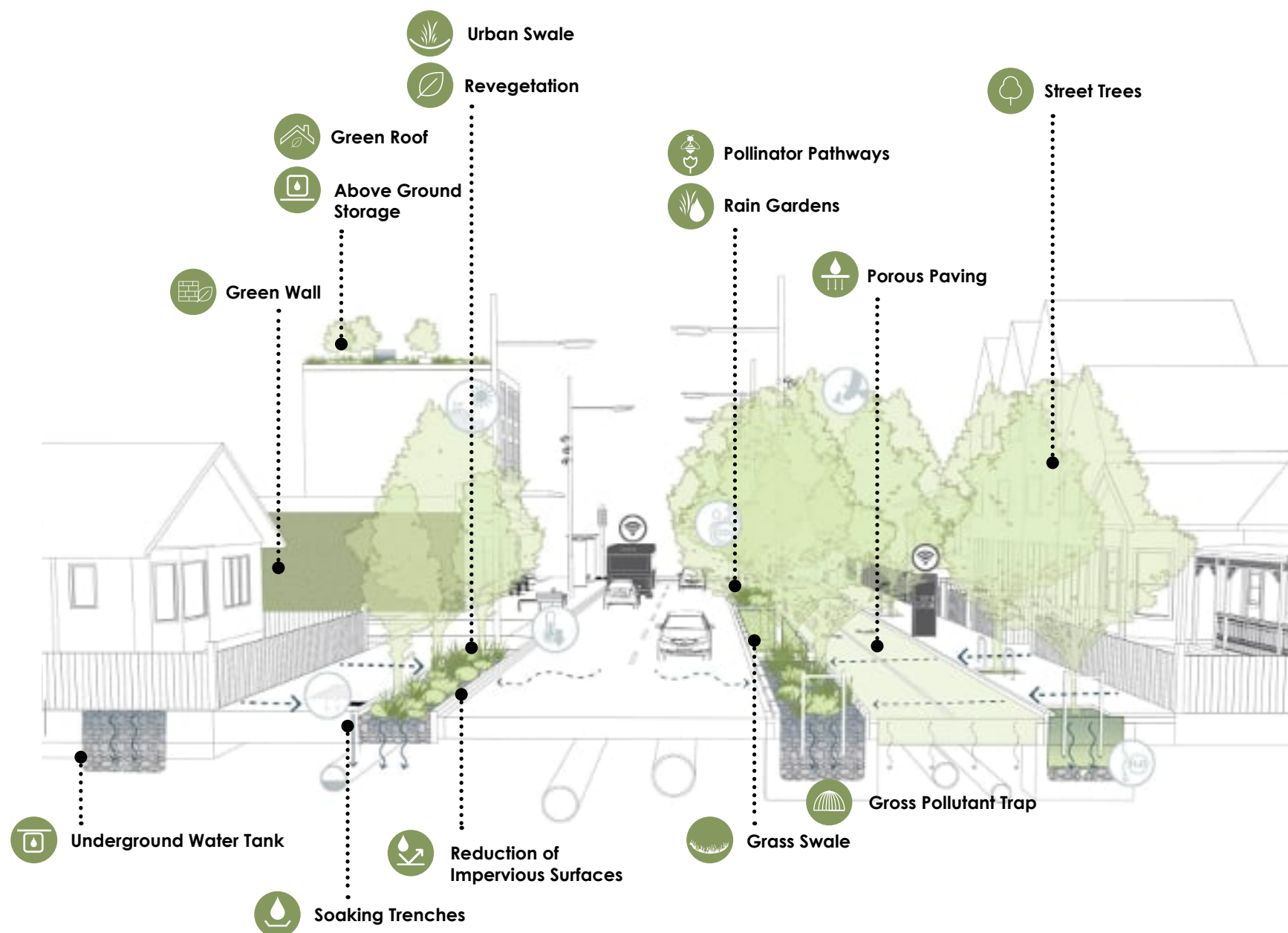
Putting green infrastructure into practice means recognising and valuing existing green assets within streets and achieving a much greater level of street greening integrated with other street functions and elements.



Design Considerations

Green Infrastructure Devices in Streets

Design considerations for green infrastructure in urban streets is not limited to just rain gardens and street trees. There are a multitude of potential green infrastructure devices that can be designed and delivered as part of integrated infrastructure and streetscape solutions. Putting it into practice at the street scale means giving consideration and utilising more of these measures on more of our urban street network to start achieving greater benefits sooner.



Links

- [Urban Street Stormwater Guide, \(NACTO, 2017\)](#)
- [Global Standard for Nature-based Solutions \(IUCN, 2020\) GDO4 Water Sensitive Design for Stormwater \(Auckland Council, 2015\)](#)
- [Auckland's Urban Ngahere \(Forest\) Strategy \(Auckland Council, 2019\)](#)
- [The Integration of Low Impact Design, Urban Design and Urban Form \(Boffa Miskell for Auckland Regional Council, 2010\)](#)
- [WSD-for-Stormwater: Treatment Device Design Guideline \(Wellington City Council, 2019\)](#)



Streets with Access for All

Providing Access for All means designing cities, neighbourhoods, places and spaces that can adapt and are equitable and inclusive - especially for children, seniors and people with disabilities and limited mobility who may use wheelchairs, trikes or other devices to help them get around. Good design benefits everyone in the community. It is about buildings, parks, and every public space being safe and easy to move around.

Environments that aren't inclusive to all create inequalities across society. The impacts of noise, air pollution, road danger and severance are more likely to affect people living in deprived areas, disabled people and their carers, children, older people, and people dependent on walking, cycling and public transport for travel. Physical barriers such as heavy traffic can make streets difficult to cross, disrupting social networks and leading to feelings of isolation.

Designing for all takes into consideration the spatial scale, activities and things that make places safe, attractive, and vibrant. Making outdoor spaces easy for people to get around and spend time in enhances their

confidence and independence and enables them to participate in their communities. This is especially important for people with dementia, sensory and physical disabilities who may find it more difficult to negotiate environments.

Anyone being injured on the road contributes to negative perceptions and feelings of safety for them and others.

Well-designed spaces also help people who are blind, deaf-blind or have low vision be independent and make their way through the world. It is estimated that in Aotearoa up to 11% of adults aged over 65 years are limited in their daily activities by vision loss. 38% of vision impaired people also suffer hearing loss. 8-80 is an international design movement which recognises we need to design urban networks that can accommodate a society with changing needs across a lifetime. Important opportunities are facing our society as the population globally ages thanks to higher life expectancy, better housing and living conditions and improved healthcare.

Environments that are safe and inviting for journeys made on foot or by bike will be inclusive for all and encourage people from all walks of life to walk and cycle.

The Aotearoa New Zealand Emissions Reduction Plan recognises the contribution of transport choice and accessible urban areas to our national climate response, through specific actions aimed at:

- Equity - improve access and travel choice for the transport disadvantaged
- delivering public transport, cycling and walking improvements in low socio-economic areas and for transport disadvantaged groups (including disabled people).
- improved access for people living in social housing through shared mobility schemes, such as car-share, carpool, and bike/scooter schemes.

Re-framing the language

There are (in 2020) nearly 791,000 New Zealanders aged 65+ and this is expected to rise to more than 1.2 million by 2034 - almost a quarter of our total population.

Our older population is becoming increasingly diverse and it is important to not think everyone over a certain age is the same. When considering the impact of what is proposed on the older population, there are two perspectives that need to be considered - the impact in an individual needs sense, and what the impacts will be on New Zealand at a systemic level. What follows are questions to consider when designing urban spaces from an older person's perspective.

Language and Communication

Use appropriate/consistent language

- Avoid the use of elderly - many older people find this term offensive, and feel that it does not apply to them
- Older people are not vulnerable because of their age - if you are considering vulnerability - what is causing it?
- Do not generalise. Older people are often portrayed as an economic burden - older people continue to pay taxes, work and are net contributors to society.

Context

- How will this particular policy/change affect older people? What research is there about older people that could support, or point to problems with what is proposed?
- Think both in terms of the individual, but also from a NZ perspective.
- People who are 65 are different to those who are 80 or 95 - so need to consider different age cohorts

Barriers and Opportunities

- Are there any barriers to older people enjoying the full benefits of the proposal? If so what can be done to address this? Is it inclusive and or accessible to older people?
- Is the recommendation likely to create difficulties for older people? What are the possible unintended consequences for older people?
- Avoid making ageist assumptions and be aware of unconscious bias.

