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

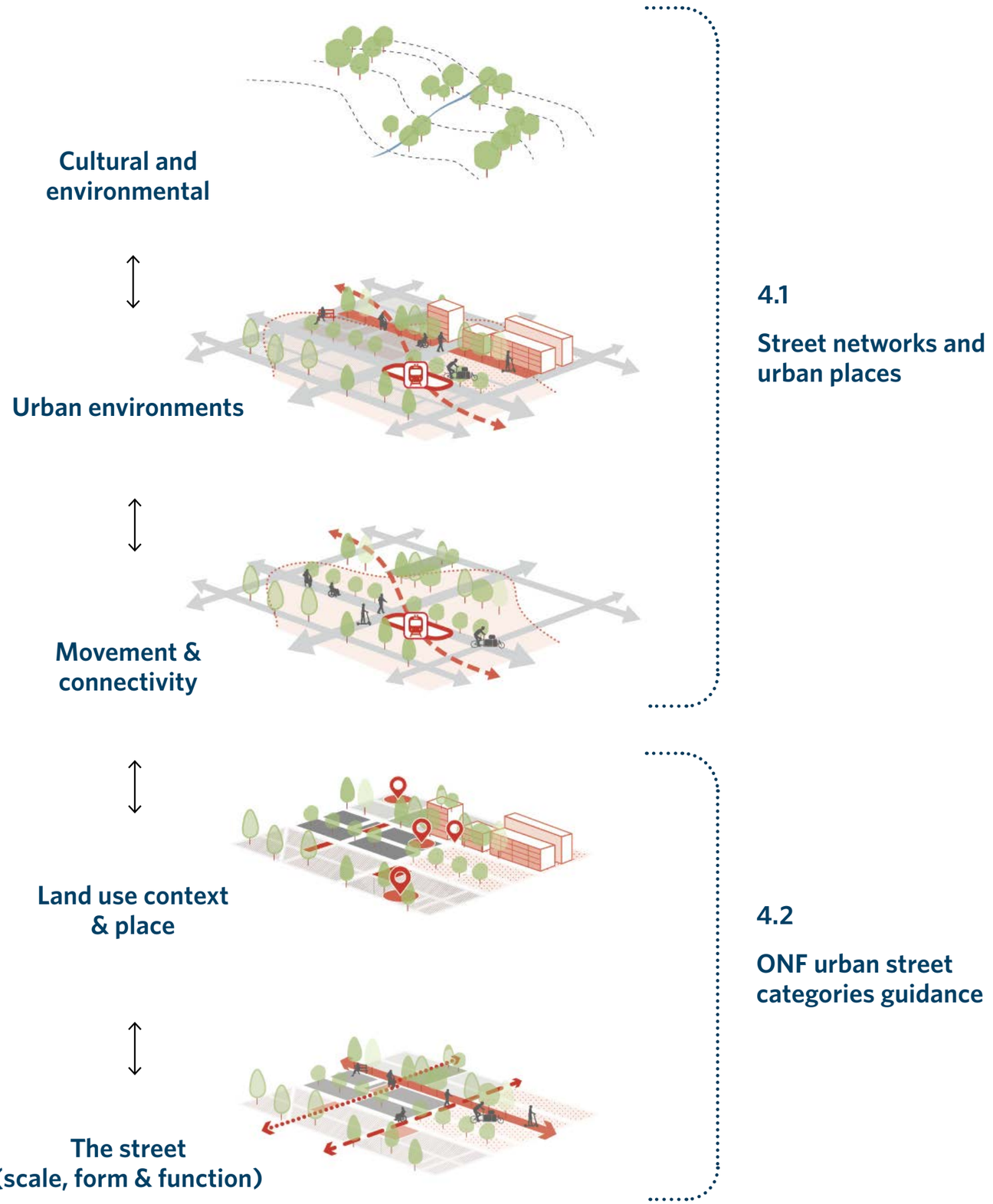
Achieving more integrated urban street outcomes requires a networked understanding of place and movement functions at multiple scales and across a spectrum of different urban contexts. These spatial scales range from the urban area as a whole (and regional and inter-regional scales beyond these), to 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

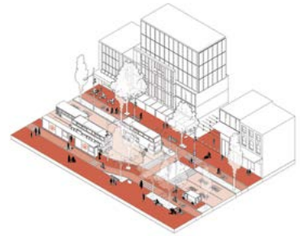
Towns & townships

Suburban residential neighbourhoods

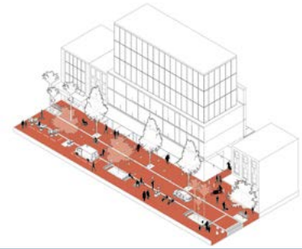
Section 4.2 ONF urban street categories guidance

Street scale solutions that relate to urban contexts

City Hubs

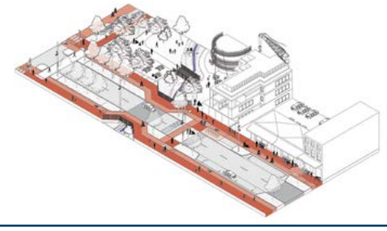


Civic Spaces

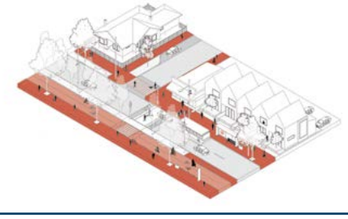


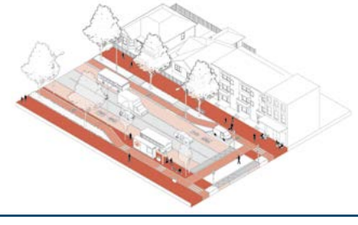
Main Streets

Activity Streets

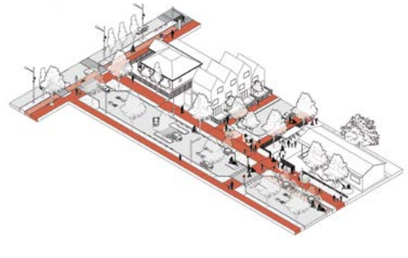


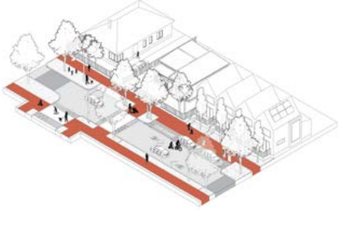
Urban Connectors





Local Streets






Hair Stylists
256
OPEN 7 DAYS
We Deal in
Whole Sale & Ret
Quality Household Bazaar
258
Wall Clock
Floor Lamps
258A
(Manurewa)
268
MillenniumMusic
MillenniumMusic
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 and 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.

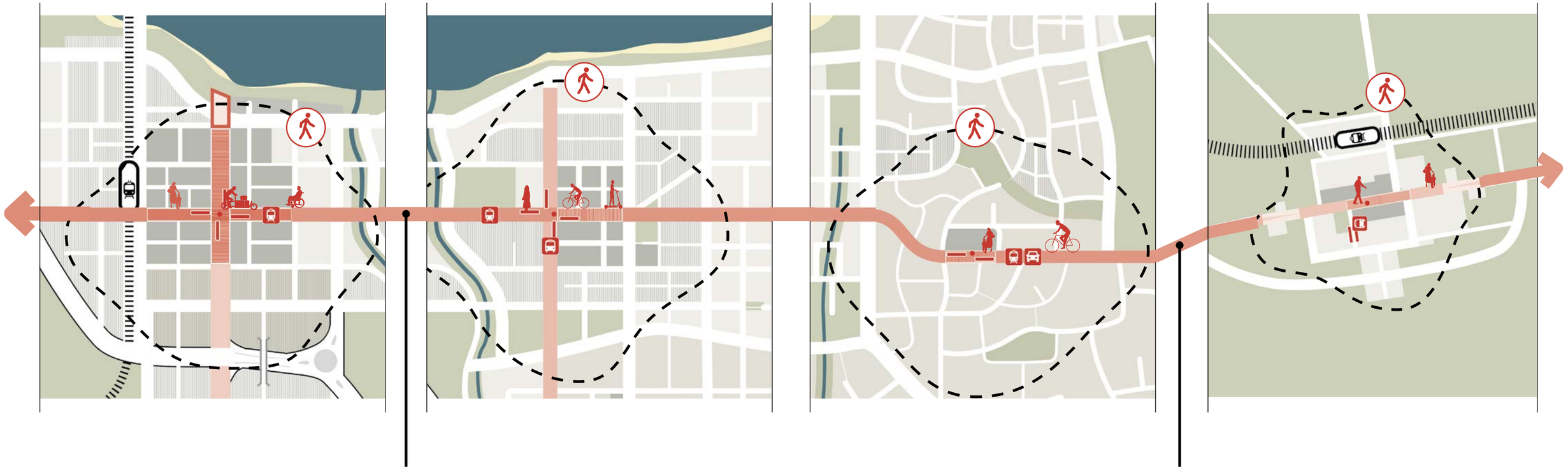
Specific street form and function guidance and the types of street in section 4.2 then provides the guidance detail on how streets can be adapted to address these challenges and meet the demands of their role in the wider street network and these urban contexts.

City centres & metropolitan centres

Suburban & local centres

Suburban neighbourhoods

Town & townships

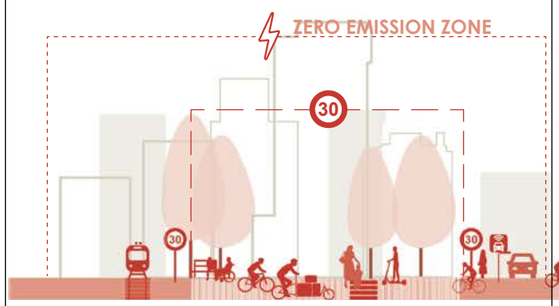


Urban centre transition zone
Urban gateways, thresholds, gateways safe systems, speed management

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.

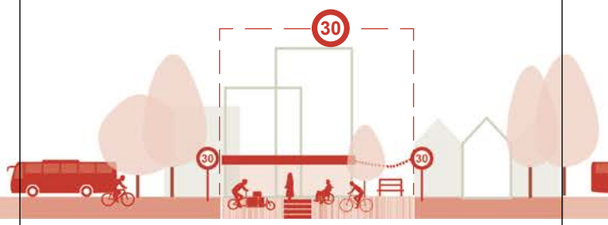
City centres & metropolitan centres



Key features:

High Density
High Place Value
Mixed Land Use
Civic Spaces
Employment Hub
Lower Speeds
Active Modes
Zero Emissions Zone

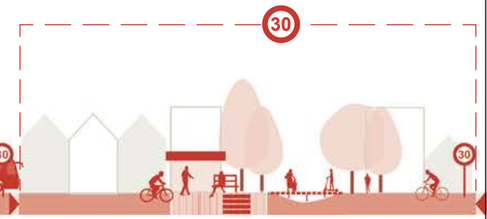
Suburban & local centres



Key features:

High & Medium Density
High Place Value
Speed Management
Mixed Land Use
Community Amenity
Lower Speeds
Active Modes
Zero Emissions Zone

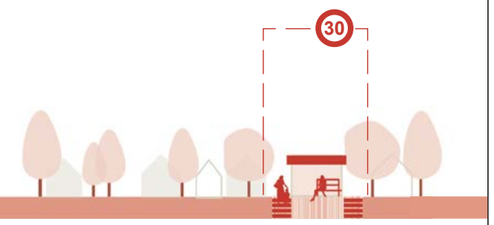
Suburban neighbourhoods



Key features:

Low Traffic Neighbourhood
Speed Management
Lower Speeds
Active Modes
Community Amenity

Town & townships



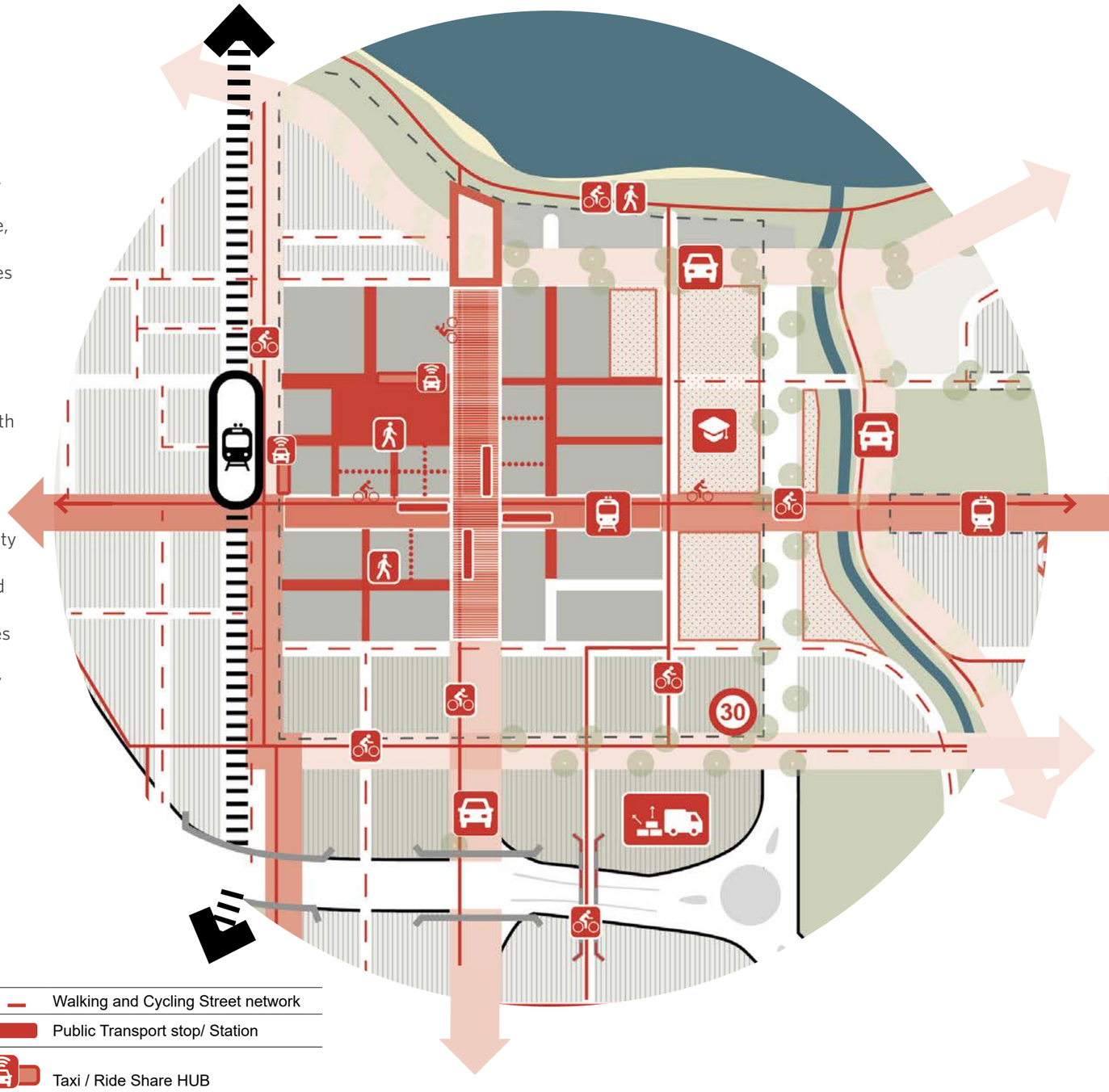
Key features:

Low Traffic Neighbourhood
Speed Management
Lower Speeds
Active Modes
Community Amenity
Wide Rural Catchment

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

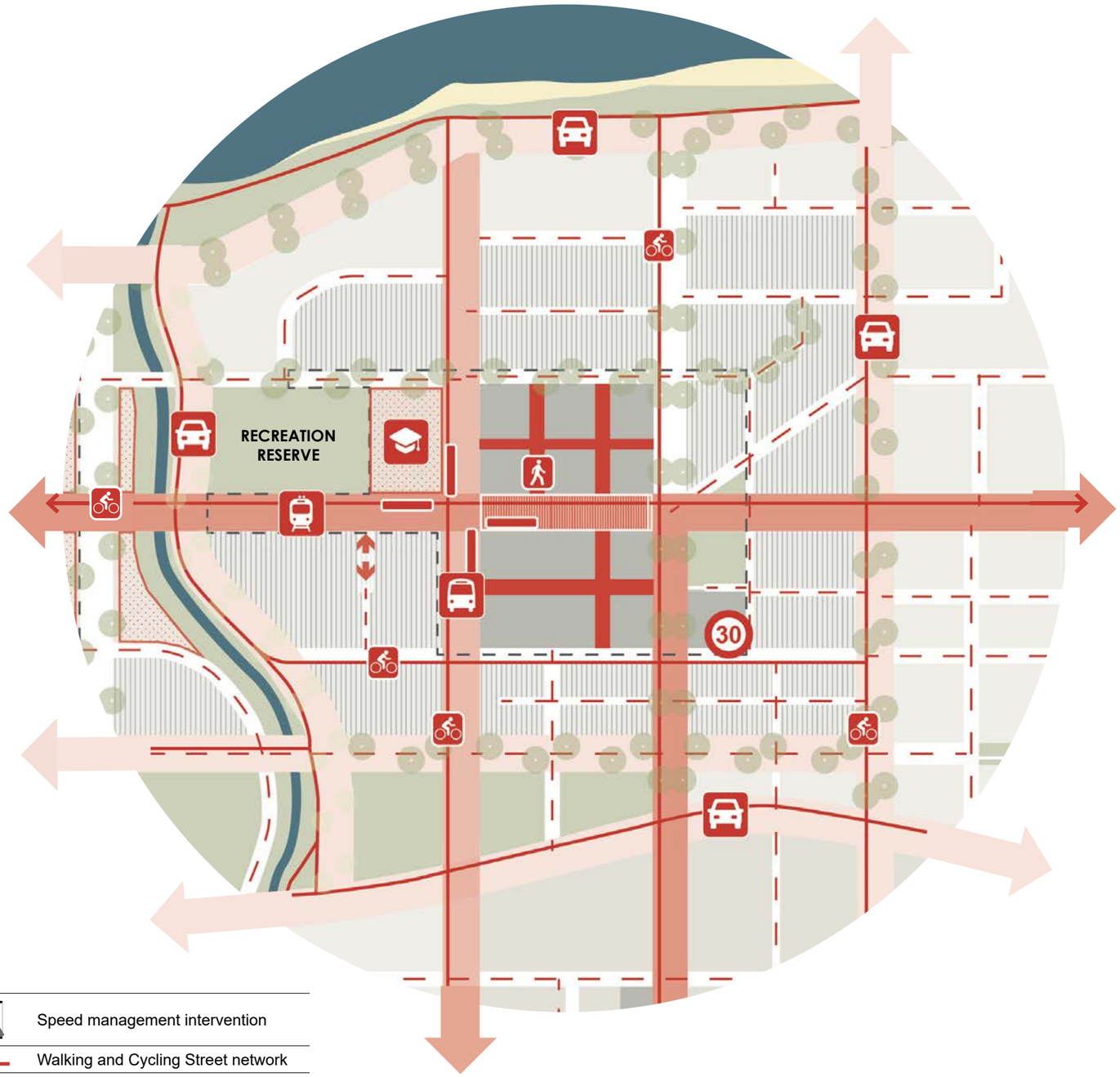
- Through movement of general traffic is avoided or minimised to prioritise walking, cycling and public transport as sustainable and space-efficient modes in our densest and busiest urban centres with greatest constraints and demands.
- All streets provide for active modes.
- Private vehicle traffic 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)
- Low speed limit - 30km or less (or low emissions zone)
- Civic Spaces
- Main Streets
- Civic Spaces laneway streets & shared spaces
- City hubs
- Urban Connectors
- Cycleway
- Speed management intervention
- Walking and Cycling Street network
- Public Transport stop/ Station
- Walkable catchment within immediate proximity of centres and rapid transit stations enabling 6-storey development

Transport planning for well functioning urban environments

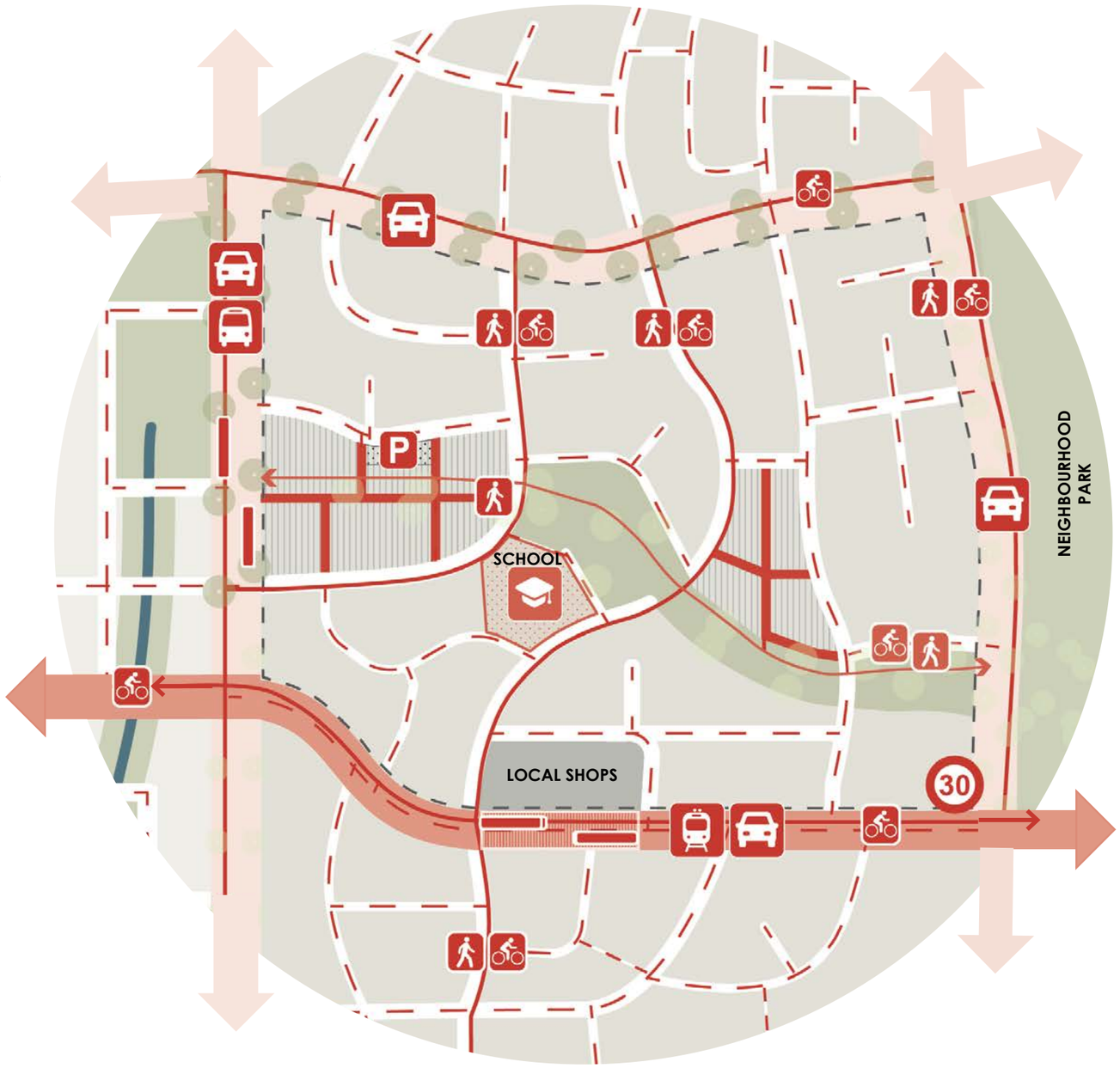
- Urban centres should have a high level of access by public transport, walking and cycling facilities should be provided to support lower emissions and better air quality in the centre.
- Allow for a high level of walkability and cycling access to local destinations within the urban centre and nearby, including public transport stops and stations.
- All streets within urban centres are to be designed for safe and apporopriate 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.

