

TE ARO TĀTOU

Traffic circulation plan investigation

Wellington City Council
12 November 2021



BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES

About MRCagney

MRCagney is a sustainable transportation consultancy that operates in a unique space for Aotearoa, combining sustainable transport strategy and planning, urban design and research.

We work on projects that shape the way New Zealanders move around their cities and towns, developing approaches that bring sustainable long-term solutions.

We consider how transport infrastructure works together with urban space and how this contributes to broader social, economic, environmental, and cultural outcomes.

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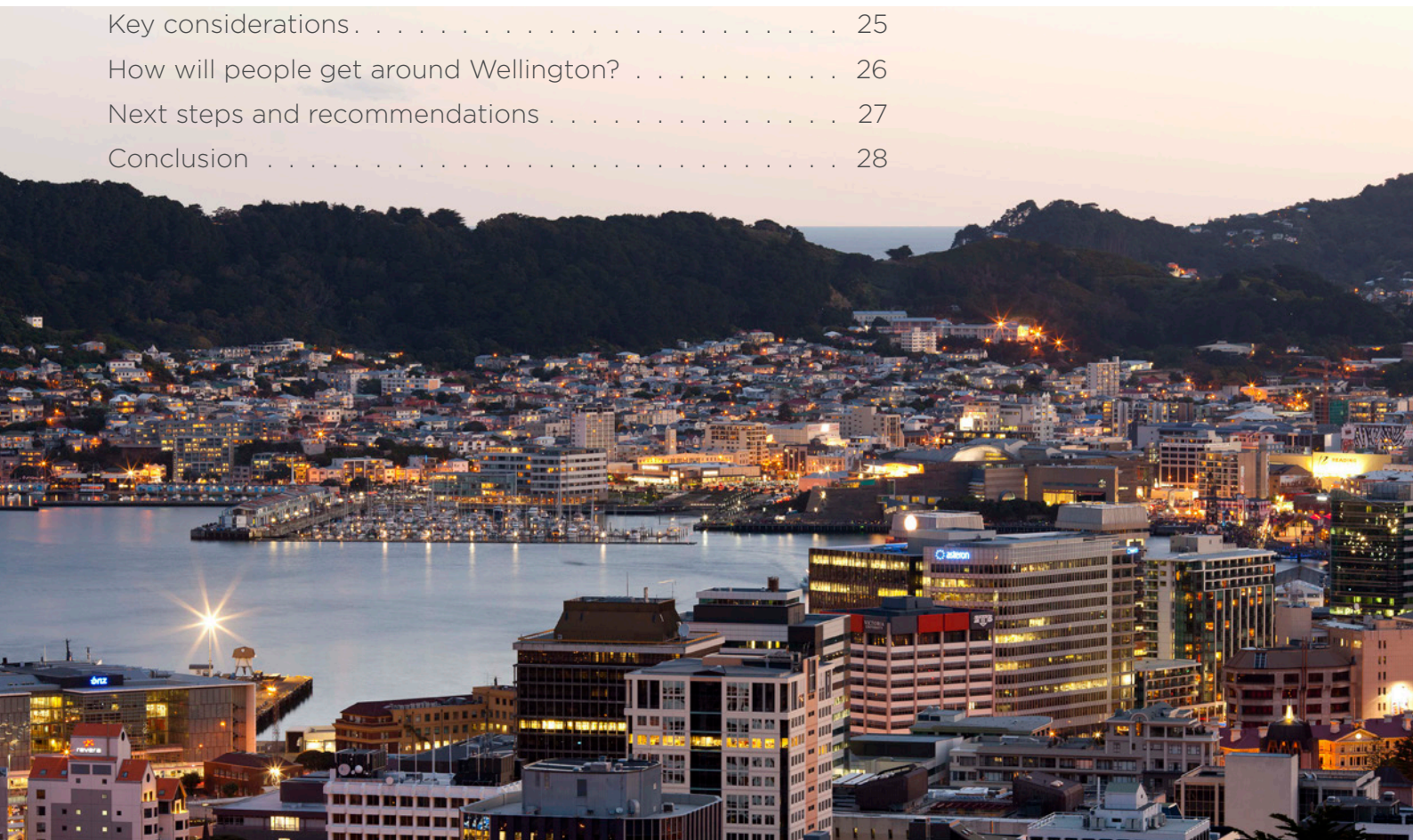
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**All photographs of
Wellington provided
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Executive summary

This report outlines a concept for a low traffic central city in Wellington.

