

Wellington Central City

Green Network Plan

Ko te hiahia kia piripono kia Papatūānuku
We want nature to be a part of our lives.



Parks Week Pop Up Forest in Bond Street

Contents

<u>The Green Network Plan</u>	4-63
Introduction	4-5
Central City Layers	6-7
Vision / Objectives / Targets	8-9
The Benefits	10-11
The Context	12-13
The Current Status of Greening	14-19
Opportunities	15
Challenges	17
Green Cover	19
The Plan	20-27
The Objectives	20-21
A Continuum of Diverse Green Spaces	22-25
<u>The Green Network Plan Implementation Framework</u>	27-37
<u>Appendices</u>	39-79
GNP Appendix 1 - History of Greening in the Central City	39-41
GNP Appendix 2 - Our City Tomorrow Alignment	43-45
GNP Appendix 3 - Green Space Types & Case Studies	47-75
Work Cited	77-79



Impression of a greener central city by Studio Pacific Architecture

The Green Network Plan sets the direction and targets for how we green Wellington's central city in the next 30 years to take action on the current deficit, provide for growth and to address the climate and ecological emergency declared in 2019.

The central city is dominated by buildings, large areas of asphalt and paving. Streets are vehicle dominated, with large areas of both on and off street car parking. The original vegetation has gone, the streams only exist in pipes. This has resulted in a deficit of green space in the central city for current users and residents. There is a need to further green the central city.

As Wellington changes and grows, with greater numbers of people visiting and living in the central city, there is a need to further treasure, celebrate, grow and manage the city's green and blue network.

A diversity of green spaces, trees and plants is critical to people's wellbeing, sustaining a healthy environment and mitigating climate change.

Green and blue elements should be part of all development as our city grows and changes whether it is new infrastructure, transport and/or a building project. There is need to ensure the city continues to build on its liveability and 'eco-credentials'.

A network of green spaces, trees and planting in the central city will contribute to Wellington's aspirations for social, economic, cultural and environmental wellbeing and have benefits at different scales.

Global:



Climate change mitigation and adaptation.

City:



A beautiful and connected central city.

People:



Individual health and wellbeing.

Central City Layers



The Green Network
Parks, trees & planting
connecting the city



The Blue Network
The streams, water sensitive
design & harbour



The Built Environment
The buildings, structures,
streets & hard surfaces

The green network is the plants – the trees, shrubs, gardens and grass that 'green' and connect the city. These green elements can occur in all sorts of places, in both public and private ownership. These places include streets, parks, plazas, laneways, carparks, community gardens, roofs and even walls of buildings.

What is the Blue Network?

Wellington's blue network is the system that captures and conveys rainfall from the headwaters to the coast. The blue network consists of natural and modified streams, surface flows, water sensitive design elements and ground. It is symbiotic with the green network as plants need water to survive and thrive and the water system needs plants to intercept and transpire water to support the hydrologic cycle.

At a city scale, the management of stormwater and the quality of water discharging to the environment is critical. In the case of Wellington almost all of our urban streams are constrained within the piped stormwater system creating ecological, social and cultural disconnect. Impermeable surfaces (roofs, roads and pavement) prevent rain from soaking into the ground and significantly change the volume and flowrate of stormwater which carries pollutants into our fresh and coastal waters. Water sensitive urban design (WSUD) provides a philosophy to better manage water within our built environment in a manner which is seamlessly aligned with the green network across our city.

What is the Green Network Plan?

This Plan proposes a well-developed continuum of green spaces to deliver the many ecological, social, economic, cultural and public health benefits to the central city as it grows, enhancing its liveability for residents, workers and visitors. To optimise the benefits, the green network needs to be:

- well distributed and highly interconnected across the central city (spatial)
- of adequate area (quantitative)
- of suitable quality (qualitative) in public and private ownership.
- Integrate with the water system to support wider ecological and cultural outcomes.
- planting considered to ensure that the right plant is in the right place as well as where possible reintroduce native species

This Plan builds on the current status of 'green' and 'blue' elements in the central city and proposes that investment and change is required to meet future demand and align with community aspirations. The distribution, quantity and quality of what exists, what is needed and where the opportunities are for improvement are all considered.

Delivering the green network will require:

- increased and ongoing investment to treasure, celebrate, grow and manage the city's plant life
- adequate protection and provision of public open space where significant parts of the green network should be located
- incentives and collaborating with other landowners to allow the green and blue networks to spread and flourish right across the city.
- Linkages with relic piped streams and historical ecological templates
- Integration with catchment scale stormwater strategies to support improved water quality, flood resilience and community education.

This document is non-statutory. It is intended to be used to direct green network investment and prioritisation.

Vision

“Thinking and living green in Wellington Central City, is the future for the planet and all us.”

Why

“Urbanisation and climate change call for new solutions to maintain and improve the quality of life in our cities. Public green space has a positive effect on biodiversity, climate, wellness and air quality (Green Cities).”

Objectives



TREASURE
and protect
what is
important



CELEBRATE
the value of
green with
partners



GROW
the number
trees and green
spaces



MANAGE
what we create and
what we already
have well



Measurable actions / programmes of work to deliver on targets & achieve the vision / objectives.



10 year Targets



No net loss



**Double the
number of trees
(to 4000 trees)**



**Improve the greening
of 20 existing
urban spaces**



**Deliver 2 new
urban parks**

10 year Targets

The Green Network Plan – Implementation Framework sets out how the objective will be achieved and measured through the delivery of the targets set out below. These address both the existing green spaces and parks as well as directing new green spaces to provide for the projected residential population growth in the Central City.

Our targets are:



No net loss



Double the number of trees (to 4000 trees)

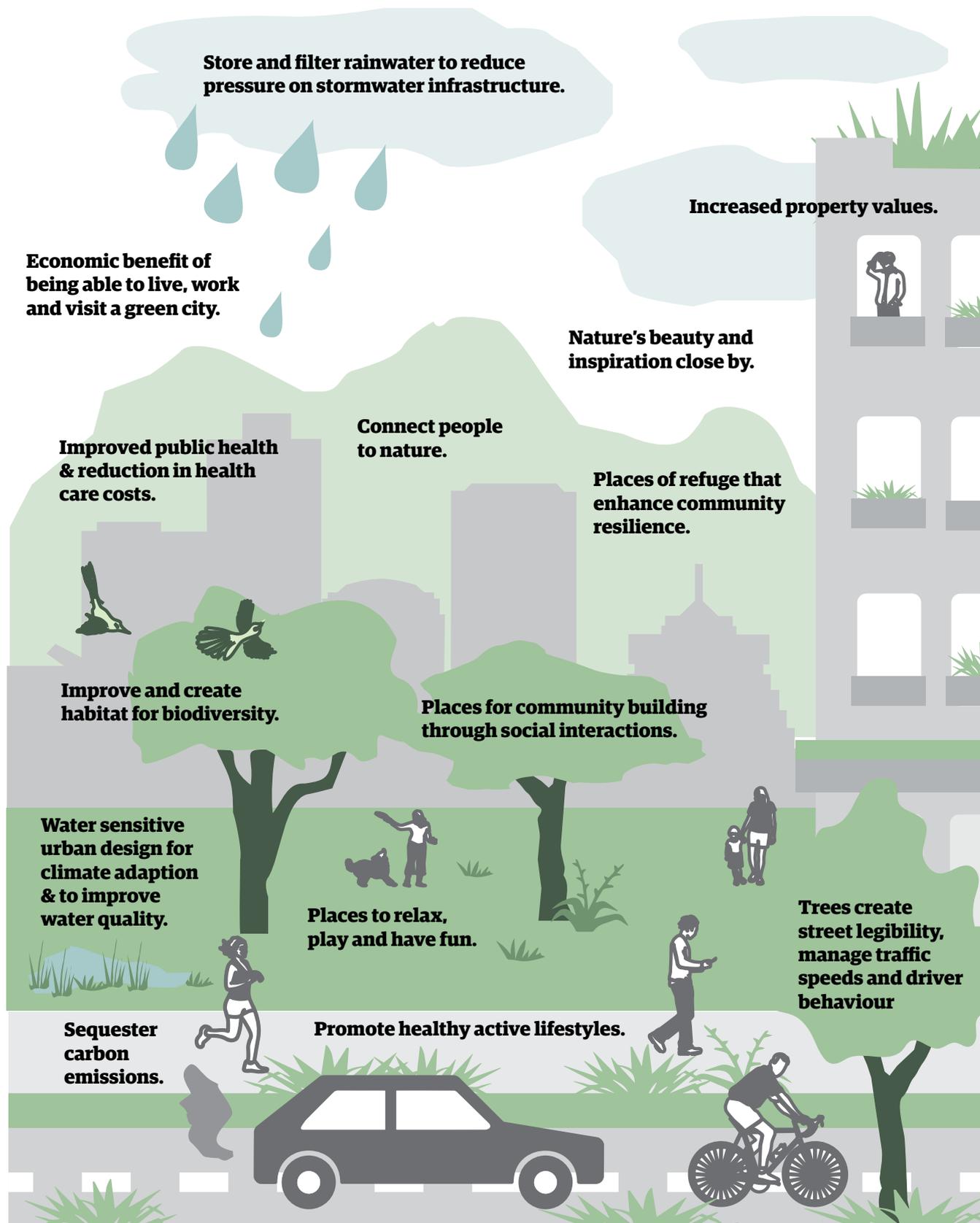


Improve the greening of 20 existing urban spaces



Deliver 2 new urban parks

The Benefits



“Urban green space is a necessary component for delivering healthy, sustainable and liveable cities (The World Health Organisation 2017).”



Benefits of a green network

It is recognised that daily contact with nature is fundamental to good urban living. There is an ethical responsibility to conserve nature in the city as part of the shared global habitat for all life. Nature can be woven through cities in many ways - from wild biodiversity in large open spaces to gardens and individual trees in largely built areas, such as the central city. Research shows that plentiful green elements in urban environments bring many benefits to a good quality of life for residents and a healthy environment. Wellington is one of the founding cities in the Biophilic Cities Network.



Nature's services

Nature provides 'ecosystem services' that are fundamental to health, wellbeing and survival. Ecosystem services include the provision of air, water, fertile soils, nutrient recycling and energy all to support plants. Ecosystem services can also support mitigation and adaptation to climate change. Trees, for instance, help offset emissions by storing carbon, intercept rainfall, assimilate air and water pollutants and reduce the summer 'heat sink' effect by shading heat-absorbing built surfaces.

Green and blue elements within the built environment need to be interwoven to ensure a wide range of benefits of are realised.

People's health and wellbeing

Many of the mental and physical health and wellbeing benefits we derive from urban open spaces are provided by nature, either directly or indirectly.

People tend to be more active in green spaces and streets and this is linked to improved physical health, such as reduced diabetes, cardiovascular disease, and mortality.

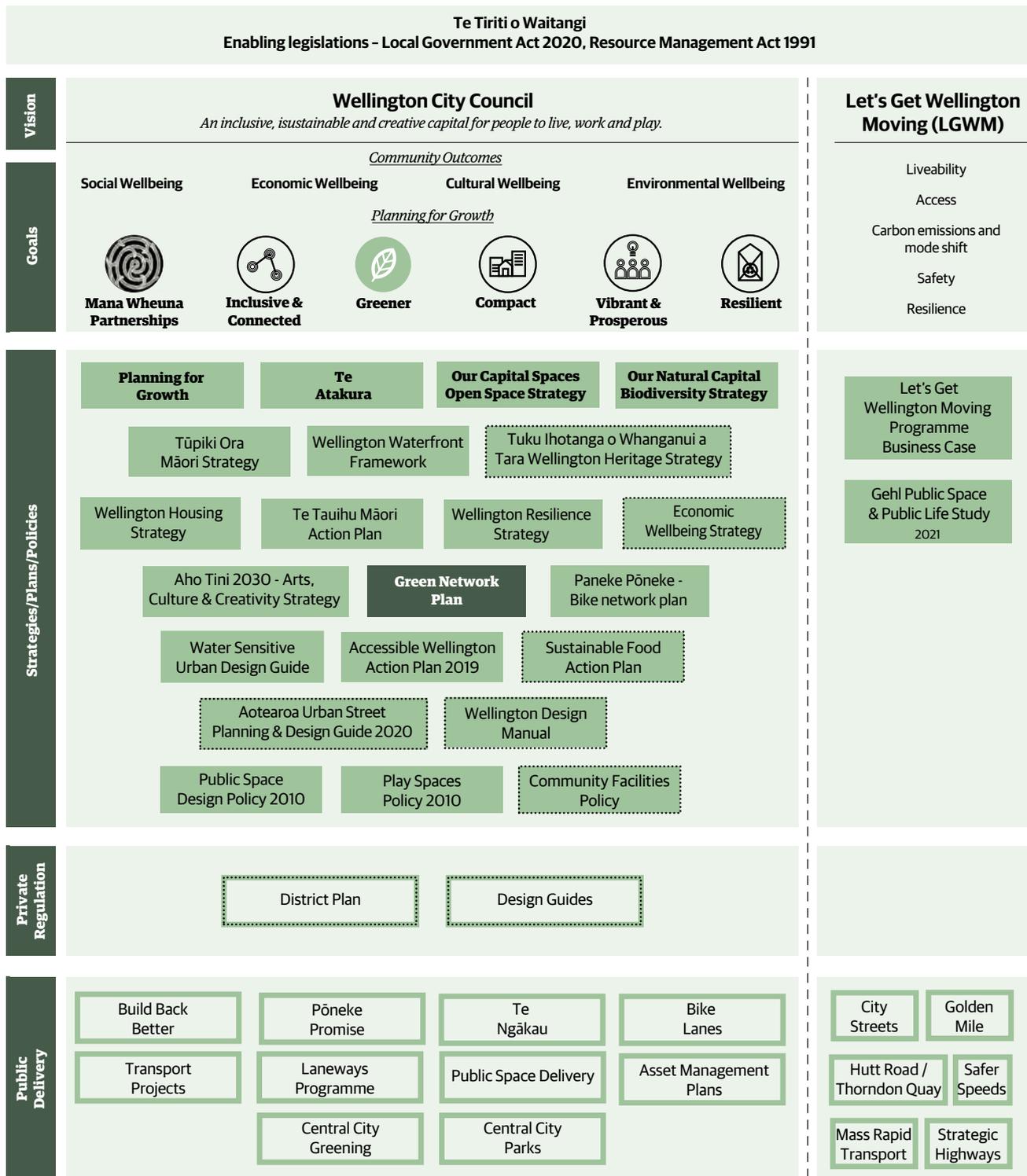
Experience of nature in open spaces also correlates with improved mental health and creative thinking, and reduced anxiety and stress. Time in a green place provides an opportunity to have a break from intense periods of focused attention in indoor environments and recharge. Nature is often a source of new ideas.

The social interactions that occur in public green spaces can also help people connect socially, with improved sense of belonging and well-being. Collectively, these individual benefits bring wider public health and social benefits, such as reducing costs on our health systems and helping bring communities together.

Well-designed urban green spaces and streets supported by water elements and trees can also mitigate the urban heat island effects (increased extreme temperatures) through shading and evaporative cooling with benefits for human health, particularly in vulnerable communities such as the elderly.

The Context

This Plan is part of a suite of Council strategies and policies which are inter-related.



Key:

 Under development /being reviewed

 GNP will **support** this strategy/policy/delivery outcome.

 GNP will **influence** this strategy/policy/delivery outcome.

The hierarchy of overarching city goals and major strategies, policies and bylaws that the Green Network Plan will support or influence.

The following strategies, plans and studies all direct the development of the Plan:

Our City Tomorrow: Spatial Plan for Wellington City 2021

“Action 3.33 - Develop a Green Network Plan for the Central City and investigate opportunities to expand the green network beyond the central city to establish forests to sequester carbon”

Te Atakura - First to Zero

Move 1: Support the transition towards higher-density development by ensuring residents will still derive the benefits of being close to nature within a compact city.

Move 7: Protect and enhance the domain of Tāne by integrating an increased green network across the central city, with its biodiversity and ecosystem services (including carbon sequestration and investing in green infrastructure to help.

Our Capital Spaces, open space and recreation strategy for Wellington

The four outcomes of the strategy are: (i) getting everyone active and healthy; (ii) protecting our birds, nature, streams and landscapes; (iii) contributing to Wellington's outstanding quality of life; and (iv) doing it together. Strategy currently being updated.

Our Natural Capital 2015

Wellington's indigenous biodiversity strategy and action plan aims to protect and restore indigenous biodiversity, connect people to nature and foster their sense of kaitiakitanga – weaving nature through the city.

Contribute to Objective 3.1.1 to ensure all Wellingtonians encounter nature on a daily basis; specifically through actions (a), (c) and (g) to increase native planting, increase the number of large trees and install green roofs and walls in the central city. Strategy currently being updated.

Central City Framework 2010

“Make our streets green – Wellington's streets will become greener and more attractive through a combination of planting, new and upgraded inner-city parks and initiatives such as 'stream streets' and wetlands in our city open spaces.” “The development of a legible green network of spaces and links. This will include vegetation and systems both within

public spaces such as streets and parks and also look at how private development can play a role.”

The Wellington Waterfront Framework 2001

The Framework directs the management of the Waterfront. It proposes two large green parks – Waitangi Park and Frank Kitts Park. Key principles include: “Ecological values of the waterfront will be maintained, bearing in mind that this is a highly modified environment. There will be a variety of open spaces – some green, some sheltered and some paved.”