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 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

30	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
	Sstreet network improvements
	Public Transport stop/ Station

	Comprehensive urban redevelopment
P	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

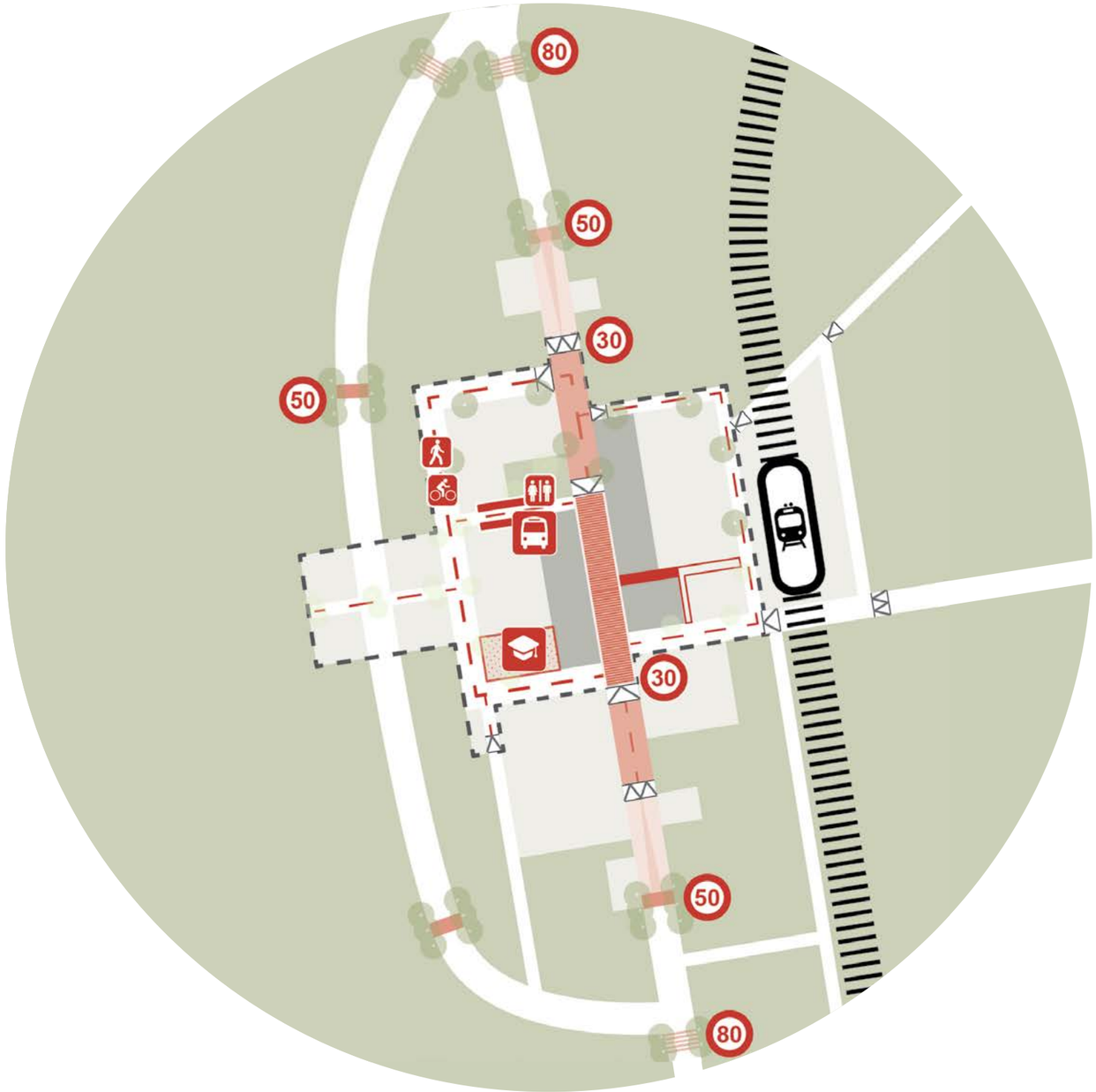
Towns and townships are smaller urban environments within predominantly rural communities across Aotearoa. They support rural communities and regional and inter-regional movement throughout the country. Towns and townships often function relatively independently depending on their relative size and proximity. 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
30	30km zone
	Speed management intervention
	Main Streets
	walking and Cycling Street network
	Regional Transport station/ stop



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.

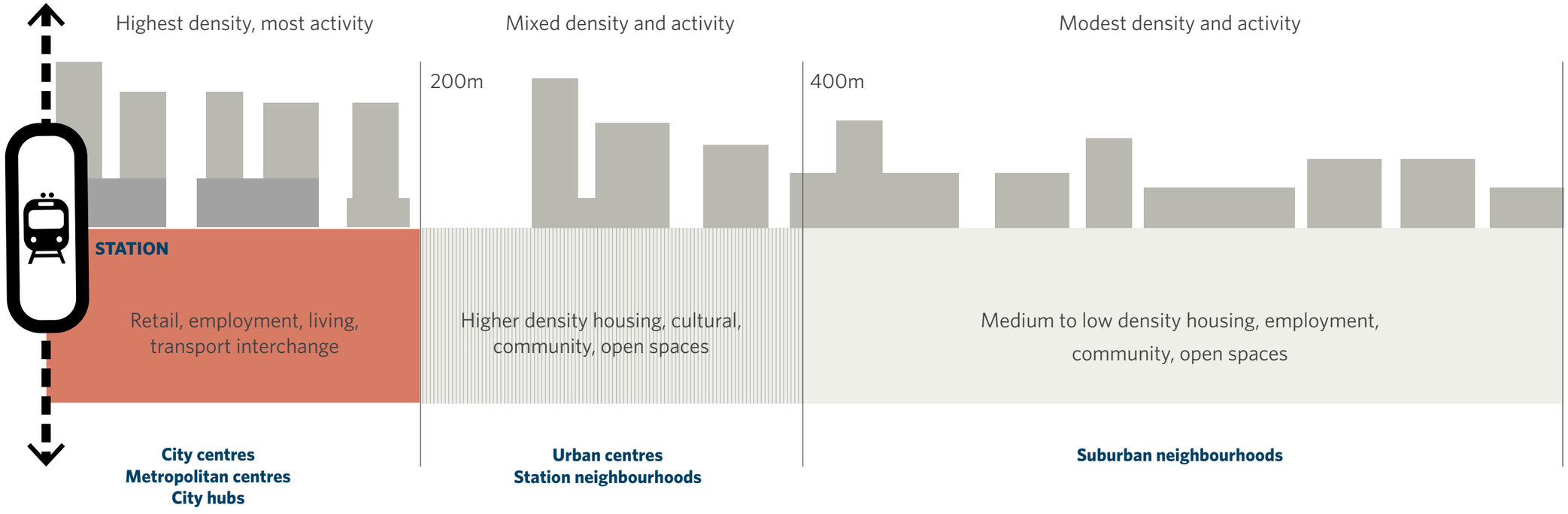
Centres and Transit-Oriented Development

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

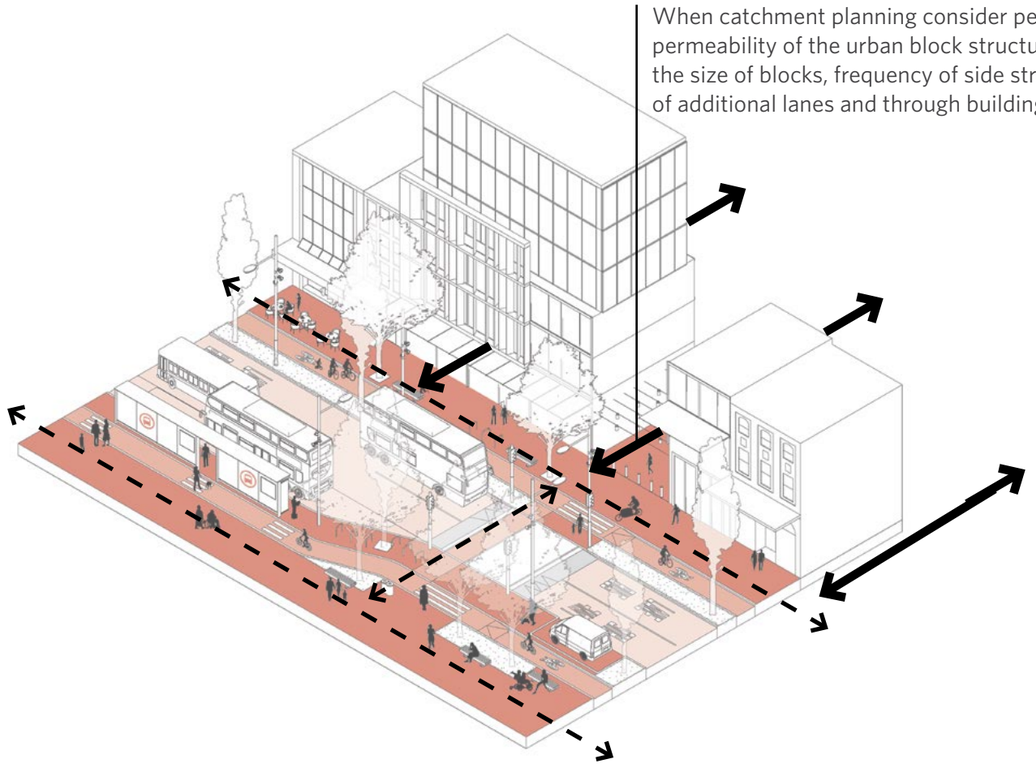
- Understanding and Implementing Intensification Provisions for the National Policy Statement on Urban Development (Ministry for the Environment, 2020)

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.



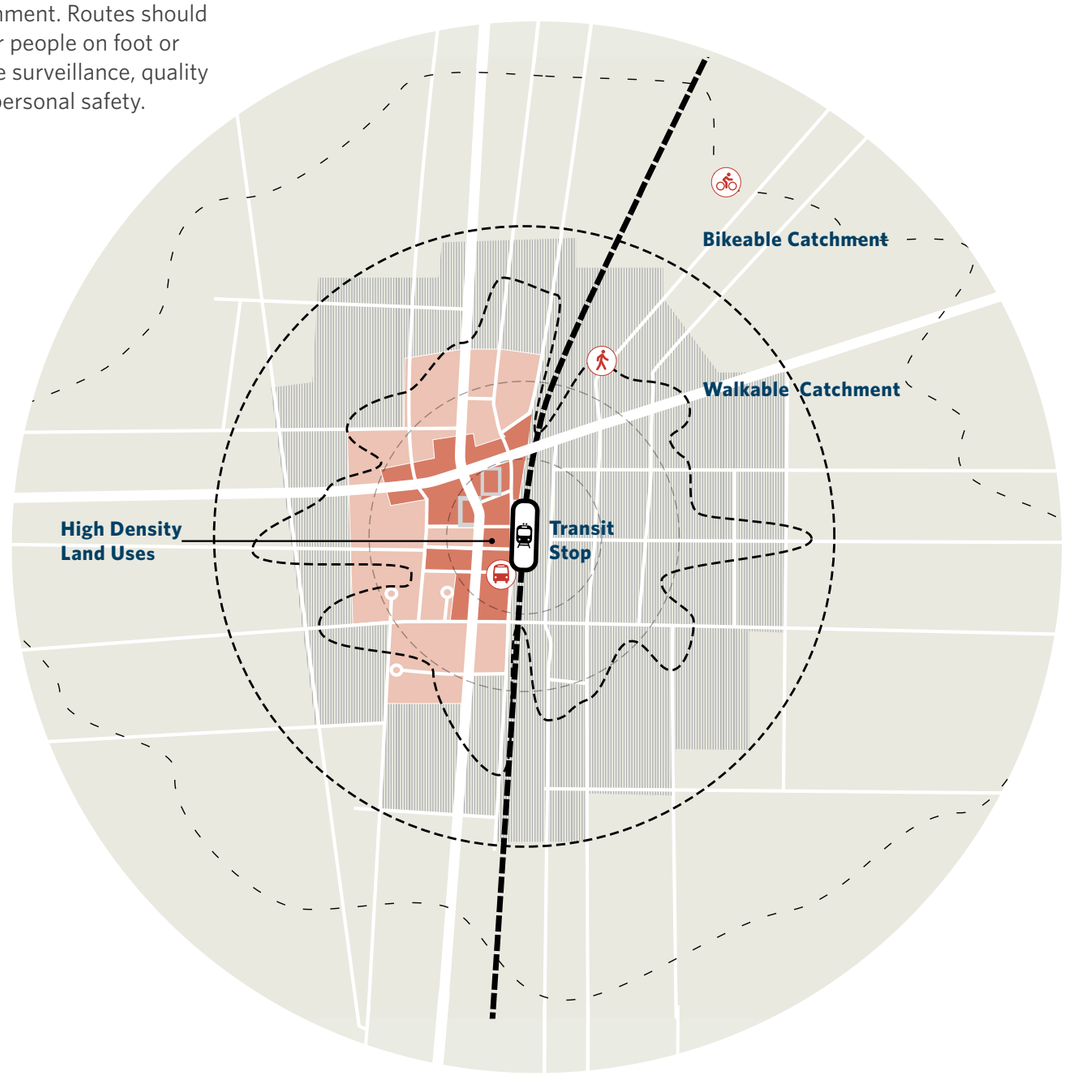


Figure 18: Active mode catchments are often expressed as basic 400m and 800m circles from transit stops and stations. However, the example above shows more accurate walking and cycling catchment analysis which is influenced by the urban street grid, different land use and densities. The NPS-UD suggests 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.

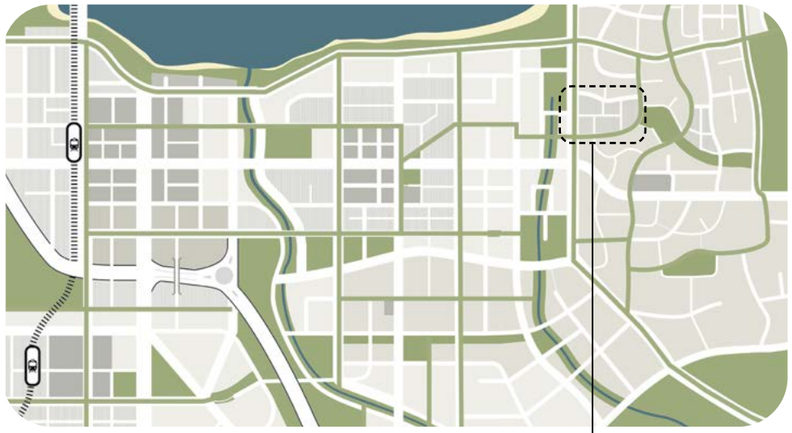
Green infrastructure planning and design connects street level solutions to the bigger picture of network planning at the larger neighbourhood and catchment scales. Green infrastructure in urban streets increases biodiversity, harvests, cleans and recycles water, supports carbon sequestration, and reduces 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.

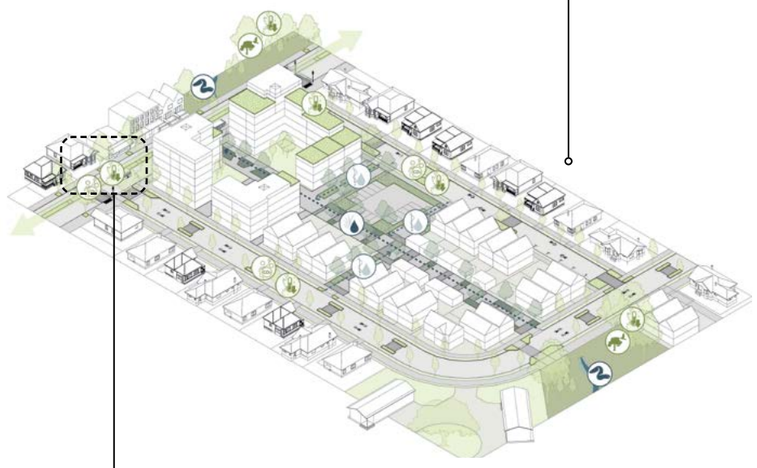
Green infrastructure and the benefits it affords are often not distributed equitably across our existing urban environments. For example, Auckland's Urban Ngahere (Forest) Strategy found that the most deprived parts of the city also have the lowest levels of existing urban tree canopy coverage. Further 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.

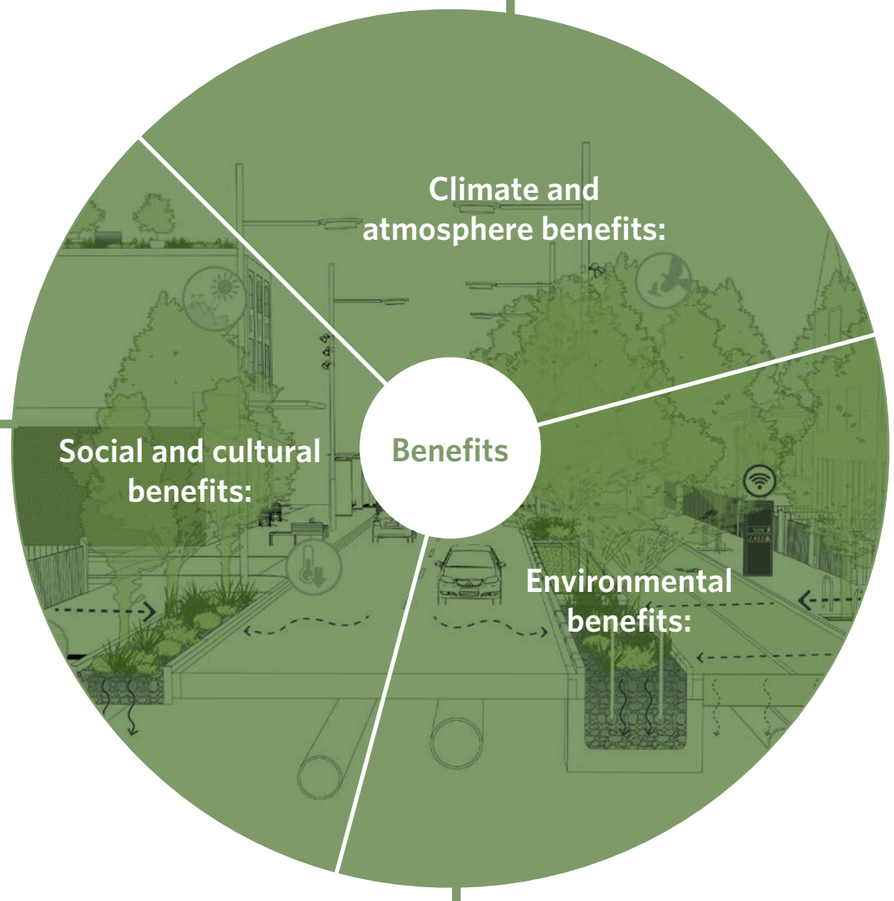
Comfort - Trees in urban streets provide shade and shelter and relief from sun and rain.