This is achieved by creating a traffic circulation plan, which sets out how private vehicles can and cannot move around the central city.

Low traffic does not mean car-free, people will still be able to access destinations in their vehicles, but the proposal divides the city into “traffic cells” which cars can drive into and out of, but not between. To access each traffic cell, cars use the boundary roads of Kent and Cambridge Terrace, The Quays, and Vivian Street/State Highway 1.

For other forms of transport, like walking, cycling and public transport, movement between the cells and within the central city continues seamlessly. This approach has been used successfully in several international cities, including Ghent, The Hague, and Strasbourg. It is also being introduced in Auckland.

By reducing the volume of private vehicles travelling within the central city, space is freed up to make room for other uses, such as cycling infrastructure, public transport priority and better public spaces for people.

What about Let’s Get Wellington Moving?

This proposal has taken the LGWM programme into consideration in a considerable way. While it is not currently part of the LGWM suite of work, it provides

a “roadmap” for the central city, including coordinating construction in a way that reduces disruption and achieves many of Wellington’s desired transport and urban outcomes at the same time.

What are the benefits, and where are the challenges?

The benefits of this approach include:

- Reduced vehicle mode share into the central city, with an associated emissions reduction,
- Increased road space for other projects, such as Mass Rapid Transit, to be built,
- Improved public transport access for more people,
- Reduced serious injuries and deaths on inner-city roads; and
- A targeted approach for construction disruption.

As this concept is developed, it is vital that access for disabled people, emergency services, and service and loading is maintained. These groups should be closely involved to ensure their central city access is clear and appropriate.

We believe this concept presents the Council with a transformational opportunity to improve Wellington’s central city for the benefit of all.



Introduction

Wellington is known as a vibrant, small and well-connected city. At the same time, it faces the challenges of increasing demands for central city space, environmental concerns, and a growing need for efficient public transport.

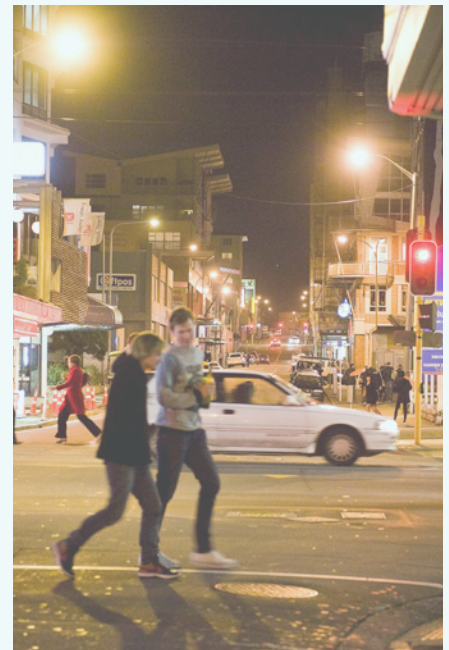
Other cities around the world find themselves in similar positions. Many cities are taking bold action to create more sustainable and more liveable central cities. Many European cities are achieving these goals by reallocating road space away from cars and to other uses, such as restricting traffic to some streets, public transport priority, or green space.

In 2021, Wellington City Councillors asked for an investigation into what a fossil fuel free central city might mean for Wellington. This relates specifically to transport in the central city.

This report draws on the experience of overseas cities and looks at what solutions may suit the Wellington context. It presents a high-level concept of how traffic circulation changes can be used to reduce the number of cars on central city streets. As an introductory concept, this initial study does not rely on traffic modeling or economic analysis and is developed as an entry point for further discussion only.

What does this report include?