Wellington 2021 Public Space Public Life Study - Gehl Architects

The first of 4 key moves promotes “green and blue -working with the unique natural assets and amenities -can make Wellington an even greener, resilient and more sustainable city.”

Green Space in Wellington's Central City - Blaschke et al 2019

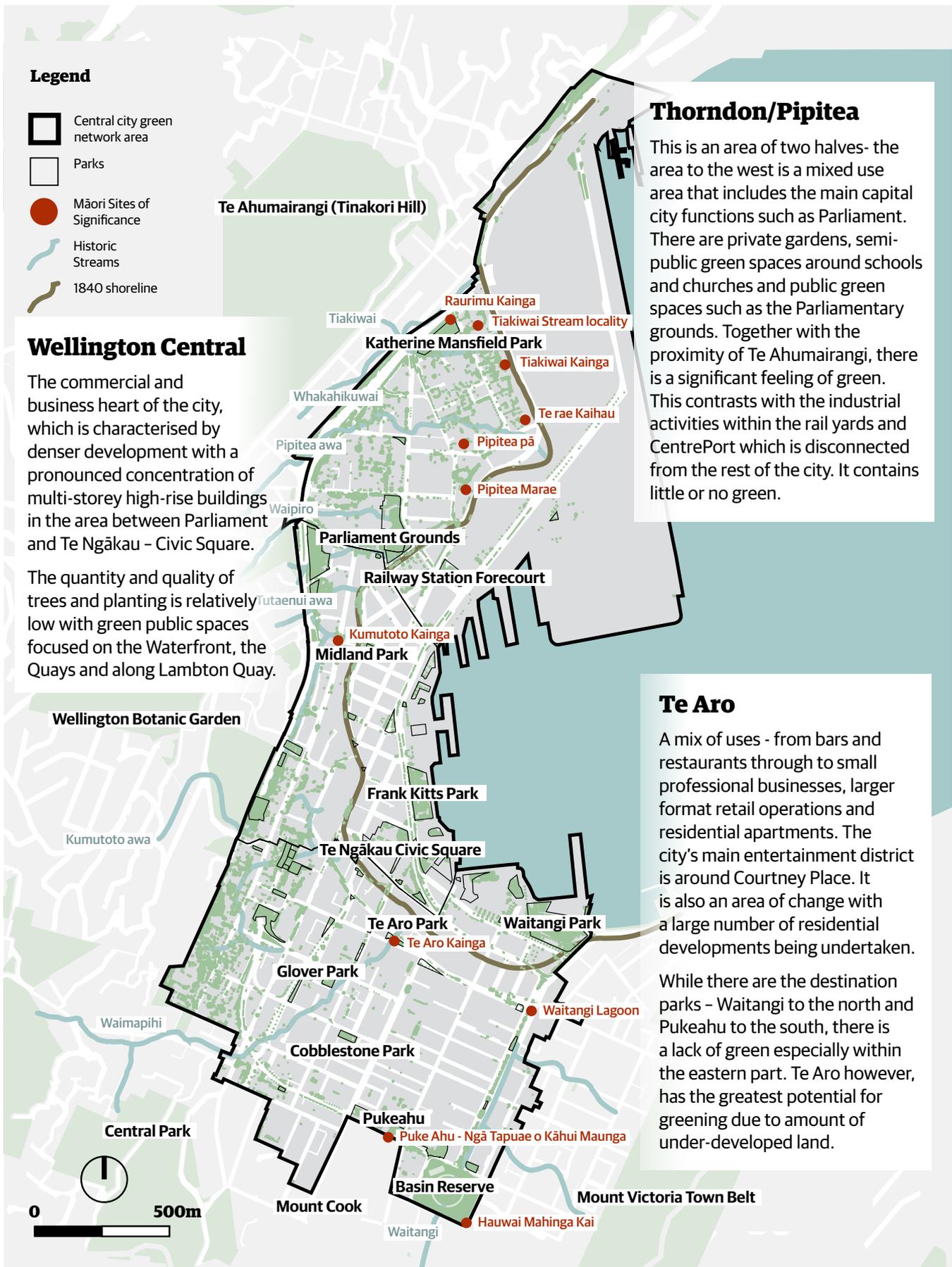
The report was commissioned to inform the development of the GNP. It analysed the provision of public green space in central Wellington City in relation to current and projected future population levels. A key conclusion that came out of this was:

“Green space amount per capita in central Wellington City declines substantially - by half on average - when projected population growth to 2043 is considered.”

Aotearoa Urban Street Planning & Design Guide 2020

Waka Kotahi developed the draft Aotearoa Urban Street Planning and Design Guide to provide a national framework and high-level principles for multi-modal street design in an urban context. It builds on the success of overseas street design guides, such as the National Association of City Transportation Officials (NACTO) Urban Street Design Guide, which looks holistically at street design and provides clear direction towards a more human-centred approach to streets, to deliver an integrated transport system for different user groups.

The Current Status of Greening





Opportunities

Wellington's central city setting is by world standards – beautiful. The beauty and character is derived from its landscape setting. The central city is part of a layered amphitheatre; the containment of steep bush clad hills, giving way to residential suburbs, the central city and the waterfront. These all face out to Te Whanganui-a-Tara, the harbour.

The indigenous vegetation, remaining open streams and 'lost' piped streams add to the story. The history of places, the pā sites of tangata whenua and their food gathering areas are part of this whenua.

Bird life is thriving: "Wellington is one of the few cities which is seeing nature return worldwide. We are bucking the trend globally, as across the world biodiversity is generally declining (The Birds are Back in Town 2019)."

The adjacent Town Belt, the subdivision of sections, the reclamations and dense urban form, tells the story of European settlement. The current parks and planting – both exotic

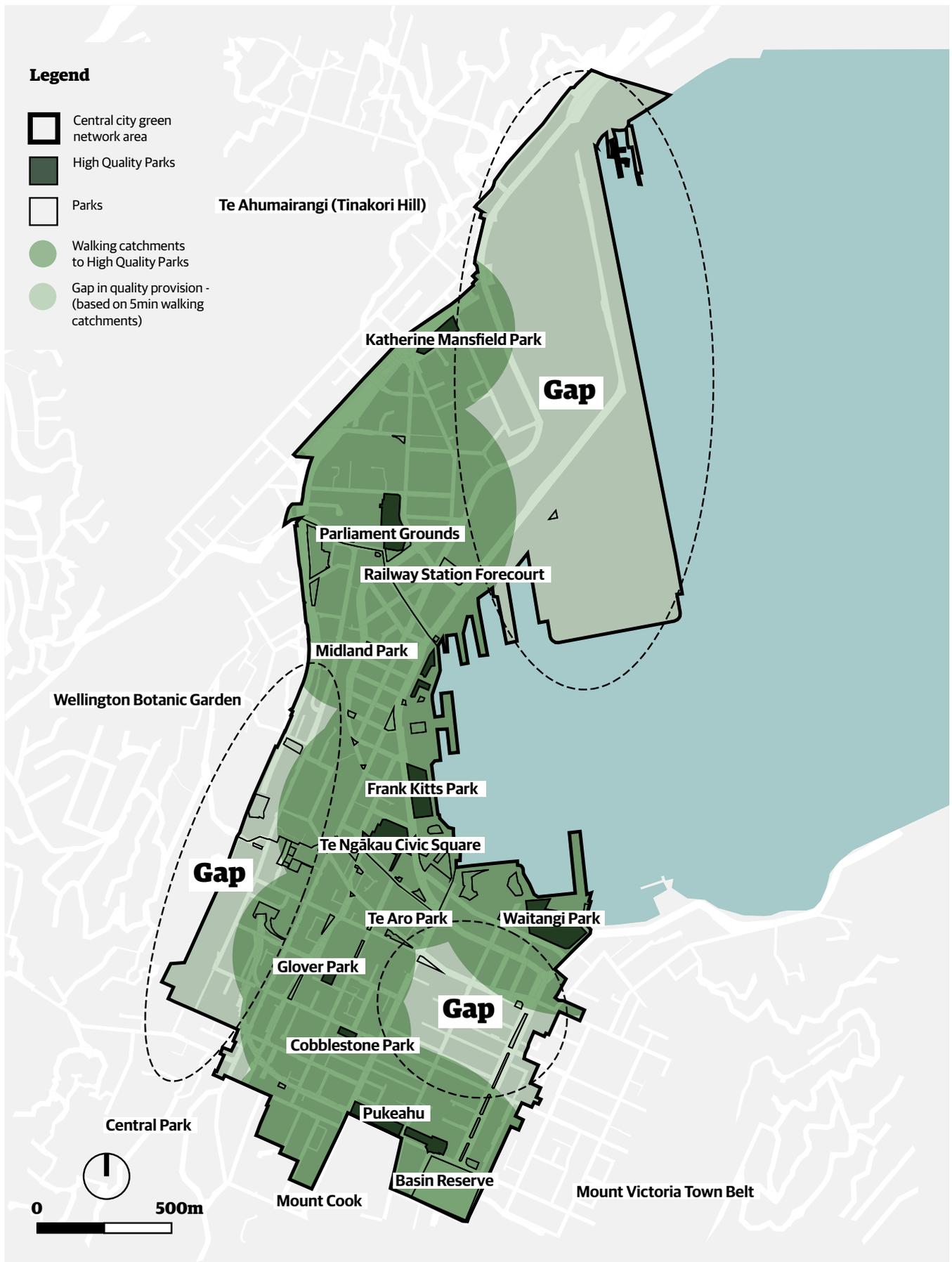
and native – are an important starting point towards regreening the central city. The streets and laneways are the connectors that provide the 'green network' with a choice of movement, place quality and ecological outcomes. As the capital city, Wellington incorporates national institutions and associated significant public spaces such as those associated with Parliament, Te Papa and Pukeahu. These are stories of this place, and its people. They can be used to enhance the identity.

At a wider city scale Wellington does have substantial and a varied amount of green space.

The natural landscape is something valued. "We are a 'Natural Capital' due to our natural environment and our nature-driven attractions. It is part of what makes us the 'coolest little capital in the world.' It is an important part of what makes people want to live and work here and helps to attract visitors (Our Natural Capital 2015)."

Images (top left to bottom right): View from Mount Victoria; Watangi Park; Pukeahu.

The Current Status of Greening: Public Parks Distribution





Challenges

The total central city is 444.5ha. Just over 9% or 41.25ha can be considered as green spaces. These green spaces are made up of:

- 43% public parks
- 24% road reserves
- 33% privately owned

The central city is car focused, with approximately 11% of the central city dedicated to car parking lot (note this does not include on-street parking or roads/streets).

The central city has a deficit of green space for the current residents, workers and visitors. This will be further exacerbated by the population growth which is projected to double from 18,000 to 36,000 over 30 years.

Central city living means more public green spaces are needed for people to use in a wide variety of ways - in addition to the 'wilder' hilltop parks of the nearby Wellington Town Belt. People thrive in cities where greening (in all its forms) is part of the urban fabric. Space needs to be deliberately allocated for this purpose.

Climate change and natural disasters bring a vulnerability; storms, flooding, urban heat, earthquake induced liquefaction, tsunami and plant disease all need to be considered.

The central city has a fragmented green space network with minimal cohesion and limited areas of ecological focus. There are significant gaps within the open space catchment, especially through Pipitea and Te Aro. There is also a significant lack of planting in the streets and laneways which hinders greater connectivity between green parks, the Town Belt, Wellington Botanic Garden ki Paekākā and the Waterfront. None of our once vibrant natural steams remain on the surface with all now constrained in pipes beneath roads and buildings. Tidal estuaries and coastal margins have been lost through land reclamation on the waterfront.

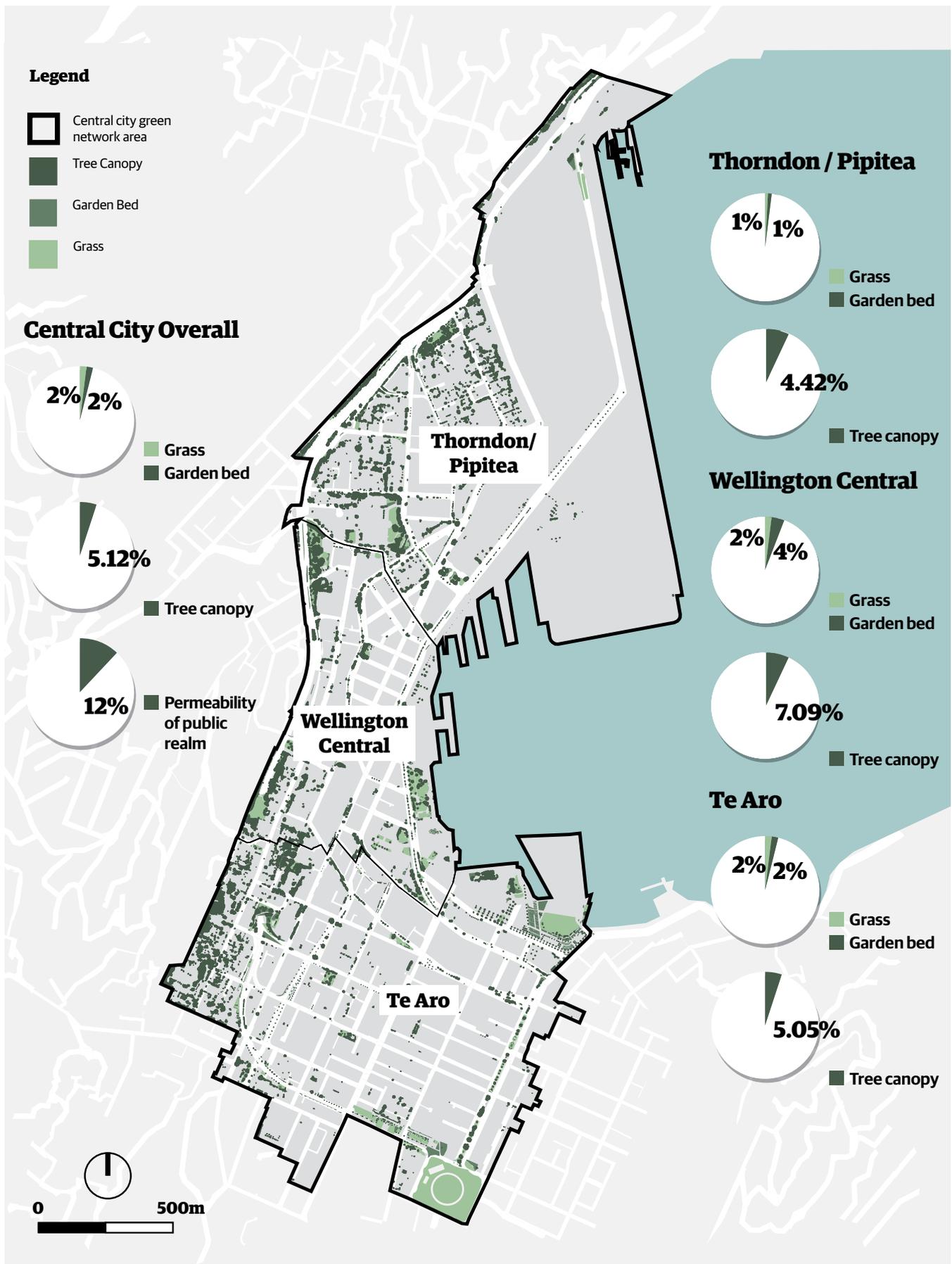
Current green spaces are of mixed quality and need to support a more diverse range of uses and ecological needs. Currently there is minimal tree protection for central city trees.

There are few incentives or requirements for private development contributions to the city's green network and limited rules to require water sensitive design and improved urban water outcomes.

Due to the topography and the prominence of the Town Belt, there can be a skewed perception of how green the central city is.

Images (top left to bottom right): Wellington Motorway, Wellington Central City Apartment Dwellers; Wellington Central City Population.

The Current Status of Greening: Green Cover





Green Cover

Grass Cover

Half the public green space is grassed/ lawn. This creates a relatively mono-culture environment that limits habitat opportunities and overall biodiversity. However, it does provide for a range of multiple uses.

Permeable Surfaces

The large area of hard paving and buildings in the central city causes flooding in extreme events when the stormwater system which includes our streets cannot cope. Surface runoff can be reduced if more surfaces can absorb water – permeable surfaces. Permeable surfaces are the grass, gardens and permeable paving. Given that 88% of public space is impervious, there are minimal benefits from ecosystem services.

Tree Canopy

Tree canopy cover is a well utilised global measure, that can be assessed over time. It is the proportion of a fixed area of the ground covered by tree crowns. The canopy cover will be determined by the tree species, as each species has different crown sizes, shapes, and heights. Trees support water retention, fauna habitat and provide amenity for people.

In terms of tree canopy, Wellington's central city does not measure well against other cities:

City	City Wide	Central City
Wellington	30.6%	5.12%
Auckland	18%	19%
Christchurch	15.6%	17.05%
Sydney	18%	14.5%
Melbourne	16.2%	11%
London	21.9%	18%

Images top left to bottom right: *Cordyline australis* (NZ Cabbage Tree) planted in Civic Square; *Hebe speciosa* a flowering native shrub species; Lawn found at Civic Square.

The Plan: Objectives



TREASURE and protect what is important

There is a need to:

Build on the essence of Te Whanganui-a-Tara by understanding the original topography and vegetation cover, the stories of settlement and their respective plantings as part of those settlements. Clearly communicate the location and names of historical streams which still flow beneath our city in pipes.