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 Councill, 2010)
- WSD-for-Stormwater: Treatment Device Design Guideline (Wellington City Council, 2019)

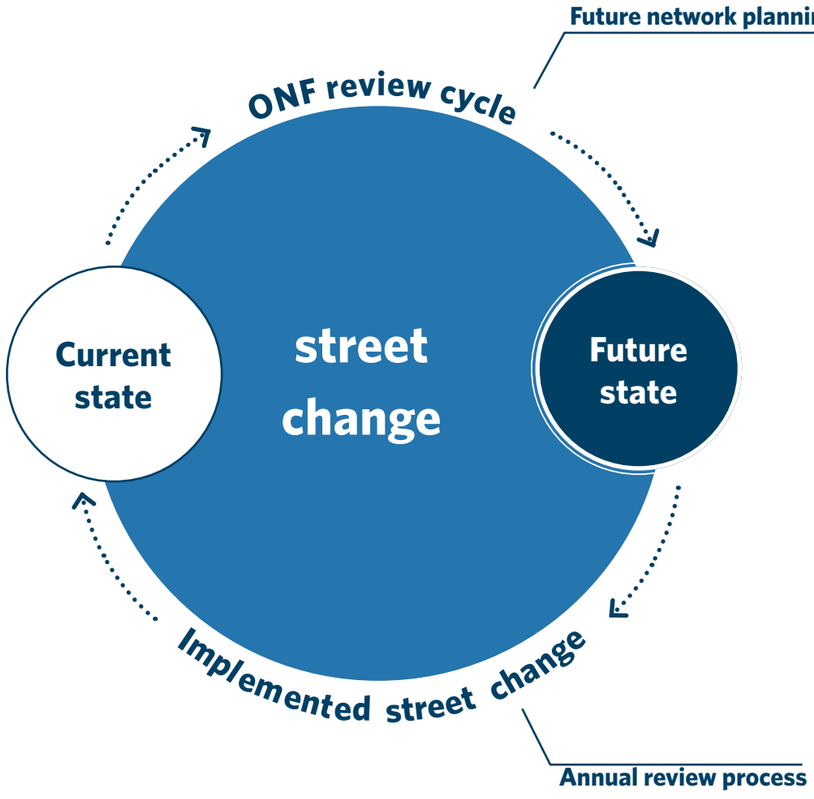
4.2 ONF urban street categories guidance

Street design guidance from current to future state

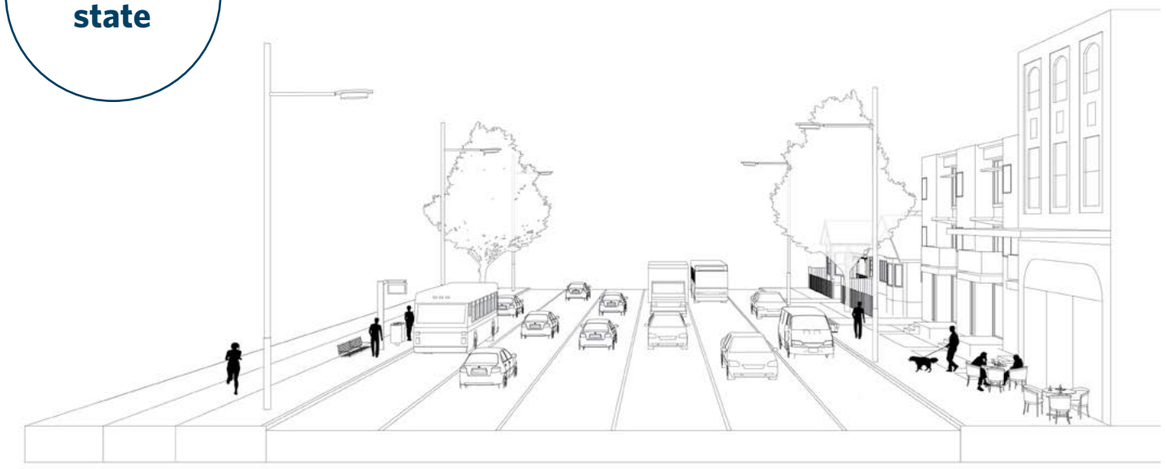
The street design guidance that follows presents simplified typical cross sectional spatial arrangement for each of the seven street category types. The treatments illustrated have been consciously developed to demonstrate comprehensive future state outcomes that show how more holistic and integrated 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.

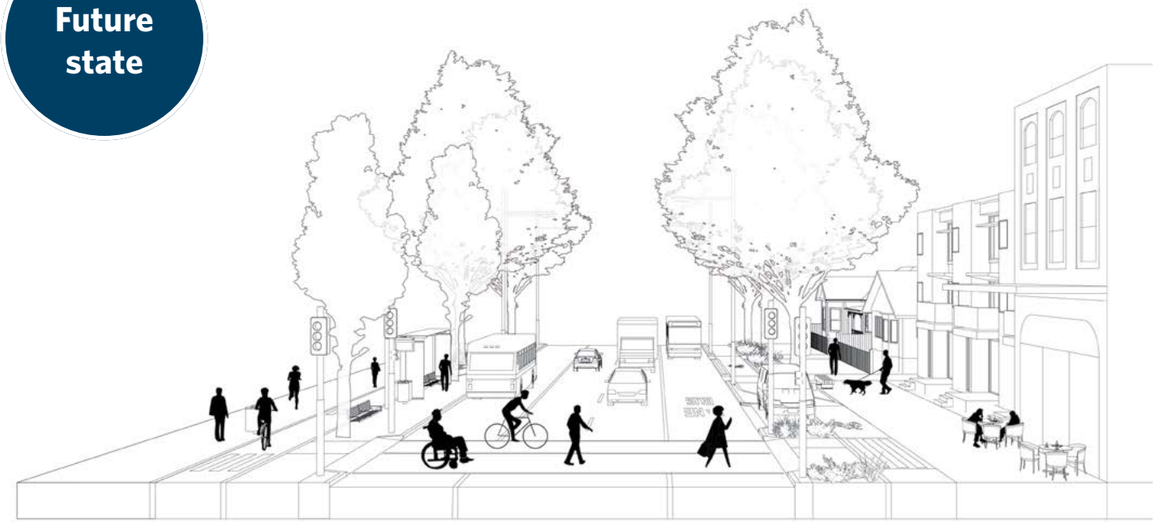
This street guide recognises that there is often a significant gulf between the current state and optimal future state for an urban street within any given ONF street category. Bridging this gulf is often likely to be the function of iterative cycles of planning and investment in street change. There 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 adatptive urbanism and staged approaches to delivering street change.



Current state



Future state



Adaptive Urbanism | Staged | Permanent

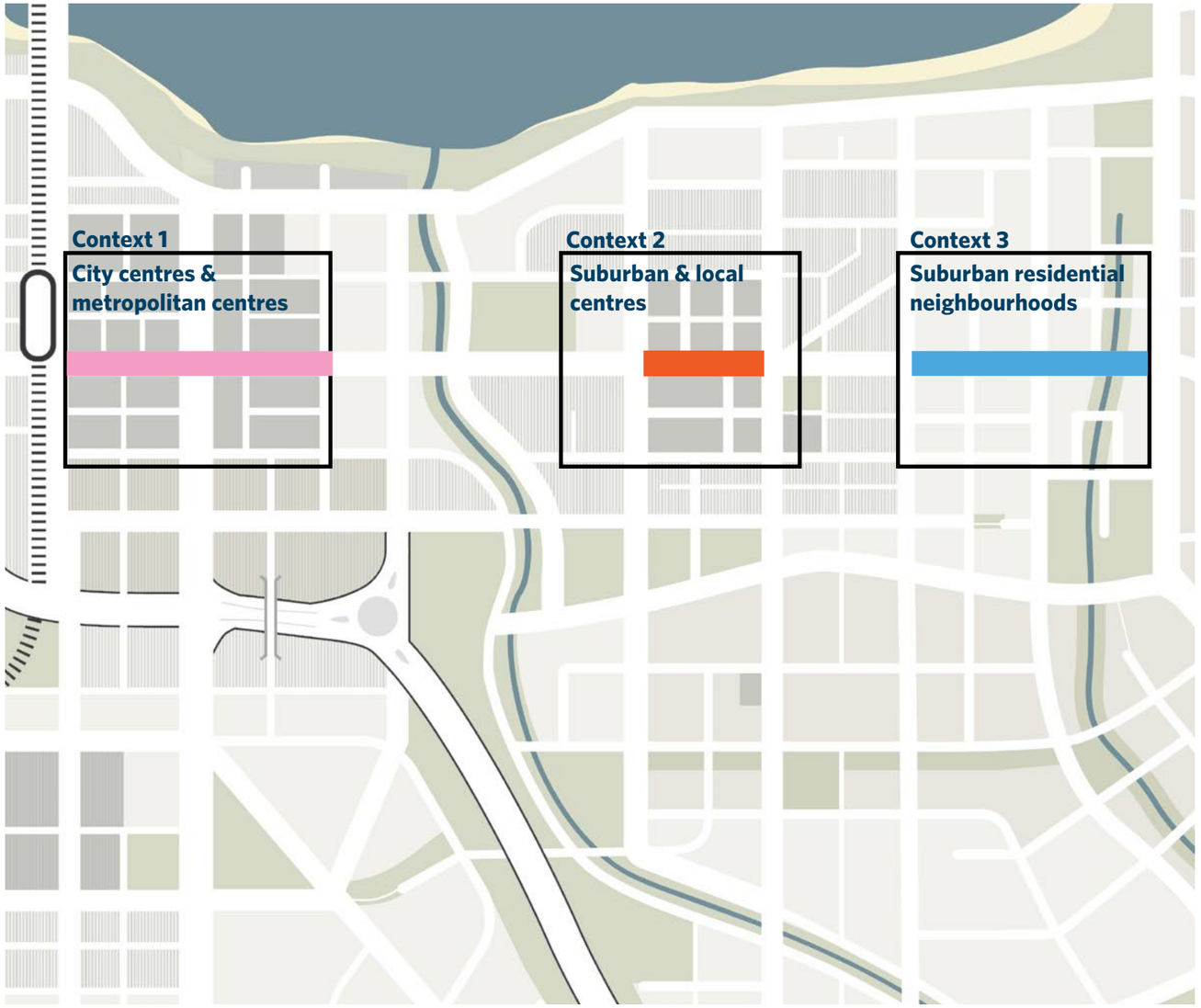
street design

Same street, different contexts

Taking account of urban context change along the street

Context is a crucial, yet often overlooked, factor in setting transport objectives and 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.

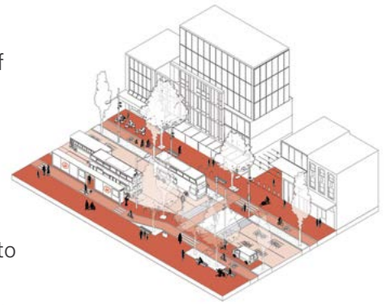
Below, a single street is illustrated at three points along its length, depicting three different potential street category designs that respond to the adjacent contexts.



Context 1 - City centres & metropolitan centres

Street category - City Hubs

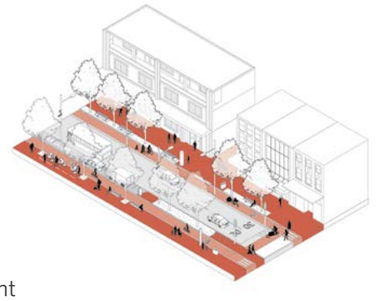
- The street transitions into a city hub with public transport priority in a high-density context, serving large volumes of pedestrians.
- Commercial activity extends from storefronts, and new street furniture supports a high-quality public realm.
- Collective transport moves through the space at slow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



Context 2 - Urban centres

Street family - Main Street

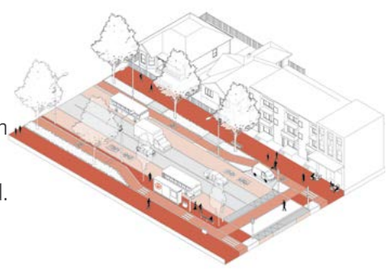
- A mix of residential and commercial ground floor uses line each side of the street in a low-to-mid density context.
- Public transport is provided in mixed traffic.
- Dedicated cycleways are created in both directions.
- Lower and appropriate speeds through urban centre.
- Green infrastructure and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

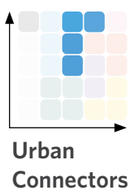


Context 3 - Suburban neighbourhoods

Street family - Urban Connectors

- 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.





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 Austroads 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 pedestrain 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

- Austroads Guides (Austroads, 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, wayfindng 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

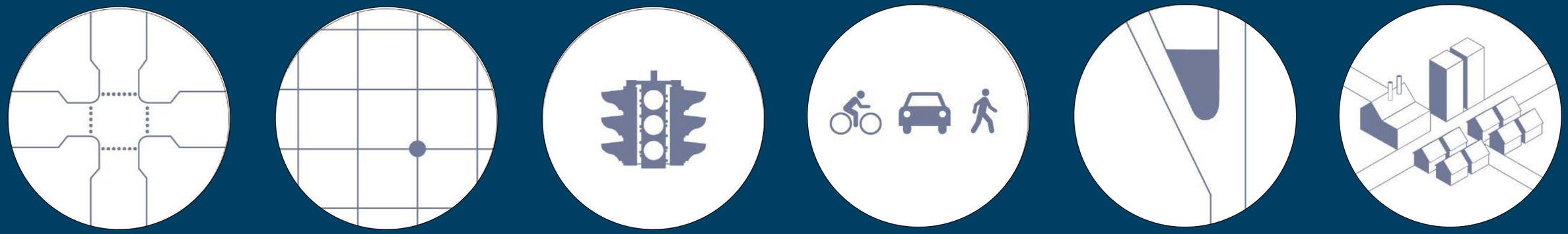
Intersection planning and design is part of creating great streets and considered early in any optioneering. Decisions on the location and form of intersections can helps shape the 'movement function' and 'place function' of a network. It can also influence the form of midblock street layouts and prioritise access for different modes. A 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.

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/

Intersection principles for street planning and design



Design intersections to be as compact as possible

Compact intersections 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?

Utilise 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.

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

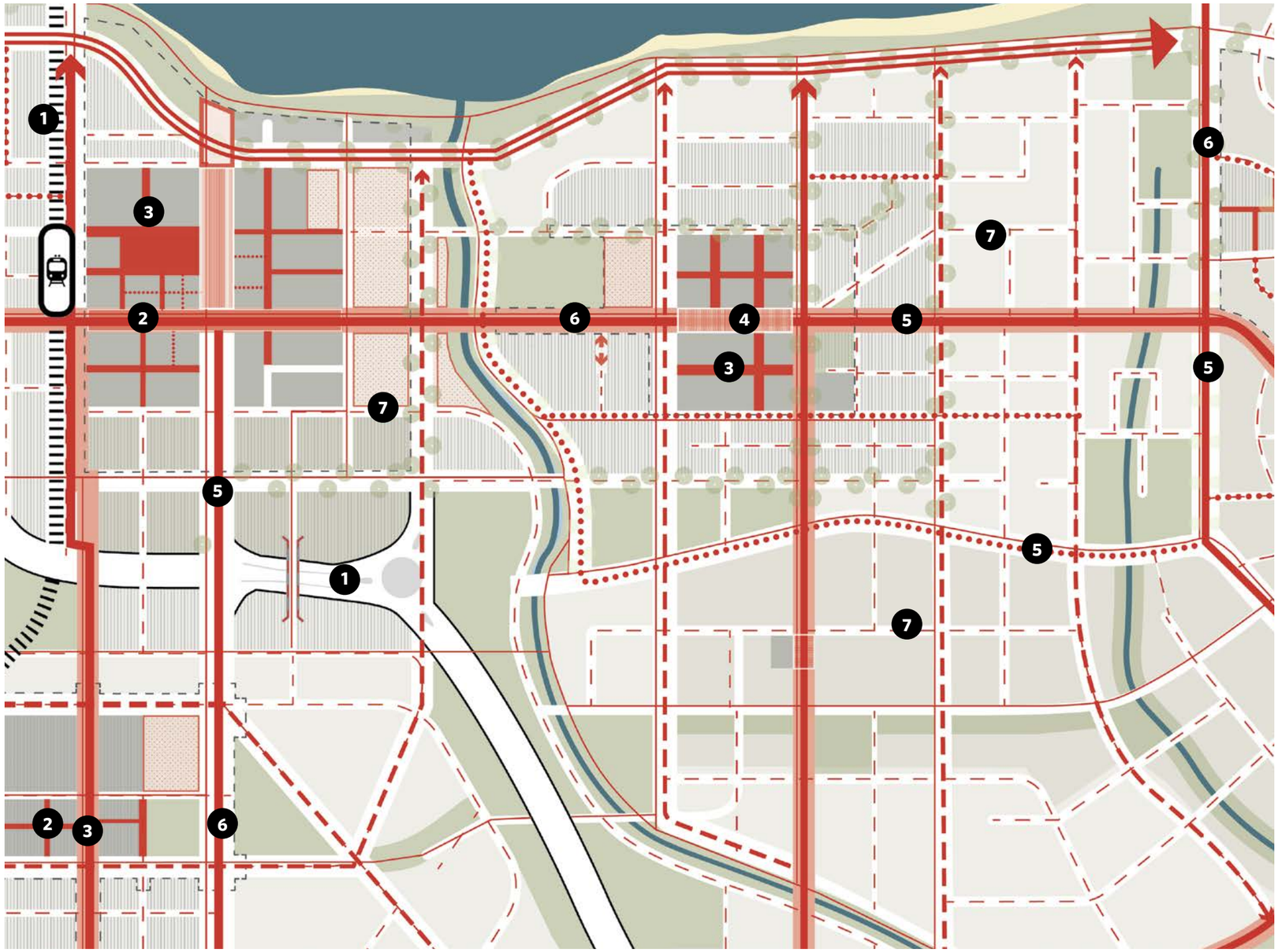
Section 4.2 provides more detailed street design guidance for six of the seven street categories within the urban street family as defined by the One Network Framework (ONF). The seventh category - Transit Corridors – encompassing segregated urban motorways and railway corridors with restricted access 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.

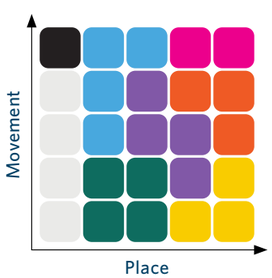
Section 4.2 of the guidance is where everything comes together, demonstrating how a co-ordinated and integrated approach to the planning and design of streets is grounded in specific streets responding to particular place and movement functions in ways that respond appropriately to their urban context. 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 and metropolitan centres to smaller urban centres, towns and 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

Links

- One Network Framework (Waka Kotahi, 2022)

City Hubs

City Hubs

WAKA KOTAHI NZ TRANSPORT AGENCY | One Network Framework

Typical street width: 20m

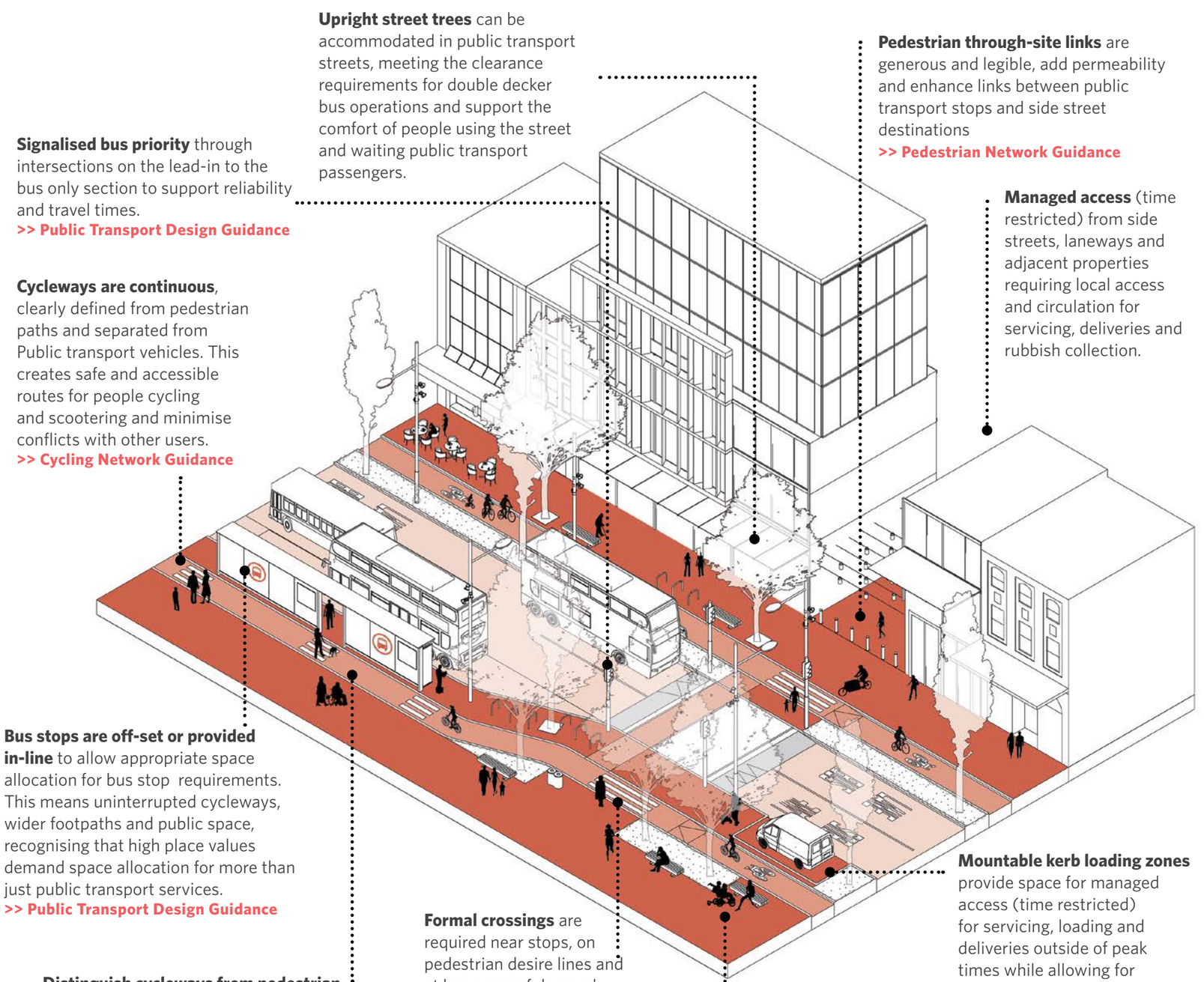
Typical speed limit: 30km/h

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.

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.

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.

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

Illustrations and associated guidance are indicative only.

