5.0 Putting it into practice

Building a community of practice

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

What is a community of practice?

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

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

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

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

Organisational support from Waka Kotahi

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

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

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

Figure 19: Examples of community of practice activities and approach from Waka Kotahi Draft Tactical Urbanism Handbook. The guide was developed to help councils and communities deliver tactical urbanism projects using a collaborative best-practice approach that support a community of practice. IMAGE SOURCE: Handbook for Tactical Urbanism in Aotearoa, Waka Kotahi.

Links

- Tactical Urbanism Handbook (Waka Kotahi, 2020)

Shared challenges to creating good urban streets

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

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

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

Gaining community support for street changes

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

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

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

Retrofitting within the existing built environment

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

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

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

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

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

Network optimisation, managing the tension between movement and place

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

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

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

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

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

Managing communications and engagement effectively

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

Thematic guidance

Applying the guidance to deliver better urban street outcomes for Aotearoa

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

The thematic case studies developed are:

- Streets for health, wellbeing and equity
- Green infrastructure in streets
- Streets with access for all
- Streets for play
- Street space management
- Streets for services and utilities.

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

- low carbon streets
- retrofitting streets for low traffic neighbourhoods
- intersection designs that recognise and support place values.

Streets for health, wellbeing and equity

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

Healthy urban development

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

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

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

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

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

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

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

Links

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

Health impact	Components
Mental wellbeing	Mental wellbeing means being able to adapt and cope with life and life's challenges, feeling that your life has meaning, as well as experiencing feelings of contentment or general happiness. People are most likely to experience positive mental wellbeing when they feel safe, connected, valued, worthy and accepted and have a sense of belonging, identity and hope for the future. Mental wellbeing can be experienced at different scales, such as in our homes, in our communities and beyond. The urban environment and street design can impact mental wellbeing positively or negatively. For example, noise pollution can cause excess stress and is connected to cognitive challenges, but it can be mitigated through urban planning and land use, therefore creating a more positive health impact (Humpheson, 2019).
Non-communicable diseases	Non-communicable diseases (also known as 'long-term conditions' and 'chronic conditions') can be defined as any ongoing, long term or recurring conditions that can have a significant impact on people's lives. The World Health Organization (WHO) estimates that in 2015, 40 million of the 56 million global deaths were due to long-term conditions (WHO, 2020). Despite that many long-term conditions are preventable; they are the leading cause of mortality globally. Long-term conditions include conditions such as cardiovascular diseases (eg heart attacks and strokes), cancers, respiratory diseases (such as chronic obstructive pulmonary disease and asthma), diabetes, mental disorders, chronic pain, chronic kidney disease and dementia. About 80 percent of premature heart disease, stroke and diabetes can be prevented (WHO, 2018a). The scientific consensus is that our urban environments and associated lifestyles contribute to the rates of long-term conditions in communities (Canterbury DHB, 2016). Our built environments influence our behaviours and our exposure to factors that increase the risk of developing various health conditions (Kochtitzky, et al., 2006).
Environmental exposures	The environment can directly impact our health and wellbeing both negatively and positive. To ensure positive outcomes and sustain wellbeing, we need safe, healthy and supporting environments for example: • drinking water • stormwater and sewerage • recreation • housing • air quality • noise • urban climate and heat • ultraviolet exposure and shade • biosecurity and pest and vector control • security and crime prevention through environmental design. Each type of environmental exposure can have varying health outcomes. However, many can be improved or mitigated with healthy urban planning and design.
Infectious disease	Infectious diseases are those that can spread from one person to another (Ministry of Health, 2020c). They are caused by microorganisms such as bacteria, viruses, parasites and fungi, and include diseases such as the common flu or the more recent COVID-19. Infectious diseases are common in our urban environments. There are simple precautions that individuals and whānau can take at work, educational places, and community centres to stop the spread of infectious disease (Ministry of Health, 2021b). There are ways we can minimise infectious disease spread in our wider urban environments. For example, throughout the Covid-19 pandemic we have learned that physical distancing can prevent spread of diseases. We can reallocate street space into a more equitable use of space by allowing wider footpath and bicycle lanes for example.