Engage with mana whenua to identify, protect and explore opportunities around green/blue sites of cultural significance and restore appropriate flora and fauna to the central city.

Protect existing trees and public green spaces in the central city ensuring no net loss and grow over time.

Support the blue network through implementation of WSUD, creating community awareness and creating a strategic long term vision for daylighting where appropriate. New development and major projects should be seen as opportunities to work towards improved urban water outcomes.

Use a diversity of plant species to allow for different character in different neighbourhoods and enable plants to be selected to suit varying needs and site conditions. There is a need to consider the 'right tree for the right location'.

Identify the existing spaces and parks to become either a parklet, urban park or a destination park.



CELEBRATE the value of green with partners

There is a need to:

Think and live 'green', as it is intrinsic to our global natural habitat and survival. There is a need to change behaviour. An example of this is Wellington was one of the founding cities in the Biophilic Cities Network.

Work in partnership with the people and agencies who live, work, own and manage property in the central city. These include Central Government, LGWM, schools/universities and property owners and developers.

Establish a Green Network champion network both internal and external to Council to advocate green/blue thinking.

Educate and support teaching programmes, for example how to set up gardens - grow plants/food and communal composting.

Work in partnership with mana whenua to include interpretation opportunities in green spaces.

Rongoa Māori; heritage significance and / or explaining infrastructure systems - e.g. Waitangi Park WSUD and the value of parks, trees and plants.

Connect communities with the natural stream catchments in which they live/work and educate them on the historical cultural and ecological values and the importance of our unique freshwater taonga. Ensure streams (including piped ones) are named on asset management plans and reflected in consenting and development planning.



GROW

the number of trees and green spaces

There is a need to:

To deliver a continuum of diverse green spaces.

Build on opportunities. Assess new green space opportunities of a variety of sizes to support a mix of active and passive uses.

Invest in further greening in Council owned assets, to maximise value for the environment, the city and people.

Change streets from just movement corridors to places - 'living streets' for people to enjoy.

Always look to the opportunity for planting trees in the streets and integrating water sensitive design elements as part of integrated stormwater system.

Prioritise locating new green parks in neighbourhoods where there are gaps and/or future growth is anticipated.

Improve accessibility for all to be able to experience green.

Grow the opportunity of green walls and roofs, develop options for community gardens and compost hubs.

Explore green finger opportunities from hills and harbour into the central city.

Integrate avenues of trees into existing work programmes such as LGWM projects.

Integrate WSUD initiatives into a wider network and work towards long term visions to daylight streams currently in parks. Co-design the green and blue networks to mimic natural hydrology and to support water quality improvements for fresh and coastal waters.



MANAGE

what we create and what we already have well

There is a need to:

Actively manage and maintain the trees and green spaces to retain their high quality.

Provide for the best growing conditions. This starts with a robust design process, construction/planting and ongoing care.

Set up appropriate asset management plans and ensure appropriate funding through LTP processes.

Manage our existing piped streams as relic connections between the coast and headwaters and for the potential to one day daylight.

The Plan: Continuum of diverse green spaces (parks)

In 30 years, the population will double with more people in higher density living. This density needs to be done well which includes accessing and being able to view greenery.

This plan directs a continuum of public and private green and open spaces to provide for a diversity of uses. Public parks are important as they are accessible to all and can be of sufficient area to provide multiple community and environmental benefits and provide a green character in a neighbourhood. The open spaces where green and blue elements can flourish, are not just confined to public parks. The street network and private land also hold potential for more green elements.

The quality and diversity of greening is critical to allow people to enjoy green spaces that are safe and attractive while providing for good access and amenities. Enabling the right balance of green and open spaces is vital to support a variety of housing typologies and neighbourhoods to cater for a broad range of people throughout all stages of their lives.



Mini Park

Small urban spaces. Location is opportunistic -temporary or permanent. Relates to immediate surroundings and uses. Likely to be repurposed road reserve.



Urban Park

Medium sized green spaces offering a variety of amenities for an associated neighbourhood. An 'urban backyard' for residents. Critical in areas of change.

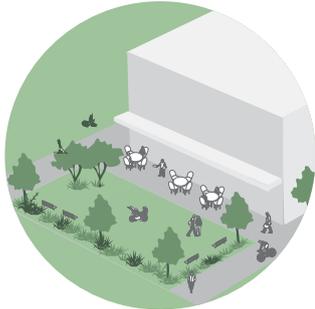


Destination Park

A large park that given its size can be multi-functional but may have a primary function that delivers a particular social, cultural or recreational use.



A small balcony or garden ensures you can pop out with your morning coffee or provide a safe space for your children to play while you prepare dinner. Larger shared and public spaces are great for meeting friends, picnicking or kicking a ball around. A well-placed seat under a tree can allow people to enjoy the shade, shelter and socialise. Physical recreation such as a playground or a basketball hoop can be incorporated. Communal spaces to grow plants for food can have important recreational, health and cultural and community benefits for Wellingtonians.



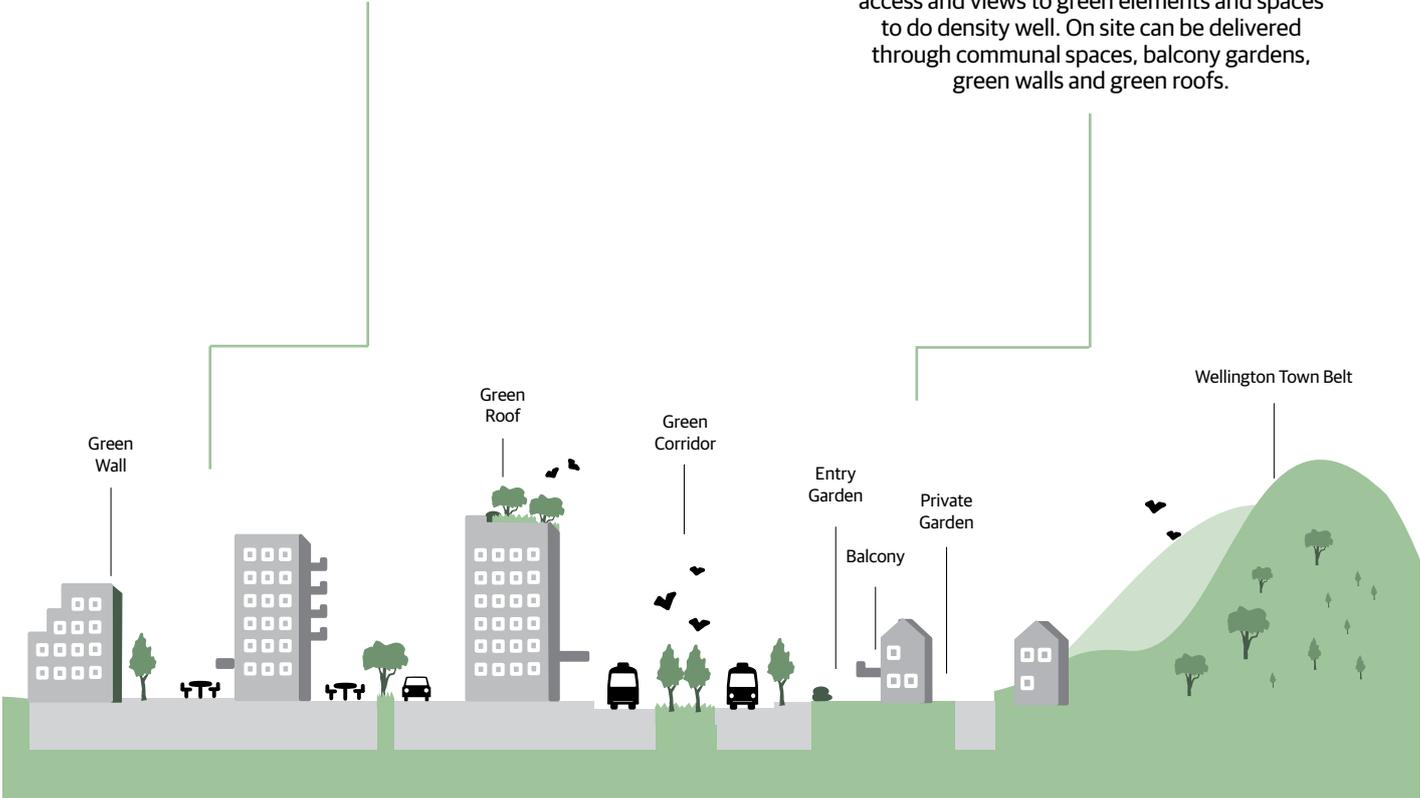
Public/Private Spaces

Opportunity to partner to create green spaces and more green elements.



Private Development

Delivers higher residential density which needs access and views to green elements and spaces to do density well. On site can be delivered through communal spaces, balcony gardens, green walls and green roofs.



The Plan: Continuum of diverse green spaces (streets)

The streets and laneways are the green connectors that extend from hills to harbour – providing ecological corridors across the central city. They were partly shaped by the topography; the original shoreline, the streams and the cliffs, They were also the ara –the traditional pathways - that connected tangata and whenua, land and sea.

Streets and laneways have both a place and movement function. Street trees and planting provide for definition and enclosure, improves microclimate and generally enhances the amenity of the central city for people.

Street trees and other planting helps slow and manage vehicle speed and driver behaviour – making for safer places.

WSUD and permeable surfaces can better manage water run-off, with planting helping reduce pollutants flowing into watercourses and the harbour. As well as street and laneway upgrades, greening can come about through transitional projects such as parklets. Network projects such cycleway and public transport projects can embracing greening.



Parklets

Parklets are parking-space sized mini-parks, plazas or outdoor dining areas that are constructed in on-street car parks. They can transform parking spaces into vibrant public spaces built for people to sit, relax, and enjoy the city.



Bike Network

The Paneke Pōneke - Bike network plan is a significant opportunity to introduce greening in our streets. Greening can help distinguish and create separation between bike lanes and footpaths to minimise user conflict, they can also separate more vulnerable users from traffic and help reduce traffic speeds.



"He Whenua Ora - A Living Environment

As towns and cities change we adapt our living environments, and work with living systems and the natural environment. Spatial and system thinking is needed to connect the street to its neighbourhood and buildings, the neighbourhood to its city, and the city to its region. Street planning and design optimises relationships between natural and built environments activating streets for activities and transport networks. It also recognises that towns and cities are part of a constantly evolving relationship between people, land, culture and the wider environment (Waka Kotahi 2021)."



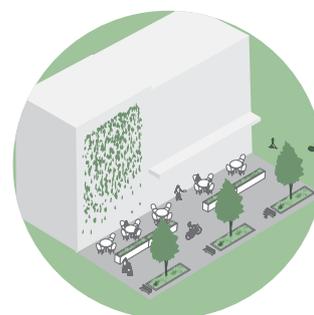
Tactical Urbanism

Tactical urbanism is a process to allow quick testing out of a design in the real world before it becomes a permanent solution. This can occur all through the public realm but has predominantly been trialed in the New Zealand context within the street network.



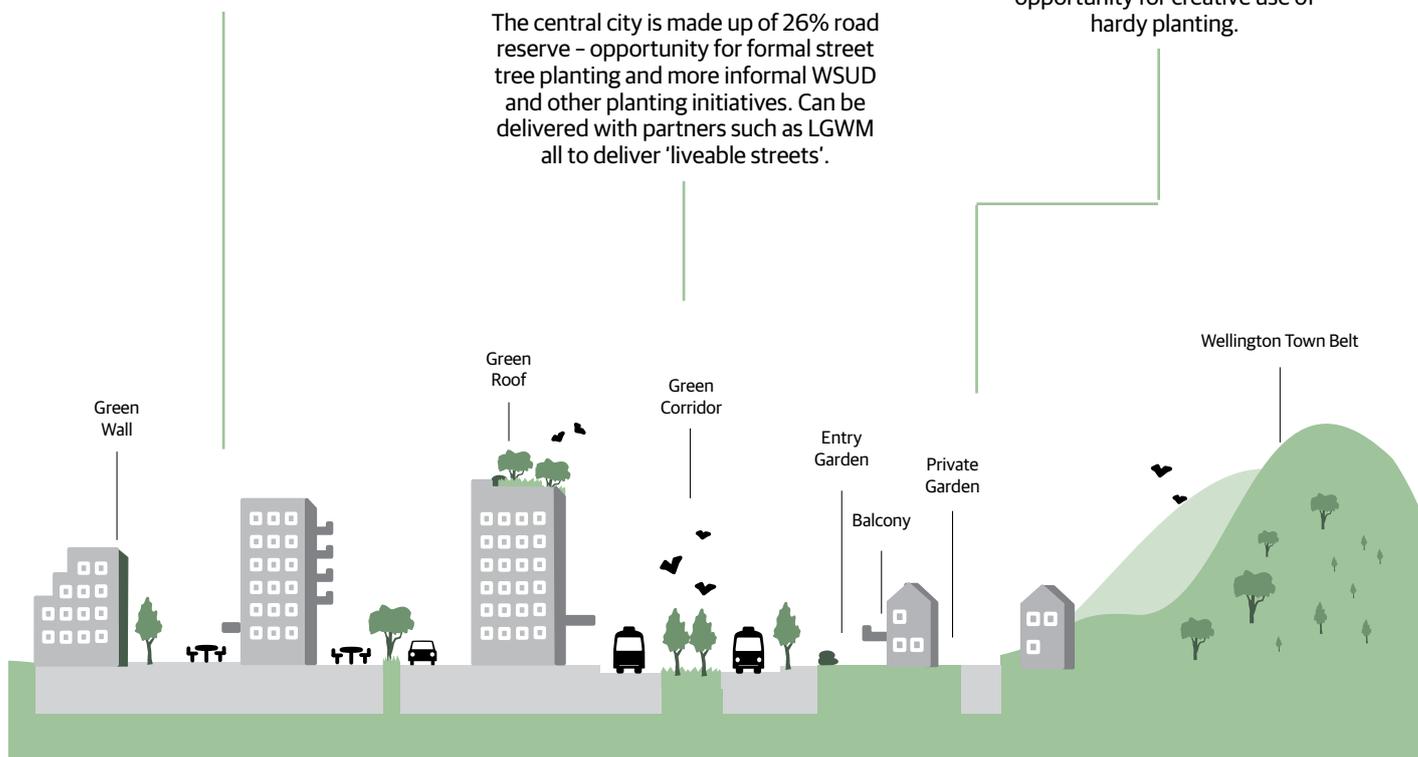
Streets

The central city is made up of 26% road reserve – opportunity for formal street tree planting and more informal WSUD and other planting initiatives. Can be delivered with partners such as LGWM all to deliver 'liveable streets'.



Laneways

Provide for mid block connections – spaces tight but opportunity for creative use of hardy planting.



Wellington Central City

Green Network Plan

Implementation

Framework 2022

Version 1: 12.05.2022

The Implementation Framework

This Framework consists of high level actions which will direct programmes of work, funding, partnering and collaboration options over the next 10 years. These actions will achieve the objectives and vision of the Green Network Plan and will deliver on the four targets.

Vision

Thinking and living green in Wellington's central city, is the future for the planet and all of us.

Green Network Plan Objectives



TREASURE
and protect
what is
important



CELEBRATE
the value of
green with
partners



GROW
the number
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10 year Targets



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**Double the
number of trees
(to 4000 trees)**



**Improve the greening
of 20 existing
urban spaces**



**Deliver 2 new
urban parks**

Key Actions

Key Green Network Plan objectives that guide actions:



TREASURE



CELEBRATE



GROW



MANAGE



1

Partnership and collaboration.

- Foster collaboration within Council.
- Advocacy to promote greening and direct behavior change.
- Collaborate with: LGWM, the development industry & international partners e.g. Biophillic Cities.

2

Partnership with Mana whenua.

- Work collaboratively with the Mataaho Aronui team to develop partnership with mana whenua.
- Reflect a stronger te ao Māori perspective.
- Engage with the LGWM Iwi Partnership Working Group on opportunities to give life to Mana Whenua values and aspirations (such as Hau-ora).

3

Business case development.

- Undertake investment logic map.
- Stakeholder engagement.
- Develop funding options.

4

Greening specifications and guidance.

- Identify plant and tree species.
- Appropriate location of trees and plants in the streets and laneways.
- Identify green infrastructure requirements.
- Ensure Water Sensitive Urban Design is delivered.