- An explanation of what low traffic means
- The key concepts that could be used to limit central city vehicle volumes
- Case study examples of cities that have introduced measures to reduce private vehicle traffic in their centres
- The case for change in Wellington
- A proposed concept for Wellington's central city
- The potential benefits to Wellington of such a plan
- Discussion of the key issues that may arise out of such changes in Wellington
- Examples of journey changes to people in Wellington
- Proposed next steps



Why implement a low traffic central city in Wellington?

For various reasons, cities are introducing measures to reduce the number and impact of cars in busy central areas.

Depending on the goals of such programmes, various techniques can be used ranging from financial incentives, like pricing, to physical traffic restrictions. Many programmes are supported by land use changes and investment in public transport infrastructure, with explicit goals around reducing traffic and improving urban environments.

Why are cities reducing vehicle numbers in their centres?

Mode share and emissions

Cities are implementing circulation changes as a way to dramatically change travel behaviour away from private vehicles in central cities. This has the expected flow on effect of reducing carbon emissions for these cities.

Liveability

In order to make attractive central cities with space for people to live, work and study in a healthy living environment. This enables density and increased residential activity in central cities.

Accessibility

In order to allow more people to safely and easily reach their destinations, while ensuring that the centre remains accessible (by vehicle) for those who need to be there.

Local environmental benefits

Reducing vehicle numbers in central cities can have strong positive environmental impacts and can directly result in reducing local harmful emissions.

What have the outcomes been?

The following cities have all introduced circulation plans as a way to reduce the volume of private vehicles in their centres.

Ghent's circulation plan resulted in bike mode share increasing from 22% in 2012, to 35% in 2018, while car travel reduced from 55% to 39% in the same time period.

Bus patronage in **Leuven, Belgium** increased by 18% in the three years following the introduction of the traffic circulation plan, while cycling increased by 16%.

Traffic volumes in **Oslo** reduced by 11% from 2016 to 2018, and by 19% from 2018 to 2019, following the implementation of the city's traffic circulation plan. Much of the car mode share has shifted to cycling and public transport.

Strasbourg experienced a reduction in absolute numbers of vehicles traveling to the central city from 240,000 in 1990, to 200,000 in 2000. It is expected that without the traffic circulation plan, more than 300,000 vehicles would have traveled into the central city in 2004.



A low traffic central city

What do we mean by low traffic?

The idea of a 'fossil fuel free area' in the city can be misleading and possibly counterproductive. Most cities that have created centres that are considered people friendly have done so through a combination of transport systems and traffic management techniques. While some streets are pedestrianised, meaning no cars travel along them, they are accompanied by circulation plans which allow vehicles to access required areas and circulate the restricted areas. This creates a wide area that is best described as low traffic. Throughout this document this is what we mean when we say low traffic.

The Dutch call this concept 'autoluw'. It allows traffic to access most areas but prevents through traffic. This limits traffic to people who have a local destination but prevents 'through traffic' vehicles that have a destination outside the central city from using local streets. By limiting traffic to people with a nearby destination, the amount of vehicles on local streets is dramatically reduced.

This limits traffic to residents and people accessing destinations like off-street car parks and key locations. Further restrictions on some streets limit general traffic completely and only allow access for emergency vehicles, service and delivery, and sometimes public transport vehicles. These streets are distinct from pedestrian malls as they manage the type of vehicles allowed and the time of access instead of just closing the street entirely.

A low traffic central city includes a combination of these types of areas, as well as streets that retain access for vehicles as they currently do. The overall aim is to reduce reliance on private vehicles within the central city, and make journeys on public transport, by bike, micro-mobility or on foot easier and faster.

What don't we mean by low traffic?

There are several other mechanisms cities use to restrict vehicle volumes in central cities. These techniques may accompany a circulation plan within a city's wider approach to managing travel demand, but are not expressly part of a circulation plan.

Congestion charging: deterring car use at busy times of the day or certain areas by charging a toll.

Parking changes: discouraging ownership of car parking spaces by charging an annual fee to the owners of inner city car parking spaces. Reduction of inner city parking.

Vehicle restrictions by emissions: Restricting access to areas based on the emissions profile of vehicles. Polluting vehicles are sometimes completely restricted while others face increasing charges for accessing certain areas.