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

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

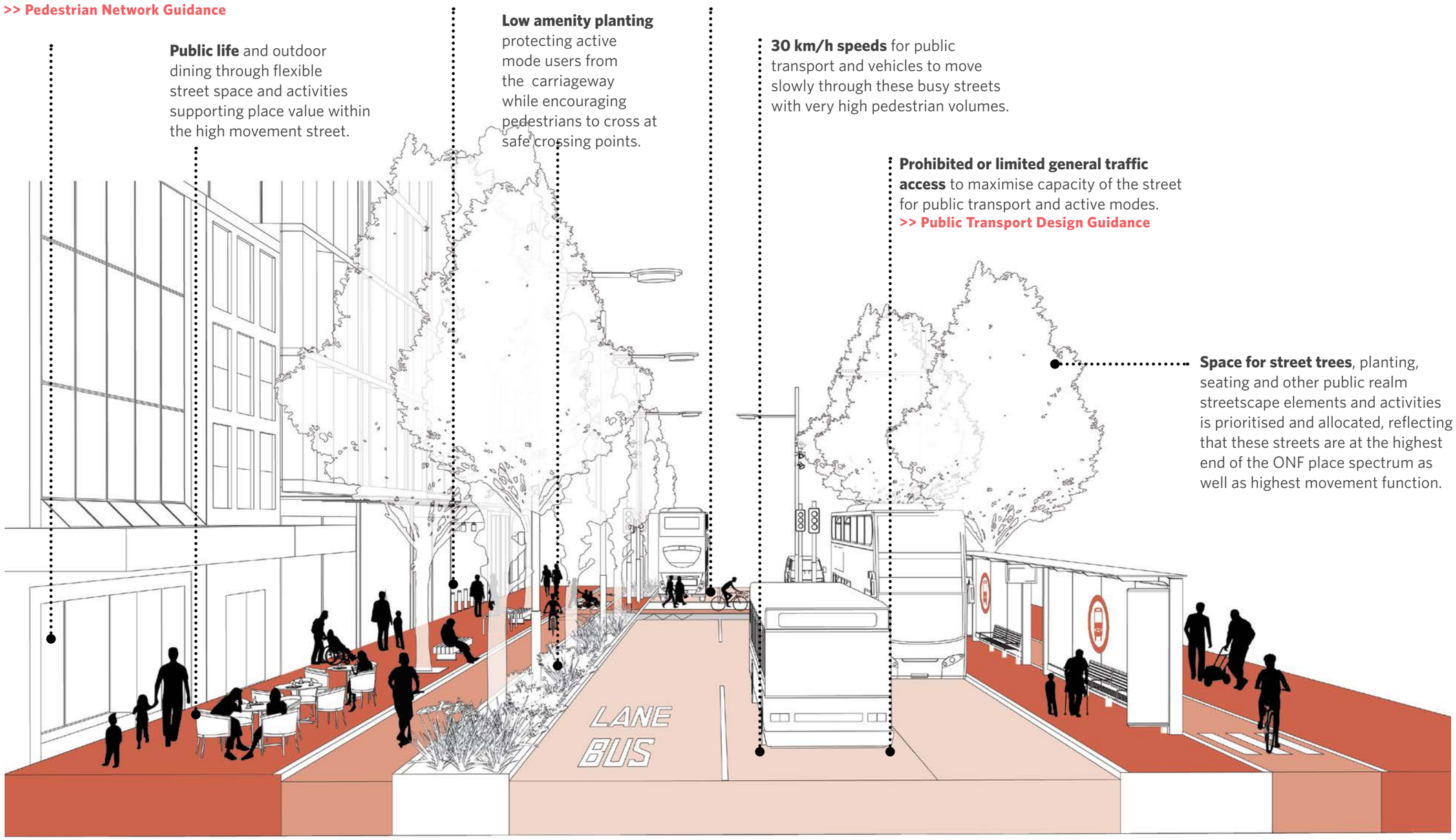
Carriageway width is as narrow as possible to achieve safe operating speeds and make it easier to cross the road, while accounting for clearance for manoeuvring and bus tail swing (including double deckers).

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

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

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.

Illustrations and associated guidance are indicative only.

City Hubs

Diversifying the street category

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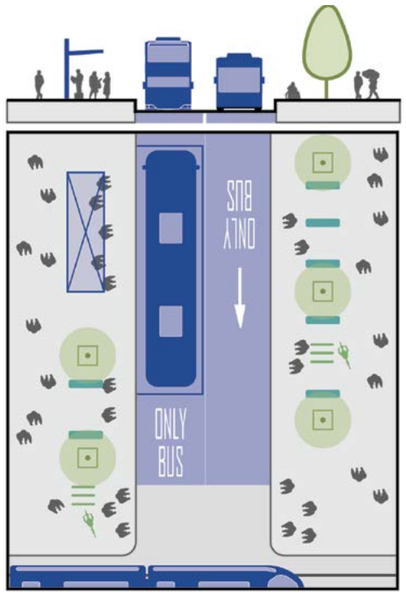
A range of potential integrated street solutions, to be explored through option development, for example



Kerb-running public transport street

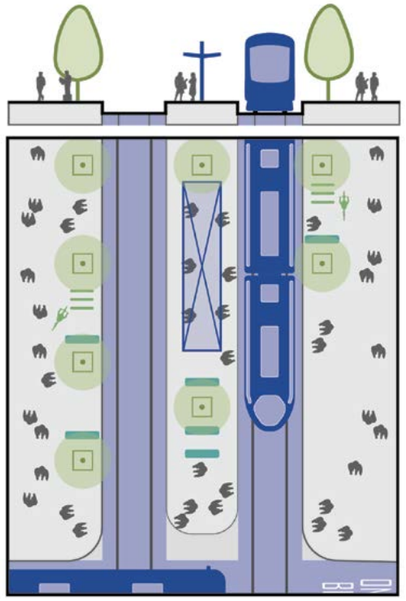
Priorities:

Safe and appropriate speed limit:

30 - 40

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

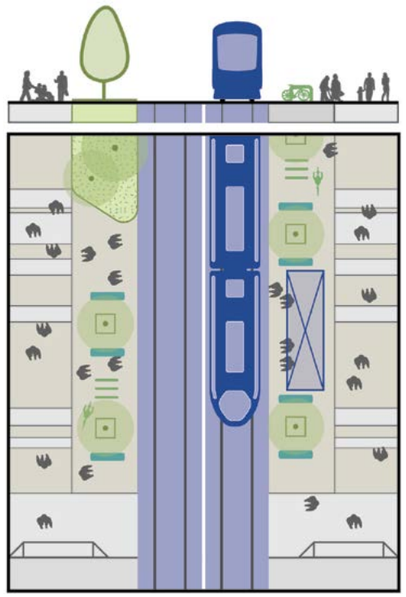
Priorities:

Safe and appropriate speed limit:

30 - 40

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:

30

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.

Illustrations and associated guidance are indicative only.

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

WELLESLEY STREET, AUCKLAND

Local examples:

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

OXFORD STREET, LONDON UNITED KINGDOM

Global examples:

- Oxford Street, London UK

Centre-running public transport street

AUCKLAND LIGHT RAIL

Local examples:

- Future Auckland Light Rail
- Future Wellington Mass Rapid Transit

SWANSTON STREET, MELBOURNE

Global examples:

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

Pedestrian mall with centre-running public transport

AUCKLAND QUEEN STREET PROPOSAL

Local examples:

- Auckland Previous Queen Street Proposal

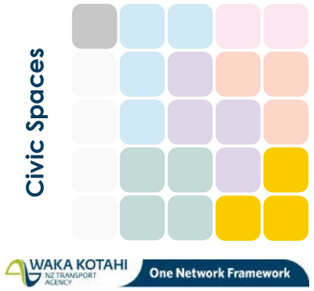
GEORGE STREET, SYDNEY

Global examples:

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

Illustrations and associated guidance are indicative only.

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.

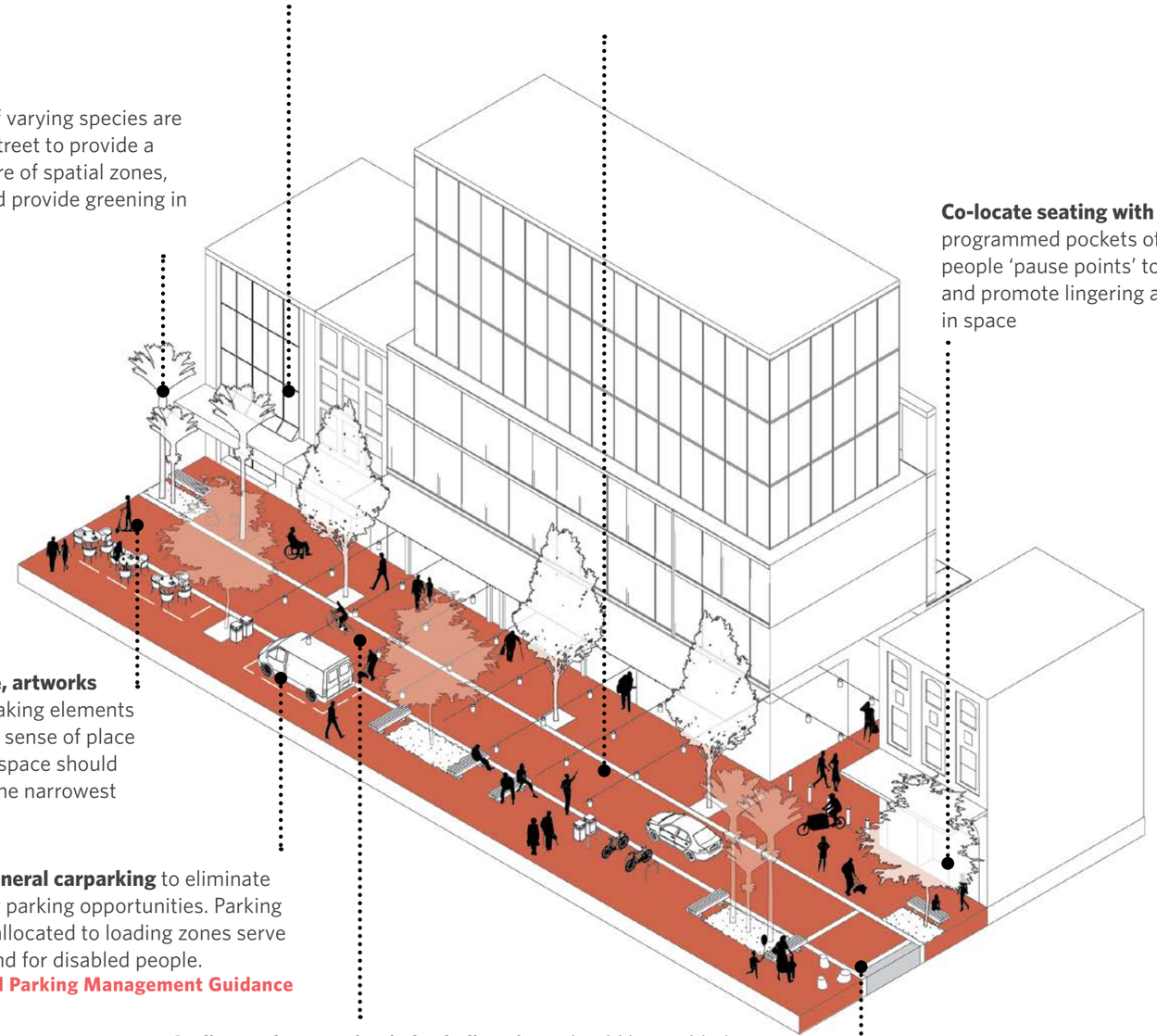
Network and operations guidance

- 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 destinational 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 scootering 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.

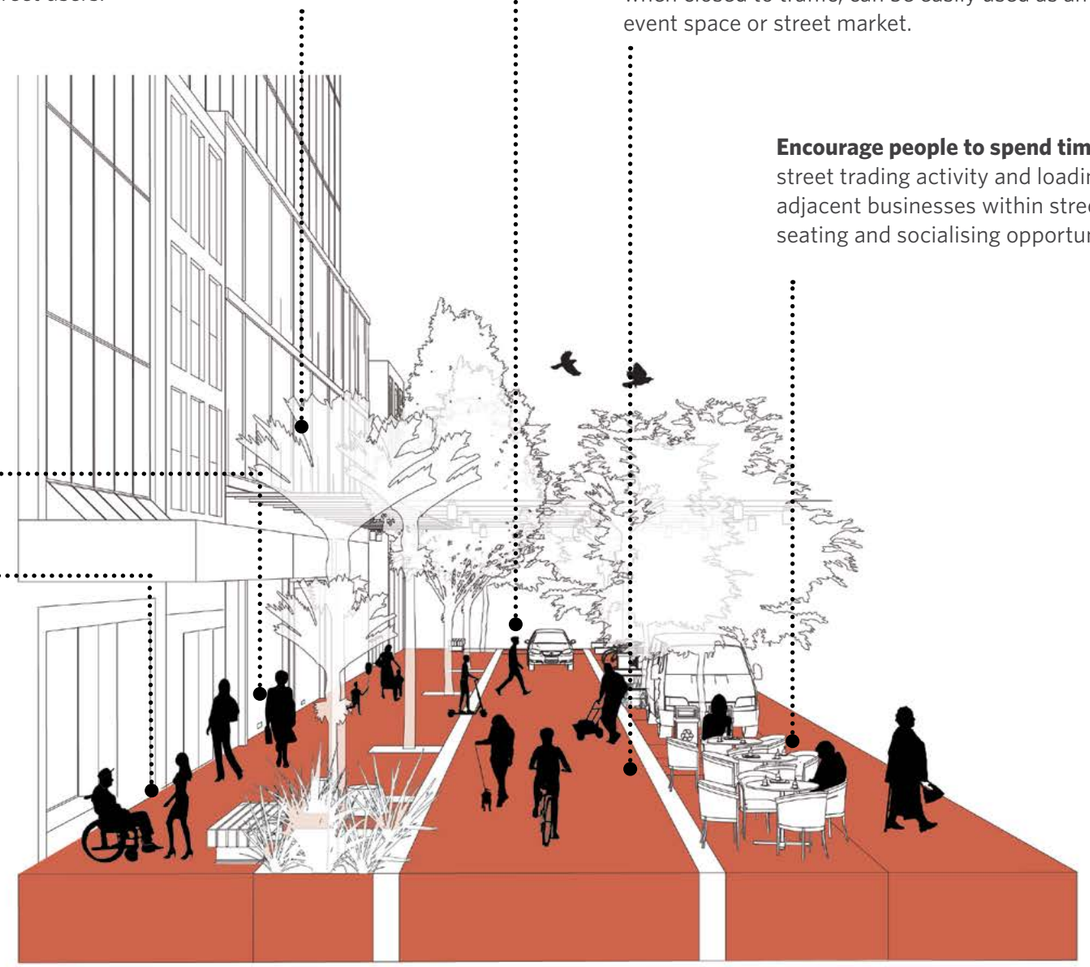
Illustrations and associated guidance are indicative only.

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 busineses.

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

Illustrations and associated guidance are indicative only.

Civic Spaces

Diversifying the street category

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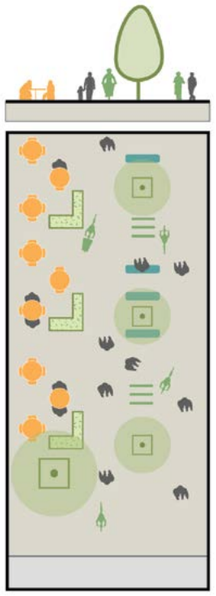
Civic Spaces

WAKA KOTAHI NZ TRANSPORT AGENCY | One Network Framework

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

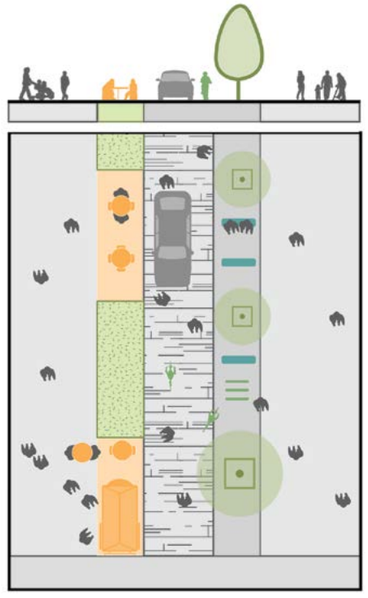
Priorities:

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

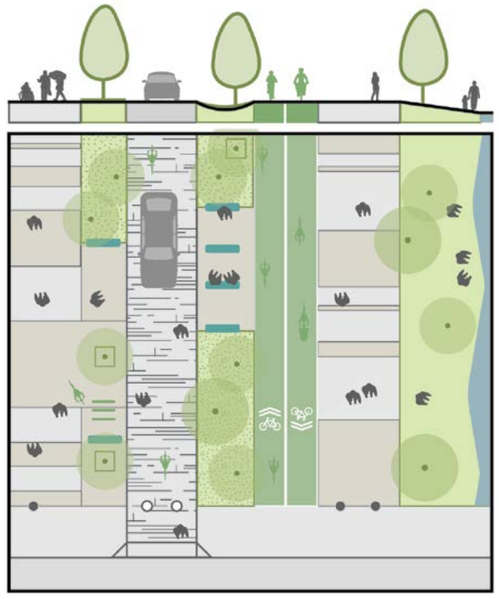
Priorities:

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.

Illustrations and associated guidance are indicative only.

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

IMAGE SOURCE: HEART OF THE CITY

VULCAN LANE, AUCKLAND

Local examples:

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

Pedestrianised streets

IMAGE SOURCE: NELSON CITY COUNCIL

TRAFALGAR STREET, NELSON

Local examples:

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

Shared spaces

IMAGE SOURCE: AUCKLAND COUNCIL

O'CONNELL STREET, AUCKLAND

Local examples:

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

Blue / green street edges

IMAGE SOURCE: ARCHIPRO NZ

OTAKARO AVON RIVER PRECINCT

Local examples:

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

IMAGE SOURCE: THE PROVIDENCE JOURNAL

CENTRE PLACE LANE, MELBOURNE

Global examples:

- Centre Place Lane, Melbourne

IMAGE SOURCE: WIKIMEDIA COMMONS, KGBO

QUEEN STREET MALL, BRISBANE AUSTRALIA

Global examples:

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

IMAGE SOURCE: JIM LINWOOD / FLICKR.COM

CARNABY STREET, LONDON, UK

Global examples:

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

IMAGE SOURCE: BOFFA MISKELL

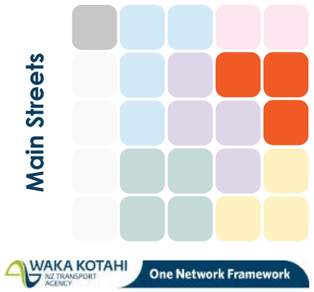
PASEALEKU BERRIA, SAN SEBASTIAN, SPAIN

Global examples:

- Pasealeku Berria, San Sebastian, Spain

Illustrations and associated guidance are indicative only.

Main Streets



Typical street width: 20m

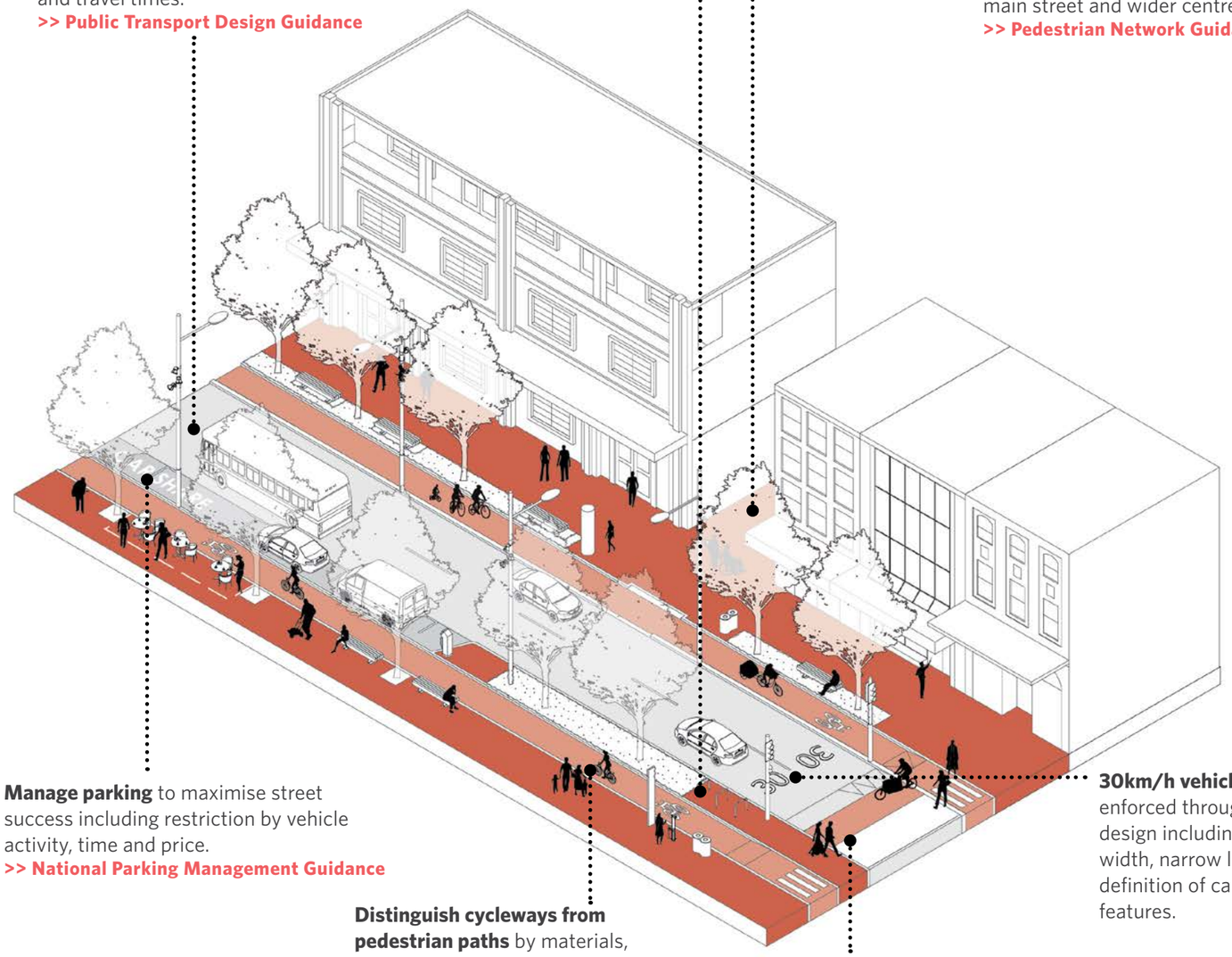
Typical speed limit: 30km/h

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 carraigeway width, narrow lanes, and definition of carriageway features.