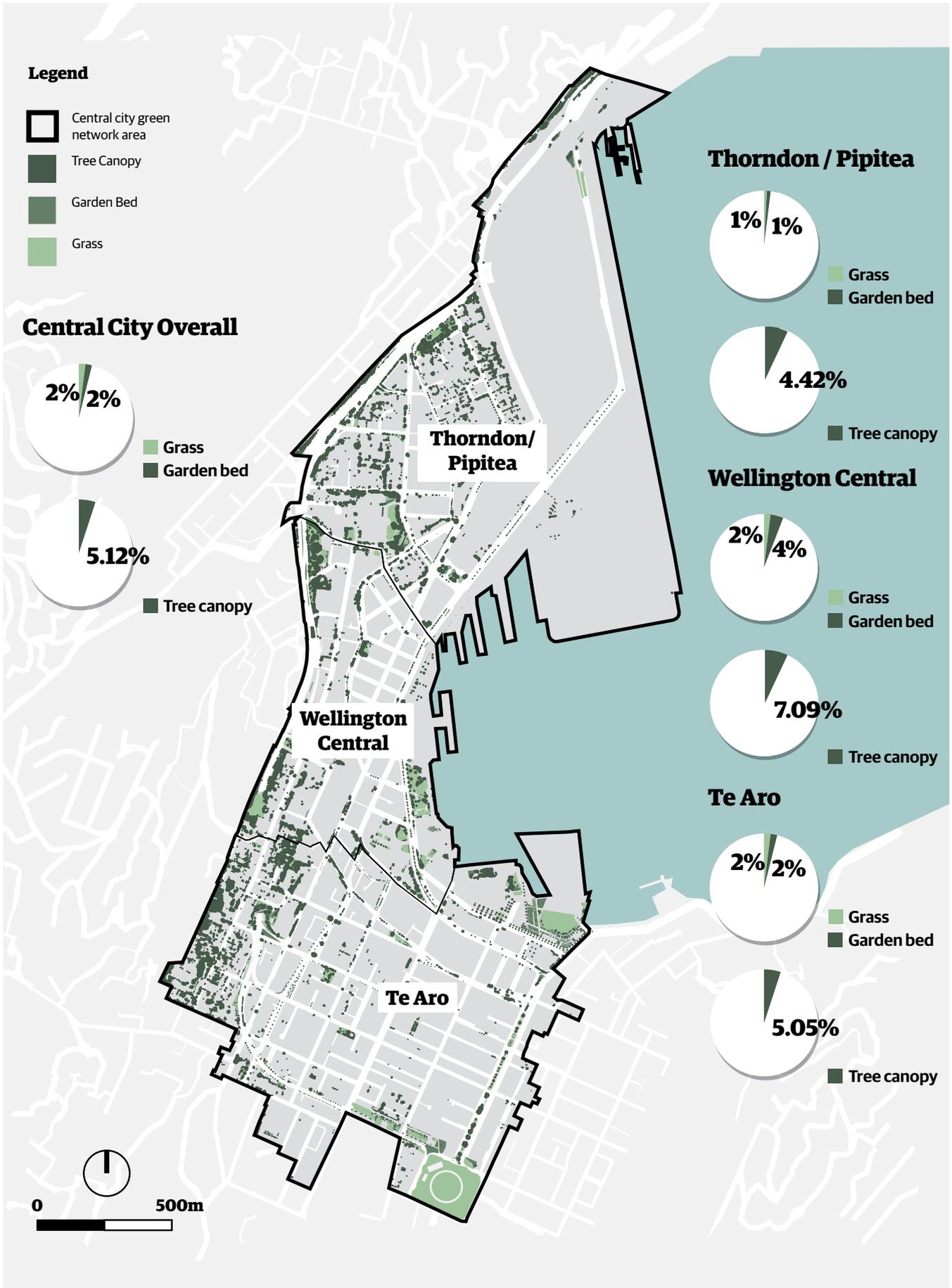


Image: Map showing the current baseline coverage of green elements in the central city.



No net loss.

Key Green Network Plan objectives that guide Target 1 and Actions:



TREASURE



CELEBRATE



GROW



MANAGE



Target Specific High Level Actions

Delivery Timeframes

Short Term
2022-2024

Mid Term
2024-2034

Long Term
2034-2044

1

Define quantity and quality of green assets.

- Define current and new service levels for maintenance of green assets.
- Agree OPEX funding required fro new service level.



2

Tree and green asset protection.

- Increase recognition and ways of protecting the existing green network.
- Update the current Working Around Trees Guidelines.
- Review District Plan protection for notable trees.



3

Parks protection.

- District Plan protection - listing appropriate urban and destination parks and ensure appropriate sunlight protection.
- One for one replacement required for any loss of existing public green infrastructure.





Images (top & bottom): Wellington City council planting projects.



Double the number of trees (to 4000 trees).

Key Green Network Plan objectives that guide Target 2 and Actions:



TREASURE



CELEBRATE



GROW



MANAGE



Target Specific High Level Actions

Delivery Timeframes

Short Term
2022-2024

Mid Term
2025-2027

Long Term
2028-2030

1

Tree planting planning.

- Undertake mapping survey to highlight spaces for trees in streets and parks.
- Develop tree planting plans to be incorporated into the Wellington Design Manual.
- Develop tree planting and replacement matrix to project and meet canopy targets.



2

Tree planting delivery.

- Task the Council nursery to grow eco-sourced native trees
- Intergrate tree planting into all street upgrade projects.
- Remove and upgrade low quality trees and and dead trees.
- Monitor canopy cover gains through iTree.
- Increase nursery production in alignment with LTP work programme.



Legend

- Central city green network area
- Proposed Destination Parks
- Proposed Urban Parks
- Proposed Parklets

- 1 Katherine Mansfield Memorial Park
- 2 Magyar Millennium Park
- 3 CentrePort Park
- 4 NZ Parliament Grounds
- 5 Bolton Street Cemetery
- 6 Bolger Park
- 7 Waititi Landing (ANZAC Corner)
- 8 Railway Station Forecourt
- 9 Alexander Turnbull House Lawn
- 10 The Cenotaph - War Memorial Reserve
- 11 Whitmore Plaza
- 12 Midland Park
- 13 Kumutoto Park
- 14 Grey Street Pocket Square
- 15 Everton Terrace Park
- 16 Lambton/Featherston/Hunter Plaza
- 17 Post Office Square
- 18 Queens Wharf
- 19 Te Papa West
- 20 Frank Kitts Park
- 21 Terrace Tunnel Park - North
- 22 Bond Street
- 23 Civic Square
- 24 Taranaki St Wharf/Whairepo Lagoon
- 25 Mount Street
- 26 Flagstaff Hill / Terrace Gardens
- 27 Denton Park
- 28 Michael Fowler Centre Park
- 29 Te Papa East
- 30 Clyde Quay Park
- 31 Terrace Tunnel Park - South
- 32 Volunteer Corner
- 33 Cuba Mall
- 34 Te Aro Park
- 35 Wakefield Street Park
- 36 Waitangi Park
- 37 Te Niho Park
- 38 Glover Park
- 39 West Courtenay Place Triangle
- 40 Cobblestone Park
- 41 Cambridge / Kent Terrace Median
- 42 Karo Drive Sculpture Park
- 43 Pukeahu National War Memorial Park
- 44 87 Kent Terrace
- 45 Basin Reserve
- 46 East Courtney Place Triangle

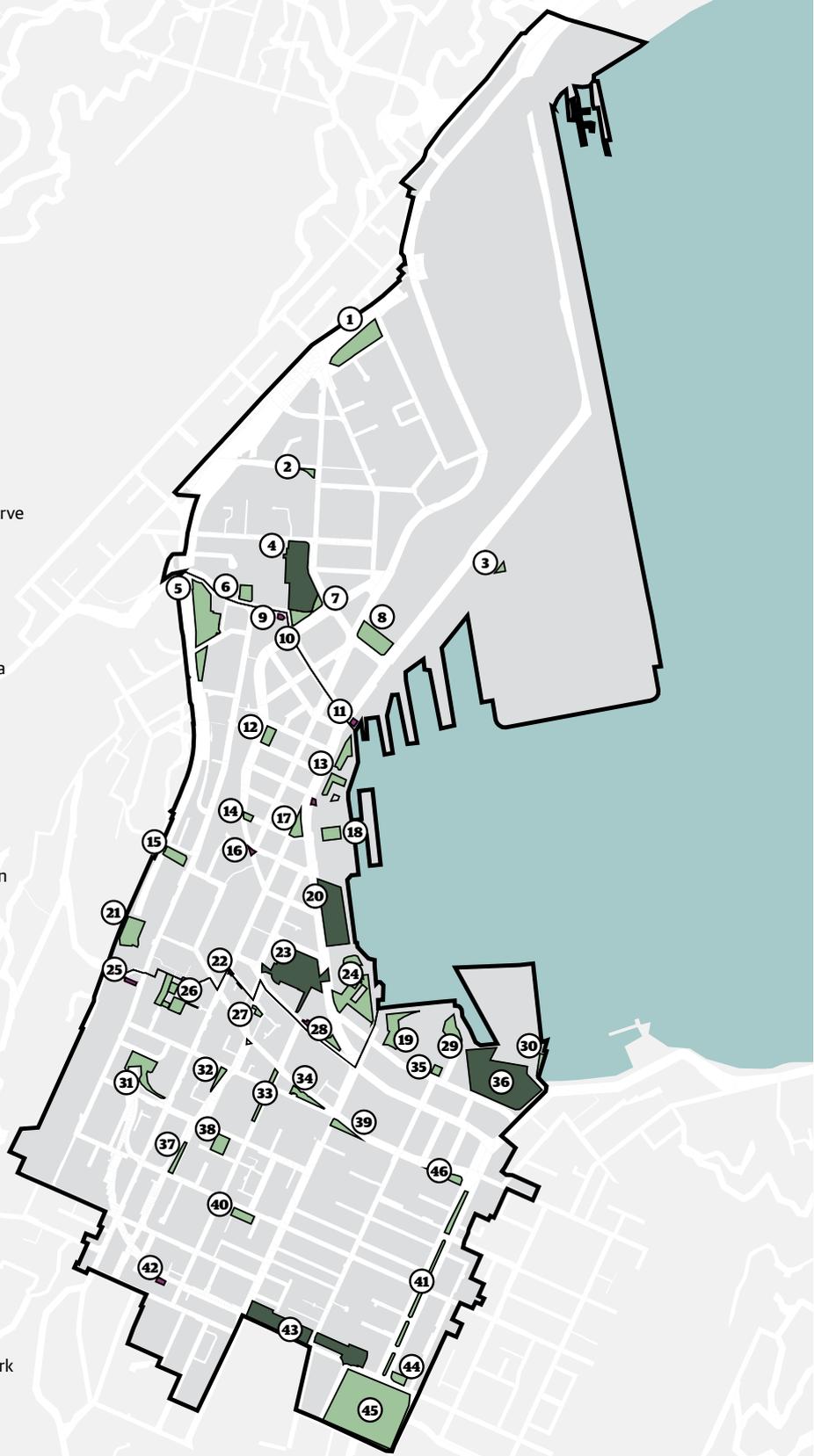


Image: Existing spaces / parks identified to become part of a 30 year improvement programme to increase the quality of central city green spaces.



Improve the greening of 20 existing urban spaces.

Key Green Network Plan objectives that guide Target 3 and Actions:



TREASURE



CELEBRATE



GROW



MANAGE



Target Specific High Level Actions

Delivery Timeframes

Short Term
2022-2024

Mid Term
2025-2027

Long Term
2028-2030

1

Quality assessment.

- Conduct a quality assessment of all existing parks in the central city.
- Determine a quality ranking of spaces to inform future improvement prioritisation.



2

Improvement programme planning.

- Determine improvement prioritisation for all spaces based on quality ranking, opportunity / alignments with other workstreams, LGWM and central city needs e.g. growth. Develop a business case including:
 - a) Assign high level CAPEX costings for improvements.
 - b) Secure appropriate level of maintenance / OPEX budget and resourcing for works.
 - c) Establish a programme for improvement of existing urban spaces.



3

Improvement programme delivery.

- Deliver on the improvement programme.
- Review prioritisation of improvements every LTP cycle based on opportunity and need.
- Deliver improvements which also increase our food resilience / accomplish other outcomes too.





Images (top to bottom): Waitangi Park and Cuba Street for People temporary parklets



Deliver 2 new urban parks.

Key Green Network Plan objectives that guide Target 4 and Actions:



TREASURE



CELEBRATE



GROW



MANAGE



Target Specific High Level Actions

Delivery Timeframes

Short Term
2022-2024

Mid Term
2025-2027

Long Term
2028-2030

1

Urban Parks programme planning.

- Engage with land owners of opportunity sites through WCC City Development.



2

Urban Parks programme delivery.

- Deliver 2 urban parks in 10 years
- Review programme/prioritisation of sites for development every LTP cycle based on opportunity and need.



3

Parklets design guide.

- Develop guidelines and a process to enable businesses to utilise on-street parking spaces for commercial use as parklets.
- Engage with interested stakeholders to trial partnerships around public parklets that deliver on Green Network Plan objectives.



Green Network Plan Appendix 1

Green History of Wellington Central City

History of Greening in the Central City



Te Aro Pā looking towards the Hutt River (Alexander 1842-43)



Birdseye view of Port Nicholson (Heaphy 1843)

1500 - 1800

Prior to Māori settlement much of the shores of Te Whanganui-a-Tara were covered by bush iwi settled on the shore of the harbour and land was cleared.

1820s

Taranaki iwi expanded into the central Wellington area. This saw Pipitea Pā, Kumutoto Kāinga and Te Aro Kāinga /Pā further developed and expanded.

Pipitea Pa had areas of cultivation extending along Hobson Street to the base of Te Ahumairangi Hill.

Kumutoto Kāinga situated above the mouth of Kumutoto Stream. It was known as a flax collecting area and boat landing site.

Te Aro Kāinga/Pā was the largest pa in the Wellington region. Cultivation extended to Buckle Street and up the Brooklyn Hill. Other food sources were Waitangi Lagoon - on the eastern side of Te Aro, the surrounding bush and the harbour itself.

1839

The artist Charles Heaphy described the future central city site as a place covered with high ferns and tupakihi tutu, rush, flax and much of the land was impassable swamp. The area that is now the Basin Reserve was 'morass' with an outlet to the sea. The Terrace was timbered with high manuka and Thorndon was fern covered.



Pukeahu National War Memorial Park



NZI Street Parade Civic Square

2014

Pukeahu National War Memorial Park opens as a place to remember and reflect on New Zealand's experience of war, military conflict and peacekeeping and provides for a sense of national identity.

1990s - early 2000s

The waterfront evolved, the area around Taranaki Street wharf was followed by Waitangi Park, the largest public park in the central city. The public were very engaged in this project which integrates Wellington's coastal ecosystems, environmental infrastructure and cultural and historic overlays, with spaces for various activities and uses. Further open space development on the waterfront followed; the area around the Wharewaka and Whairepo Lagoon and further north, the area around the mouth of Kumutoto Stream.

1992

Pidgeon Park was renamed Te Aro Park with a redesign led by Shona Rapira Davis which recognises the significance of the site due to its relationship to Te Aro Pā and was the first example of continual engagement with mana whenua across a project that highlights a hugely significant story from Te Ao Māori.



Waitangi Park

1991

The new Te Ngākau (Civic Square) opens providing the central city with an important civic space, integrating a number of smaller public spaces around the then Council buildings. The City to Sea bridge links the Square across to the Waterfront.



Plan of the town of Wellington (New Zealand Company 1840)



Scene in the Botanical Gardens (Unknown ca 1840)

1840

1860s

1869

Given Wellington's steep topography the Mein Smith survey laid out 1100 town acres covering Te Aro, Thorndon and The Terrace. The steep slopes adjacent to the flat areas became the open spaces - now the Town Belt, with limited public open spaces within what is now the central city. Two cemeteries adjacent to the central city were created, the larger Bolton Street Cemetery and the smaller Mount Street Cemetery for those of the Catholic faith.

The bush on the surrounding hills was cleared and burnt, leaving a barren aspect from the harbour. Native bird life was drastically reduced. Reclamation was underway to support the mercantile businesses and port development with minimal thought of parks or public spaces.

The Wellington Botanic Gardens were established, on the forested site that Te Atiawa from Pipitea Pa had used for food cultivation and native plant gathering.

Relatively large scale commercial development occurred in the central city with very little green in Victorian Wellington. Private gardens were described as bare of trees with some kitchen gardens on larger sites.

Late 1800s



Midland Park (Selkirk 1983)



Development along Lambton Quay (Hinge 1920)

1983

1970s

1964

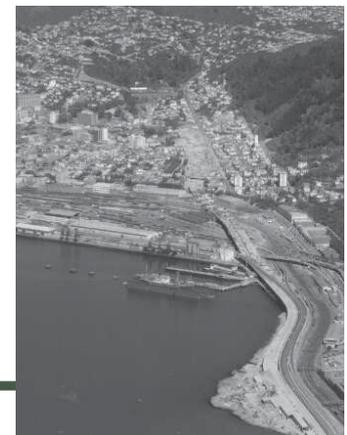
1900s

Midland Park was opened. The Council bought the Midland Hotel and had it demolished. It was to be start of developing a series of public parks in the central city, which never transpired. Both Glover and Cobblestone Parks in Te Aro have further evolved.

Frank Kitts Park opened on the waterfront in 1976 on redundant Harbour Board land. Initially half the current size, it was expanded in the late 1980s in line with plans to open up the waterfront for the public. This started with a Civic Trust run public competition in 1982 for the future of the waterfront.

The start of the urban motorway construction led to hundreds of houses demolished and the bisection of the Bolton Street cemetery with 3693 human remains needing to be re-interred. Katherine Mansfield Park was developed adjacent to the motorway.

Pidgeon Park opened.



Urban Motorway (Whites Aviation 1969)

Green Network Plan Appendix 2

Our City Tomorrow Alignment

Our City Tomorrow Alignment

Compact



Wellington builds on its urban form with quality development in the right locations.

The inner-city population will increase with higher density residential accommodation developed in the central city. Research shows people need ready access to green space for their health and wellbeing, so high quality, well-designed green spaces will be a critical factor in supporting the intensification. The green spaces will need to be of various types and be multi-functional to meet the needs of residents, workers and visitors and increase the amount of nature and its useful services in the central city.

Greener



Wellington is sustainable and its natural environment is protected, enhanced and integrated into the urban environment.

Greening the central city will reintroduce natural processes and connections that help keep our urban environment healthy and liveable.