Putting Access for All into practice means neighbourhoods and streets that are:

<p>Safe</p> <p>Accessible and well connected for pedestrians and cyclists to optimise active transport</p>	<p>Inviting</p> <p>Offer high-quality public realm and open spaces</p>	<p>Local</p> <p>Provide opportunities close to where people live and facilitate thriving local economies.</p>
<p>Offer Travel Choice</p> <p>Provide access to quality walking, cycling and public transport networks and options</p>	<p>Are Diverse</p> <p>Deliver housing choice and densities that make local services and transport viable</p>	<p>Easy to Navigate</p> <p>Incorporate simple, logical and consistent layouts with non-visual features (e.g. audible and tactile devices)</p> <p>Convey important information to users who are blind or have low vision</p>

Design Considerations

1
Crime Prevention through Environmental Design: The street network must incorporate safe design measures such as clear sight lines, well-lit pathways, surveillance by surrounding land uses and provision for mobility and vision-impaired users.

2
Indoor pedestrian links to provide protection from the elements, increased user safety and amenity and commercial opportunities. Increase permeability through urban block structures and greater route choice.

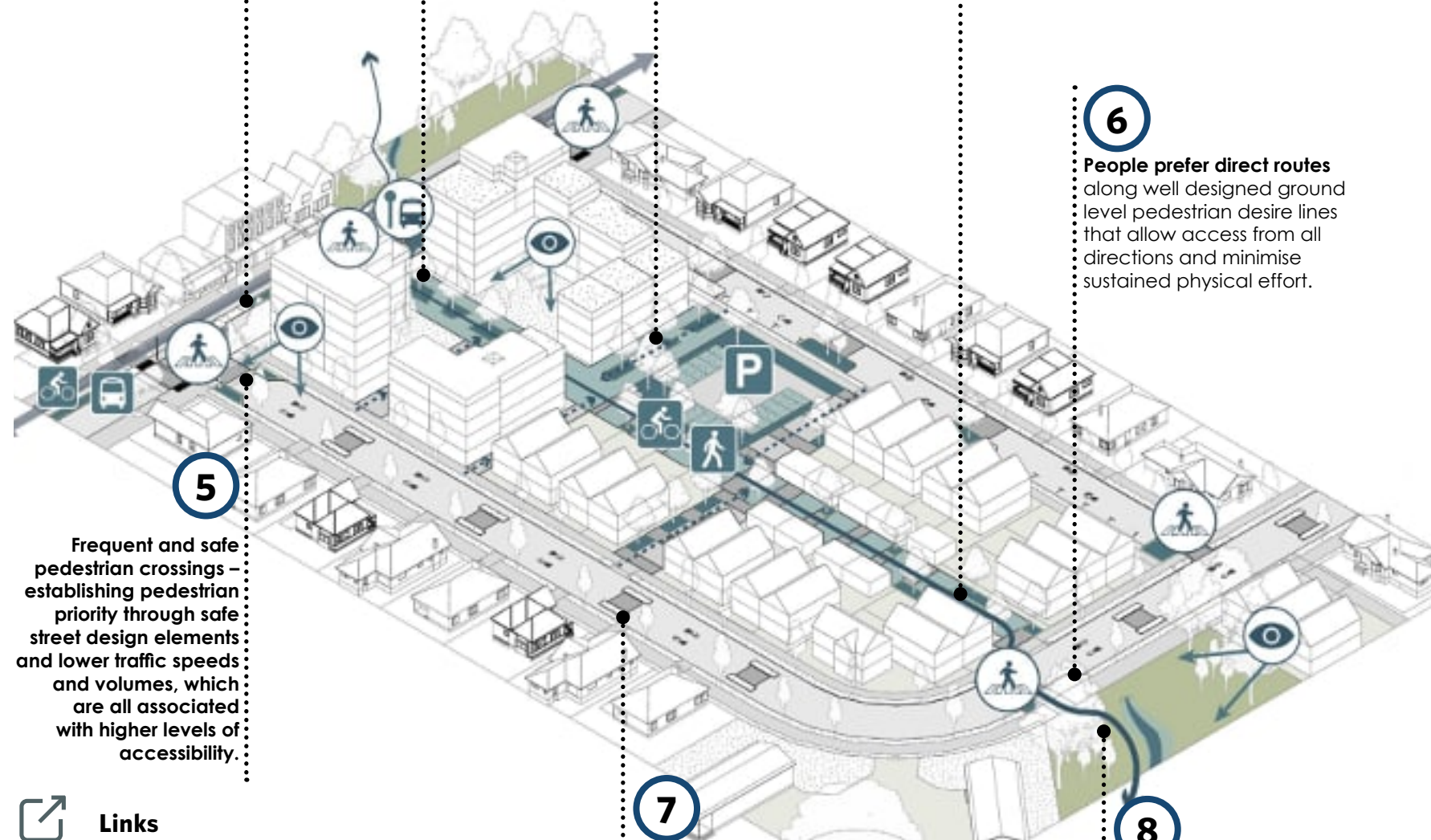
3
Information boards and wayfinding - Signs and other directional markers, such as pavement markings, help users to find the simplest and most direct route.

4
 Provide high amenity in streetscapes and public space with informal meeting and resting points, gathering places and landmarks incorporating shade, lighting, landscaping and planting.

9
Provide adequate space for the use of personal mobility devices, including consideration of the requirements for: different sizes and types of wheels (for example, pushchairs wheelchairs, scooters, skateboards)

- no curbs, smooth surfaces and non-obstructive speed reduction mechanisms.

6
People prefer direct routes along well designed ground level pedestrian desire lines that allow access from all directions and minimise sustained physical effort.



5
Frequent and safe pedestrian crossings – establishing pedestrian priority through safe street design elements and lower traffic speeds and volumes, which are all associated with higher levels of accessibility.

7
Minimize sustained physical effort. People prefer direct routes along well designed ground level pedestrian desire lines allowing access from all directions.

8
Maximize "legibility" of essential information through a variety of techniques or devices used by people with sensory limitations.



Links

- [Resource Hub \(8-80 Cities, 2022\)](#)
- [Cities Alive: Designing for ageing communities \(ARUP, 2019\)](#)
- [Silver Hues: Building Age Ready Cities \(The World Bank, 2022\)](#)



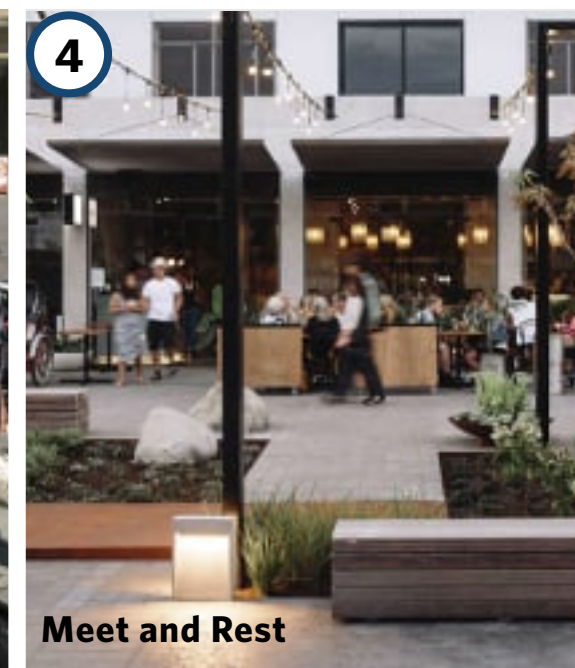
Safe and Inclusive



Links through buildings



Wayfinding



Meet and Rest



Direct Routes



Design for Diversity

Streets for Play

Informal outdoor play in Aotearoa New Zealand is on the decline. Play is one of the most important ways tamariki learn to be physically active and it is through informal Play experiences that they develop physically, cognitively, spiritually, and emotionally.

Tamariki need the time, space and permission to play.

As the urban population increases, we will need to adopt denser living styles and transition from private to 'shared' backyards. Streets are the largest type of public space in towns and cities and should be designed as places where people come together to connect, interact and play. Great streets enable safe and equal access for all, and spaces for rest, respite and refuge, as well as pathways for movement. One of the fastest and most effective ways to improve physical, mental and community wellbeing is to make space on our streets for everyone, making it easier for people to walk or bike to work, school or the shops.

A city that works for children, works for everyone.

Designing streets for people and play enables the rapid reallocation of street space away from vehicle movement to a broader range of community and active transport uses. This will be critical to achieving our emission reduction goals and making our towns and cities healthier, safer and more livable. Independent mobility, such as walking, cycling, or scootering, is important for children to build their independence, ability to assess risk, and as an opportunity for informal outdoor play. Street space can be enjoyed by a diverse range of people, and this supports Sport New Zealand Ihi Aotearoa vision that play happens everywhere, not strictly dedicated play spaces.