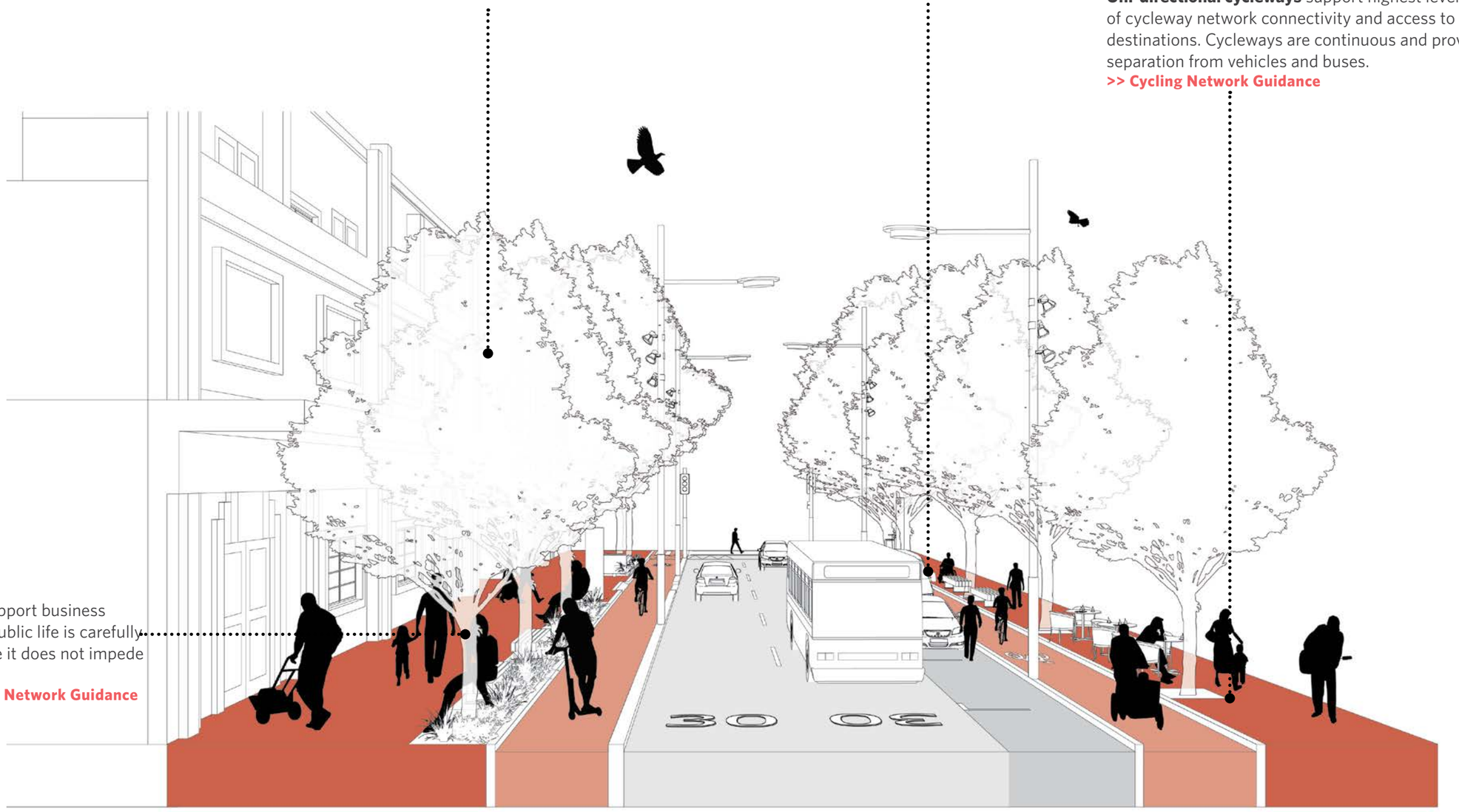
Formal crossings are required near bus stops and in areas with high demand. Allow for easy walking with pedestrian priority on raised tables at minor side street crossings and safe signalised crossings at major intersections and on key cross corridor desire lines along the Main Street.
>> Pedestrian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

Illustrations and associated guidance are indicative only.

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

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Main Streets

Diversifying the street category

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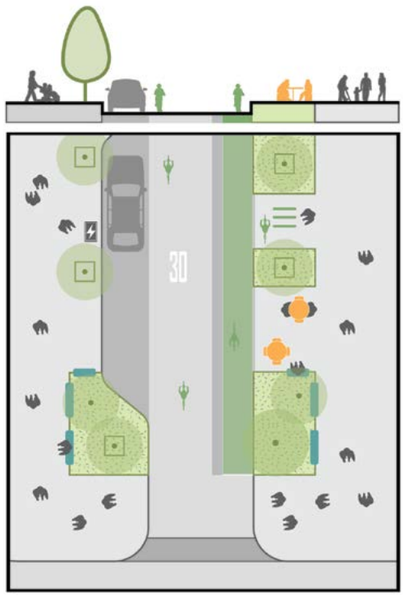


One-way, retail priority

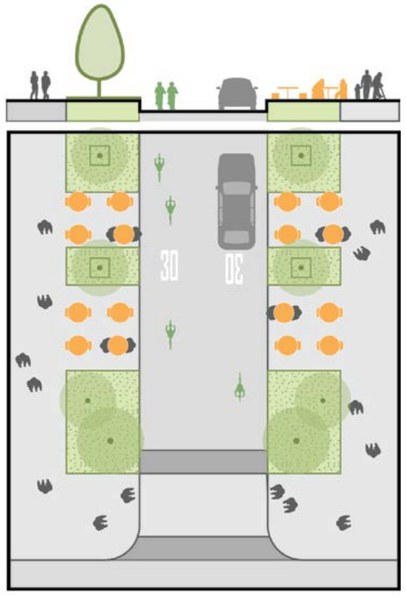
Priorities:

Safe and appropriate speed limit:

30

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

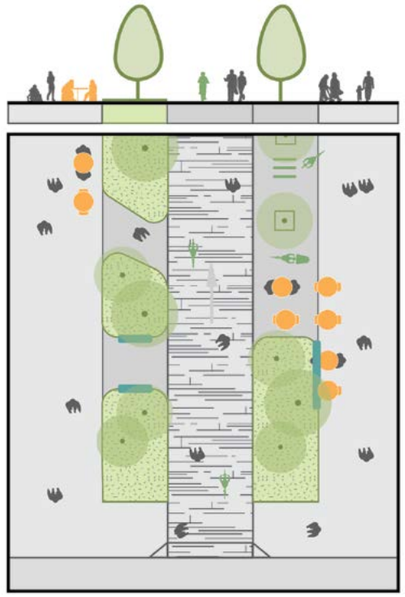
Priorities:

Safe and appropriate speed limit:

30

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

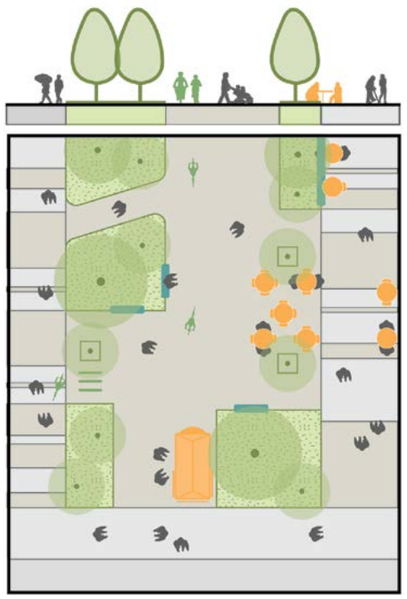
Priorities:

Safe and appropriate speed limit:

10 - 20 Low and slow

Key features:

- Kerb separated carriageway or level surface design solutions
- Spatial arrangment 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.

Illustrations and associated guidance are indicative only.

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

IMAGE SOURCE: DUNEDIN CITY COUNCIL

GEORGE STREET, DUNEDIN

Local examples:

- George Street, Otepoti Dunedin

Dining priority

IMAGE SOURCE: AUCKLAND COUNCIL

HURSTMERE ROAD, TAKAPUNA

Local examples:

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

Shared space

IMAGE SOURCE: INVERCARGILL CITY COUNCIL

ESK STREET, INVERCARGILL

Local examples:

- Emerson Street, Ahuriri Napier
- Esk Street, Invercargill

Pedestrianised streets / malls

IMAGE SOURCE:

CASHEL MALL, CHRISTCHURCH

Local examples:

- Cashel Mall, Otautahi Christchurch
- Beach Street, Queenstown

IMAGE SOURCE: BOFFA MISKELL

MONMOUTH STREET, LONDON, UNITED KINGDOM

Global examples:

- Monmouth Street, London, United Kingdom

IMAGE SOURCE: REIMAGINED STREETS AUSTRALIA

MUSK AVENUE, KELVIN GROVE, QLD AUSTRALIA

Global examples:

- Musk Avenue, Kelvin Grove, Brisbane, Australia

IMAGE SOURCE: WATERLOOREGIONCONNECTED.COM

SHARED SPACE SHOPPING STREET, NETHERLANDS

Global examples:

- New Road, Brighton UK
- Bagijnhof, Dordrecht, Netherlands

IMAGE SOURCE: OUTLOOK TRAVELLER

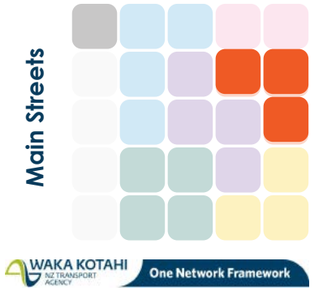
STROGET COPENHAGEN

Global examples:

- Stroget, Copenhagen

Illustrations and associated guidance are indicative only.

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

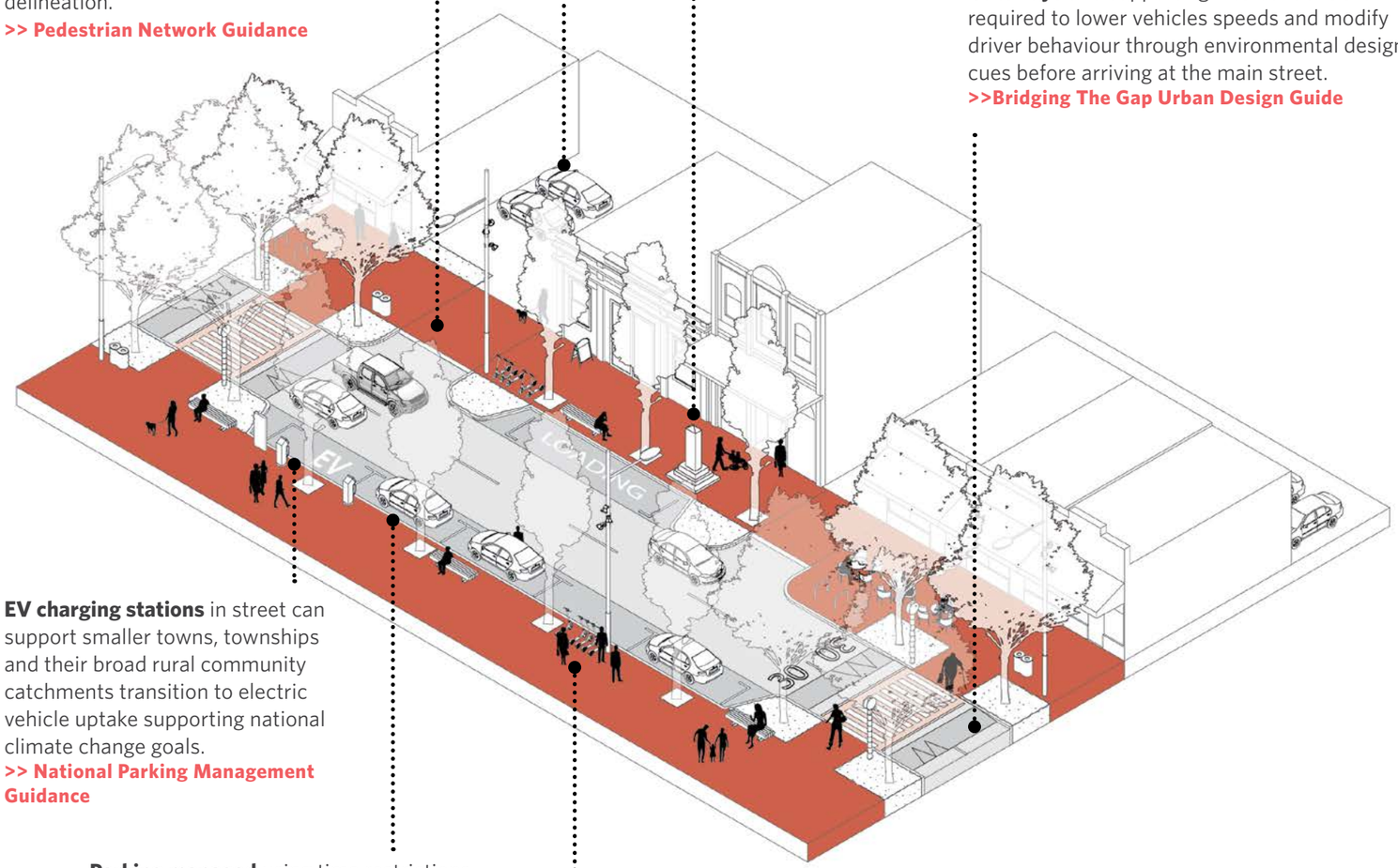
- Main streets in towns are often tasked with two sometimes conflicting functions – providing a long-distance arterial function and being a central place for public life and local economic activity.
- Prioritising people and place activities requires slowing traffic speed limit to 30km/h, enabling safe 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

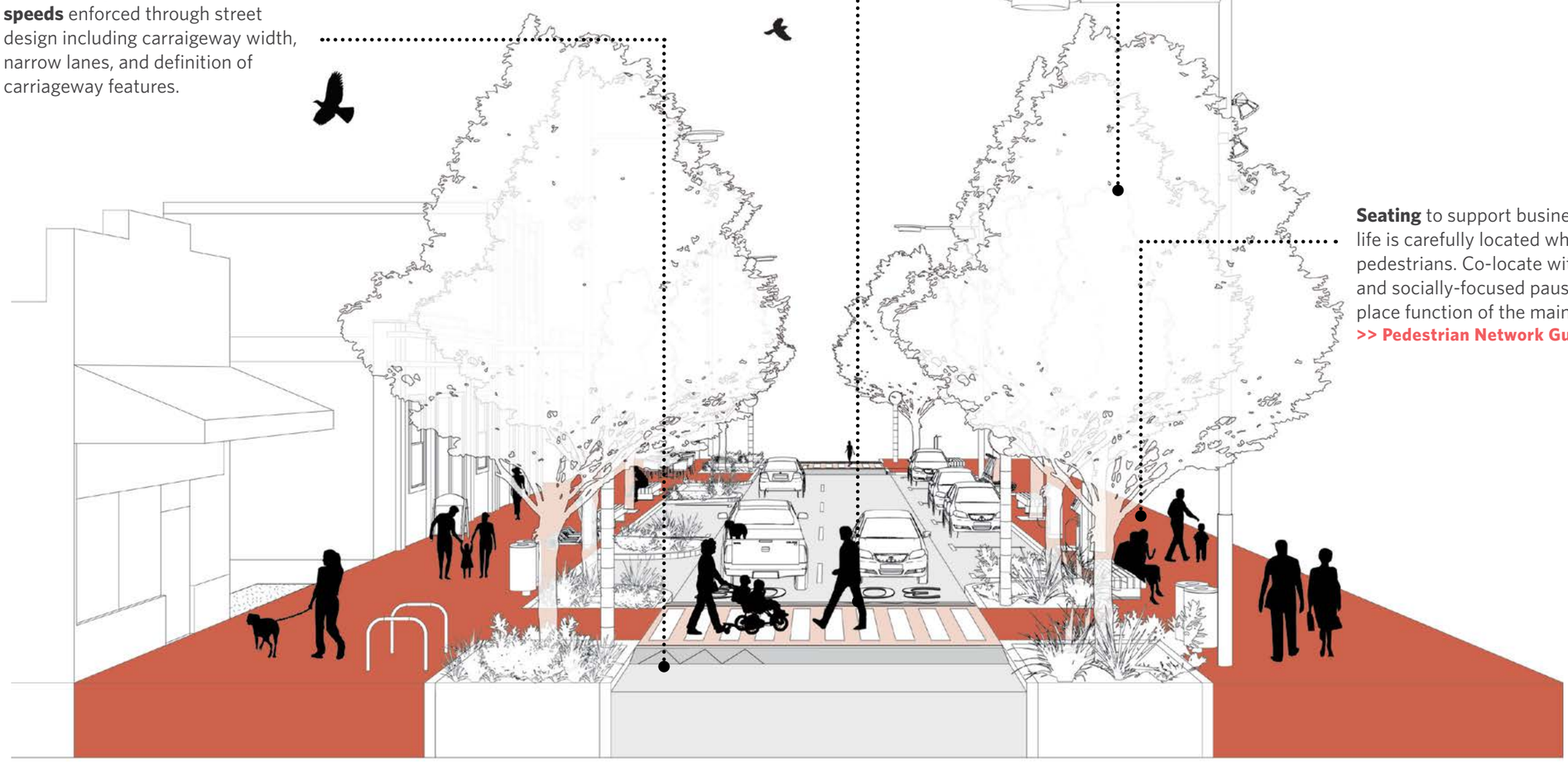
Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements.
>> Cycling Network Guidance

Illustrations and associated guidance are indicative only.

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

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.

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



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

Illustrations and associated guidance are indicative only.

Main Streets

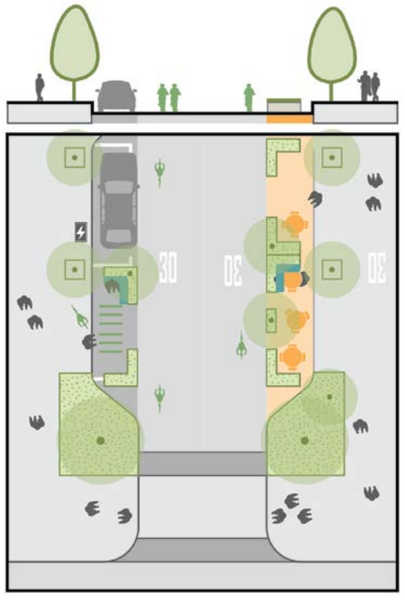
Diversifying the street category

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.

Main Streets

WAKA KOTAHI NZ TRANSPORT AGENCY One Network Framework

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



Towns and townships main street

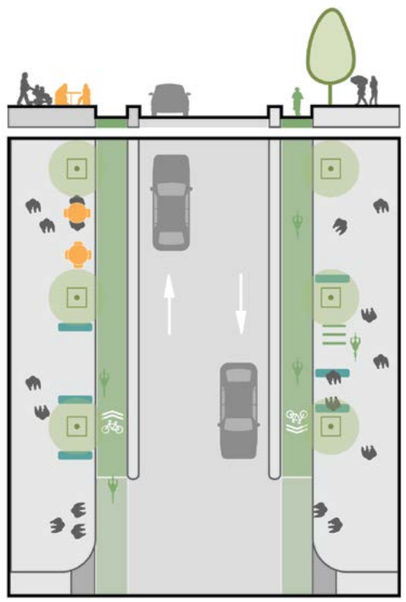
Priorities:

Safe and appropriate speed limit:

30 - 40

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

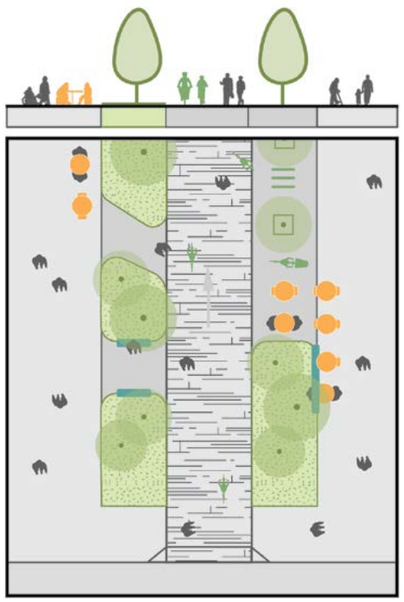
Priorities:

Safe and appropriate speed limit:

30 - 40

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

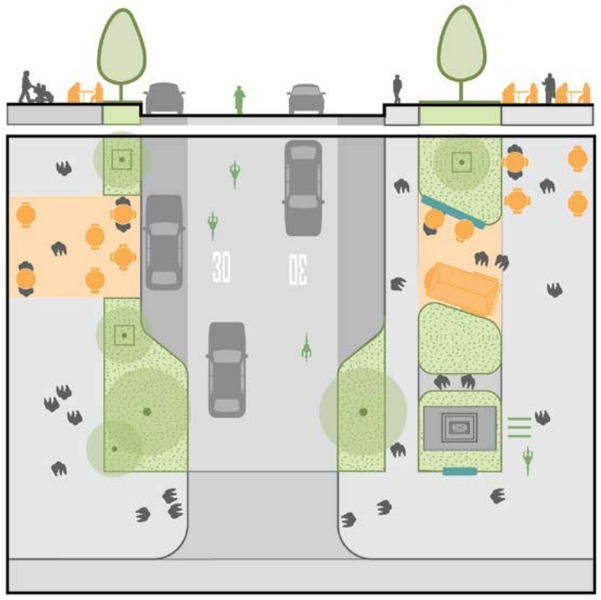
Priorities:

Safe and appropriate speed limit:

10 - 30 Low and slow

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:

30 - 40

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.

Illustrations and associated guidance are indicative only.