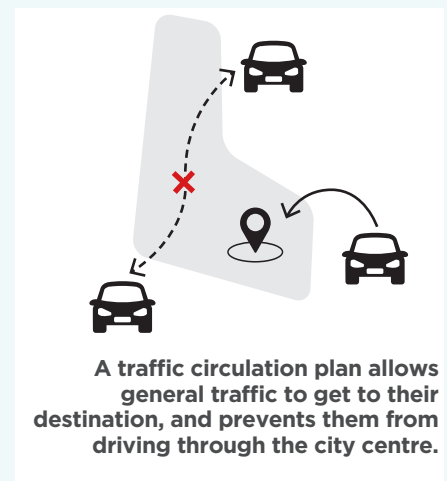
How is low traffic achieved?

Creating a low traffic central city is achieved by implementing a series of clear tools to direct through traffic away from busy pedestrian areas and determine where cars will and will not be.

A traffic circulation plan

A traffic circulation plan strategically directs where and how cars circulate in the city. It establishes restrictions on general vehicles to prevent 'through traffic' from passing through certain areas. Through traffic is directed to specially designated and designed traffic arterials and distributor roads.

This means that not all streets are accessible by cars.



Traffic circulation changes

Accompanying modal filters or 'snips', other traffic circulation changes that support circulation plans and traffic cells include changes in directions to streets, creating one-way streets from previously two-way streets or vice versa.

Traffic circulation changes further manage where cars can and cannot go.

Modal filters

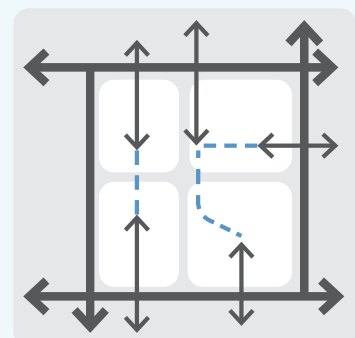
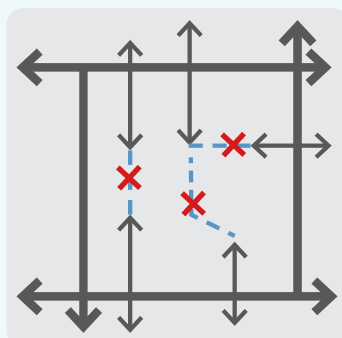
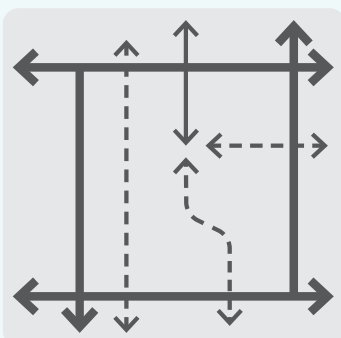
Modal filters, through various means, allow some vehicles to pass through but not others. Examples could include a bus-only section of a road, such as Wellington's Manners Mall, or a pedestrian only section, such as parts of Cuba Street.

These are called 'snips' and are the main tools used at the boundaries of traffic cells.

Traffic cells

Within the wider traffic circulation area, there may be traffic cells. While traffic can access locations within the cells, it cannot travel between cells. This concept stops cars from driving through the central city, keeping it on key perimeter routes instead.

Traffic cells make pedestrian cycling and public transport journeys more convenient than circuitous car trips.



What sorts of streets does a traffic circulation plan create?

A traffic circulation plan redefines the functions of central city streets.

By cutting out through traffic, the street network can be prioritised for clean and spatially efficient transport modes. This also frees up space for pedestrian and public realm improvements.

Some streets will now have a special purpose by restricting traffic but accommodating high volumes of cycling, public transport, or both.

Other streets benefit from reduced traffic volumes and speeds. This means that streets can become quiet with room to linger or can be used safely for people cycling in the street without special cycling infrastructure.

Bus only, Ghent

Through traffic was removed from the Ghent central city using low-cost measures. Bus only streets and bridges allow buses direct access across the central city while restricting traffic.