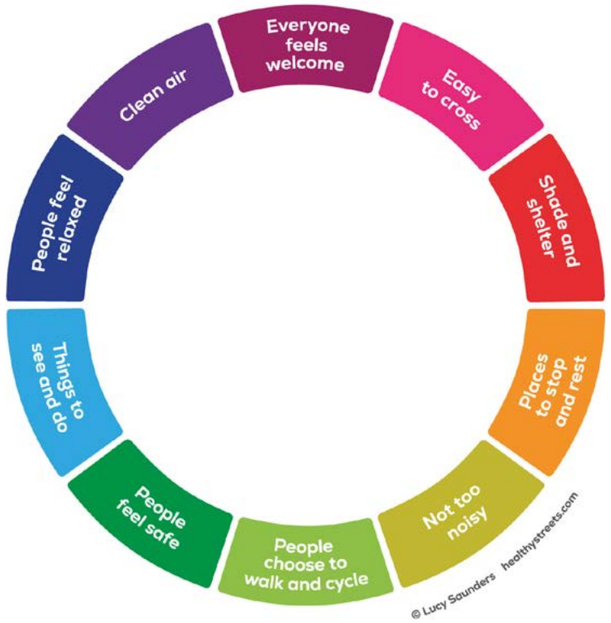


Figure 20: The 10 Healthy Streets indicators and scoring criteria https://www.healthystreets.com/resources

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

Figure 21: Healthy Streets score generator, demonstrating the relationship between 19 key metrics and making streets healthier for people across the 10 indicators https://www.healthystreets.com/what-is-healthy-streets

Currently there is a New Zealand version of metrics being prepared to test against the Healthy Street Indicators above.

Healthy Streets

The Healthy Streets Approach is a framework for decision making in relation to planning transport and streets that is a growing movement internationally. The framework is based on 10 Healthy Streets Indicators (see Figure 20) for Indicators). These Indicators are human-centred and encompass many of the public health, socio-economic and environmental challenges for how our streets are designed and managed. The indicators align with the Ministry of Health principles of urban development for the Aotearoa context.

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

There are a range of tools to enable practitioners to apply the Healthy Streets Approach in design and evaluation of projects. The Healthy Streets Design Check is tailored to each national context. Ministry of Health and Waka Kotahi are exploring the development of urban streets indicators appropriate for consistent application and use throughout Aotearoa New Zealand. For now, reference and use of international indicators, such as the Australian tool referenced in Figures 20 and 21, is broadly applicable for demonstrating measurement of how well a street design prioritises the 10 Healthy Streets Indicators.

Healthy streets can positively impact the climate

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

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

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

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

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

Health in street design:

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

Green infrastructure in streets

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

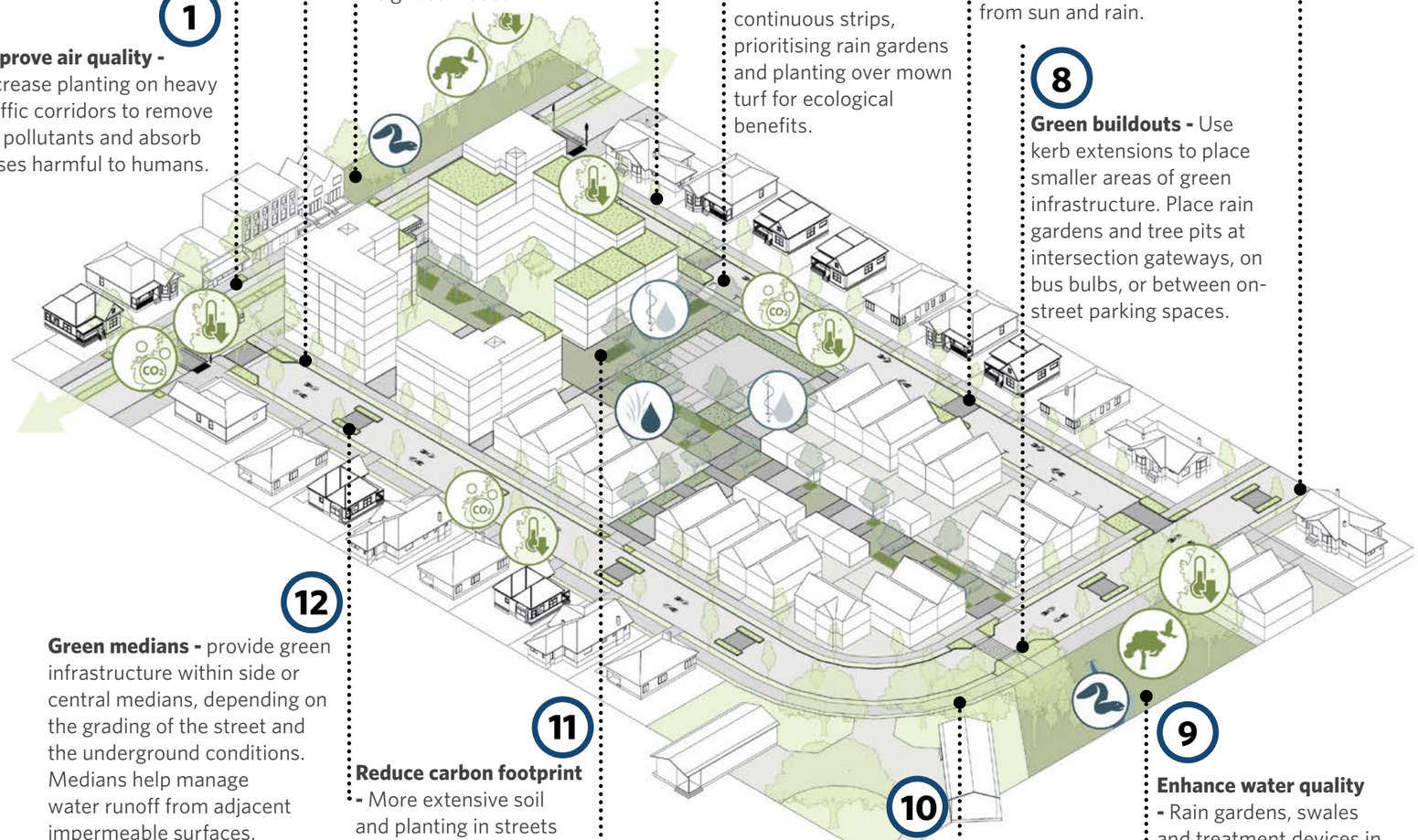
Some of the most important things for integrating green infrastructure into the planning, design and delivery of urban streets are:

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

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

Green infrastructure at the neighbourhood scale

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



1 Improve air quality - Increase planting on heavy traffic corridors to remove air pollutants and absorb gases harmful to humans.

2 Keep neighbourhoods green as they redevelop - Allocate more street space for long term trees and planting to offset loss of private green space as neighbourhoods intensify.

3 Grow Urban Biodiversity - diversity of planting supports more habitat and wildlife in streets and creates connected corridors through neighbourhoods.

4 Reduce urban heat island - Retain and plant large street trees to cool surrounding environment.

5 Retain and enhance green berms as neighbourhoods intensify - Provide space for distributed green infrastructure along the footpath as continuous or non-continuous strips, prioritising rain gardens and planting over mown turf for ecological benefits.

6 Create comfort and reduce environmental exposure- Increase shade and shelter to provide relief and protection from sun and rain.

7 Increase resilient planting for a changing climate - Select plants that are tolerant of extended dry periods and periodic inundation,and diversify species to reduce exposure to monocultures at risk in changing climate.

8 Green buildouts - Use kerb extensions to place smaller areas of green infrastructure. Place rain gardens and tree pits at intersection gateways, on bus bulbs, or between on-street parking spaces.

9 Enhance water quality - Rain gardens, swales and treatment devices in streets to capture and filter contaminants and clean runoff to waterways.

10 Retain existing trees to reach green goals sooner - Recognise the location of healthy mature trees and go to every effort to retain these within redesigned streets.

11 Reduce carbon footprint - More extensive soil and planting in streets makes for less CO2 in atmosphere and helps reduce carbon footprints for streets and neighbourhoods.

12 Green medians - provide green infrastructure within side or central medians, depending on the grading of the street and the underground conditions. Medians help manage water runoff from adjacent impermeable surfaces.

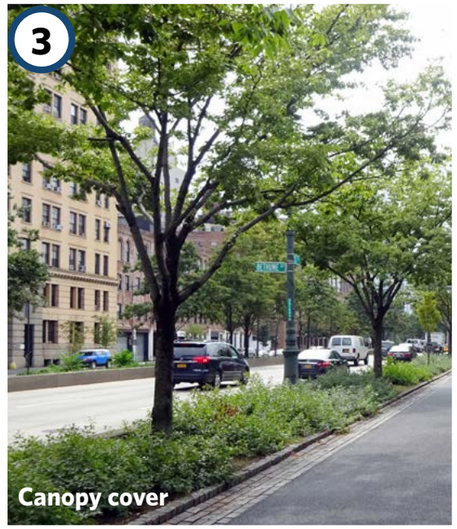
Green infrastructure devices in streets

Design considerations

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

Links

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



Streets with access for all

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

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

Designing for all takes into consideration the spatial scale, activities and things that make places safe, attractive, and vibrant. Making outdoor spaces easy for people to get around and spend time in enhances their confidence and independence and enables them to participate in their communities. This is especially important for people with dementia, sensory and physical disabilities who may find it more difficult to negotiate environments.