- **Healthier environment:** Trees and plants improve air quality by capturing airborne particles and water quality by filtering out pollutants.
- **More sustainable:** Planting, raingardens and wetlands filter pollutants and also store and slowly release stormwater, reducing flood risk. Trees and plants can store carbon and provide food.
- **More biodiversity:** More green spaces can provide habitat for numerous plant and animal species.
- **More liveable:** Trees and plants provide shade, shelter and sensory stimulation that helps to make the city pleasant to be in.

Vibrant + Prosperous

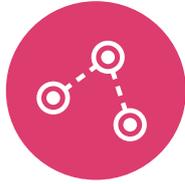


Wellington builds on its reputation as an economic hub and creative centre of excellence by welcoming and supporting innovation and investing strategically to maintain our thriving economy.

Central city green spaces can support Wellington's economy by enhancing our reputation as a city that is close to nature and stimulating to be in.

- **Showcasing sustainable urban design:** The green network can visibly show how nature and high-density living can be creatively integrated and reflect Wellington's unique environment.
- **Visitor attractions:** Green spaces can be attractions in themselves (e.g. Pukeahu National War Memorial Park) and accommodate events and exhibitions based on Wellington's unique history, arts and leisure scene.
- **Property value:** Studies indicate that properties close to green open space in high density housing areas tend to have higher real estate value.
- **Supporting creativity:** Green spaces close to where people work provide opportunities for people to take time out during the working day, mentally recharge and derive inspiration from being in the open air and close to natural elements.

Inclusive + Connected



Wellington recognises and fosters its identity by supporting social cohesion and cultural diversity, and has world-class movement systems with attractive and accessible public spaces and streets.

Well-designed central city green spaces can provide important places of connection for all.

- **Social gathering:** Provided they are designed to feel safe, accessible and shared, green spaces are places where people can freely mix, relax, have fun and build a sense of community. The green elements help to make these spaces pleasant and calming – places of respite from the demands of everyday life that supports positive social activity.
- **Sense of belonging:** The green spaces can be designed to reflect Wellington's unique natural, social and cultural history, which helps build a sense of identity and belonging.

Resilient



Wellington's natural and built environments are healthy and robust, and we build physical and social resilience through good design.

Central city green spaces can help build resilience through:

- **Climate change mitigation and adaptation:** Trees absorb CO₂. Trees, rain gardens and wetlands absorb/filter rainfall and slow stormwater flow. Trees and other vegetation moderate summer temperatures.
- **Community building:** Residents know each other through encounters, activities and events in the green spaces – building a sense of belonging and community support.
- **Places of refuge:** In natural disasters, people seek out green spaces as safe, communal gathering places. In pandemics, people seek out green spaces as safe places for exercise, fresh air and stress relief.
- **Improved citizen health:** The demand on health services, and costs, are reduced because people's physical and mental health improves through their contact with nature.

Mana Whenua Partnerships



Mana whenua development and landowner interests are recognised in planning and developing our city. Design of our public space is undertaken in collaboration with mana whenua.

The central city green spaces will be co-designed with mana whenua.

- **Tirohanga o te ao** (Māori world view), traditional knowledge of taiao (natural environment) and kaitiakitanga (guardianship) can be embedded and help shape the green network. For example, the alignment and character of green spaces could reflect the original streams
- The **cultural landscape** of Te Whanganui-a-Tara, including sites of significance, can be recognised and expressed through design and story-telling interpretation.

Our City Tomorrow: Spatial Plan for Wellington City 2021 includes six goals to guide how Wellington city will grow in the future, develop and address key challenges such as population growth, earthquake risk and climate change - while continuing to be a highly liveable city. Implementing the central city green network plan can help achieve the goals.

Green Network Plan

Appendix 3

Green Space Types & Case Studies



Mini Parks

These are small urban spaces designed with people, businesses, and the surrounding environment in mind. Mini parks can be opportunistic in land acquisition, range from temporary to permanent installations, and encourage community-led activation and use.

Mini parks will be mostly delivered through reallocation of road reserve, shifting its use from car storage to spaces for people.

Size: <200m²

Catchment: as opportunities arise

Green elements:

Due to their size, mini parks require efficient methods to increase their greening potential. Strategic placement of planting that uses limited surface area is best for this typology. Every tiny patch of green helps to reinforce the health and connectivity of the wider network.

Greening appropriate to the type includes:

- Edge planting
- Green walls
- Planter boxes
- Small edible gardens for community or restaurant use
- Small specimen trees
- Raingardens

Other amenity considerations relative to type:

- Seating / tables
- Play elements
- Temporary food truck/coffee carts
- Public art / interpretation
- Scooter / bicycle parking



Case Study

Derbyshire Street Park, London (Greensmith Associates)

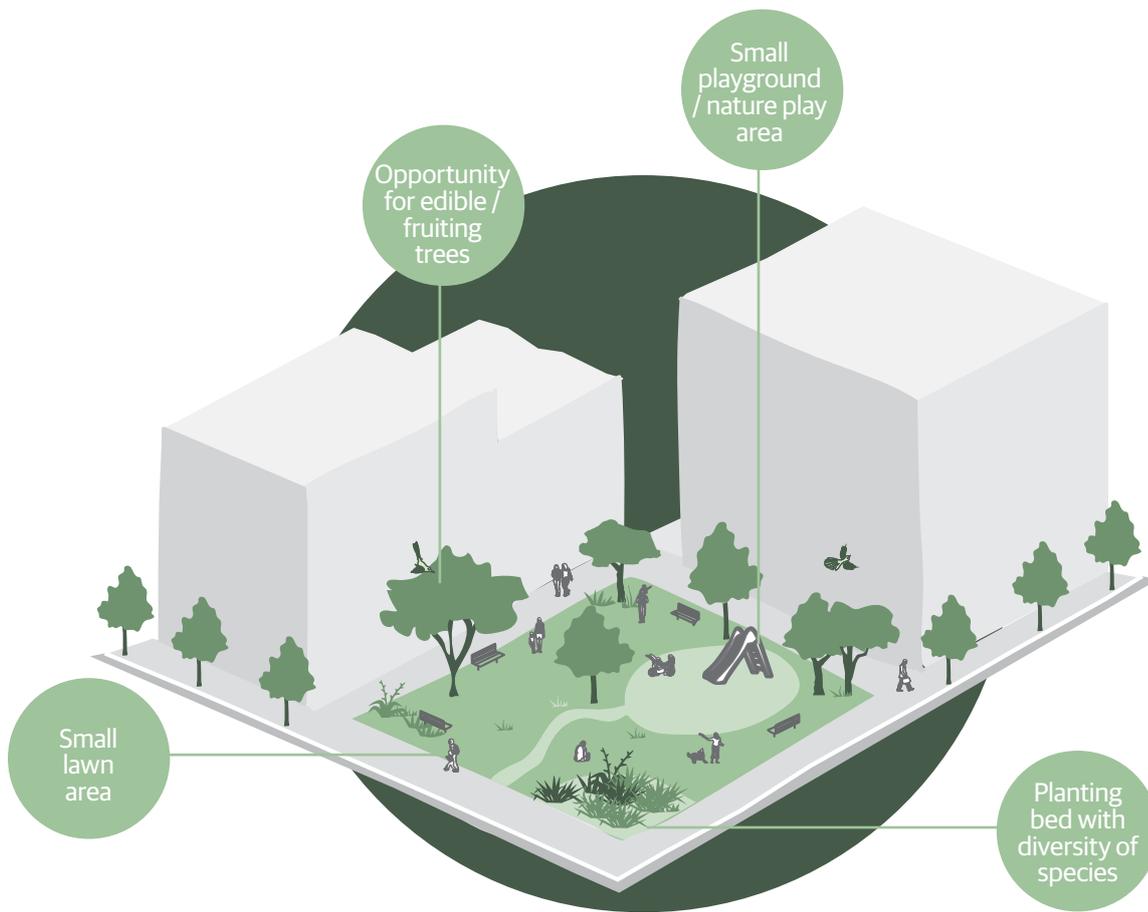
Derbyshire Street Park was delivered as part of a wider Mayor of London scheme to deliver 100 small parks across London. These parks range from a rain garden in Vauxhall to a dinosaur playground in Hornsey and edible gardens along a south London bus route. London's Mayor described them as: "...pocket-sized pieces of previously forgotten land, but they pack a real punch in what they now offer local people, thousands of whom have given up their time to make the capital greener and more resilient."

This particular site was previously a car park but the Landscape Architects recognised the untapped potential of the space – a sunny aspect and shaded by trees. The design reconfigures the street to a multi-functional social space with outdoor seating for the

adjacent café and a new pedestrian / cycling route. A significant green element of the design is how the park disconnects the east end of Derbyshire Street from the combined sewer system with all surface water dealt with on site through various water sensitive urban design components such as:

- attenuating planters
- permeable paving
- small scale green roofs
- rain gardens
- engineered tree pits
- swales

This small-scaled park is a great example of how a community can get the environment and social benefit of public spaces without the need for large-scale redevelopment.



Urban Park

An urban park prioritised in areas of change with significant existing or anticipated urban growth. These spaces will provide residents, workers, and visitors to the central city respite from the built environment and the opportunity to connect with nature.

Where residential development is dense, they will offer a social and recreational hub for inner-city communities. For individuals or families living in a relatively small central city apartment without a typical suburban backyard, urban parks provide everyday access to a shared "urban backyard." These spaces will be high-performing for their size, offering a variety of amenities that respond and cater to the needs of the associated neighbourhood.

Size: 200m² – 3,000m²

Catchment: about a 5min walk

Green elements:

Urban parks like Cobblestone Park are a good example of maximising green space, planting, and canopy cover with a balance of recreation uses while limiting the amount of paved surface area.

Greening appropriate to the type & site context includes:

- Patches of planting / canopy cover
- Lawn area
- Planting beds with a diversity of species
- Nature play elements
- WSUD elements including flood storages integrated with other uses
- Edible/fruiting trees
- Small community garden & composting

Other amenity considerations relative to type:

- Multiple seating / picnic areas
- Shade structures
- Small playground / nature play
- Could include sports facilities eg. 3 on 3 court/ hoops/ skate surface etc
- Artwork / interpretation that engage with mana whenua/cultural values
- Includes spaces for temporary kiosks and food trucks/coffee carts
- Integrated with existing pedestrian and cycle connections



Case Study

Cobblestone Park, Wellington (Wraight + Associates)

There are limited opportunities to purchase and convert land to new urban parks in a growing central city. This means when Council acquires land, it needs to work much harder to meet the needs of the current and future populations. Such requirements command a creative design approach to make sure these spaces are both high quality and multi-functional.

Cobblestone Park is a good example of this creative design approach. The park efficiently makes the most of green space with a series of useable lawn terraces, planting beds that filter the site-generated storm-water runoff, and retention of the existing mature trees found on the site.

Seating opportunities were increased through thoughtful design of the retaining walls along the pedestrian spine and terraces and dotted beneath the tree canopy watching over the playground. Paved surfaces are limited to the central pedestrian spine, and basketball court – green and permeable surfaces are maximised throughout.

For a small park, Cobblestone accommodates a wide range of users. The lawns are used by students and city dwellers seeking a place to relax and eat lunch. The play area and steppingstones beneath the trees offer opportunities to connect with nature. While the basketball court is a chance for active play, found few and far between in the central city. It is an actively used park that provides essential green and amenity functions to the city and surrounding neighbourhood.



Case Study: Climate Adaptive Urban Park

Taasinge Square, Copenhagen (GHB Landscape Architects)

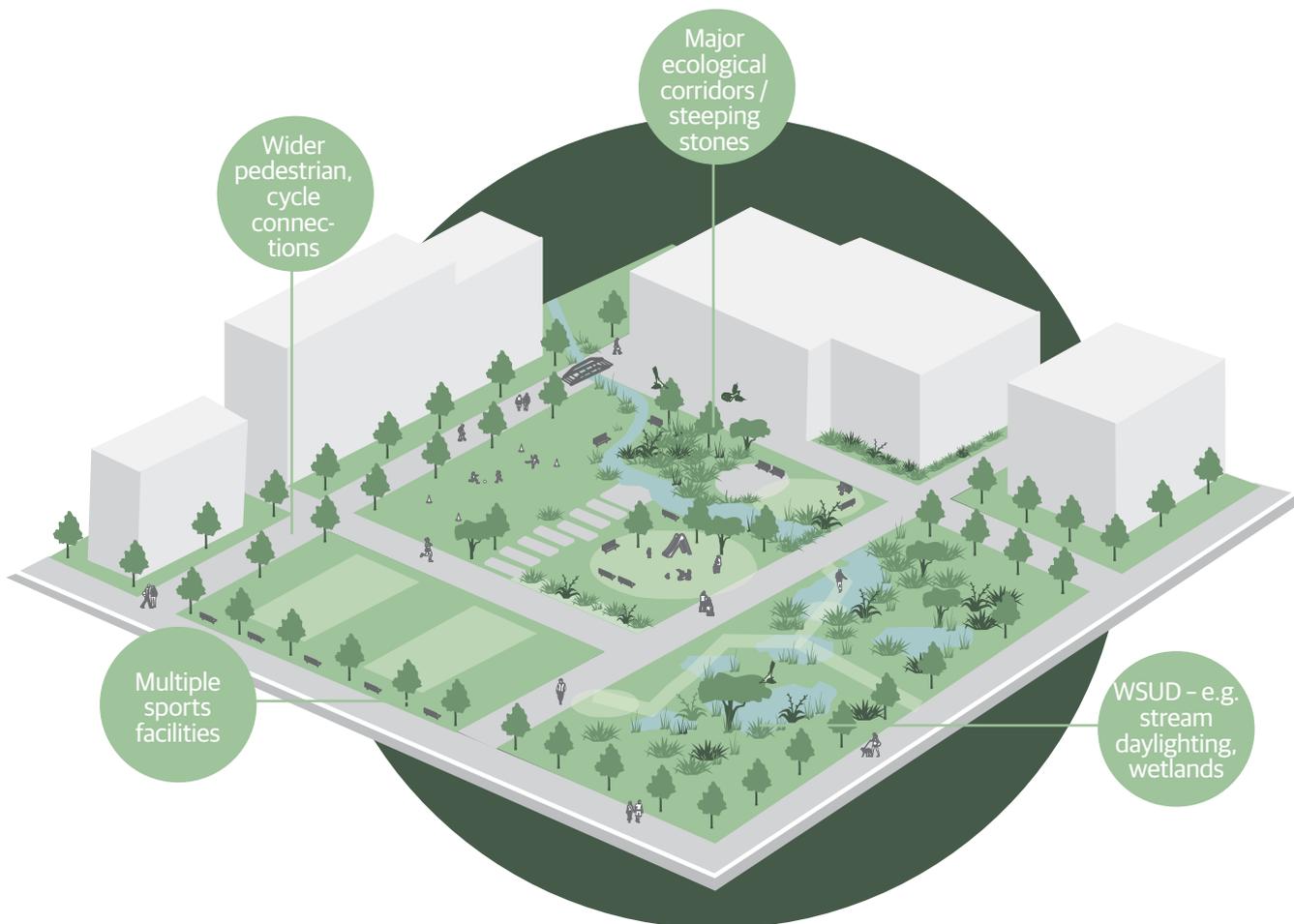
Taasinge Square is an exceptional example of an urban park space that integrates greening approaches with climate adaptation. Climate adaptation is a pressing issue in Wellington's central city - with most of the development on low-lying reclaimed land - flooding, sea-level rise, and liquefaction are significant concerns. Looking to cities that are setting a precedent for creative adaptation is critical.

Taasinge Square is part of Copenhagen's broader Cloudburst Plan, the city's climate mitigation plan following the 2011 flood, which caused roughly NZD 1.5 billion in damages. The 20-year plan includes over 300 blue/green infrastructure projects for water retention and drainage integrated into Copenhagen's streets and public space network and the private realm through public-private partnerships. It is an integrated planning approach that focuses on the liveability benefits such investment can provide the city.

Once underutilised paved surface, the square itself has been converted to a valuable public green space. This natural refuge supports biodiversity while detaining and collecting rainwater from the surrounding streets and rooftops. The square shows how stormwater detention (both above and below ground) can produce playful urban spaces that support community interaction and delight - adding value to our urban neighbourhoods.

As climate change results in an increased frequency and intensity of flood events the ability to manage large volumes of water in public open spaces will be important and the infrequency of occurrence enables this to be coupled with other recreational and amenity elements which can be enjoyed when not in flood.

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Destination Park

A large urban destination or an anchor place. As a green space it will have high cultural, social, and recreational importance to the central city. They will accommodate a mix of uses, respite, recreation, planned events, tourism, and large gatherings of people.