Designing towns and cities which truly prioritise people will lead to more holistic outcomes, including the improved health of citizens, better environmental outcomes to help combat climate change, increased social cohesion, and increased support for local businesses due to people spending more time in streets and urban places.

Putting Play Streets into practice means:

Play is Te Tiriti-Led

When designing and creating streets and places to play, we work in partnership to create better spaces that reflect the cultural diversity of the community.

Time, Space and Permission

It is widely accepted that for informal play to occur, tamariki need the time, space and permission to do so. Our towns and cities need to support tamariki to feel they have permission to play and the space to do so safely. Achieving this requires access to streets that are safe and enjoyable to be in e.g. green, quiet and pollution free.

Play is an Everywhere Activity

Play shouldn't just occur in formal play spaces. We need to consider how we can integrate landscape elements that encourage play and social interaction, and improve user amenity, into the street design of Aotearoa.

Streets as Places

Streets should become valued and defined as "places and spaces", i.e., "streets people go to", not only as "streets people go through", and move away from a street's role as solely for transportation via private motor vehicles. Where appropriate, we should support slow local traffic movement and encourage all people who walk, ride or drive to share the space. In streets of high-traffic volumes and speeds, we must ensure there are safety barriers in place to separate vulnerable road users from traffic.

Safe and Independent Mobility

Children and young adults benefit from independent mobility. They should have the autonomy to walk, cycle, and take public transport, and feel safe using streets. The design of our towns and cities should include easily accessible networks between home, schools and workplaces, where people can travel safely via their chosen modes of transport. Caregivers should be able to be independent when moving with young children.

Locally-Led Design

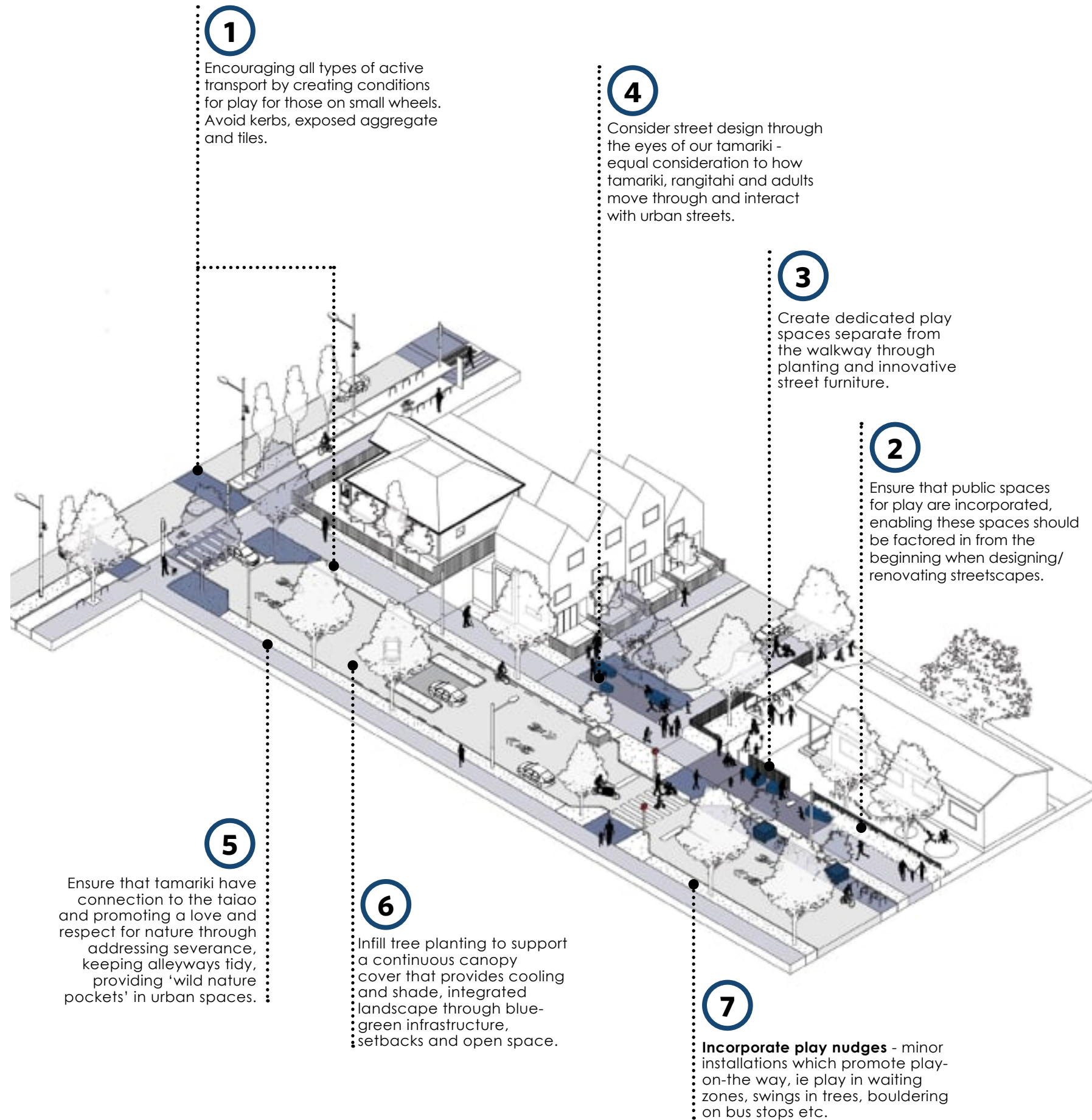
The provision of infrastructure and changes to the design of street space on its own does not achieve holistic people-orientated places. A key component of the process is involving communities in the design and planning of streets, including children.



Links

- [Play Street Guidelines \(Waka Kotahi, 2021\)](#)
- [The Importance of Play \(Sport New Zealand, 2017\)](#)
- [Cities Alive: Designing for Urban Childhoods \(ARUP, 2017\)](#)
- [Child Friendly Guidelines \(NACTO, 2020\)](#)
- [1000 Play Streets Toolkit \(Play Australia, 2021\)](#)

Design Considerations



Supportive Surfaces



Incorporate play



Street Furniture



Dedicated Space



Wild Nature



Shelter, Shade and Comfort



Space For Play



Informal Opportunities

Street Space Management

Streets are an integral part of the public realm and occupy a large proportion of the urban area. The allocation of street space is strongly contested in many cities, given the need to balance multiple functions and transport modes with the needs of a diverse range of users. This is particularly relevant in Tier 1 city centres and activity centres where high demands for movement, access and servicing conflict with popular places and key destinations in their own right.

Aside from performing a critical functional role, streets equally perform an important contribution to the character of a place as well as foster business activity and community connectivity. The design of streets can influence the behaviour of road users and their perception of which mode has the highest priority in any given streetscape.

A better understanding of street space allocation and use can help identify opportunities to promote greater user equity. This is particularly relevant in the context of COVID, which has focussed street space management around providing increased priority for people who walk and cycle and increased outdoor dining and commercial opportunities through conversion of car parking space. Street space management can support efforts to achieve broader health and environmental objectives associated with increasing active travel and reducing dependency on the private car.

Not all movement-related activities on urban streets are part of that street's access function. There are also place-related activities that are directly connected with transport and occur within and adjacent to the carriageway. For example: loading/unloading; vehicle, bicycle and micromobility parking, public and private transport service providers pick up/drop off. Recognising the diverse range of temporal demands on street and kerb space across provides a valuable management approach to effective space allocation and supporting urban function.

The management of car parking is a key consideration in the efficient use of street space. Emerging technology can provide flexibility to promote the most efficient 24hr/7-day use of off-street and on-street car parking supply. It may be possible to share spaces between employee and visitor use, or to utilise real-time management of on-street spaces to reflect times of highest movement or place demand.

Design Considerations

- Recognise the role of the street network in contributing to high quality public space and identify opportunities for the same space to perform different functions across the day/week. (Examples via graphics).
- Identify opportunities to convert on-street car parking to public open space and provide additional space and capacity on priority walking and cycling routes.
- Temporal change to accommodate a range of roles, where streets can function differently at different times of the day/week as demand and need shifts.
- The role of streets for the freight network, including the need to address with strategic and spatial plans as well as local access solutions at the street scale
- Crime Prevention through Environmental Design: Security and design - anti-terrorism. Drop bollards, planter boxes preventing vehicle passage, security surveillance (also SmartCities), lighting,
- Car parking and kerbside management - consideration of priority, opportunities for generation of revenue.
- Influence of disruptor's on technology- on-street charging, micro-mobility parking, food delivery services and urban logistics innovations.
- Co-location of bus, taxi, ride share bays
- Car free/car light zones.