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

IMAGE SOURCE: BOFFA MISKELL

BUCKINGHAM STREET, ARROWTOWN

Local examples:

- Commercial Street, Takaka
- Buckingham Street, Arrowtown

Towns and townships bike priority


IMAGE SOURCE: BOFFA MISKELL

SURRY HILLS, SYDNEY, AUSTRALIA

Local examples:

- Cycling Street, Surry Hills, Sydney, Australia

Towns and townships pedestrian priority


IMAGE SOURCE: BOFFA MISKELL

TANCRED STREET, ASHBURTON

Local examples:

- Burnett and Tancred Streets, Hakatere Ashburton

Towns and townships wide main street

IMAGE SOURCE:GOOGLE EARTH

BROADWAY, MATAMATA

Local examples:

- Broadway, Matamata
- Jellicoe Street, Te Puke


IMAGE SOURCE: JOHN GOLLINGS

LONSDALE STREET, DANDENONG, AUSTRALIA

Global examples:

- Lonsdale Street, Dandenong, Australia


IMAGE SOURCE: REIMAGINED STREETS AUSTRALIA OPEN ACCESS

BELVIDERE STREET, BELMONT WA AUSTRALIA

Global examples:

- Belvidere Street, Belmont, WA Australia

IMAGE SOURCE: REIMAGINED STREETS AUSTRALIA OPEN ACCESS

PRINCES HIGHWAY, WOLLONGONG, AUSTRALIA

Global examples:

- Princes Highway, Wollongong, Australia


IMAGE SOURCE: GOOGLE EARTH

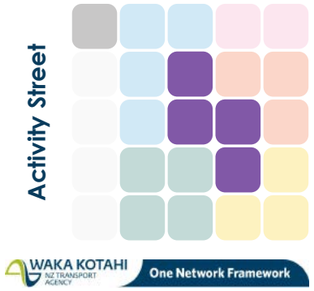
PALL MALL, BENDIGO, AUSTRALIA

Global examples:

- Pall Mall, Bendigo, Australia

Illustrations and associated guidance are indicative only.

Activity Streets



Typical street width: varies (18 - 20m depicted)

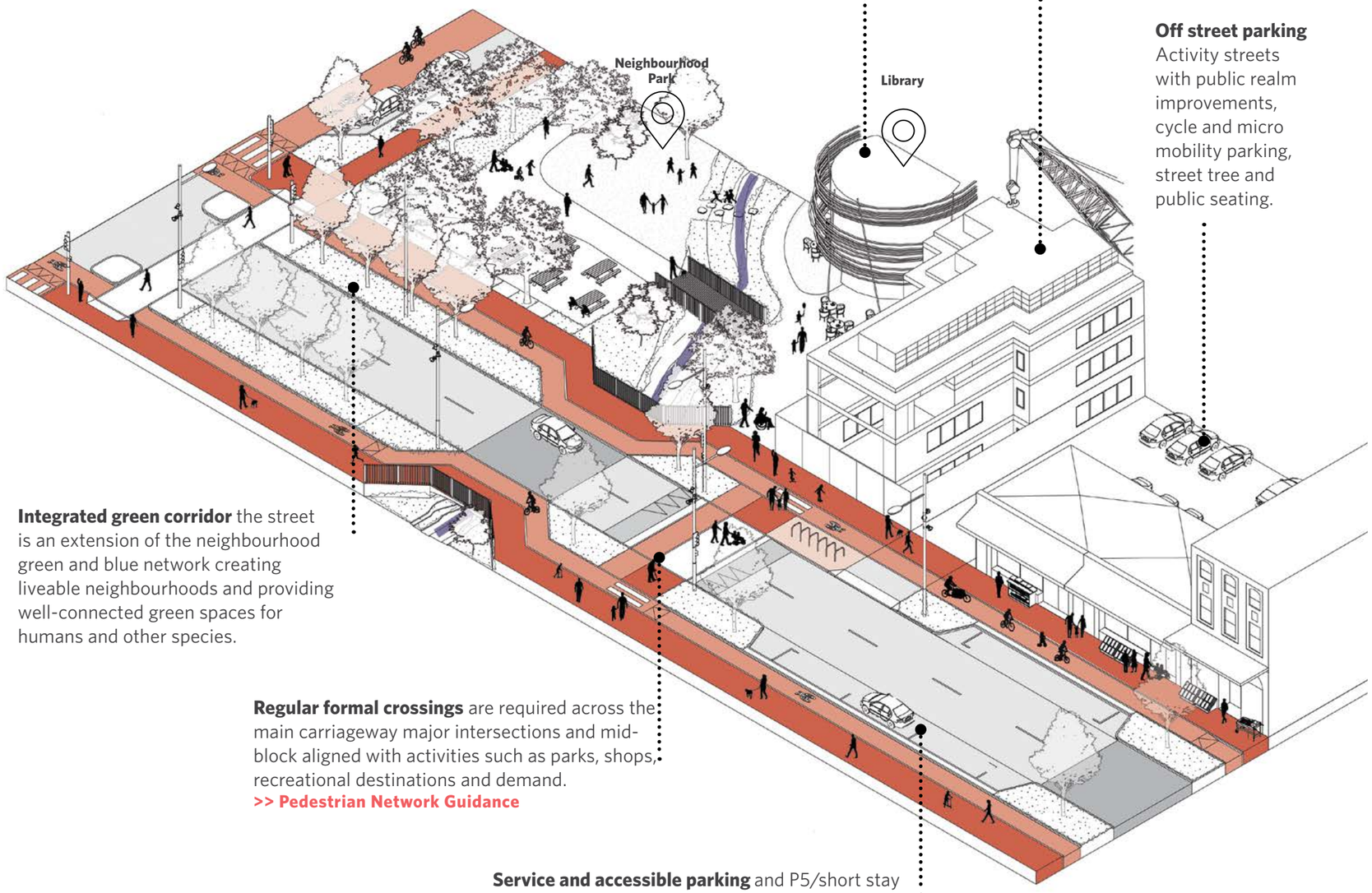
Typical speed limit: 30 - 40km/h

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.

Businesses trading within the footpath zone creating active edges.

Cycle and micromobility parking should be located close to destinations without impeding pedestrian movements.
>> Cycling Network Guidance

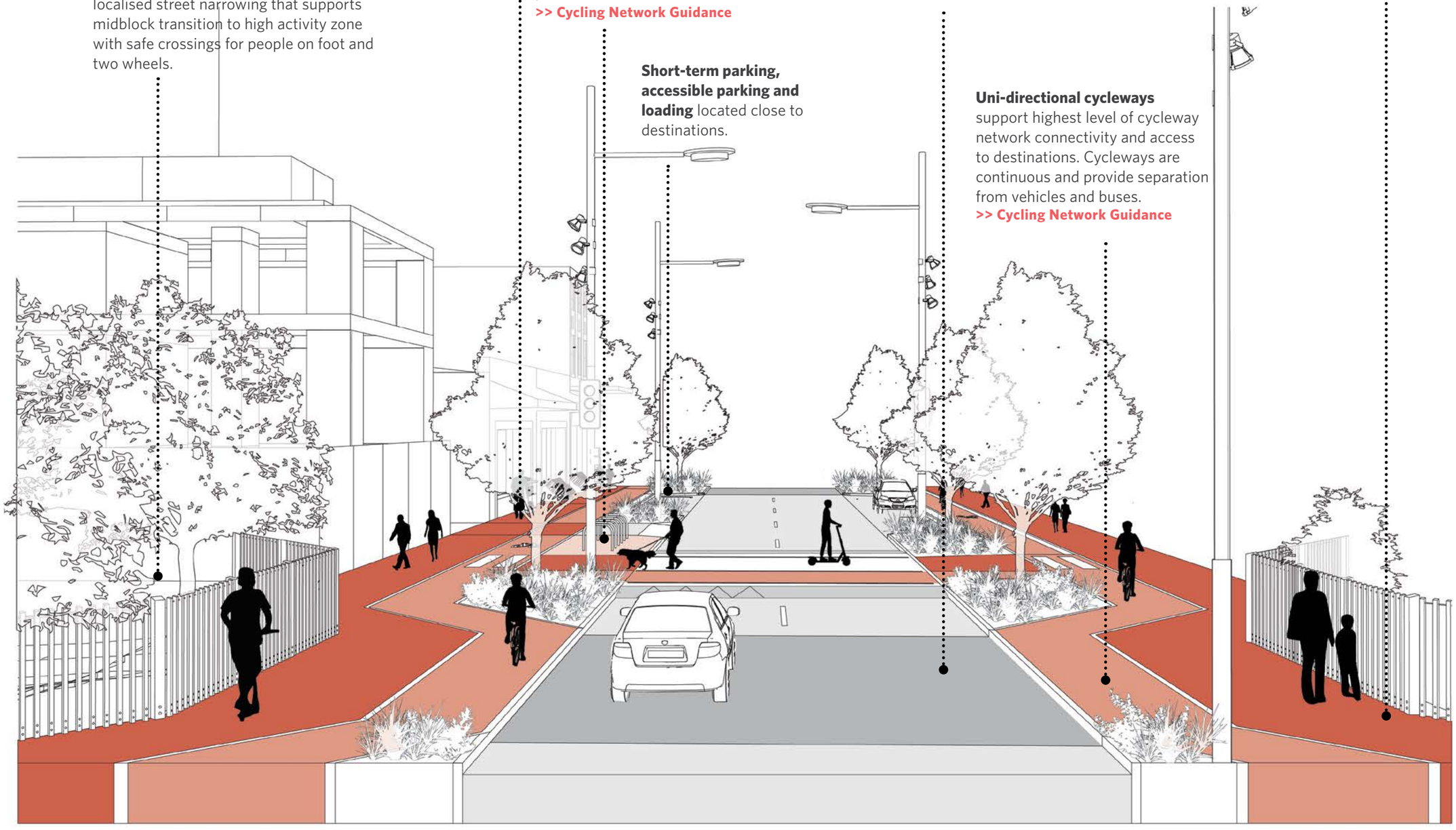
Roadway narrowing and material changes are needed as a threshold treatment at the entrance to the residential street. This indicates a change in urban environment requiring a change in vehicle behaviour.
>> Nacto Global Street Design Guide

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

Stream crossing creates opportunity for localised street narrowing that supports midblock transition to high activity zone with safe crossings for people on foot and two wheels.

Short-term parking, accessible parking and loading located close to destinations.

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



Illustrations and associated guidance are indicative only.

Activity Streets

Diversifying the street category

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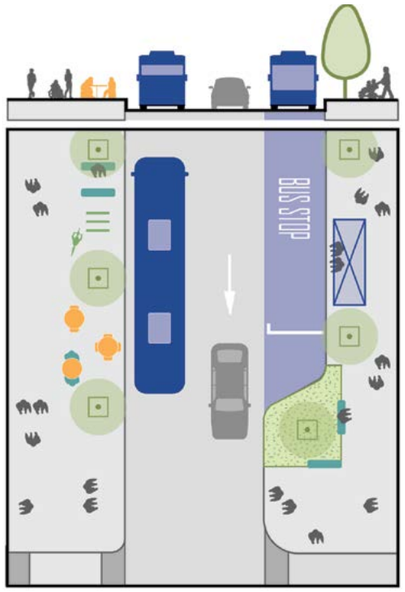
Activity Streets

WAKA KOTAHI NZ TRANSPORT AGENCY | One Network Framework

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



Mixed-use

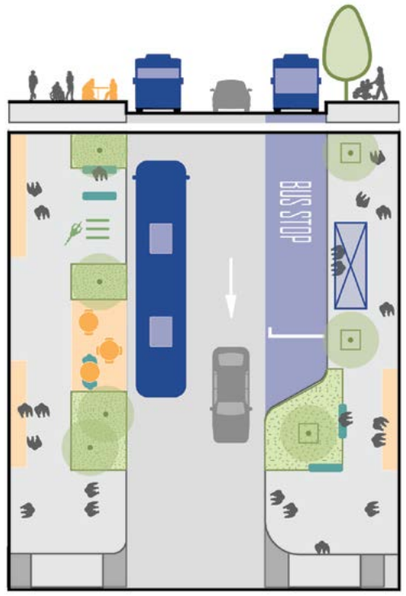
Priorities:

Safe and appropriate speed limit:

30 - 40

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

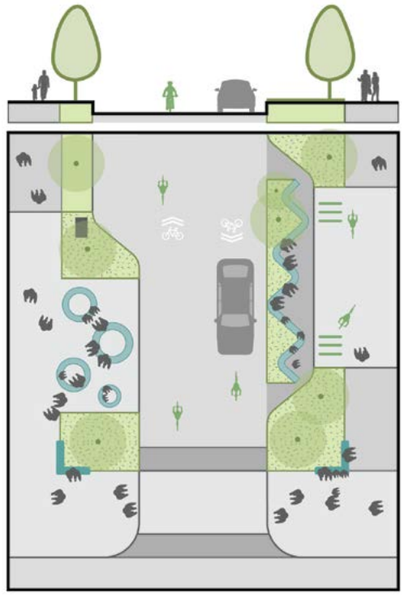
Priorities:

Safe and appropriate speed limit:

30 - 40

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

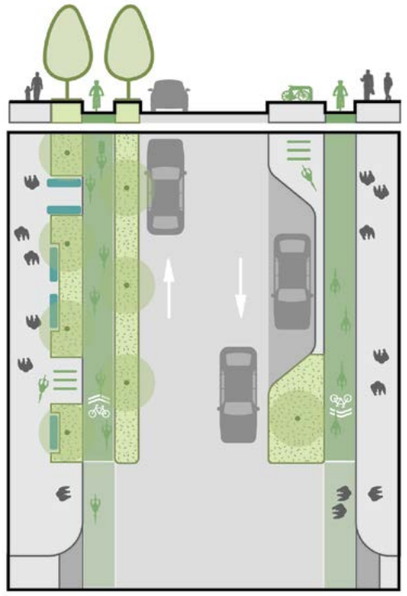
Priorities:

Safe and appropriate speed limit:

30

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:

30 - 40

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.

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

MASCOT AVENUE, MANGERE, AUCKLAND

Local examples:

- Mascot Avenue, Mangere, Auckland

Commercial

VICTORIA STREET, CHRISTCHURCH

Local examples:

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

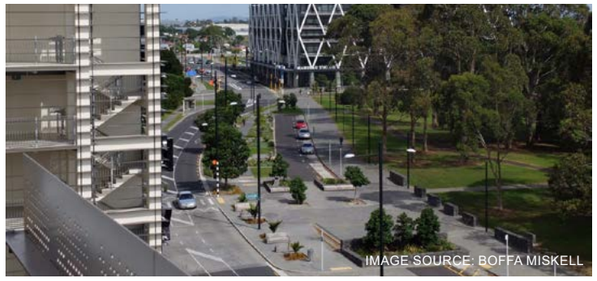
School

MASCOT AVENUE, MANGERE, TAMAKI MAKAURAU AUCKLAND

Local examples:

- Mascot Avenue, Mangere, Auckland

Park



DAVIES AVENUE, MANUKAU, AUCKLAND

Local examples:

- Davies Avenue, Manukau, Auckland

LONDON UNITED KINGDOM

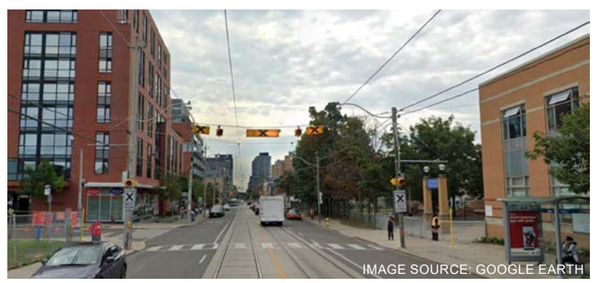
Global examples:

- Francis Road, London, United Kingdom

BARANGAROO AVENUE, SYDNEY, AUSTRALIA

Global examples:

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



PARLIAMENT STREET, REGENT PARK, TORONTO, CANADA

Global examples:

- Parliament Street, Regent Park, Toronto, Canada

PROMENADE DES ANGLAIS, NICE,FRANCE

Global examples:

- Promenade des Anglais, Nice, France

Illustrations and associated guidance are indicative only.

Urban Connectors

Urban Connectors

WAKA KOTAHI NZ TRANSPORT AGENCY One Network Framework

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.

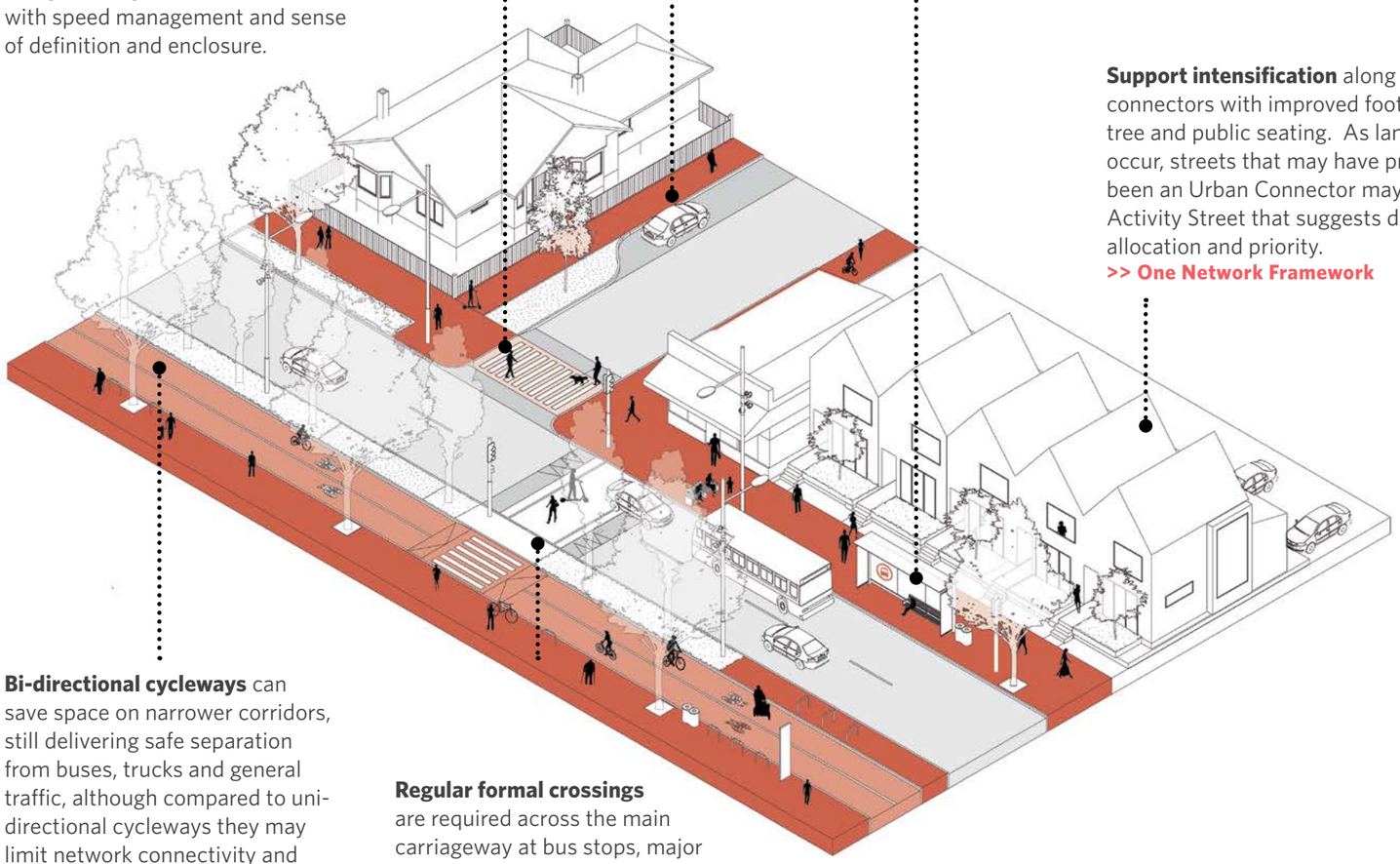
Raised zebra crossings of minor side streets allow for easy and safe walking journeys along the street including to access public transport and nearby centres.
>> Pedestrian Network Guidance

Safety devices must recognise the safe and appropriate speed environment
>> Speed Management Guide

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

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.

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

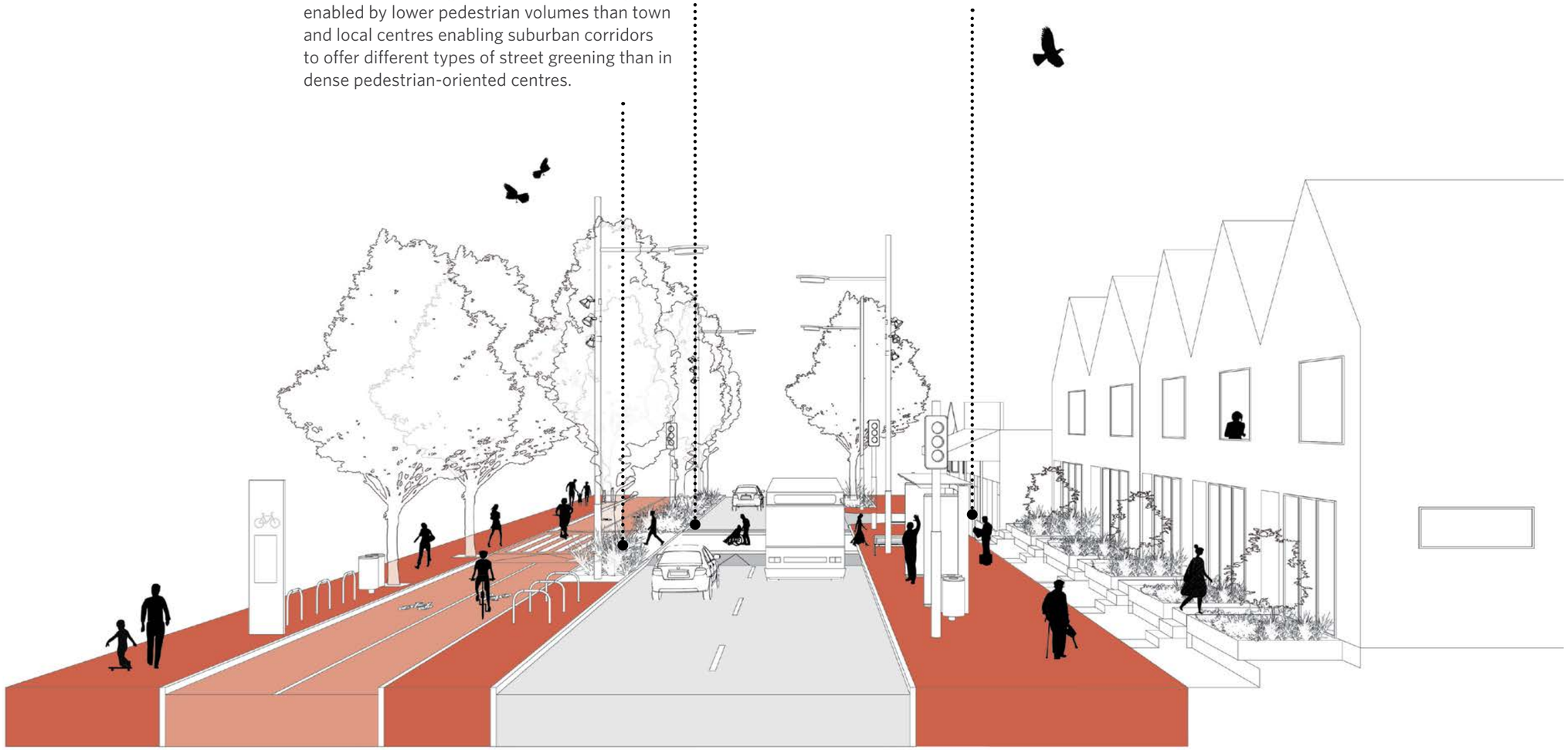
Regular formal crossings are required across the main carriageway at bus stops, major intersections and mid-block where activities such as schools, shops, parks and recreational destinations demand.
>> Pedestrian Network Guidance

Illustrations and associated guidance are indicative only.