Catchment: about a 15min walk

Green elements:

These spaces are an opportunity to showcase our best practice greening approaches to public space. The greening needs to contribute to the space's strong character and identity. Greening must support the multi-functional needs as a place of refuge, events, and sites of ecological & cultural importance through high-quality, diverse planting treatments. Greening opportunities could include:

- Large areas of planting (i.e. urban forest establishment, ecological significance)
- WSUD - e.g. sub catchment scale raingardens and wetlands, stream connections (daylighting, light wells or interpretation) and stormwater harvesting for irrigation and city re-use

- Integrated flood storage for resilience
- Large lawn space (for kickaround space & large events & civil defence)
- Community garden, urban farming & orchard
- Dedicated ecological areas that form part of the city's ecological network (steppingstones / corridor)

Other amenity considerations relative to type:

- Multiple seating / picnic areas / shade structures
- Significant playground and multiple nature play areas
- Multiple sports facilities eg. 3 on 3 court / football fields / skate surface etc
- Design/elements strongly reflect the site's history and are well grounded in mana whenua / cultural values
- Managed/programmed events
Permanent kiosks and spaces for food trucks/coffee carts
- Intergrated into the wider pedestrian, cycle and public transport network



Case Study

Waitangi Park, Wellington (Wraight + Associates)

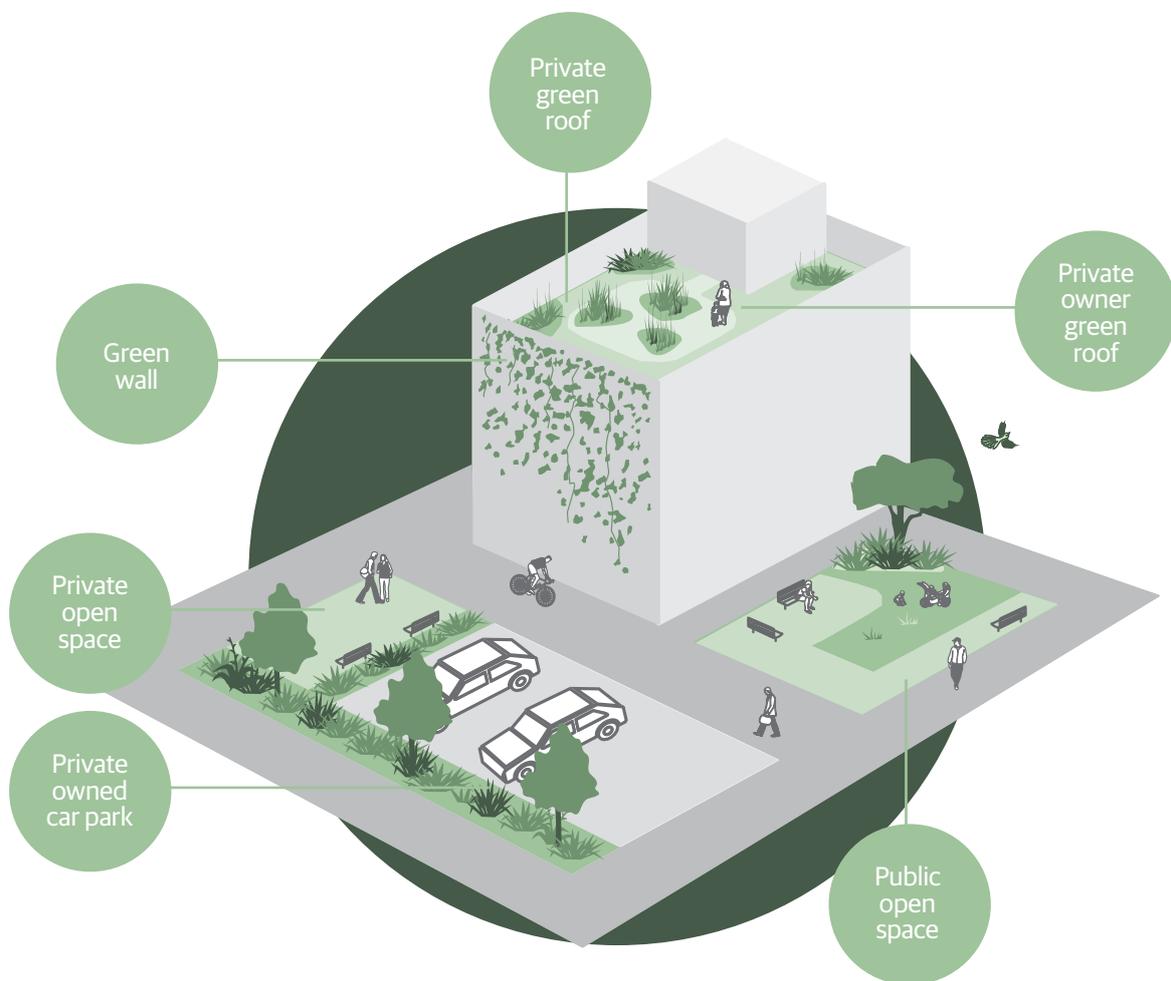
Waitangi Park is a successful study of how our green spaces can not only meet our city's environmental and amenity needs but also express our cultural narratives and relationship with nature.

At 5.8ha Waitangi Park is the largest park in the central city. Waitangi Park provides many recreational amenities such as the large lawn area, skate park, children's playground, and basketball courts and often hosts various public events.

The central design element of the park has been the integration of stormwater treatments and representation of Waitangi Stream and the connection to lost coastal environs. Before the development of the central city, the Waitangi Stream and lagoon were critical sources of food gathering, freshwater, and materials for local iwi. The story is that the stream and lagoon was once the home of a taniwha that disappeared upon European arrival. This narrative aligns

with the eventual fate of the stream. It was piped for urban development.

The diversion of stormwater from the piped network, treatment through constructed subsurface wetlands and representation of Waitangi Stream and lagoon through a planted constructed wetland reveals the potential of what our natural heritage can bring to the city. "The park's environmentally sustainable design and the water sensitive urban design strategy not only contributes to improved water quality but also contributes to the visual appeal of the park generating a unique character for the place (Wraight + Associates)."



Private Development

Private ownership is 49% of Wellington's central city land area.

On top of this figure, we expect 18,000 more people to live in Wellington's central city, which equates to 7900 - 8800 new dwellings.

This densification needs to be done well and requires a collaborative approach between the Council, local communities, developers, planners, designers, businesses, and private landowners.

While the District Plan and Design Guides are supporting and enabling greener outcomes, ongoing advocacy will be important.

Green elements:

Examples of greening elements appropriate to this space could include:

- Communal green spaces
- Entry gardens
- Backyards
- Publicly accessible green spaces
- Container balcony gardens
- WSUD
- Trees
- Edible/fruited trees
- Small edible garden & composting
- Green walls
- Green roofs / roof terraces



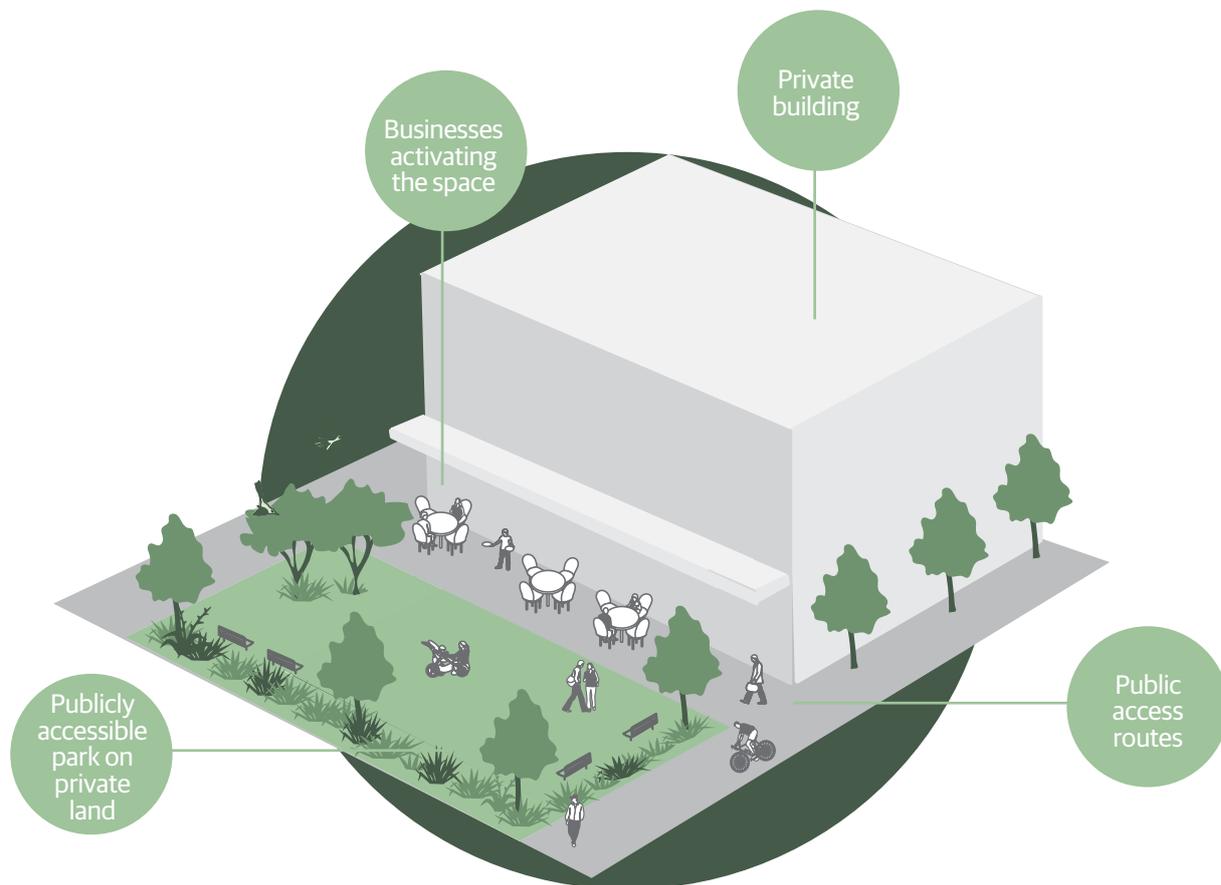
Case Study

Urban Habitat Collective, Newtown, Wellington (Spacecraft Architects)

Spacecraft Architects are in the process of designing a co-housing apartment building for a group of Wellington families.

The concept of this apartment complex is about balancing private space with the ability to interact with and share amenities with neighbours. The shared spaces "...will include a shared dining & living area, and such other common areas as we agree in the design process. They will be integrated into the building to save costs and encourage community interaction. They are designed for daily use, are an integral part of the community, and are always supplemental to the private residences (Urban Habitat Collective)".

While the notion of co-housing is not for all, Spacecraft Architects have found a balance between private and shared outdoor space within this high-density development. The shared space between the apartment buildings is an excellent opportunity for greening and provides a sense of community. The balconies overlooking the shared green space provide the transition from private to shared and would allow families to be able to greet neighbours or check up on children playing below.



Public / Private Partnerships

Another enabler for greener outcomes is a partnership approach between public and private agencies.

This is a method of cooperation aimed to deliver projects that have been identified to impact the public realm. This type of cooperation aims to achieve mutual public and commercial benefits to both public and private partners.

In an economic climate where public funding is limited, engagement of a private partner can ensure partial financing of the project and therefore lift the burden off public funds. This can lead to better quality outcomes for a project. Public agencies such as the Council can then deliver on strategic goals they may not have achieved due to limited public funding.

Green elements:

Examples of greening elements appropriate to this space could include:

- Publicly accessible green spaces
- WSUD
- Trees & Edible/fruited trees
- Small edible garden & composting
- Green walls
- Green roofs / roof terraces



Case Study

Michael Fowler Centre Car Park (Willis Bond, Athfield Architects)

This project is being delivered through an agreement between the Council and Willis Bond.

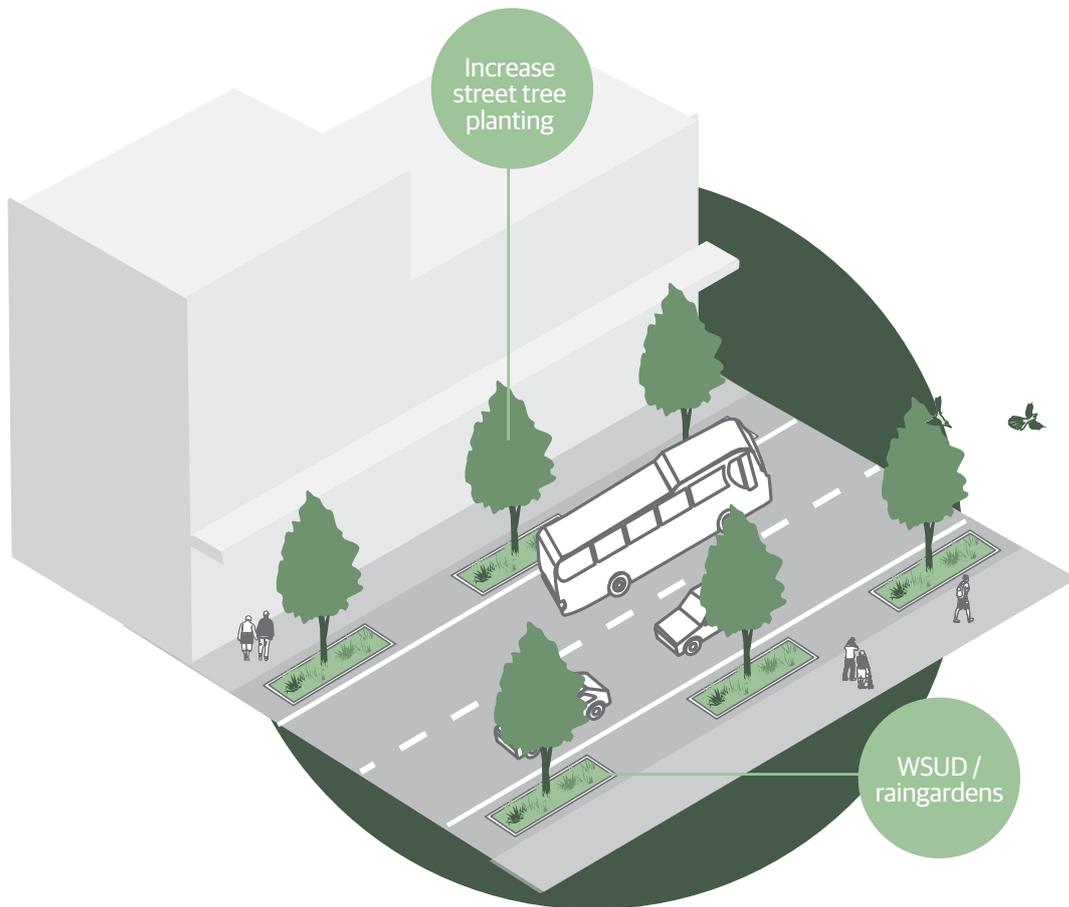
The proposal is to convert the Michael Fowler carpark into a multi-storied, minimum 5-Star Green Star building with high quality, surrounding green space, and improved linkages to the waterfront.

An underdeveloped site, a carpark, is being developed to provide public benefit through improved greening and access to the waterfront, while the developer benefits due to higher foot traffic and improved amenity.

A ground lease of the site was approved in the Long-Term Plan to develop the site without generating cost to Council and ratepayers. The site is in an important location for the city as it connects the Te Aro Park area via Opera House Lane through to the waterfront.

Through the agreement, the Council was able to direct design outcomes for the development of open space and green space amenity. Council required Willis Bond in their design to retain the existing Pohutukawa trees, provide public open space and ensure a public connection is made to link the waterfront, Te Ngakau, and Cuba Street.

This model can have mutually beneficial outcomes for both the developer, the Council, and the public who use the space.



Streets

The Council owned road reserve is 26% of the area of the central city. Streets present a significant opportunity to deliver green outcomes for the central city.

Green streets are the connectors, linking the various green spaces and infrastructure while addressing multiple needs such as creating habitat corridors, stormwater management, and air pollution and noise reduction.

A collaborative approach needs to be undertaken so that there is a balance between streets being places for people and movement corridors to achieve multi-beneficial outcomes.

There are opportunities to partner with LGWM and leverage off other programmes and projects including the cycle network delivery.