Streets for City Centres and Metropolitan Centres:

Are Multimodal

Multimodal streets serve more people and must support and encourage different transport choices for people. They provide multiple modes in respect to their priority than enhance access to jobs and services and increase the capacity of the street.

Recognise Public Transport hubs as key drivers of walking activity -

Identify opportunities for surrounding land uses to complement these areas, ie through provision of extra space, surveillance, complimentary adjacent land uses and services. Establish a strong connection and opportunities for integration between the transport network and other land uses.

Are for people

There are benefits in removing unnecessary traffic and providing place priority in areas of high activity, such as major public spaces and streets adjacent to rapid transit and civic hubs.

Carry Goods and Services

Roads and streets support the servicing, deliveries and everyday needs for businesses and residents. The ways in which freight is moved and land use activity is serviced must be coordinated with place and movement considerations in ways that take account of street context.

Create Value

Streets are an economic and social asset as much as a functional element. Well-designed streets attract more people, create opportunities for social interaction and generate higher value for businesses and homeowners.

Are safe

Anti-terrorism and Crowd Management - opportunity to consider and creatively apply protective security measures during the early design stages. This can minimise the disruption of protective security on people's enjoyment of public spaces. The use of street space for civic events and public gatherings must also incorporate effective responses to anti-terrorism, crime prevention and public safety and security.

Items to prepare for the future of street logistics include:

- Consolidate Based On Destination, Not Carrier
- Off-Peak Delivery
- Down-Size Freight Vehicles
- Develop A Curbside Asset Database
- Shift to alternative delivery options
- Commit to safer urban delivery vehicles for safer streets
- Promote multi-stakeholder decision making structures
- Optimize the efficiency of delivery operations
- Integrate land use planning for freight delivery
- Support consolidation schemes for urban deliveries
- Frameworks for climate-friendly business models
- Raise awareness and encourage behaviour change for better understanding of the impact of deliveries in urban environments



Links

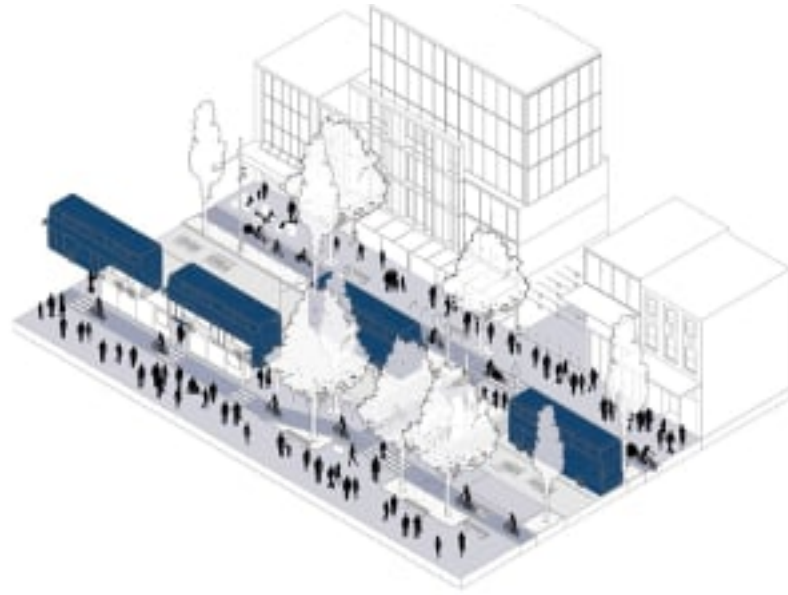
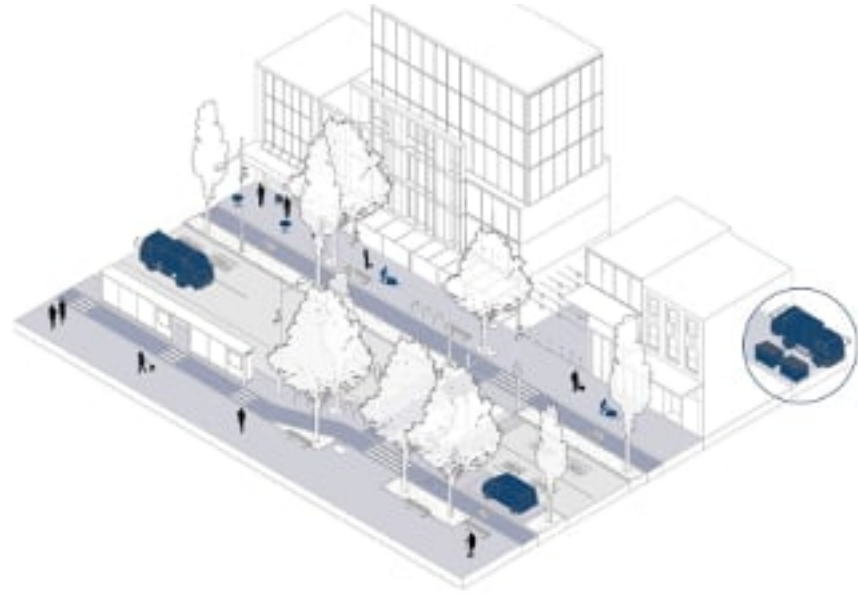
- [Movement and Place: Victoria, Australia \(Department of Transport, 2022\)](#)
- [Urban Design Street Guide \(NACTO, 2016\)](#)
- [Blueprint for Autonomous Urbanism: Second Edition, \(NACTO, 2017\)](#)
- [Last Mile Freight Toolkit: A guide to planning the urban freight task \(New South Wales Government, 2018\)](#)
- [Principles of EcoLogistics, \(Taoyuan City Government and EcoLogistics Community, 2018\)](#)
- [Sustainable Urban Logistics Planning \(European Platform on Sustainable Mobility Plans, 2019\)](#)
- [Envisioning a new Daxi through EcoLogistics \(ICLEI Local Governments for Sustainability, 2020\)](#)

Temporal Change in the Street

Temporal change to accommodate a range of roles, where streets are able to function differently at different times of the day/week as demand and need shifts. Recognise the role of the street network in contributing to high quality public space and identify opportunities for the same space to perform different functions across the day/week. Examples of how this plays out on a City Hub below.

Early Morning

Morning commute

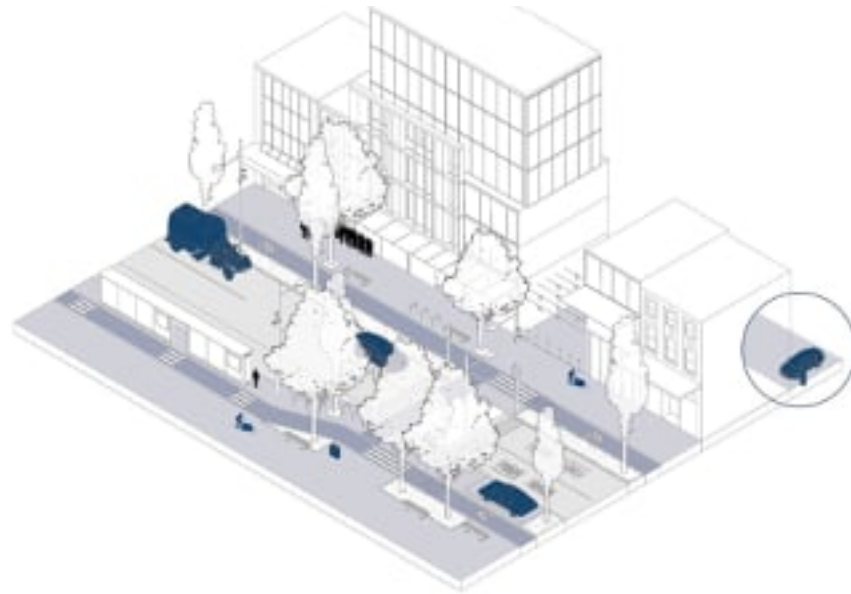
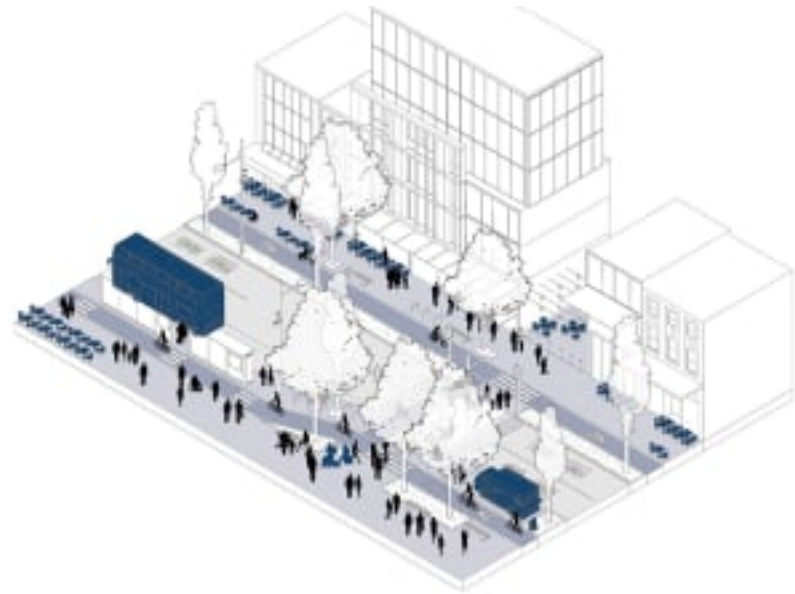