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

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

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

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

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

Links

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

Putting access for all into practice means neighbourhoods and streets that are:

Safe
Accessible and well connected for pedestrians and cyclists to optimise active transport

Inviting
Offer high-quality public realm and open spaces

Local
Provide opportunities close to where people live and facilitate thriving local economies.

Offer travel choice
Provide access to quality walking, cycling and public transport networks and options

Are diverse
Deliver housing choice and densities that make local services and transport viable

Easy to navigate
Incorporate simple, logical and consistent layouts with non-visual features (e.g. audible and tactile devices)

Convey important information to users who are blind or have low vision

Re-framing the language

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

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

Language and communication
Use appropriate/consistent language

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

Context

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

Barriers and opportunities

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

Design considerations

1

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

2

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

3

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

4

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

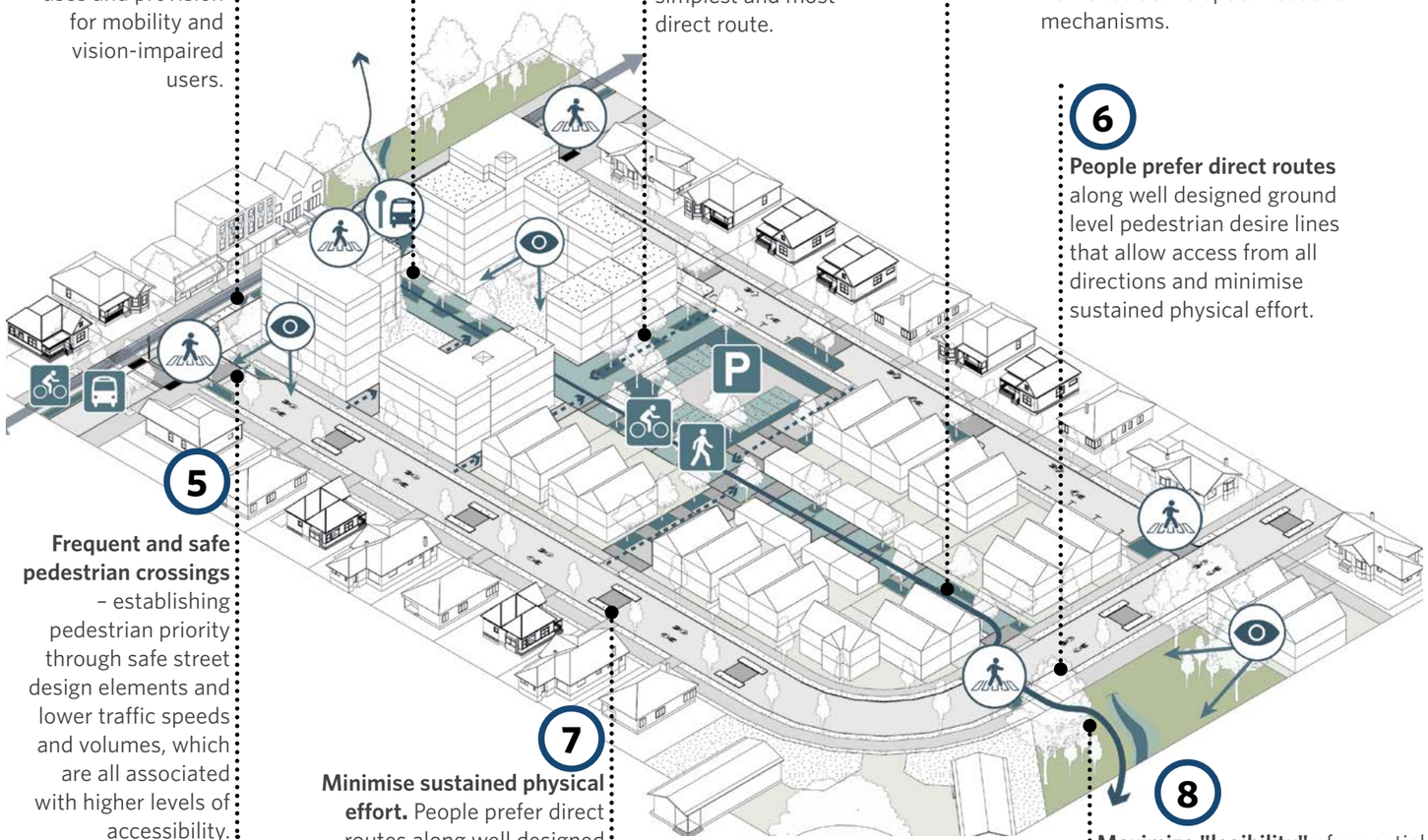
9

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

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

6

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



5

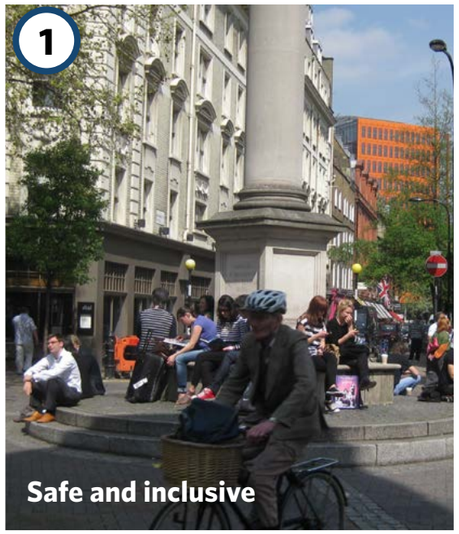
Frequent and safe pedestrian crossings – establishing pedestrian priority through safe street design elements and lower traffic speeds and volumes, which are all associated with higher levels of accessibility.

7

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

8

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



Streets for play

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

Tamariki need the time, space and permission to play.

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

A city that works for children, works for everyone.

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

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

Putting play streets into practice means:

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

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

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

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

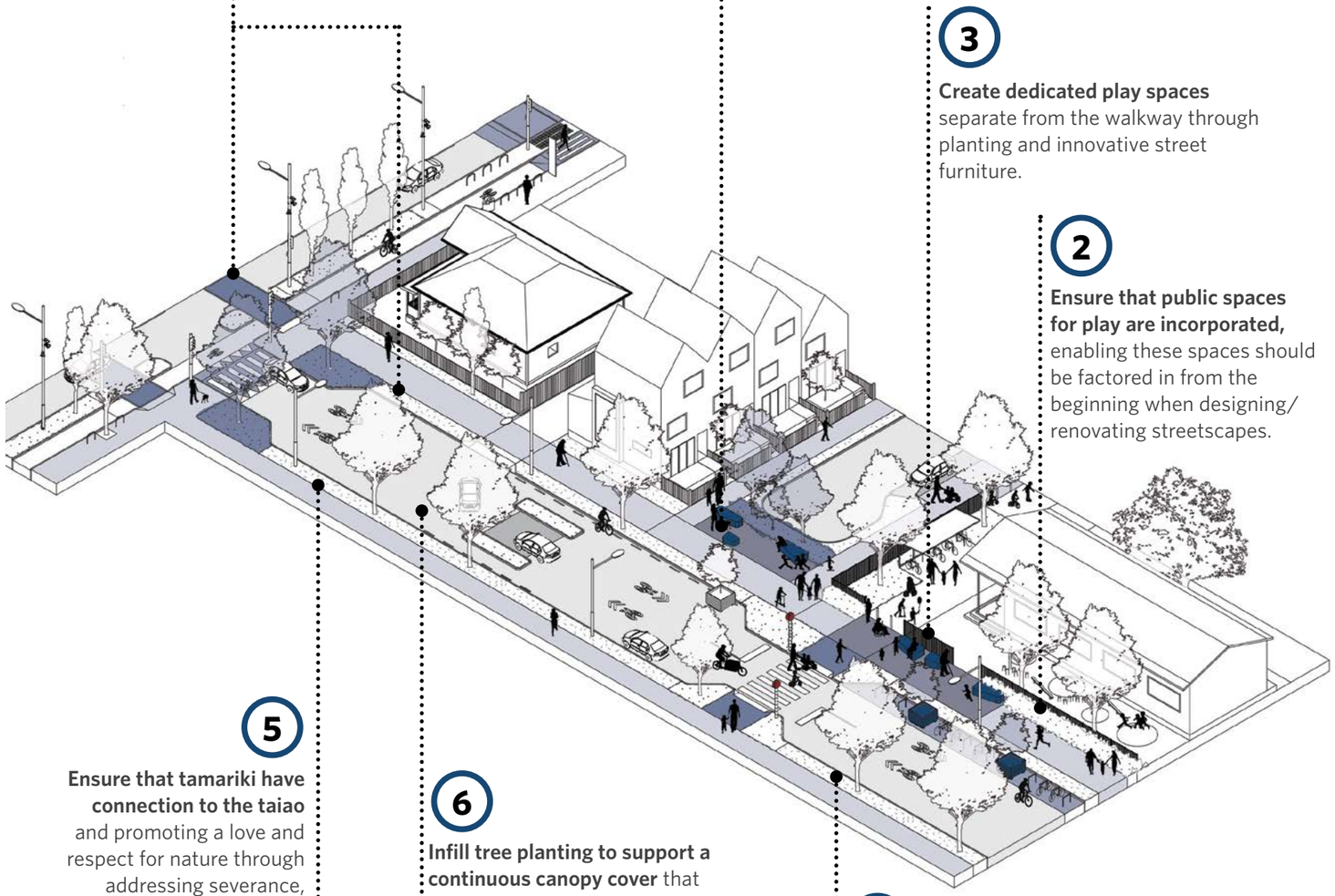
Safe and independent mobility
Children and young adults benefit from independent mobility. They should have the autonomy to walk, cycle, and take public transport, and feel safe using streets. The design of our towns and cities should include easily accessible networks between home, schools and workplaces,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