Cycle Street, Leuven

A traffic circulation plan was put in place in Leuven in 2016 that restricts car traffic from the central city freeing up streets for people cycling.



Very low traffic street, Barcelona

Traffic is directed to outer streets freeing up space inside the 'superblock' to be used for playing and socialising.



Very low traffic street, Amsterdam

Low traffic and the recent removal of parking allows for greenery in this residential street.



Case study 1: Ghent, Belgium

Urban population

260,000

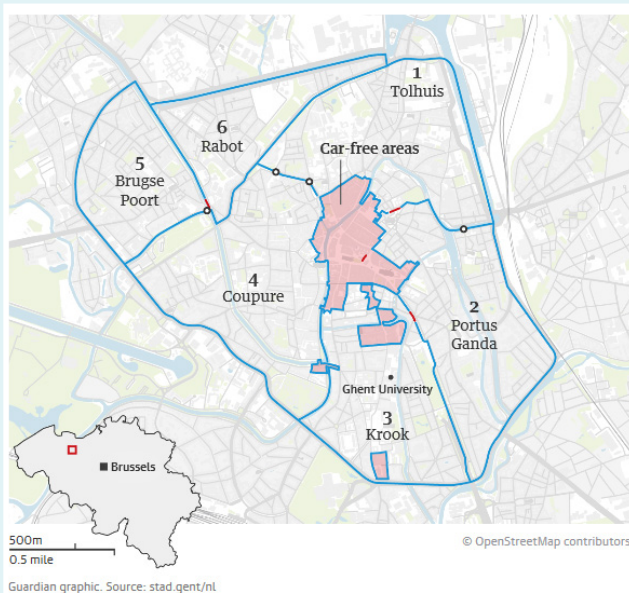
Ghent introduced a circulation plan in 2017.

The purpose of the plan was to prevent private vehicles from traversing the central city and to improve accessibility for public transport and active modes.

The plan was introduced quickly and with cheap and temporary infrastructure to allow changes to be made as fast as possible. This had been supported with significant prior planning, communication and engagement and vision from local politicians.

The city is divided into five restricted traffic cells, as well as an earlier-implemented historic centre, with vehicle movements limited between the zones. To access different zones, private vehicles use a ring road on the outside of the central city. Access to the zones is controlled by a permit system, with more generous permits for users with higher needs e.g. mobility vehicles, service and delivery, healthcare providers.

As a result of both the circulation plan and the city's transport planning efforts, Ghent achieved its goal of a 35% cycling mode share by 2019, 11 years ahead of its 2030 expectation.



Universal access

Poor quality of pavements in Ghent was addressed through a Pavement Action Plan from 2010 to 2014, bringing all pavements up to a minimum standard based on the least mobile users. This improved accessibility across the central city.



In 2018, the city introduced small people mover buses, called Wandelbussen, to transport people with limited mobility around the central city. The buses run on a set route made up of 8 stops every 25 minutes. This service has not been well used and is set to be discontinued.

Parking plan

Ghent's parking plan was launched the year before the circulation plan and includes provisions for:

- resident parking
- long-term underground car parks
- park and ride
- staggered pricing of on-street parking based on distance from the central city
- digital parking meters

Traffic cells and a traffic-free centre

Ghent's traffic circulation plan clearly delineates traffic cells around a completely car free centre.

Graphic Source: The Guardian

Case study 2: The Hague, Netherlands

Urban population

884,000

The Hague introduced a circulation plan in 2009 after two years of extended public hearings and participation in the process.

The city is divided into three 'sectors', each of which is accessible via a ring road, called a CentrumRing. Vehicles cannot travel between the sectors once inside them, instead they use the ring road to access each one. Pedestrians and cyclists can travel between the sectors without using the ring road.

The circulation plan is supported by an extensive tram network throughout the city which has been in place since 1864 and has a total of 12 lines with 241 stops.

The city is also phasing in a series of low emissions zoning for the city.