No parking on narrow urban connectors to minimise carriageway width and prioritise traffic flow functions for urban connector routes while creating space for cyleways, 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.



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Urban Connectors

Diversifying the street category

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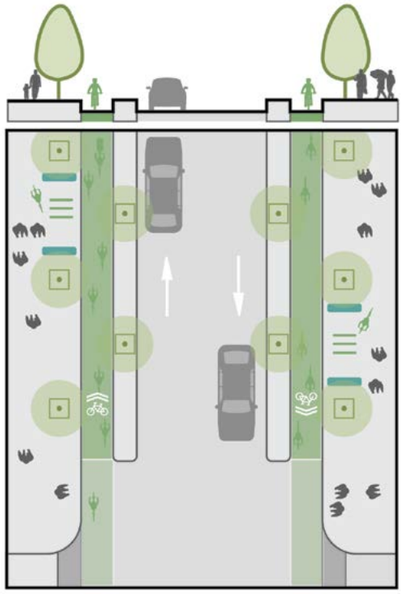
Urban Connectors

WAKA KOTAHI NZ TRANSPORT AGENCY | One Network Framework

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



Cycling priority

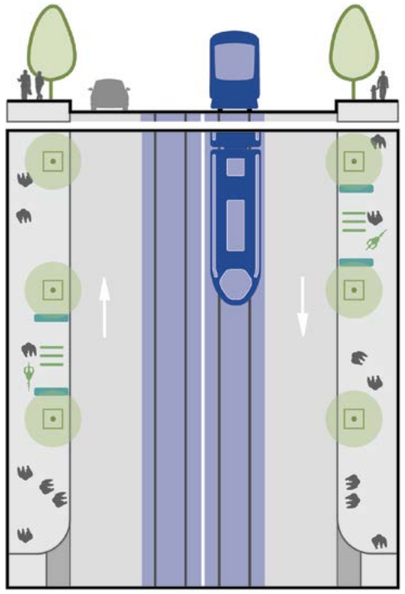
Priorities:

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

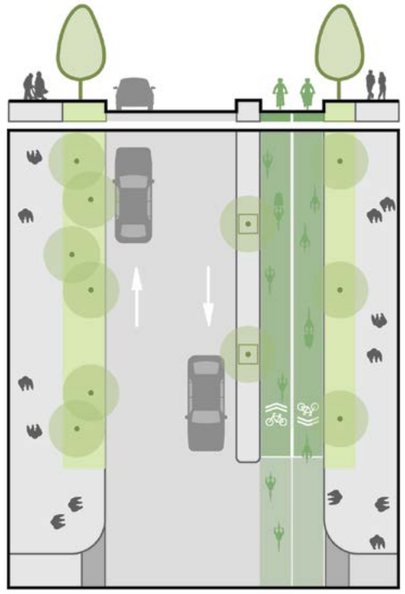
Priorities:

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.

Illustrations and associated guidance are indicative only.

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

MASCOT AVENUE, MANGERE, AUCKLAND

Local examples:

- Mascot Avenue, Mangere, Auckland

DUNSMUIR STREET, VANCOUVER, CANADA

Global examples:

- Dunsmuir Street, Vancouver, Canada

MRT corridor

AUCKLAND LIGHT RAIL

Local examples:

- Future Auckalnd MRT
- Future Wellington MRT

DEVONSHIRE STREET, SYDNEY AUSTRALIA

Global examples:

- Devonshire Street, Surry Hills, Sydney Australia

Green cycling street

LINWOOD AVE, ŌTAUTAHI, CHRISTCHURCH

Local examples:

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

BOURKE STREET, SYDNEY AUSTRALIA

Global examples:

- Bourke Street, Surry Hills, Sydney Australia

Illustrations and associated guidance are indicative only.

Urban Connectors

Urban Connectors

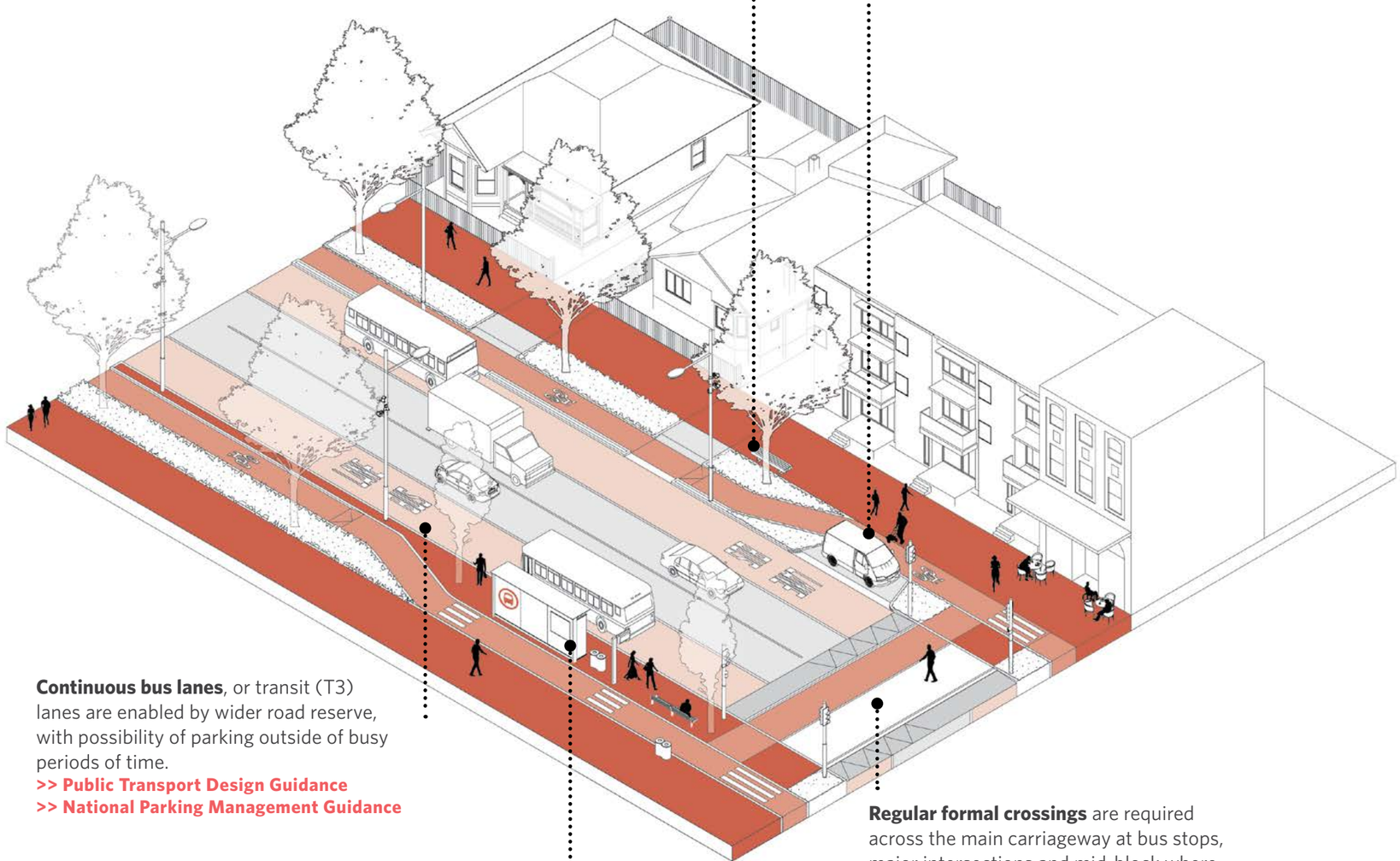
WAKA KOTAHI NZ TRANSPORT AGENCY One Network Framework

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.

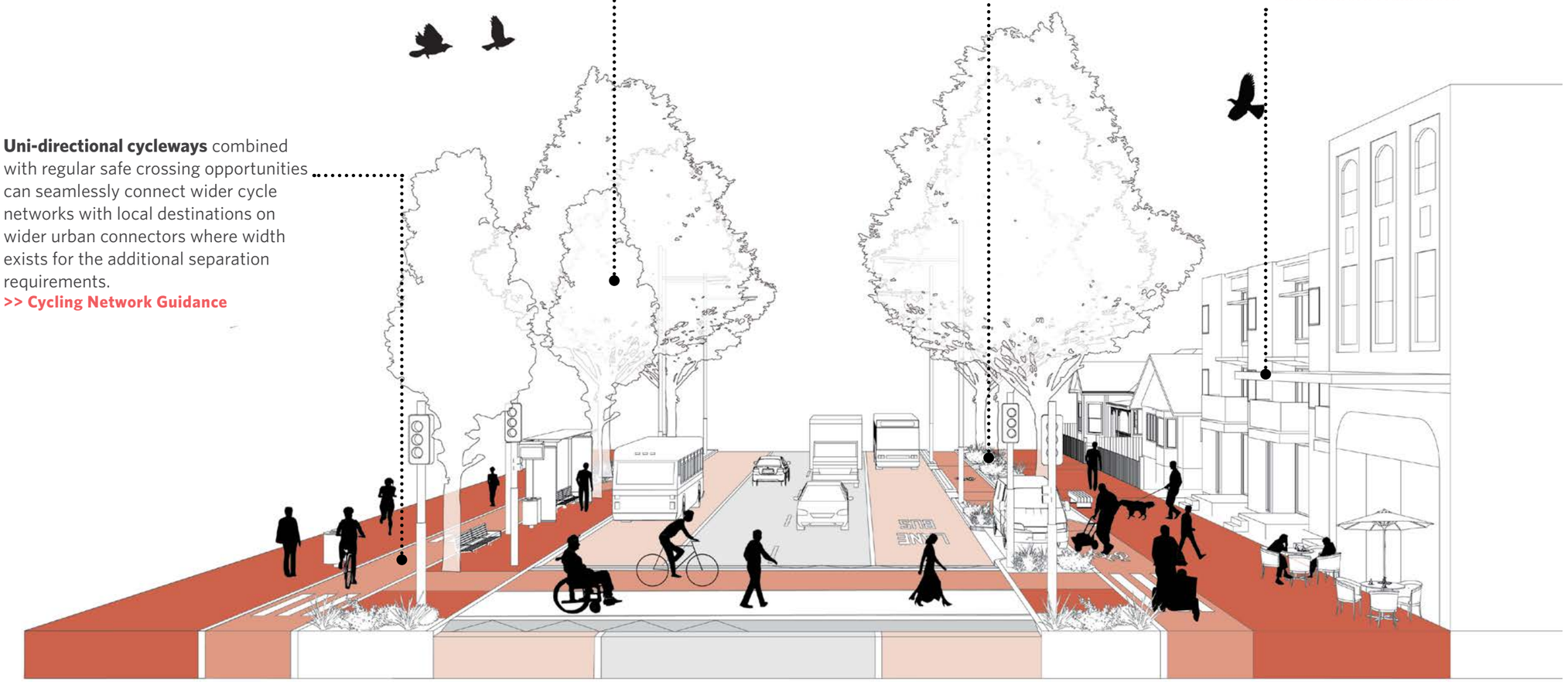
Uni-directional cycleways combined with regular safe crossing opportunities can seamlessly connect wider cycle networks with local destinations on wider urban connectors where width exists for the additional separation requirements.

>> 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



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Urban Connectors

Diversifying the street category

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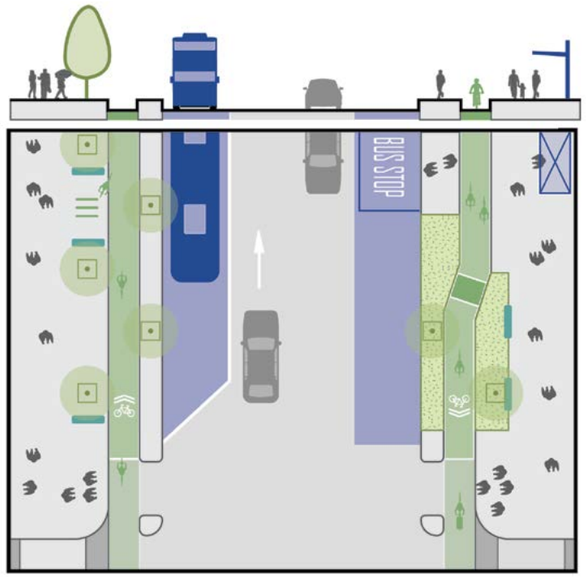
Urban Connectors

WAKA KOTAHI NZ TRANSPORT AGENCY One Network Framework

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



Bus and bike connector

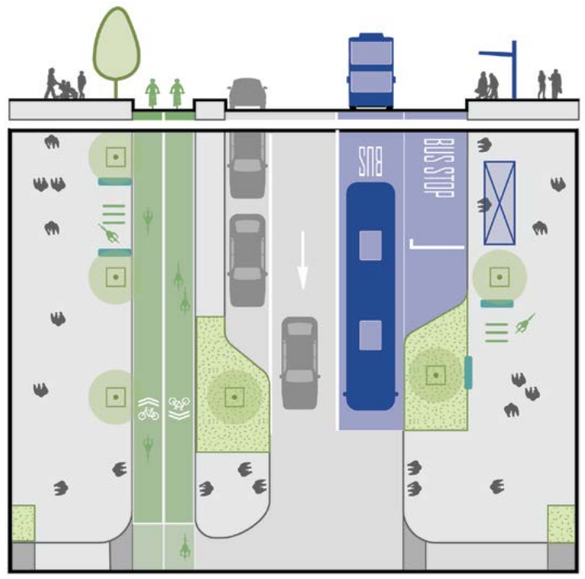
Priorities:

Safe and appropriate speed limit:

40 - 60

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

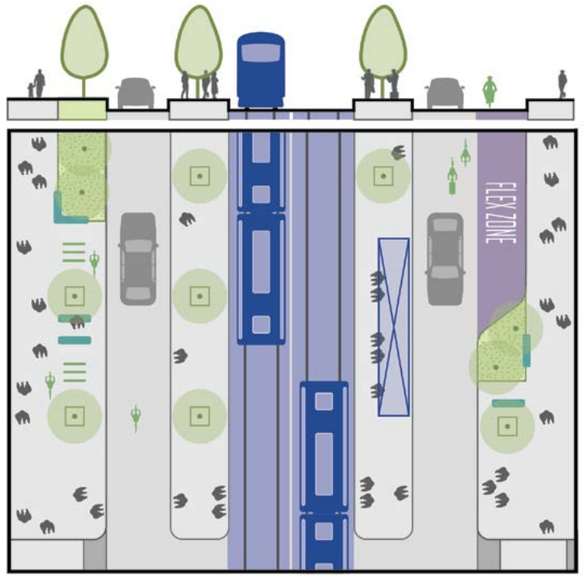
Priorities:

Safe and appropriate speed limit:

40 - 60

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

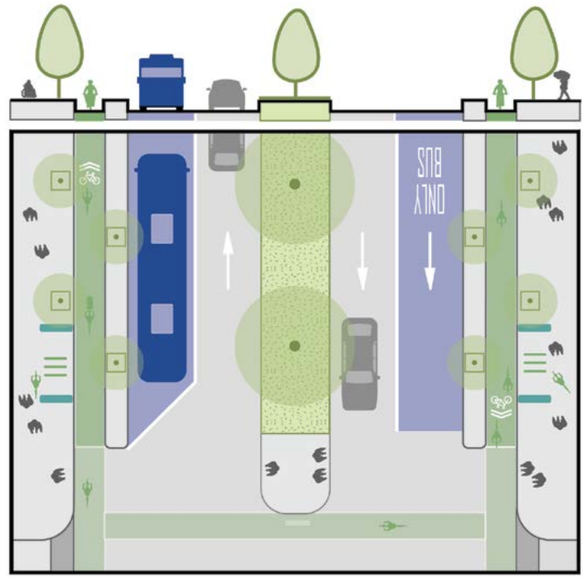
Priorities:

Safe and appropriate speed limit:

40 - 60

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:

40 - 60

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.

Illustrations and associated guidance are indicative only.

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

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

CUMBERLAND STREET

Local examples:

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

MRT corridor

AUCKLAND LIGHT RAIL

Local examples:

- Future Auckland Light Rail
- Future Wellington MRT

Green connector

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

MILLBANK, LONDON, UK

Global examples:

- Millbank, London, UK

UNION STREET, VANCOUVER, CANADA

Global examples:

- Union Street, Vancouver, Canada

HAMMARBY ALLE, STOCKHOLM

Global examples:

- Hammarby Alle, Stockholm, Sweden

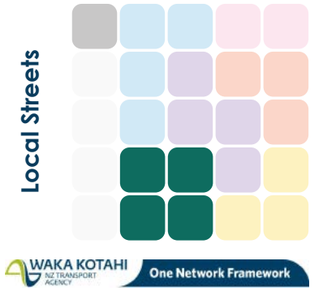
SAN PASSEIG DE SAINT JOAN BOULEVARD, BARCELONA, SPAIN

Global examples:

- San Passeig de Saint Joan Boulevard, Barcelona, Spain

Illustrations and associated guidance are indicative only.

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.