Green elements:

Examples of greening elements appropriate to this space could include:

- Hardy street tree species / habitat corridors
- WSUD / rain gardens / stormwater management
- Planter boxes
- Parklets delivered through reallocation of street space



Case Study

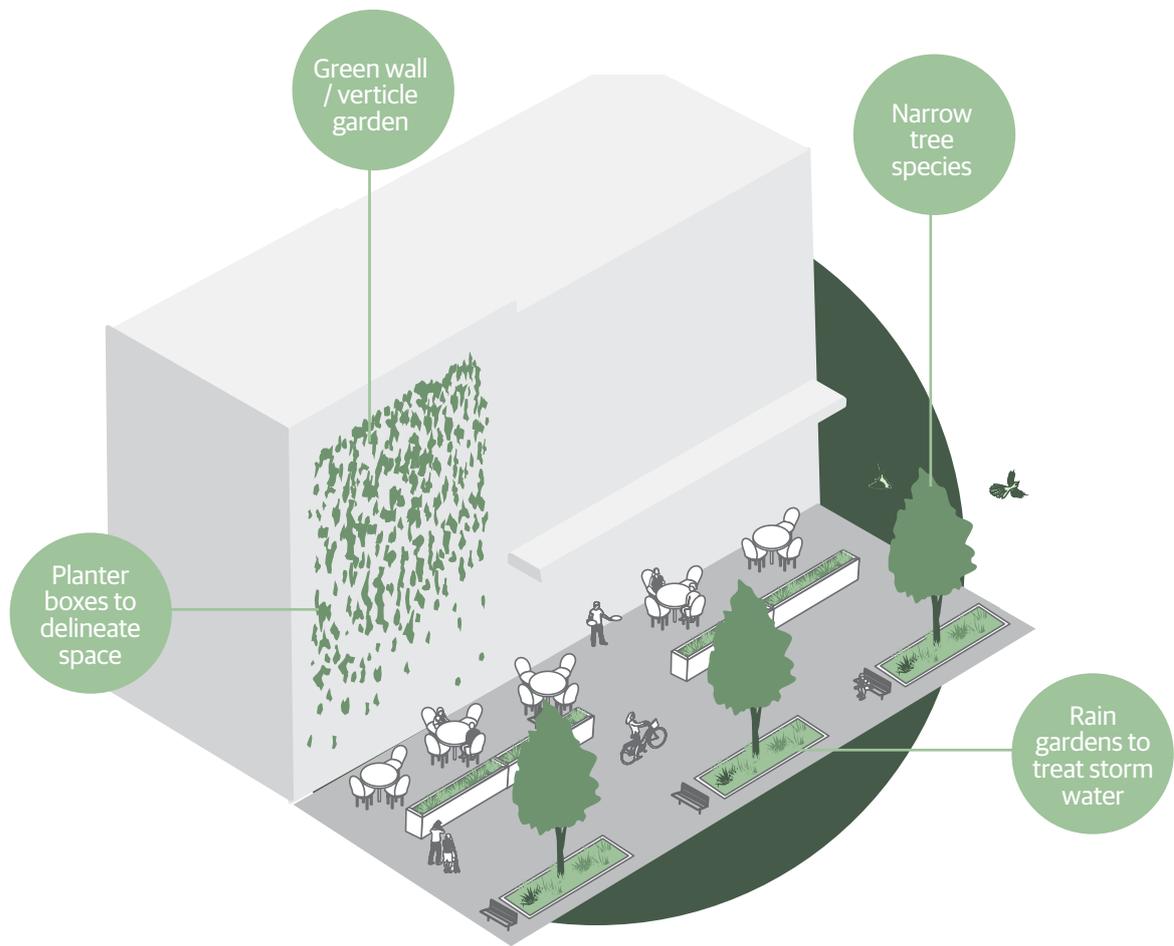
Daldy Street, Wynyard Quarter, Auckland (LandLab, Opus, MPM Projects & Waterfront Auckland)

Daldy Street is part of Wynyard Quarter a large urban renewal project in central Auckland.

The area has evolved through extensive urban design and planning from an industrial port once closed to the public to a high-quality waterfront neighborhood.

A major feature of the project is the inclusion of its extensive water sensitive urban design system within the street and public space network. This system was achieved through a collaboration between the engineering and urban design project teams and a readiness to challenge traditional stormwater management techniques.

Daldy Street development (including Daldy Street Linear Park) is one of the key projects within Wynyard Quarter. This development creates a green link through the development for pedestrians, cyclists and vehicles. The street is activated by adjacent retail and commercial uses within the Wynyard Quarter. The collaborative approach between engineers and landscape architects enabled the project to enhance Te Mana o te Wai through water sensitive design. This included raingardens and swales providing stormwater treatment and overland flowpaths incorporated into the Daldy Street linear park.



Laneways

Laneways play a vital role in the public realm and finer grain network of the central city. They can improve midblock connectivity for people on foot when adequate investment is made to ensure they are attractive, safe, and activated.

Regarding greening, laneways present a massive opportunity to the city as public space can be prioritised over transport movement. Space in a laneway is tight, but creative use of hardy planting can contribute to the overall connectivity of the green network and add to the mix of urban backyards in the central city.

Green elements:

Examples of greening elements appropriate to this space could include:

- Edge planting
- Green walls
- Planter boxes
- Small edible gardens for community or restaurant use
- Small / narrow specimen trees
- WSUD / rain gardens



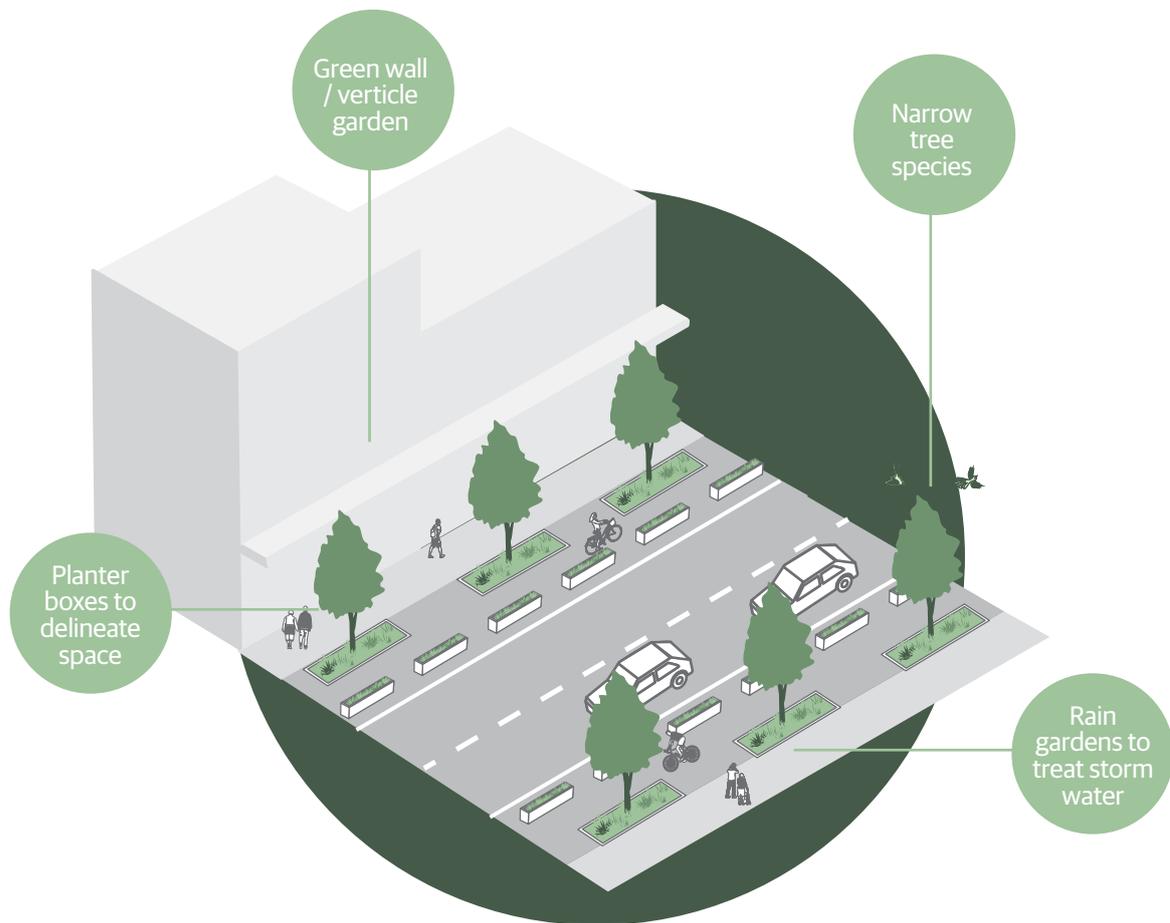
Case Study

Lombard Lane, Wellington (Cook Strait Properties + BECA + E3BW + LandLAB + WCC)

This project was a public/private sector partnership between Wellington City Council and Cook Strait Properties to regenerate Denton Park and surrounding streetscapes in and around Lombard Lane, Bond Street, and the Victoria Street interface. The central city block before the project had become rundown, underutilised, and vehicle-dominated, with safety issues affecting tenants and property owners. Investment in the public realm was needed to assure businesses of the lane's future occupation and bring public life back. A significant part of the public realm investment was the delivery of quality open space and streetscape greening.

Denton Park was an integral part. The project has been re-designed into an elevated lawn space that allows informal occupation by the public and a green outlook to the adjacent restaurant. The shared spaces of Lombard Lane and Bond Street have been reinvigorated with a greener outlook and now include street tree planting, garden beds, rain gardens, and informal planter pots that line the space.

Through this revitalisation Lombard Lane has become a busy pedestrian route and inspired a diverse mix of retail and hospitality businesses to open in the area, further activating the central city space.



Bike Network

The Paneke Pōneke Bike network plan is Council's 10-year plan for developing a citywide bike network in Wellington.

Council's goal for this plan is to create a city "...where it is easy for people of all ages and abilities to choose low or zero carbon transport options. Where kids can get themselves to school in ways that are great for their health and the environment. Where people can easily choose to live without a car if they want, and where our suburban streets are quiet, safe places (Paneke Pōneke Bike network plan)".

The bike network is a significant opportunity to introduce greening in our streets and contribute to our city's liveability and biodiversity.

Practically, green elements can help distinguish bike lanes from pedestrian paths to minimise user conflict, they can be a barrier to traffic and help reduce traffic speeds.

A well designed, green streetscape is a desirable asset for a city and helps incentivise users who may not be experienced to give biking a go.

Green elements:

Examples of greening elements appropriate to this space could include:

- Planter boxes
- Small / narrow specimen trees
- WSUD / rain gardens



Case Study

Cobham Drive Cycleway, Wellington (Isthmus + WCC)

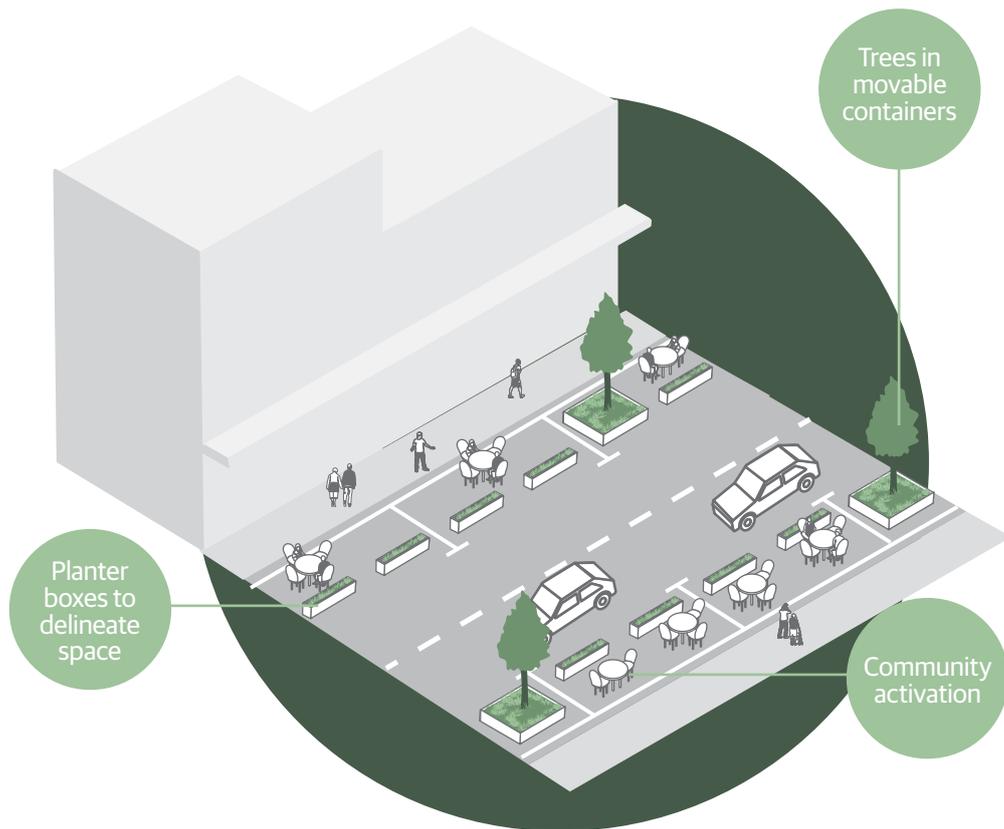
The cycleway along Cobham Drive is part of Tahitai and Te Aranui o Pōneke / the Great Harbour Way - our region's goal to one day have a walking and cycling path all the way around Wellington Harbour to Sinclair Head on the south coast.

The two-way cycle path and separate footpath will make things safer and more enjoyable for everyone and help to encourage more sustainable ways to travel.

Green and urban design elements such as planting, seating and bicycle parking provide places for people to stop and enjoy the views while planting along the edge of the path creates a buffer from the state highway traffic.

In addition to making Wellington a better place for active transport modes the greening in this project facilitated the revitalisation of the foreshore area with landscaping and planting, rock revetment to provide greater resilience to the coastal edge. Green and urban design elements such as planting, seating and bicycle parking provide places for people to stop and enjoy the views while planting along the edge of the path creates a buffer from the state highway traffic.

Green network thinking was front and centre with the design focusing on restoring areas for coastal fauna, planting to encourage diverse habitats as well as ongoing pest management.



Tactical Urbanism

“Tactical Urbanism involves temporary ‘tactical demonstrations’ and ‘trial interventions’ to test living, breathing versions of designs with communities in real time (Waka Kotahi 2020)”

Tactical urbanism is a process to allow quick testing out of a design in the real world before it becomes a permanent solution. This form of design can occur all through the public realm but has predominantly been trialed in the New Zealand context within the street network through projects such as Innovating Streets or Transitional cycleways or Parklets in Wellington.

A community driven co-design approach is recommended for these projects to allow people to directly contribute to project outcomes.

Green elements:

As these projects are temporary a particular material palette needs to be considered when it comes to greening.

Examples of greening elements appropriate to this space could include:

- Moveable planter boxes
- Larger planter boxes can be better because they are less likely to be stolen
- Use native, robust, drought-resistant plants that are easy to maintain
- Consider alternative planting options like edible plants



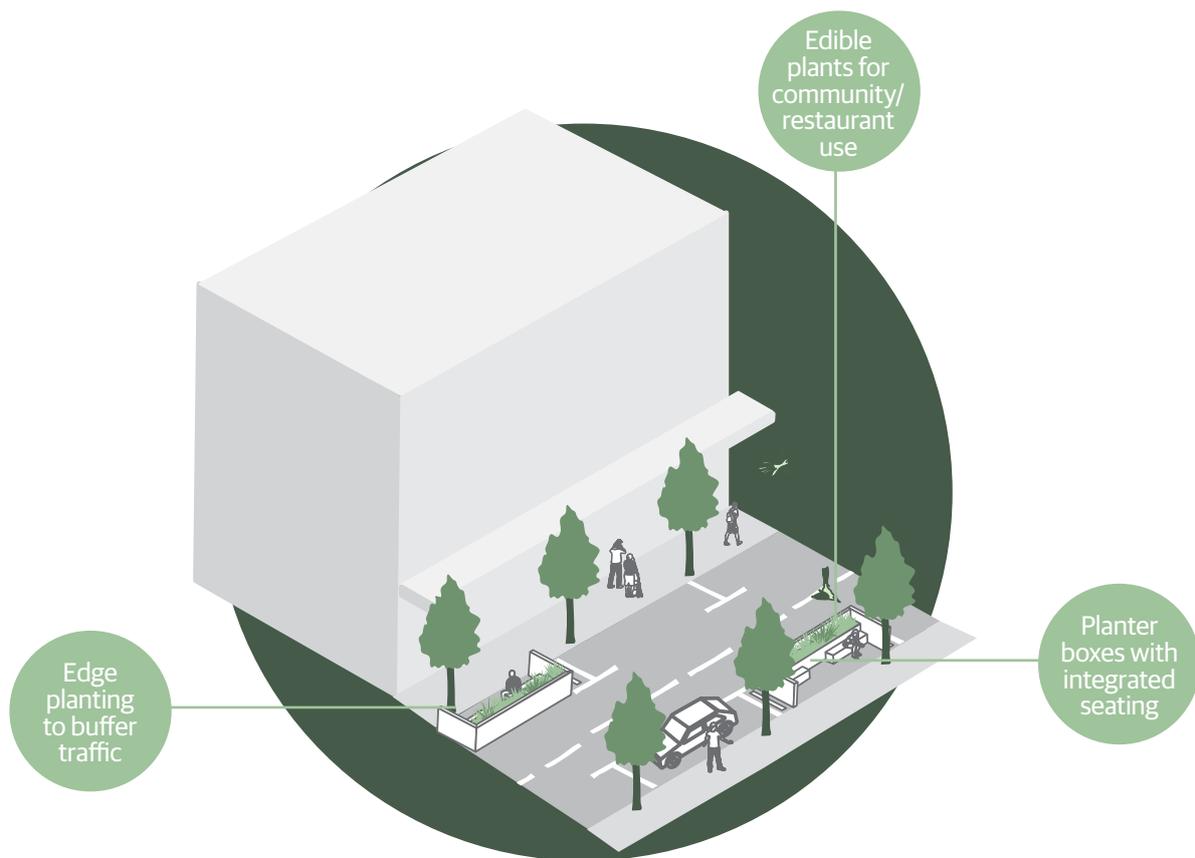
Case Study

Flatiron Plaza, New York City (NYC DOT Plaza Program)

In 2007 the New York Department of Transportation (DOT) launched a series of projects to repurpose asphalt to public plaza using temporary materials as part of the NYC Plaza Program. The project aimed to improve the public realm in an area of New York city that had previously been one of the most congested and dangerous for cyclists and pedestrians.

The program builds support for changes through tactical urbanism techniques of temporary surface treatments and utilises these short-term changes to collect data to support permanent solutions.

The Flatiron Plaza is one such plaza, located at the intersection of 23rd Street, Fifth Avenue, and Broadway, adjacent to Madison Square Park. This plaza uses robust temporary planters as green elements that are manufactured from a durable resin blend that resists sun, salt and the harsh streetscape environment. The lightweight material allows for easy relocation during events or with seasonal changes.