- Servicing
- Loading and delivery
- City dwellers walking dog
- People exercising
- Cafes and other businesses preparing for opening

- Lots of people - school children
- Public Transport peak
- Many people commuting by bike
- Stopping for coffee
- Businesses opening

Evening

Late at night



- Street performers
- Street dining
- Late night shopping
- Busy with cultural events

- EV charging in rear lane
- Street cleaners
- Uber's picking people up
- Line to night club



1 Walkable public transport hubs



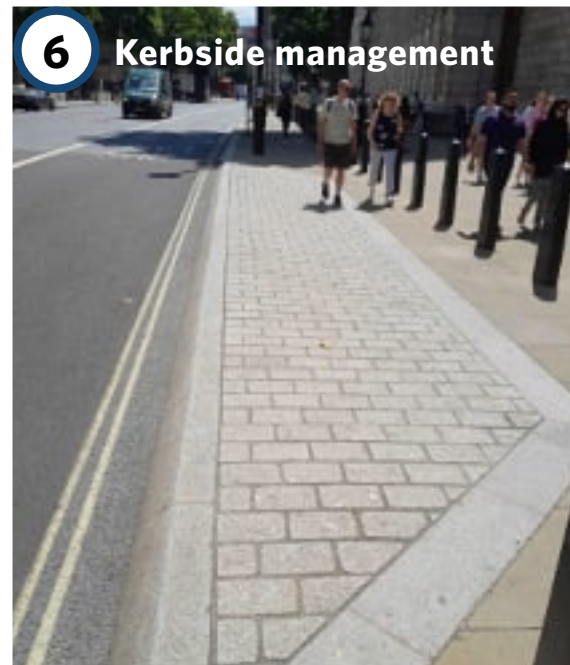
2 Technology



3 Car free/ Car light



4 Last mile freight



6 Kerbside management



9 Public space

Streets for Services and Utilities

The role of streets in urban environments is multi-faceted. Streets perform important movement, place functions and are corridors for essential public/private infrastructure and utilities for a well-functioning urban environment. Designing from the start for the recognition and inclusion of infrastructure supports the optimisation of streets now and for the future. Utilities are critical and essential component that enables, potential to enhance and support well-functioning spaces.

Utilities provide core services that significantly improve a community's quality of life, spurring social and economic growth. Improper planning for current and future requirements and provision maintenance of utilities, will have the consequences limiting the economic viability of a space/locality; increased operational costs; on-going disruption to the community and customers. Designing for streets is complex given infrastructure are at street level, above and below it. Infrastructure planning and maintenance can involve many organisations (public and private) and stakeholders. Inter-organisation coordination, especially when it comes designing for integrating and for construction of street works, is critical. Common issues include high costs and lack of cost certainty, assumed knowledge, lack of understanding of changing infrastructure requirements and opportunities, complex regulatory processes, lack of coordination, the state of existing utility plans, and spatial impacts.

Streets are multiple-level integrated infrastructure/people/environment corridors, with the ground plane design responding to operational and maintenance needs of below and above-ground utilities. Integrated understanding is critical; the opportunities and vision for landscaping, green infrastructure, technology and climate change must be coordinated with the planning/designing of utilities and street infrastructure for people. Utilities infrastructure and street design must be resilient to the impacts of a changing climate and consider carbon emission and adaptation across an extended timeframe of up to 80-100 years for major components such as water and waste infrastructure. Compliance with design standards and best practice infrastructure guidelines and integration with existing assets are also a critical component of the process.

Digital technology is rapidly evolving commonly known as IoT (internet of Things), Smart Cities innovations provides infrastructure opportunities to activate spaces and gather data via devices such as sensors, camera, smart street furniture. Data that can be used for expanding range of initiatives including machine learning predictions for air quality, energy or water use, maintenance programming or traffic managements or entertainment. Designing to integrate or future proof for technology to essential for understanding our changing climate reducing carbon emission and adaptation decision making and keeping users of the space engaged and informed. Getting the design and providing the opportunity for involvement of infrastructure operators can only enhance the spatial outcome but more critically plan and enable for on-going and future operational and maintenance needs.

Boston Smart Utilities Program

Companies who perform the majority of excavation work throughout Boston are required to review and officially "clear" streets proposed for resurfacing or reconstruction. Clearing a street indicates that there will be no excavation cuts into the pavement for utilities, drainage, telephone, gas, electric, etc. for a minimum of five years for resurfacing candidates and ten years for reconstruction candidates. A centralized database to coordinate all construction work on city-owned streets and reduce conflicts amongst ongoing projects (the COBUCS system) allows for the City to establish long term capital programs that can be successfully coordinated to ensure that newly paved roadways will not be excavated.

Links

- [Boston Smart Utilities Program \(Boston Planning and Development Agency, 2020\)](#)
- [City of Boston Utility Coordination Software \(Boston Public Works Department\)](#)
- [Boston Complete Streets Guidelines \(Boston Transportation Department, 2013\)](#)

Effective integrated street design and management:

Minimises disruption

Locates ground level elements and features that can be most easily changed or replaced above underground infrastructure to minimise maintenance costs and disruption.

Coordinated

Coordinates planned public realm improvements with future infrastructure maintenance and upgrades through early co-design with utilities providers.

Meets different needs at different times

Ensures streets are operated and maintained to respond to different operational needs across land-use, transport and utilities across times of day, week and year.

Adaptable

Incorporates adaptable infrastructure – for example providing extra capacity in utilities functions to future-proof for growth and minimise disruption