In 2017, walking, cycling and public transport made up nearly 60% of journeys less than 15km in the city, and 95% of journeys less than 2.5km

The Hague's car free central city makes it easy for pedestrians and cyclists to get around

Cycling initiatives:

The Hague is implementing several initiatives to encourage cycling and provide bike parking. This includes:

- Subsidies of up to €120,000 for neighbourhood bike parking facilities
- Extensive bike parking network across the city
- Several bike share providers
- Temporary bike parking on a "bicycle deck" the size of an on-street car park being trialled across the city
- 'Park and bike' facilities



Source: Wikimedia commons. https://commons.wikimedia.org/wiki/File:The_Hague_car-free_city-centre_28.JPG



Sectors and 'Centrumring' (ring-road) of The Hague's Circulation Plan.

In The Hague's traffic circulation plan, a CentrumRing (ring road) surrounds a central city in which car movements are tightly controlled. Vehicles can enter and exit three 'sectors' (purple outline), for example using the outlined routes in red, but not cross between them, unlike cyclists and pedestrians who can cross freely.

Graphic source: bof-den Haag.n

Case study 3: Strasbourg, France

Urban population

467,000

Strasbourg introduced a circulation plan in 1992.

The plan accompanied the introduction of a step change in the city's transportation system, with the building of a new tram network which has now reached 65km in length. The city's circulation plan is made up of four traffic loops, which guide private vehicle traffic around the central city and which freed up space for both the new tram system, and for increased pedestrian zones in the central city which were set up in 1994.

Since the initial traffic circulation plan, several network extensions to the tram network have been delivered and reforms to parking policy have been introduced across the city. Between 1997 and 2019, the private vehicle went from making up 53% of journeys in the city to 37%, while public transport, cycling and walking all saw increases.

Universal access

Of the case studies profiled in this work, Strasbourg appears to have the most comprehensive universal access support in its central city.

- Strasbourg's tram and bus fleet is 100% accessible, with space for wheelchairs, ramps and a low floor tram fleet.
- The city has an on demand mobility service for mobility impaired users. A standard public transport fee of €1.70 applies per trip.
- A system of remote controlled pedestrian crossings for users with mobility impairments.

Strasbourg's new tram network was an important component in the circulation plan.



Source: https://en.wikipedia.org/wiki/Strasbourg_tramway



Strasbourg's circulation plan filters vehicle journeys.

This map shows the recommended delivery routes within the Strasbourg circulation plan and restrictions for different types of vehicles at different times of the day.

Graphic source: <https://urbanaccessregulations.eu/countries-mainmenu-147/france/strasbourg>

Case Study 4: Oslo, Norway

Urban population

1.03million

Oslo introduced its 'Car Free Life' programme in 2017, with a plan to reduce the volume of cars in the central city.

Unlike the other case studies outlined in this work, the Oslo programme does not rely as significantly on a circulation plan, rather a series of interventions aimed at reducing car volumes in the central city.

The crux of this approach has been the removal of a large number of on-street parking spaces. This means cars can still access the central city, but stays are no longer accommodated by on-street parking. In turn, this has changed the use of some streets away from the movement of vehicles and towards public space or cycling infrastructure. The approach also relied strongly on the identification of pilot areas to trial street treatments and approaches.

These changes have been accompanied by long-standing congestion charging in the city and recent low emissions zoning.