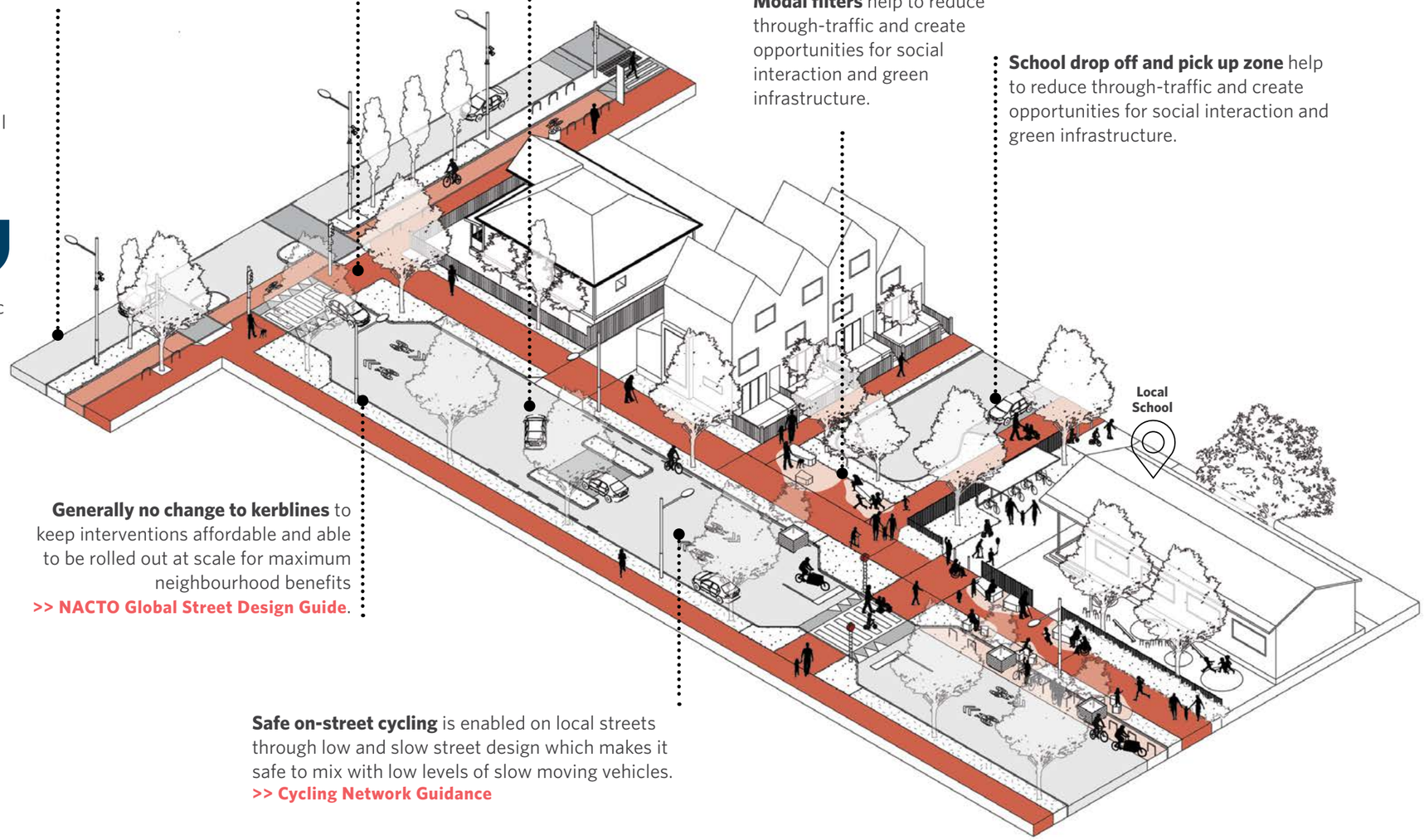
Informal parking to kerb (unmarked) helps to slow traffic as road space is reduced and side friction increased
>> National Parking Management Guidance

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

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

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

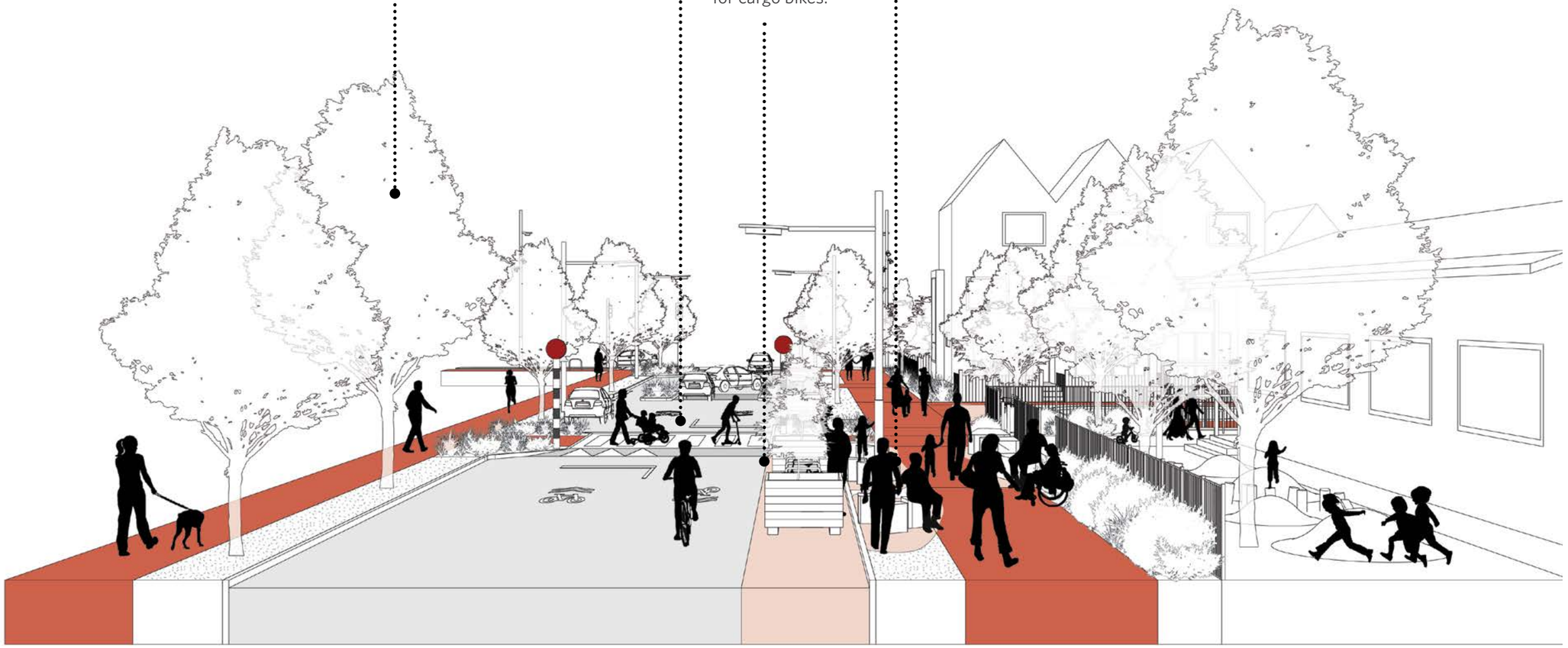
Illustrations and associated guidance are indicative only.

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**.**



Illustrations and associated guidance are indicative only.

Local Streets

Diversifying the street category

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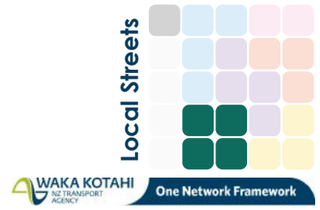
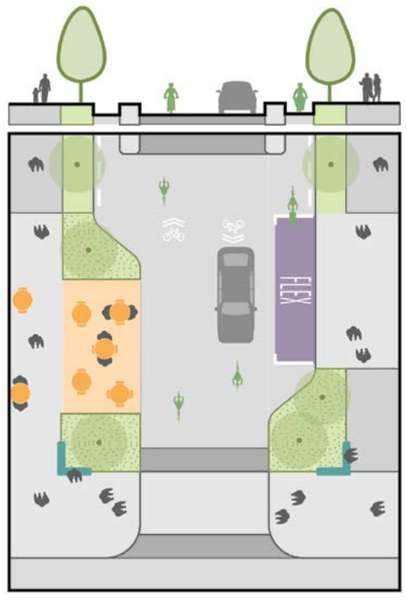


A range of potential integrated street solutions, to be explored through option development, for example



Neighbourhood activity priority

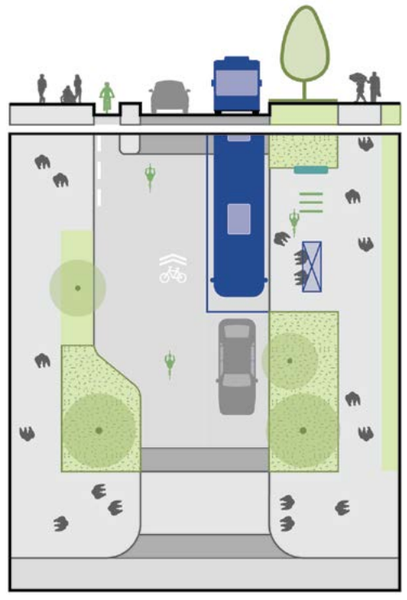
Priorities:

Safe and appropriate speed limit:

30

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

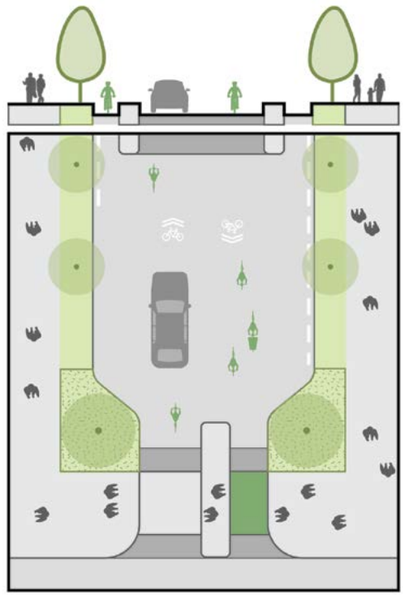
Priorities:

Safe and appropriate speed limit:

30

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

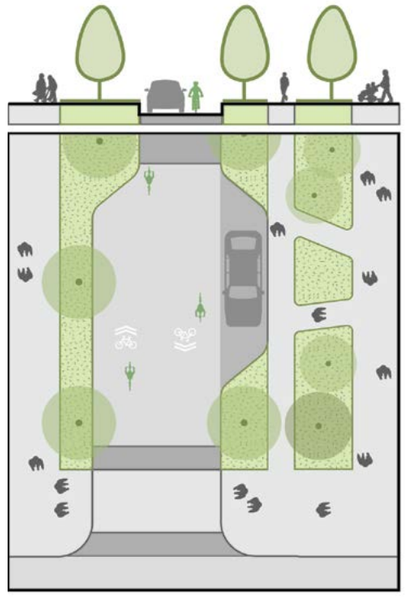
Priorities:

Safe and appropriate speed limit:

30

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:

30

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.

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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

HOBSONVILLE POINT ROAD, AUCKLAND

Local examples:

- Hobsonville Point Road, Auckland

SACKVILLE STREET, REGENT PARK, TORONTO, CANADA

Global examples:

- Sackville Street, Regent Park, Toronto, Canada

Local bus service

HOBSONVILLE POINT ROAD, AUCKLAND

Local examples:

- Hobsonville Point Road, Auckland

PARLIAMENT STREET, REGENT PARK, TORONTO, CANADA

Global examples:

- Parliament Street, Regent Park, Toronto, Canada

Low traffic neighbourhood

RAPANUI CYCLEWAY AT FITZGERALD AVENUE, CHRISTCHURCH

Local examples:

- Rapanui Cycleway, Christchurch

10TH AVENUE, VANCOUVER, CANADA

Global examples:

- 10th Avenue, Vancouver, Canada

Neighbourhood greenway

BUCKLEY AVENUE, HOBSONVILLE, AUCKLAND

Local examples:

- Buckley Avenue, Hobsonville, Auckland

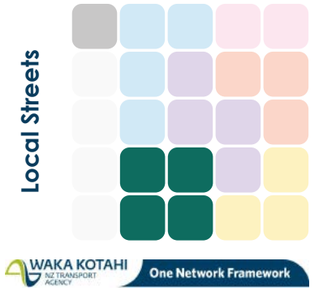
HAROLD PARK, SYDNEY, AUSTRALIA

Global examples:

- Harold Park, Sydney, Australia

Illustrations and associated guidance are indicative only.

Local Streets



Typical Street Width: 14 - 20m
Typical Speed Limit: 10 - 30km/h
Typical Land Use Context: Residential

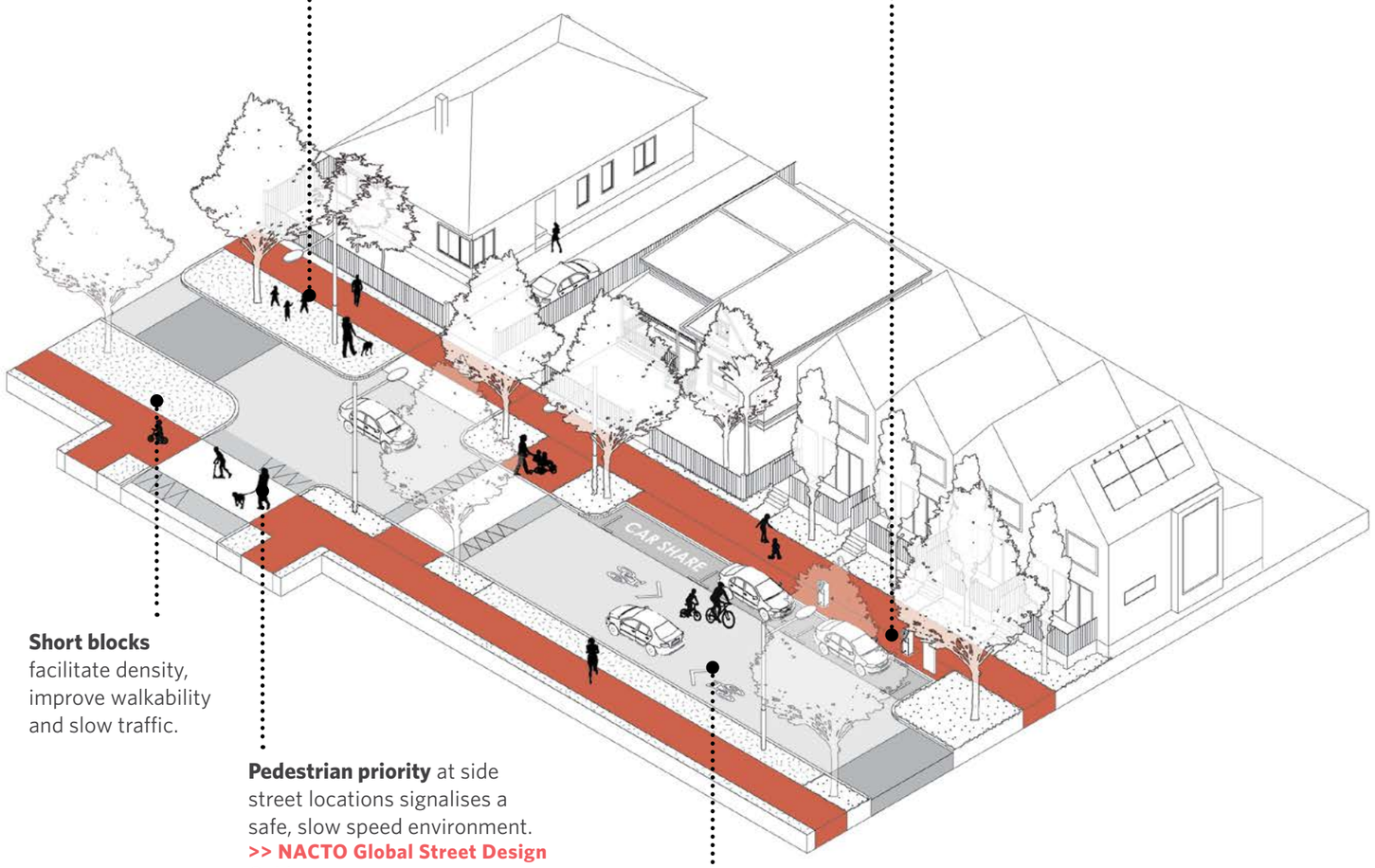
Local streets have low traffic volumes, low speeds and limited network requirements. They are largely residential streets with occasional commercial uses.

Network and operations guidance

- Residential streets support access to housing and support public and community activity and walking to destinations and transit stops.
- Residential streets are not a part of the traffic movement network and through traffic should be removed 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.
- Modal filters can provide permeable connectivity for active modes while removing unnecessary through traffic, both contributing to more liveable residential neighbourhoods.
- Car share and electric vehicle charging should be focused around dense housing pockets.
- Comprehensive parking management strategies of time restrictions and pricing should be implemented to increase the liveability of the street.

Children in the street. Slow speeds make it safe for children to play in the kerbside of the street and promote community.
>> NACTO Designing Streets For Kids

Electric vehicle charging and car share provided in associated with residential density within managed. kerbside space.
>> National Parking Management Guidance



Short blocks facilitate density, improve walkability and slow traffic.

Pedestrian priority at side street locations signalises a safe, slow speed environment.
>> 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

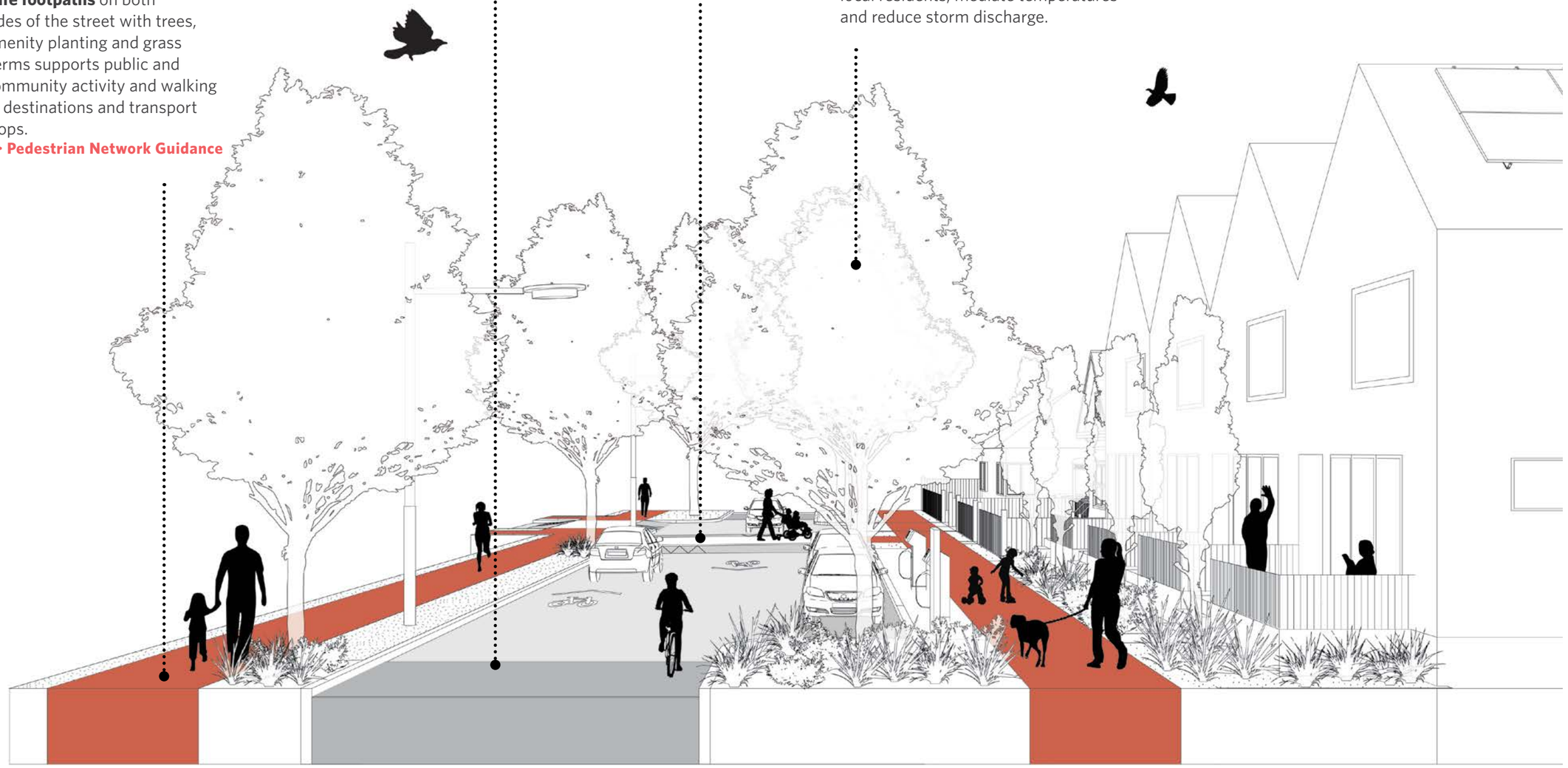
Illustrations and associated guidance are indicative only.

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.



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Local Streets

Diversifying the street category

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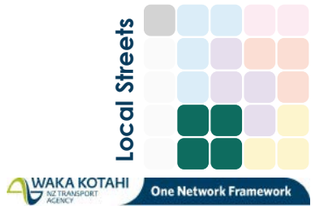
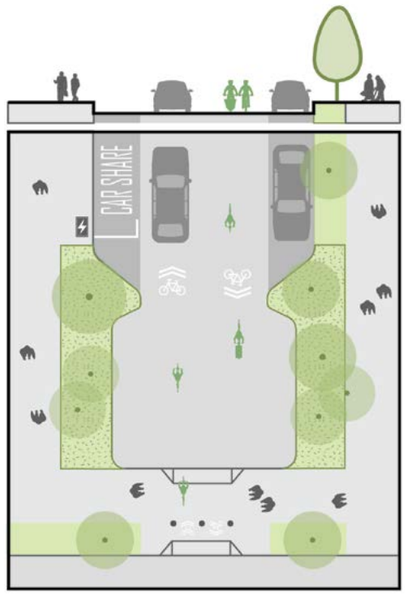


A range of potential integrated street solutions, to be explored through option development, for example



Cul de sac modal filter

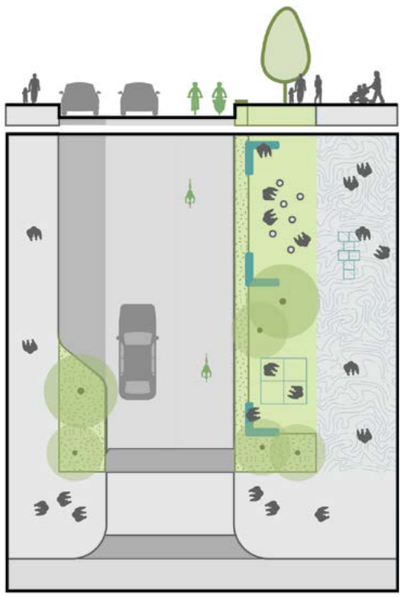
Priorities:

Safe and appropriate speed limit:

30

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

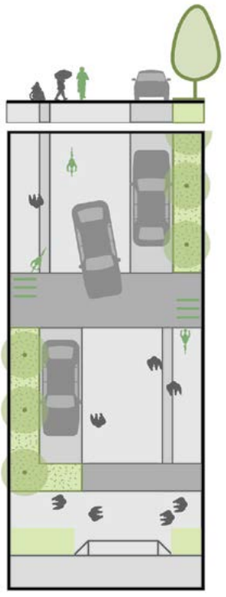
Priorities:

Safe and appropriate speed limit:

30

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

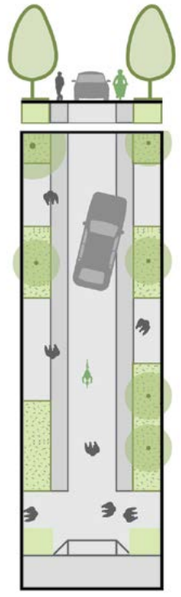
Priorities:

Safe and appropriate speed limit:

10

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:

10

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.

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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

WARRINGTON AND FORFAR STREETS, CHRISTCHURCH

Local examples:

- Warrington and Forfar Streets, Christchurch

Neighbourhood play

LOCAL PLAY STREET, AUCKLAND

Local examples:

- Local Play Street, Auckland

Woonerf / home zone / living street

BEDFORD LANE, CHRISTCHURCH

Local examples:

- Bedford Lane, Christchurch

Urban residential lane

191 CASHEL STREET, CHRISTCHURCH

Local examples:

- Christchurch East Frame

WINDSOR, MELBOURNE, AUSTRALIA

Global examples:

- Windsor, Melbourne, Australia

NACTO PLAY STREET EXAMPLE

Global examples:

- Global streets for kids example, NACTO

VAN GOGH WALK, LONDON

Global examples:

- Van Gogh Walk, London

AMSTERDAM, THE NETHERLANDS

Global examples:

- Amsterdam, The Netherlands

Illustrations and associated guidance are indicative only.