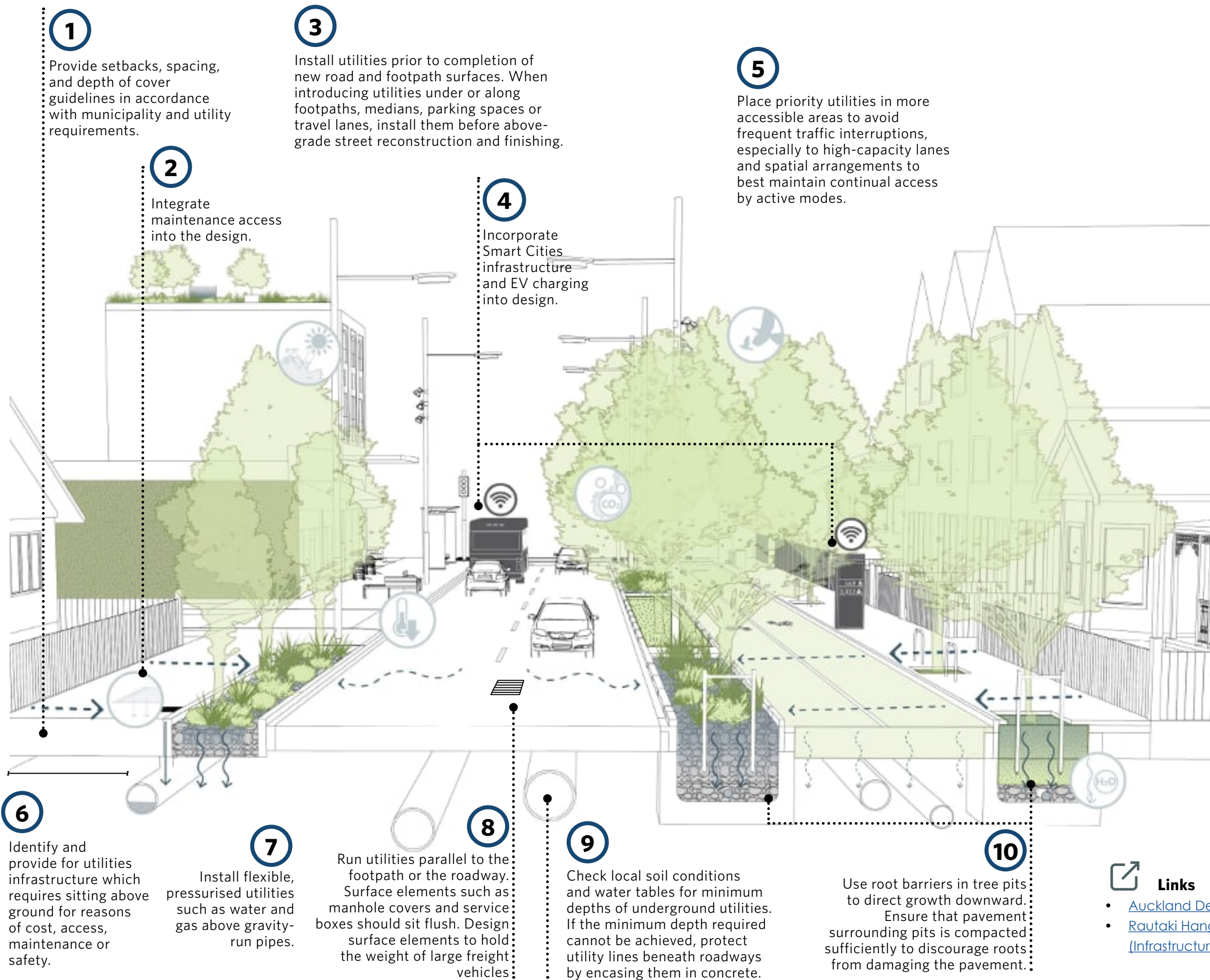
Recognises key constraints and risks

Recognises key constraints and risks early in the process, including right-of-way ownership, major utility and service conflicts, and long-term maintainability.

Integrates stormwater

Considers stormwater management and environmental mitigation practices during all phases of implementation

Design Considerations

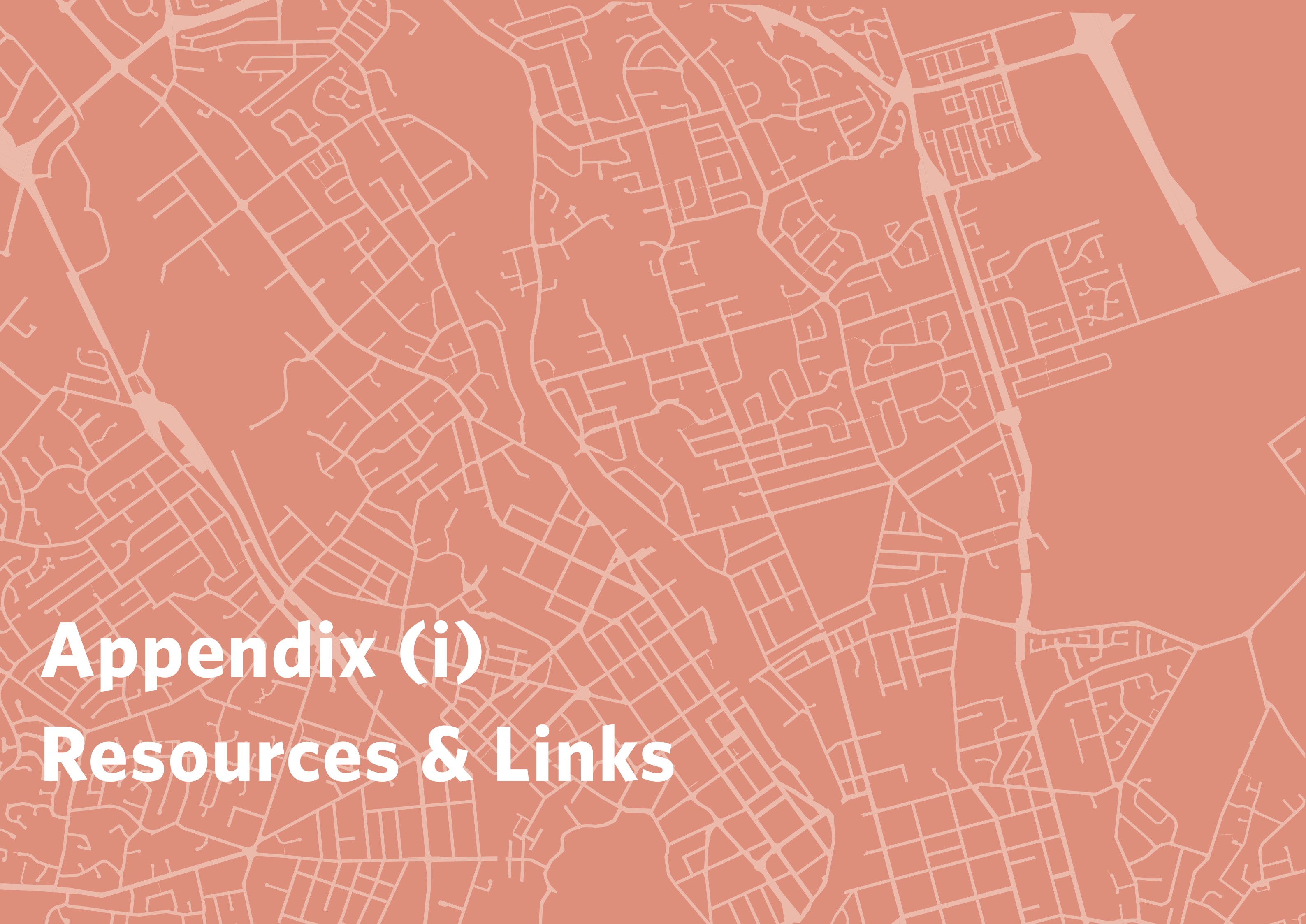


Consider Stormwater Management and Environmental Mitigation

- Permeable paving solutions within cycleways, parking and loading zones.
- Rain gardens to filter road run off, improves groundwater quality.

Links

- [Auckland Design Manual \(Auckland Council, 2022\)](#)
- [Rautaki Hanganga o Aotearoa: Infrastructure Strategy \(Infrastructure Commission Te Waihanganga, 2022\)](#)



Appendix (i)

Resources & Links

Waka Kotahi Resources and Guidelines

Partnership & Engagement:

Our Māori Strategy - <https://www.nzta.govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategy-august-2020.pdf>

Waka Kotahi Public Engagement Guidelines (2016) - <https://nzta.govt.nz/assets/resources/public-engagement-manual/docs/nzta-public-engagement-guidelines.pdf>

Waka Kotahi Te Ara Kotahi – Our Māori Strategy - <https://www.nzta.govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategy-august-2020.pdf>

Transport outcomes:

Arataki (10-year view): <https://www.nzta.govt.nz/arataki/>

Waka Kotahi - Keeping Cities Moving - <https://www.nzta.govt.nz/assets/resources/keeping-cities-moving/Keeping-cities-moving.pdf>

Vision Zero - Road to Zero: <https://www.transport.govt.nz/area-of-interest/safety/road-to-zero/>

One Network Framework

One Network Framework - <https://www.nzta.govt.nz/onf>

Vision Zero:

Vision Zero for system designers - <https://www.nzta.govt.nz/safety/what-waka-kotahi-is-doing/nz-road-safety-strategy/road-to-zero-resources/vision-zero-for-system-designers/>

Vision Zero for engineers: <https://www.nzta.govt.nz/safety/safety-resources/vision-zero-for-engineers/>

Vision Zero for planners: <https://www.nzta.govt.nz/safety/safety-resources/vision-zero-for-planners/>

Safety System:

Safe System Audit Guidelines - <https://www.nzta.govt.nz/assets/resources/road-safety-audit-procedures/docs/safe-system-audit-guidelines.pdf>

Standard Safety Intervention Toolkit - <https://www.nzta.govt.nz/resources/standard-safety-intervention-toolkit/>

Waka Kotahi Crash Analysis System (CAS) - <https://www.nzta.govt.nz/safety/partners/crash-analysis-system/>