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

Links

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

Design considerations



1

Encouraging all types of active transport by creating conditions for play for those on small wheels. Avoid kerbs, exposed aggregate and tiles.

4

Consider street design through the eyes of our tamariki - equal consideration to how tamariki, rangitahi and adults move through and interact with urban streets.

3

Create dedicated play spaces separate from the walkway through planting and innovative street furniture.

2

Ensure that public spaces for play are incorporated, enabling these spaces should be factored in from the beginning when designing/ renovating streetscapes.

5

Ensure that tamariki have connection to the taiao and promoting a love and respect for nature through addressing severance, keeping alleyways tidy, providing 'wild nature pockets' in urban spaces.

6

Infill tree planting to support a continuous canopy cover that provides cooling and shade, integrated landscape through blue-green infrastructure, setbacks and open space.

7

Incorporate play nudges - minor installations which promote play-on-the way, ie play in waiting zones, swings in trees, bouldering on bus stops etc.

Street space management

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

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

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

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

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

- Recognise the role of the street network in contributing to high quality public space and identify opportunities for the same space to perform different functions across the day/week. (Examples via graphics).
- Identify opportunities to convert on-street car parking to public open space and provide additional space and capacity on priority walking and cycling routes.

Links

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

Putting play streets into practice means:

Are multimodal

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

Recognise public transport hubs as key drivers of walking activity - Identify opportunities for surrounding land uses to complement these areas, ie through provision of extra space, surveillance, complimentary adjacent land uses and services. Establish a strong connection and opportunities for integration between the transport network and other land uses.

Are for people

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

Carry goods and services

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

Create value

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

Are safe

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

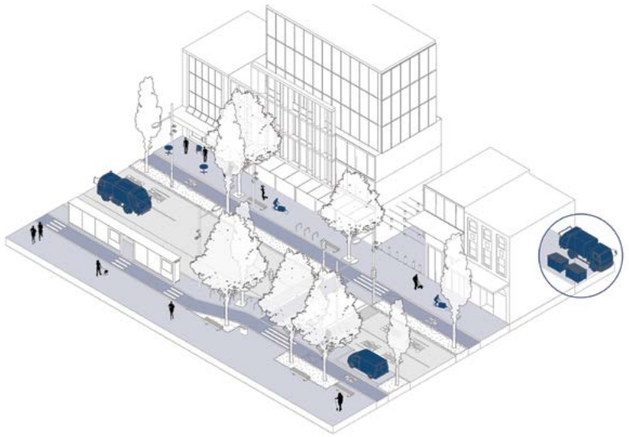
Design considerations

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

Temporal change in the Street

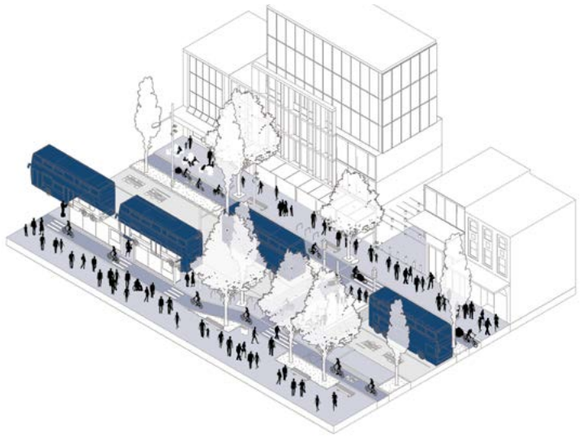
Temporal change to accommodate a range of roles, where streets are able to function differently at different times of the day/week as demand and need shifts. Recognise the role of the street network in contributing to high quality public space and identify opportunities for the same space to perform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

Early morning



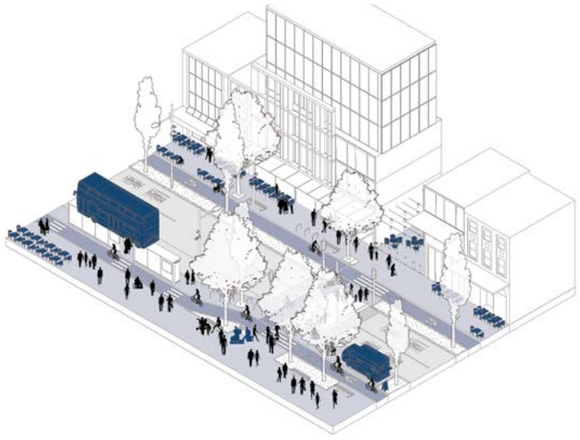
- Servicing
- loading and delivery
- city dwellers walking dog
- people exercising
- cafes and other businesses preparing for opening.