Parklets

Parklets are parking-space sized mini-parks, plazas or outdoor dining areas that are constructed in on-street car parks. They can transform parking spaces into vibrant public spaces built for people to sit, relax, and enjoy the city. These spaces provide fun, unique, and creative ways to experience and re-imagine the potential of public space.

These mini-spaces are best where the street lacks public space, or the footpaths are too narrow to provide space for anything other than people walking by. They can bring more life and activity to the street without compromising accessibility and people's ability to use the footpaths.

Parklets are generally low cost and relatively simple to construct.

Green elements:

Parklets should be an engaging and aesthetically pleasing addition to a community. Parklets also present an opportunity to add more green spaces.

Greening appropriate to the type includes:

- Planter boxes are commonly used as a green barrier between traffic and the parklet space
- Use native, robust, drought-resistant plants that are easy to maintain
- Larger planter boxes can be better because they are less likely to be stolen
- Consider alternative planting options like edible plants

Refer to Council's Parklets application page for more information:

<https://wellington.govt.nz/certificates-and->



Case Study

Fresh Air Square, London (WMB studio)

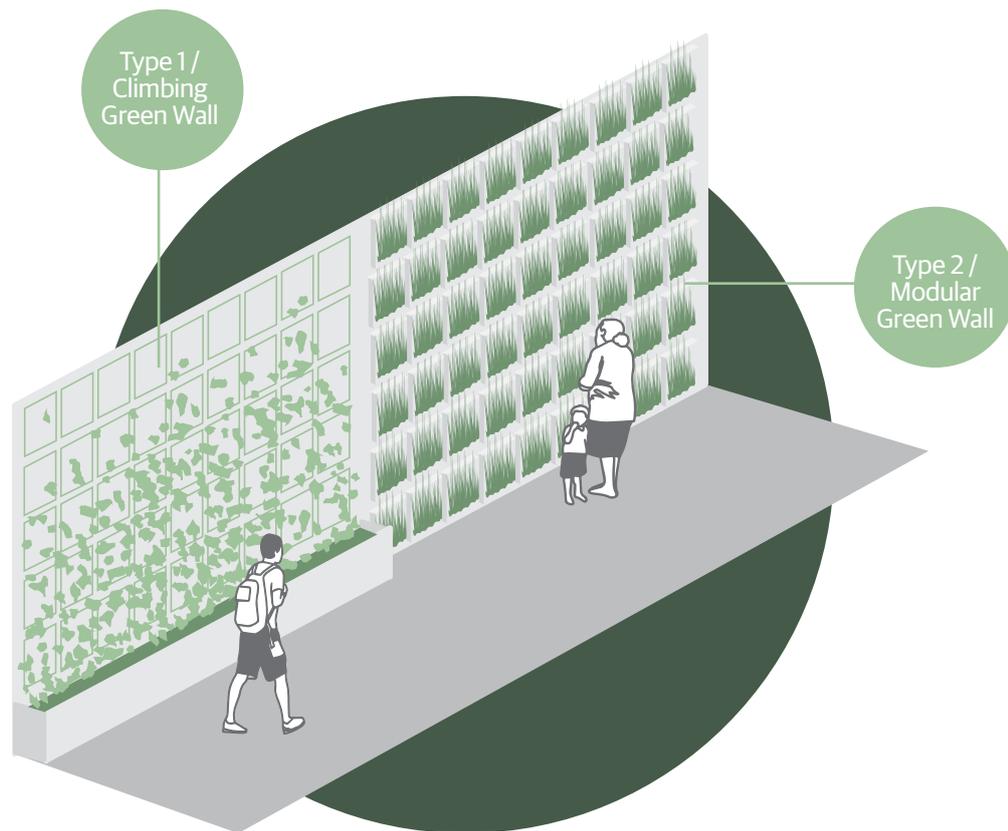
Fresh Air Square is one of a series of parklets that have been installed in London as part of Team London Bridge's fresh Air Squares initiative. The initiative aims to improve local environments, raise awareness of London's pollution, and monitor air quality. The Tooley Street parklet (shown above) was the first one to be installed in November 2015. It was designed to replace two standard car park spaces.

The Fresh Air Square is a colourful modular parklet that can be scaled up or down depending on available space. The installations are temporary but built to promote the need for more permanent green spaces in the city. The parklet features a zigzag bench built using scaffolding boards painted bright red for traffic visibility.

Pockets of greening have been woven along the roadside edge, creating a buffer from wind exposure and passing traffic.

Fresh Air Square is useful as a case study as the design's modularity could be replicated in different locations and configurations throughout the city.

Parklets like these can create small chances for respite, interaction, allow for business activation and alleviate footpath congestion. They can be both temporary and permanent and be peppered throughout a city as opportunities arise.



Green Walls

(Also known as living walls or vertical gardens).

Green walls come in two main types:

- A vertical structure is fixed to the wall of a building with climbing plants rooted in soil at ground level. The plants use the structure to climb up the wall from the soil containers below.
- The soil is fixed to the wall itself (often in modular units). The plants are rooted in the modular units, which are fastened to the façade using a structural system.

Green walls have many benefits for the central city as they

- Are fixed vertically and can be used in areas where space is limited (for example, in laneways or along narrow streets).
- Can improve the appearance of a building or structure (as well as prevent graffiti that can occur on bare walls).
- Diversify the suite of planted habitats and can act as stepping stones for species.
- Increase the amount of visible green in the city environment & improve the psychological health of residents.

Improve air quality and reduce noise

- Well integrated with rainwater capture for watering to reduce reliance on mains water and filter stormwater from buildings. Ground based systems well suited as linear raingardens
- Can be used for edible gardens.

Green elements:

- Plants should be chosen to suit the location and climate of the green wall
- Hardy climbing or cliff species (NZ has many native species that thrive on cliff faces and which have been trialed successfully in green walls)
- Hanging plants can also work - beans and tomatoes have been used in edible green walls (in sheltered, sunny sites)



Case Study

Civic Square Green Wall (Natural Habitats)

Designed by Natural Habitats, the 24sqm green wall was installed in the prominent site of Civic Square as an exemplar project and a way to motivate developers to install more around the central city.

The harsh coastal environment of the green wall's location demonstrates how green walls can thrive in Wellington - and gives confidence for future installations.

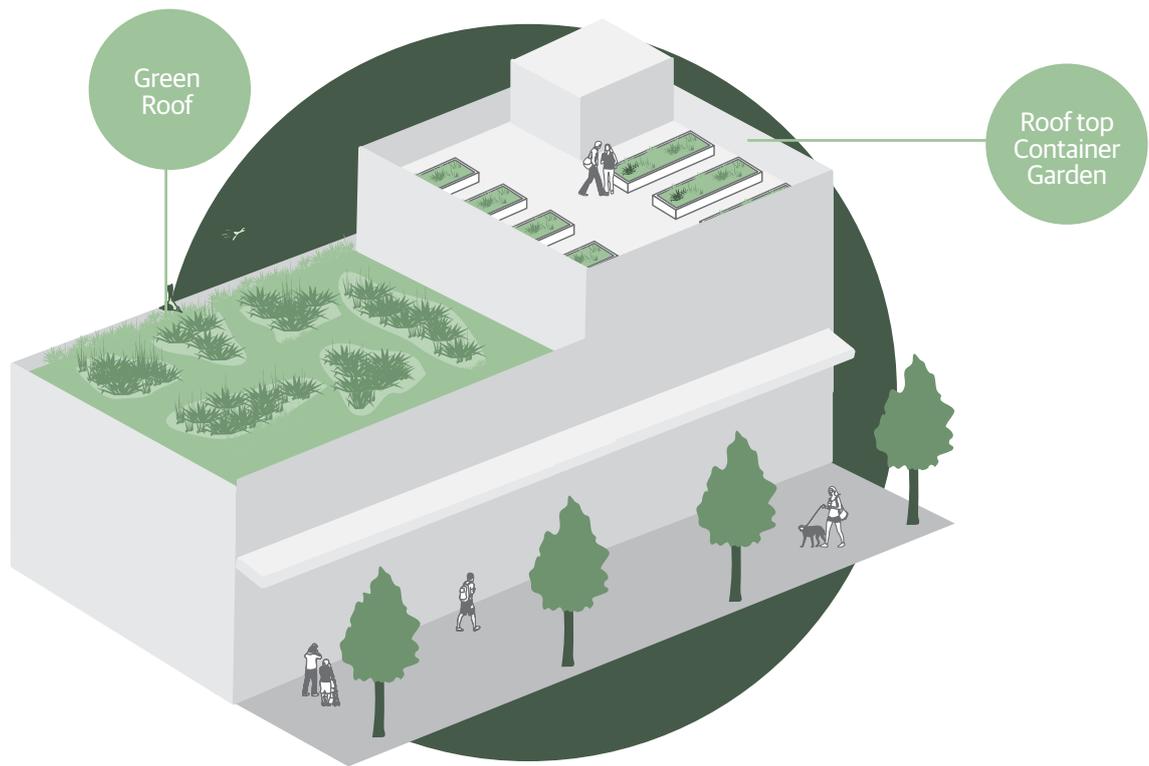
Careful plant selection is critical to achieving a thriving green wall. Species used in this example include the following hardy native species:

- Arthropodium "Te Puna" (rengarenga lily)
- Acaena novae "Zelandiae" (piripiri)
- Chionochloa conspicua "Hunangamoho" (snow grass)
- Disphyma crassifolium (New Zealand ice plant)
- Fuschia procumbens (creeping fuschia)

The structure itself is a modular system and built to be self-watering and self-fertilising. The wall is moveable if required.

Further examples of green walls have also been rolled out throughout the central city by Wellington City Council through the laneways programme to green the street network when street trees are not achievable.

The design and ongoing management needs careful consideration for green walls to be successful.



Green Roofs

(Also known as living roofs or roof gardens).

Green roofs are a roof of a building or built structure that has been planted over a layered system of waterproof membrane, insulation, drainage, root barrier, and growing medium. A similar type (although not a genuine green roof) is a rooftop container garden. Rooftop container gardens are when plants are sown in containers or pots and placed or fixed on a roof/roof terrace. These are a more accessible and cheaper alternative to green roofs as they may not need the structural engineering and waterproofing required by genuine green roofs.

Green roofs have many benefits for the central city:

- They can be used in dense city environments where at-grade space is limited as they utilise the buildings.
- They slow and reduce stormwater run-off, which places less stress on downstream stormwater infrastructure.

- Provide water quality to reduce discharge of contaminants and cool water temperatures.
- Help reduce stormwater volumes to mimic natural hydrology
- Provide thermal insulation for buildings and reduce overall urban heat island effect across city.
- Provide habitat and insects, birds and potentially lizards.
- Provide amenity and a green outlook for the building users and for other who are overlooking.

Green elements:

- Plants should be chosen to suit the location and climate of the green roof.
- Many hardy native plant species thrive in green roof conditions, including native ground covers, grasses, succulents, climbers, and creepers.
- Native species specifically are suitable as they promote native biodiversity and can be stepping stones for migrating fauna.



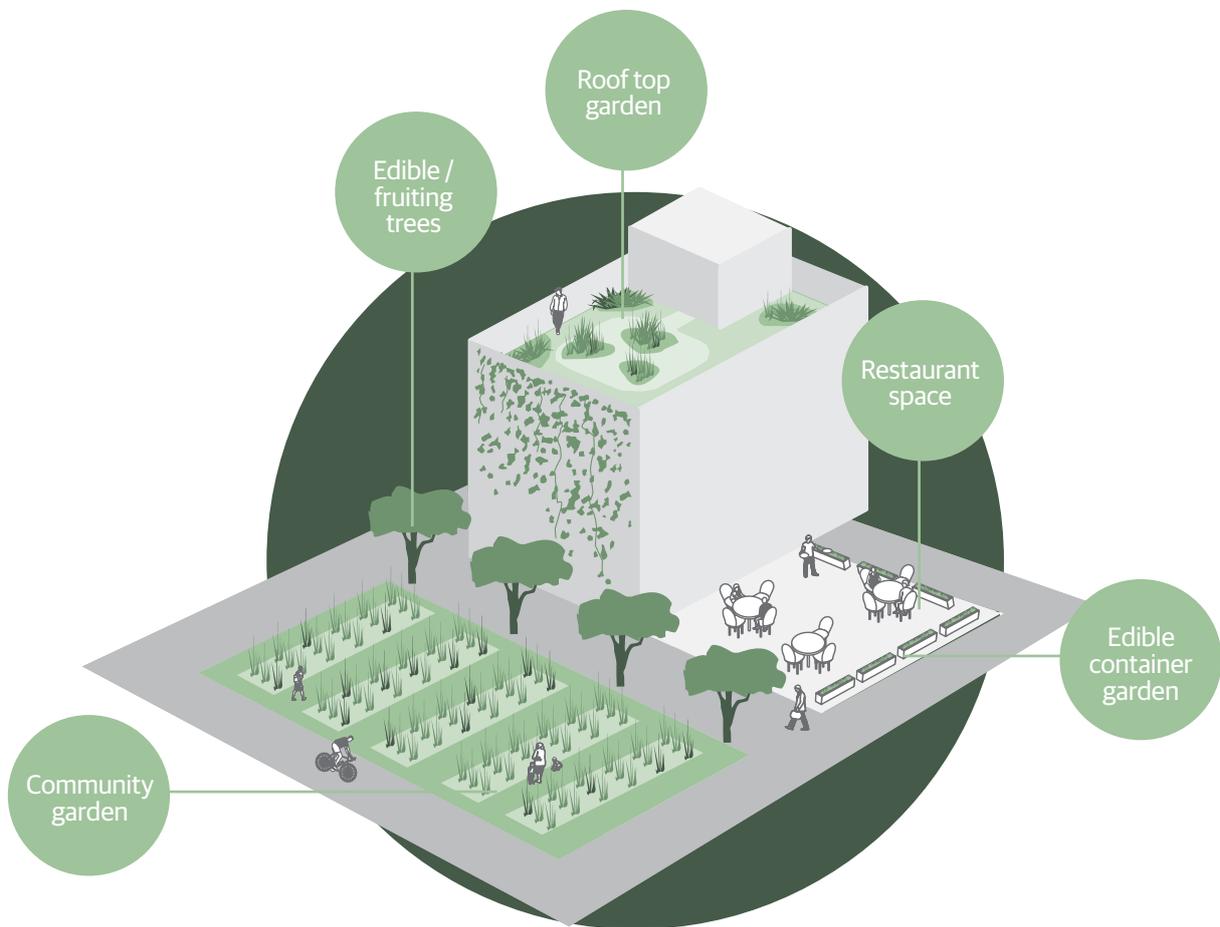
Case Study

Pipitea Plaza Green Roof, Wellington (Athfield Architects, Greenroofs NZ, RCP & Boffa Miskell)

Pipitea Plaza is a nine-storey five green star office building located at the edge of Pipitea escarpment (the historic harbour's edge), Pipitea Marae, and Old Saint Paul's church. The green roof is an integral part of the project and illustrates how green roofs are an excellent method of establishing ecological habitats in high-density, central city sites where on-grade space is limited.

The green roof is integrated into three of the building's stepped levels and flows visually from the roof terraces, the enfolding tree canopies, and green spaces. The roof can be viewed by staff within the building, providing

visual interest from their office windows. The planting selection is a striking but minimal mix of succulents, sedum, and grasses, punctuated by Riwaka Gold chip and Otaki pebbles. The species were selected to be tolerant to the harsh coastal conditions found on such an exposed site.



Good Food Green Spaces

Part of the Green Network Plan will be connecting with the broader sustainable food network for Wellington city by supporting initiatives to increase the amount and quality of green space used for food production in the central city. Examples of food production spaces include community gardens, urban farms, inner-city exemplar gardens, community composting hubs, vertical gardens, fruiting trees, and edible rooftop gardens.

Community food production spaces allow central city residents to participate in gardening where personal backyard space is unavailable.

These spaces are a way to diversify the green network and offer space for central city residents to connect and educate themselves / or increase capacity (either one works - your choice) in food growing and production. They also provide capacity to wrap food waste back into production at a local level. These spaces are part of the continuum of green spaces and foster a sense of community, improving the central city's mental and physical wellbeing, livability, and resilience.

While the central is constrained for space there are industrial & under developed sites that could contribute to local food production. These sites could be either temporary or permanent, and no longer fit for purpose. They include sites in Pipitea, car parking lots, road reserve and even rooftops.

Green elements:

Examples of greening elements appropriate to these spaces include:

- Edible / fruiting trees
- Community gardens
- Edible green walls
- Edible roof gardens
- Edible container gardens
- Rongoā rākau (medical plant / tree species)
- Berm gardens
- Urban farms



Case Study

Sole Food Street Farms, Vancouver

Sole Food Street Farms is a Vancouver-based organisation that has converted underutilised, contaminated land into productive urban farms. Their Main Street location, found on a previous petrol station site, was leased to the organisation by the City of Vancouver for one Canadian dollar per year and is today one of the largest urban farming sites in North America. The site, before the project, had been vacant for over a decade due to soil contamination. Sole Food Farms worked around the contamination issue by setting up a system of planter boxes to grow their extensive orchard, herb, and vegetable garden.

Sole Food Farming project provides numerous benefits to Vancouver's city, including offering jobs and training to members of the community with mental health and addiction issues. The city of Vancouver has strongly

supported the project as it aligns with Vancouver's Greenest City Action plan. The plan stipulates a "Local Food" action where the goal is "Vancouver will become a global leader in urban food system (City of Vancouver)" with the associated target to: "Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels (City of Vancouver)".

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