Road Safety Audit Procedures for projects - <https://www.nzta.govt.nz/resources/road-safety-audit-procedures/>

Speed Management Guide - <https://www.nzta.govt.nz/safety/speed-management-resources/>

Austrroads - Integrating Safe System with Movement and Place for Vulnerable Road Users - <https://austrroads.com.au/publications/road-safety/ap-r611-20>

Environment & Sustainability:

Environment & Social Responsibility Policy, Standard, tools and processes - <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/environment-and-social-responsibility/>

Sustainability Rating Scheme <https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020.pdf>

Toitū Te Taiao - Our Sustainability Action Plan Sustainability - <https://www.nzta.govt.nz/assets/About-us/docs/sustainability-action-plan-april-2020.pdf>

Tools (for air quality and road traffic noise): <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/tools/>

Z/19 Taumata Taiao - Environmental and Sustainability <https://www.nzta.govt.nz/assets/Highways-Information-Portal/Technical-disciplines/Environment-and-social-responsibility/Standards-and-guidelines/Z19-Taumata-Taiao-Environmental-and-Sustainability-Standard.pdf>

Project Emissions Estimation Tool (PEET) - <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/environment-and-sustainability-in-our-operations/environmental-technical-areas/climate-change/climate-change-mitigation/project-emissions-estimation-tool-peat/>

Infrastructure:

Resource Efficiency Policy for Infrastructure Delivery and Maintenance <https://www.nzta.govt.nz/resources/resource-efficiency-policy-for-infrastructure-delivery-and-maintenance/>

Urban Design:

Bridging the Gap, Waka Kotahi Urban design Guidelines - <https://www.nzta.govt.nz/assets/resources/bridging-the-gap/docs/bridging-the-gap.pdf>

Creating vibrant towns and cities webinar series: <https://www.nzta.govt.nz/walking-cycling-and-public-transport/creating-vibrant-towns-and-cities-webinar-series/>

Urban and Landscape Design Frameworks - <https://www.nzta.govt.nz/assets/resources/urban-design/highways-network-ops-guideline/docs/uldf-highways-network-ops-guideline.pdf>

Planning & Investment:

Waka Kotahi Investment Hub - <https://invest.nzta.govt.nz/>

Planning Policy Manual (PPM) - <https://www.nzta.govt.nz/resources/planning-policy-manual/>

Business Case Approach - <https://invest.nzta.govt.nz/>

Intervention Hierarchy - <https://www.nzta.govt.nz/assets/resources/The-Business-Case-Approach/PBC-intervention-hierarchy.pdf>

Planning & Investment - <https://nzta.govt.nz/planning-and-investment/planning/>

Investing in Place Policy - <https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/202124-nltp/202124-nltp-principles-and-policies/assessment/investing-in-place-policy/>

Planning & Investment Knowledge Base - <https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/>

Adaptive Urbanism - Street for People Programme:

Streets for People - <https://www.nzta.govt.nz/roads-and-rail/streets-for-people/>

Tactical Urbanism Handbook (2020): <https://www.nzta.govt.nz/roads-and-rail/innovating-streets/resources/tactical-urbanism-handbook/>

Mode Shift Plans:

Waka Kotahi Multi-modal Transport Planning and Design Guidance - <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/multi-modal-transport/>

NZTA - Programme Business Case Intervention hierarchy - <https://www.nzta.govt.nz/assets/resources/The-Business-Case-Approach/PBC-intervention-hierarchy.pdf>

Waka Kotahi - Walking and cycling planning and design guidance - <https://www.nzta.govt.nz/roads-and-rail/highways-information-portal/technical-disciplines/multi-modal-transport/>

Planning and Network Design Audit (PANDA) - *Website link coming soon*

Auckland - <https://at.govt.nz/about-us/transport-plans-strategies/regional-land-transport-plan/>

The Bay of Plenty - <https://www.nzta.govt.nz/assets/resources/keeping-cities-moving/BoP-regional-mode-shift-plans.pdf>

Hamilton-Waikato - <https://www.nzta.govt.nz/assets/resources/keeping-cities-moving/Hamilton-Waikato-regional-mode-shift-plans.pdf>

Wellington - <https://www.nzta.govt.nz/assets/resources/keeping-cities-moving/Wellington-regional-mode-shift-plans.pdf>

Greater Christchurch - <https://www.nzta.govt.nz/assets/resources/keeping-cities-moving/Christchurch-regional-mode-shift-plan.pdf>

Urban Mobility and Liveable Cities <https://www.nzta.govt.nz/walking-cycling-and-public-transport/creating-vibrant-towns-and-cities-webinar-series/urban-mobility-and-liveable-cities/>

Walking:

Pedestrian Planning and Design Guide - <https://www.nzta.govt.nz/resources/pedestrian-planning-guide/>

Cycling:

Cycling Network Guide (CNG) - <https://www.nzta.govt.nz/walking-cycling-and-public-transport/cycling/cycling-standards-and-guidance/cycling-network-guidance/>

Public Transport:

Public Transport Design Guidelines (PTDG) - <https://nzta.govt.nz/ptdg>

Parking & kerbside management:

National Parking Management Guidance - <https://www.nzta.govt.nz/assets/Roads-and-Rail/docs/National-Parking-Management-Guidance-for-consultation.pdf>

Universal Access:

RTS14 Guidelines for facilities for blind and vision impaired pedestrians (2015) - <https://www.nzta.govt.nz/assets/resources/road-traffic-standards/docs/rts-14.pdf>

Crime prevention through environmental design:

CPTED - <https://www.nzta.govt.nz/assets/resources/pedestrian-planning-guide/docs/pedestrian-planning-guide.pdf>

Central Government Resources

Transport & urban Policy:

Government Transport Outcomes Framework - <https://www.transport.govt.nz/area-of-interest/strategy-and-direction/transport-outcomes-framework/>

Vision Zero - Road to Zero - <https://www.transport.govt.nz/area-of-interest/safety/road-to-zero/>

Land Transport Management Act - <https://www.legislation.govt.nz/act/public/2003/0118/latest/DLM226230.html>

Better Travel Choices - <https://www.transport.govt.nz/assets/Uploads/Report/ATAPBetterTravelChoices.pdf>

Te Āhei ki te Whakamahi Ara - Accessible Streets - <https://www.transport.govt.nz/area-of-interest/walking-and-cycling/accessible-streets/>

Transport Emissions Action Plan - <https://www.transport.govt.nz/area-of-interest/environment-and-climate-change/climate-change/>

Ministry of Housing and Urban Development - Urban Growth Agenda - <https://www.hud.govt.nz/urban-development/urban-growth-agenda/>

Ministry of Housing and Urban Development - National Policy Statement - Urban Development - <https://www.hud.govt.nz/urban-development/national-policy-statement-on-urban-development-nps-ud/>

Urban Development Act 2020 - <https://www.legislation.govt.nz/act/public/2020/0042/latest/whole.html>

RMA reforms - <https://environment.govt.nz/what-government-is-doing/key-initiatives/resource-management-system-reform/overview/>

Urban Design Protocol <https://environment.govt.nz/publications/new-zealand-urban-design-protocol/>

National Policy Statement for Urban Development <https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/>

Climate Change & Transport Emissions:

New Zealand's Framework for Adapting to Climate Change - <https://environment.govt.nz/publications/new-zealands-framework-for-adapting-to-climate-change/>

National Adaptation Plan <https://environment.govt.nz/publications/aotearoa-new-zealands-first-national-adaptation-plan/>

Emissions Reduction Plan <https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/>

Hikina te Kohupara - Kia mauri ora ai te iwi - Transport Emissions: Pathways to Net Zero by 2050 - <https://www.transport.govt.nz/consultations/hikina-te-kohupara-discussion/>

New Zealand's targets for reducing emissions - <https://www.climatecommission.govt.nz/our-work/reducing-emissions/>

Hikina te Kohupara - Kia mauri ora ai te iwi - <https://www.transport.govt.nz/consultations/hikina-te-kohupara-discussion/>

Transport Emissions: Pathways to Net Zero by 2050 Climate Action Framework

Conservation and Biodiversity:

Te Mana o te Taiao, Biodiversity Strategy <https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020.pdf>

Health & Wellbeing:

Living Standards Framework - <https://www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework>

Ministry of Health - Healthy Urban Development - <https://www.health.govt.nz/our-work/environmental-health/built-environment/urban-development>

Ministry of Health - Urban Development - <https://www.health.govt.nz/our-work/environmental-health/built-environment/urban-development>