Morning commute



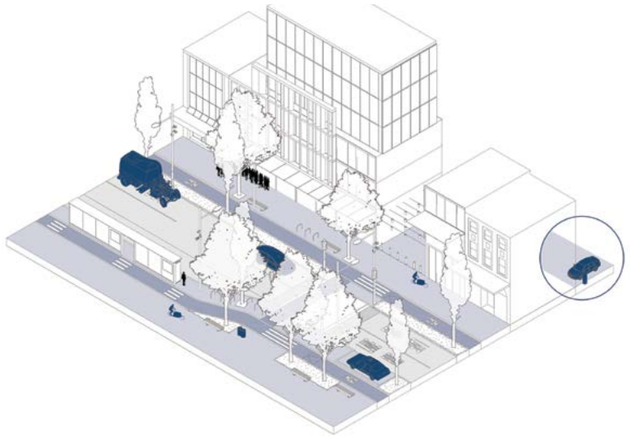
- Lots of people - school children
- public transport peak
- many people commuting by bike
- stopping for coffee
- businesses opening.

Evening

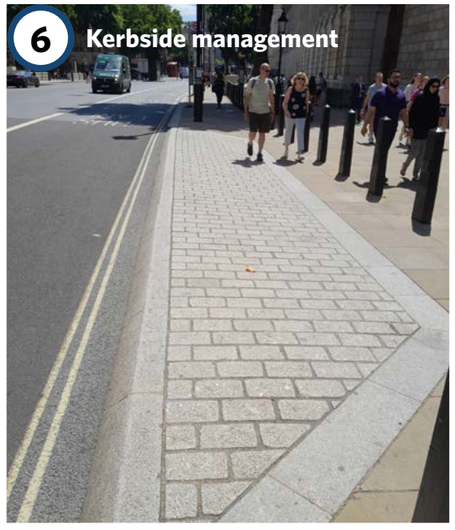


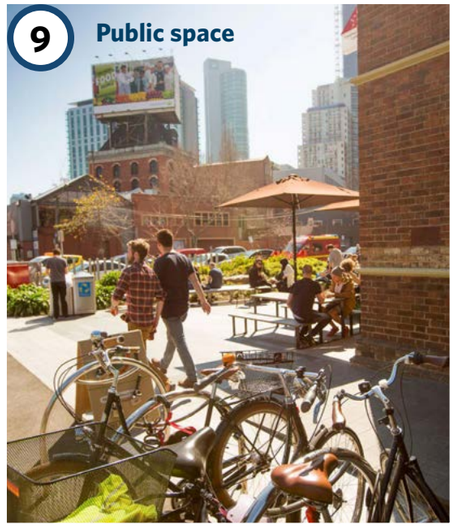
- Street performers
- street dining
- late night shopping
- busy with cultural events.

Late at night



- EV charging in rear lane
- street cleaners
- uber's picking people up
- line to night club.





Streets for services and utilities

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

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

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

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

Links

- Auckland Design Manual (Auckland Council, 2022)
- Rautaki Hanganga o Aotearoa: Infrastructure Strategy (Infrastructure Commission Te Waihanga, 2022)

Effective integrated street design and management:

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

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

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

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

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

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

Boston Smart Utilities Program

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

Links

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

Design considerations

1

Provide setbacks, spacing, and depth of cover guidelines in accordance with municipality and utility requirements.

2

Integrate maintenance access into the design.