Ministry of Health - Air Quality - <https://www.health.govt.nz/our-work/environmental-health/built-environment/air-quality>

<https://www.health.govt.nz/publication/achieving-healthy-urban-planning-comparison-three-methods>

<https://www.health.govt.nz/our-work/environmental-health?mega=Our%20work&title=Environmental%20health>

Social and Street Data:

New Zealand Human Rights - Your Rights - <https://www.govt.nz/browse/law-crime-and-justice/human-rights-in-nz/human-rights-and-freedoms/#:~:text=The%20Act%20includes%2C%20among%20other,rights%20covenants%2C%20conventions%20and%20protocols.>

Demographics:

Statistics NZ - <http://nzdotstat.stats.govt.nz/wbos/Index.aspx>

New Zealand Police:

Protecting Our Crowded Places from Attack: New Zealand's Strategy - Te Whakamaru i Ō Tātau Wāhi Kōpiripiri mai i te Whakaekenga: Te Rautaki a Aotearoa - <https://www.police.govt.nz/sites/default/files/publications/crowdedplaces-strategy-30092020.pdf>

Heritage & Culture:

Saving the Town Heritage Toolkit - <https://www.heritage.org.nz/resources/saving-the-town>

Partnership & Engagement

IAP2 Resources - <https://iap2.org.au/resources/iap2-published-resources/>

Taituara (SOLGM) Shoulder to shoulder - guide to collaborative engagement - https://taituara.org.nz/Attachment?Action=Download&Attachment_id=621

Te Arawhiti Māori Engagement Framework - <https://www.tearawhiti.govt.nz/te-kahui-hikina-maori-crown-relations/engagement/>

LGNZ resources for Māori partnerships - <https://www.lgnz.co.nz/assets/Uploads/2dac054577/44335-LGNZ-Council-Maori-Participation-June-2017.pdf>

Waka Kotahi Business case approach - <https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/archive/201821-nltp/planning-and-investment-principles-and-policies/business-case-approach/>

Waka Kotahi Public Engagement Guidelines (2016) - <https://nzta.govt.nz/assets/resources/public-engagement-manual/docs/nzta-public-engagement-guidelines.pdf>

Waka Kotahi Te Ara Kotahi - Our Māori Strategy - <https://www.nzta.govt.nz/assets/About-us/docs/te-ara-kotahi-our-maori-strategy-august-2020.pdf>

Waka Kotahi Tactical Urbanism handbook - <https://nzta.govt.nz/assets/Roads-and-Rail/innovating-streets/docs/tactical-urbanism-handbook.pdf>

The Workshop - How to talk about urban mobility and transport shift - a short guide - <https://static1.squarespace.com/static/5e582da2de97e67b190b180c/t/5e964a181c923d689f099d58/1586907824986/The-Workshop-Urban-Mobility-2020.pdf>

Investing in Place - <https://investinginplace.org/about/>

Global Designing Cities Initiative (NACTO)

Street Design Guidance:

- Global Street Design Guide (GDCI-NACTO) - <https://globaldesigningcities.org/publication/global-street-design-guide/>
- Designing Streets for Kids (NACTO) - <https://globaldesigningcities.org/publication/designing-streets-for-kids/>
- Urban Street Design Guide (NACTO) - <https://nacto.org/publication/urban-street-design-guide/>
- Transit Street Design Guide (NACTO) - <https://nacto.org/publication/transit-street-design-guide/>
- Urban Bikeway Design Guide (NACTO) - <https://nacto.org/publication/urban-bikeway-design-guide/>
- Designing for All Ages & Abilities (NACTO) - <https://nacto.org/publication/urban-bikeway-design-guide/designing-ages-abilities-new/>
- Urban Street Stormwater Guide (NACTO) - <https://nacto.org/publication/urban-street-stormwater-guide/>

Other Global Resources

- Safer City Streets: Global Benchmarking for Urban Road Safety - <https://www.itf-oecd.org/safer-city-streets-global-benchmarking-urban-road-safety>
- NSW movement and Place - <https://www.movementandplace.nsw.gov.au/>
- Austrroads Safe System with Movement for Vulnerable Road Users <https://austrroads.com.au/publications/road-safety/ap-r611-20>
- Austrroads Road Safety <https://austrroads.com.au/publications/road-safety/ap-r611-20>
- Austrroads Intersections and Crossings - <https://austrroads.com.au/publications/road-design/agrd04>
- Evaluating Complete Streets Projects: A Guide for Practitioners, Smart Growth America - <https://smartgrowthamerica.org/resources/evaluating-complete-streets-projects-a-guide-for-practitioners-2/>
- How to measure streets, Global Designing Cities Initiative - <https://globaldesigningcities.org/publication/global-street-design-guide/measuring-evaluating-streets/how-to-measure-streets/>
- UK HM Treasury Infrastructure Carbon Review - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/260710/infrastructure_carbon_review_251113.pdf
- UK Guidance Document for PAS 2080 - Tool for Managing Whole of Life Carbon Infrastructure - http://greenbuildingencyclopaedia.uk/wp-content/uploads/2016/05/Guidance-Documents-for-PAS2080_vFinal.pdf
- World Resources Institute - Sustainable and Safe: A Vision and Guidance for Zero Road Deaths <https://www.wri.org/research/sustainable-and-safe-vision-and-guidance-zero-road-deaths>
- How to Talk About Urban Mobility and Transport Shift www.theworkshop.org.nz/publications/how-to-talk-about-urban-mobility-and-transport-shift-a-short-guide
- Sustainable and Safe: A Vision and Guidance for Zero Road Deaths - <https://www.wri.org/research/sustainable-and-safe-vision-and-guidance-zero-road-deaths>
- Making Streets Healthy Places for Everyone - <https://www.healthystreets.com/>
- The Individual, Place and Wellbeing - a Network Analysis McElroy <https://bmcpublichealth.biomedcentral.com/counter/pdf/10.1186/s12889-021-11553-7.pdf>
- Resource Hub 8-80 Cities <https://www.880cities.org/resource-hub/>
- Cities Alive: Designing for Ageing Communities <https://www.arup.com/perspectives/publications/research/section/cities-alive-designing-for-ageing-communities>
- Silver Hues: Building Age-Ready Cities <https://www.worldbank.org/en/topic/urbandevelopment/publication/age-ready-cities>

Key Stakeholder Links

Government Ministries and Agencies:

- Accident Compensation Corporation (ACC) - <https://www.acc.co.nz/>
- Ministry for Culture & Heritage - Ministry for Culture and Heritage Te Manatu Taonga - <https://mch.govt.nz/>
- Ministry of Health - <https://www.health.govt.nz/>
- Ministry of Māori Development - <https://www.tpk.govt.nz/en>
- New Zealand Police - <https://www.police.govt.nz/>

Specialist User Groups:

- Blind Low Vision New Zealand - <https://blindlowvision.org.nz/>
- CCS Disability Action - <https://ccsdisabilityaction.org.nz/>
- Grey Power New Zealand Federation - <https://greypower.co.nz/>
- Sport New Zealand - Ihi Aotearoa - <https://sportnz.org.nz/>

Professional institutes & Industries:

- Engineering New Zealand Transportation Group - <https://www.transportationgroup.nz/>
- New Zealand Institute of Landscape Architects - <https://www.nzila.co.nz/>
- New Zealand Planning Institute - <https://planning.org.nz/>
- New Zealand Institute of Architects - <https://www.nzia.co.nz/>
- Ngā Aho Maori Design Institute - <https://ngaaho.maori.nz/page.php?m=185>
- Property Council New Zealand - <https://www.propertynz.co.nz/>
- Urban Design Forum - <https://urbandesignforum.org.nz/>

Transport & Urban Advocacy Groups:

- Cycling Action Network NZ - <https://can.org.nz/>
- Generation Zero - <https://www.generationzero.org/>
- Living Streets Aotearoa - <https://www.livingstreets.org.nz/>
- Women in Urbanism - <https://www.womeninurban.org.nz/>

***NOTE - links current as of December 2022**



Appendix (ii)

Adaptive Urbanism

Adaptive Urbanism

Streets for People Programme:

<https://www.nzta.govt.nz/roads-and-rail/streets-for-people/>



Adaptive Urbanism Handbooks:

Tactical Urbanism Handbook (2020): <https://www.nzta.govt.nz/roads-and-rail/innovating-streets/resources/tactical-urbanism-handbook/>

Coming soon:

- Project Leads Handbook
- Engagement Leads Handbook
- Monitoring and Evaluation Leads Handbook
- Design Leads Handbook
- Delivery Leads Handbook