3

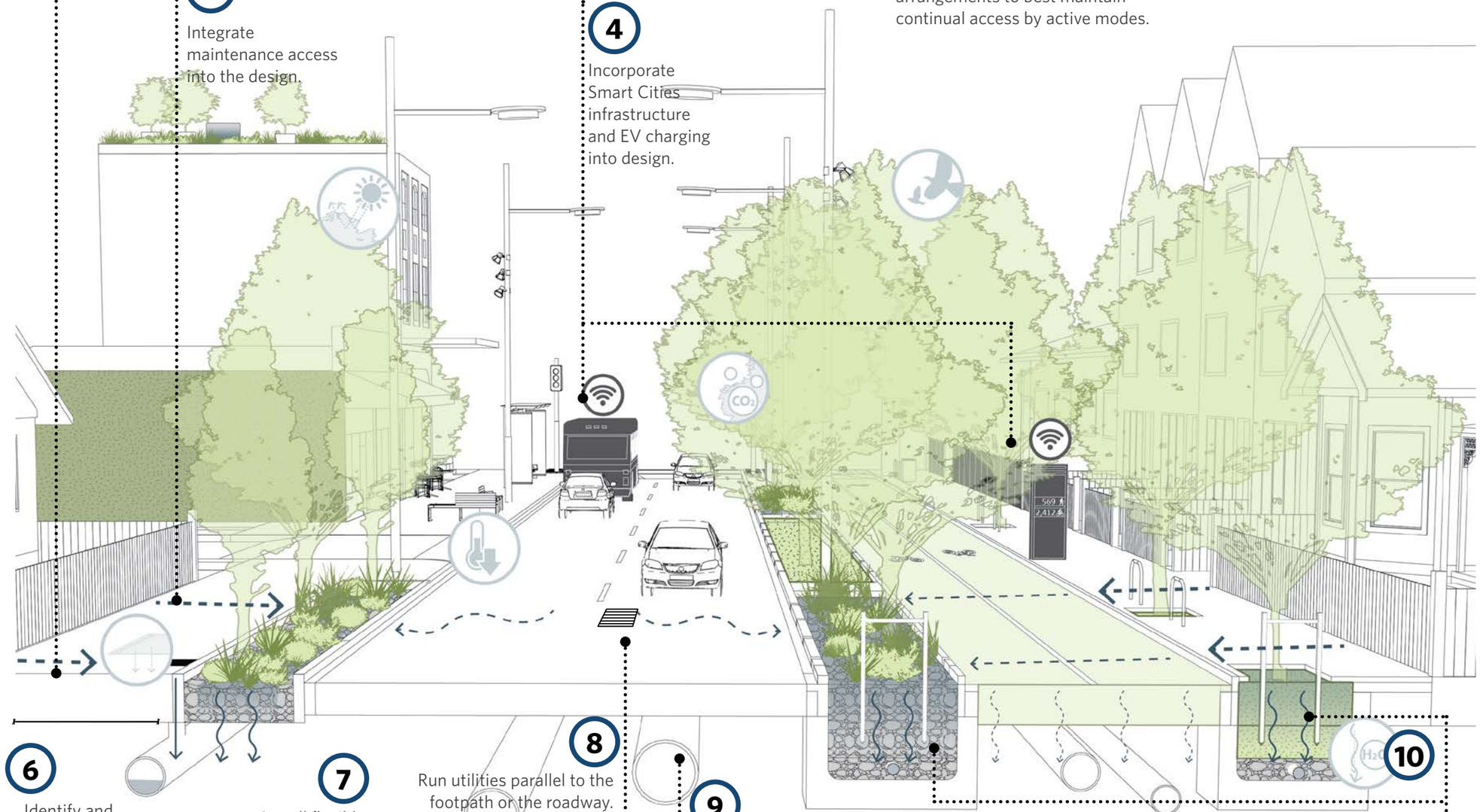
Install utilities prior to completion of new road and footpath surfaces. When introducing utilities under or along footpaths, medians, parking spaces or travel lanes, install them before above-grade street reconstruction and finishing.

4

Incorporate Smart Cities infrastructure and EV charging into design.

5

Place priority utilities in more accessible areas to avoid frequent traffic interruptions, especially to high-capacity lanes and spatial arrangements to best maintain continual access by active modes.



6

Identify and provide for utilities infrastructure which requires sitting above ground for reasons of cost, access, maintenance or safety.

7

Install flexible, pressurised utilities such as water and gas above gravity-run pipes.

8

Run utilities parallel to the footpath or the roadway. Surface elements such as manhole covers and service boxes should sit flush. Design surface elements to hold the weight of large freight vehicles

9

Check local soil conditions and water tables for minimum depths of underground utilities. If the minimum depth required cannot be achieved, protect utility lines beneath roadways by encasing them in concrete.

10

Use root barriers in tree pits to direct growth downward. Ensure that pavement surrounding pits is compacted sufficiently to discourage roots from damaging the pavement.

Consider stormwater management and environmental mitigation

- Permeable paving solutions within cycleways, parking and loading zones.
- Rain gardens to filter road run off, improves groundwater quality.
- Include greater detention and runoff zones to allow for more frequent flooding capacity from storm events.
- Keep underground services protected from erosion areas due to stormwater runoff.