Public support

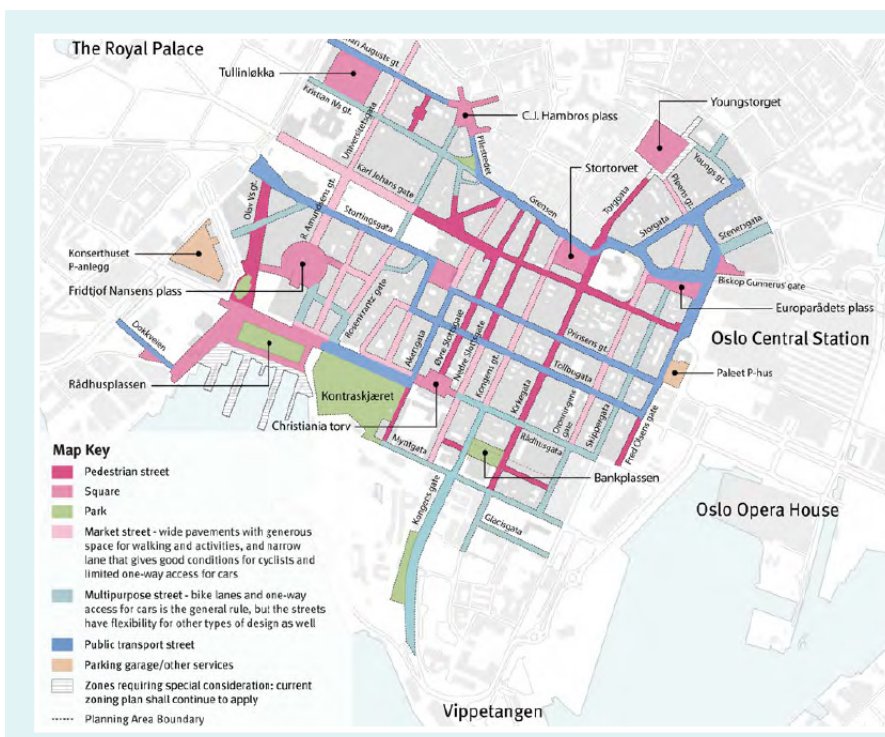
Oslo built support for its 'Car Free Life' approach by providing financial grants and public support for the use of central city public spaces for events and initiatives from local people. The city also ran public events in the new spaces.

In 2019, Oslo recorded zero pedestrian or cyclist deaths.

The city saw a 28% reduction in cars in the central city between 2016 and 2019.



Source: MRC



Proposed new zoning plan for Oslo Central city.

This plan shows the various types of streets that form Oslo's central city, including pedestrian streets, market streets with limited one-way vehicle access, public transport streets, and multi purpose streets.

Graphic source: Agency for Planning and Building Services, Oslo City

Low traffic city plans as part of a collection of interventions

While cities internationally have implemented circulation plans with successful results, they do not stand alone.

In each location, plans to create low traffic central cities have sat within wider transport plans, and alongside approaches such as low emissions zoning or congestion charging, and have enhanced, or been enhanced by investment in infrastructure to support travel options using several modes.

In general, traffic circulation plans fit with other plans in the following ways.

Emissions or vehicle-based charging

In terms of physical catchments, low traffic central cities tend to become nested with emissions zoning or congestion charging catchments. The concepts may be mutually reinforcing, but are generally implemented at different times and for different reasons. In several case study cities, environmental zoning has been applied at a later date, with the aim of reducing the city's emissions.

Common approaches used to support environmental zoning include:

- Subsidies and incentives to encourage travel by walking, cycling and public transport
- The promotion of alternative mobility options
- Enforcement of zoning with fines for non-compliance with environmental zoning catchment rules/requirements.
- A fee/permit structure for high-emitting vehicles to enter a central catchment

These approaches also support traffic circulation plans for low traffic central cities.

Investment in infrastructure to support low traffic central cities

Within the case studies, low traffic central cities are closely linked to sustained investment in infrastructure to support travel choices using non-car modes.

While investment in infrastructure can require a medium to long-term horizon to deliver outcomes, low traffic central city approaches can be implemented in a shorter time frame at any point along the life cycle of infrastructure delivery.

Some cities have already had well developed public transport networks in place prior to implementing circulation changes (The Hague), and others had a strong culture of sustained infrastructure investment.

However, the experience in Strasbourg shows that steps towards low traffic central cities can come before infrastructure delivery and catalyze its delivery. Circulation changes can facilitate longer term infrastructure proposals by taking a step towards altering the use of space. Alternatively, such changes can work in tandem with network development and delivery (as in Ghent), where infrastructure delivery can function as a key way to build support for low traffic proposals by showing how accessibility needs will be met.

This shows that circulation changes for low traffic central cities can come at any point in the timeline of large infrastructure projects, and does not rely on them ahead of time.



An artist's impression of the LGWM Golden Mile project

Wellington's current vehicle access

LEGEND	
	State Highway
	Arterial road
	Secondary arterial (through route)
	Golden Mile (bus corridor)
	Pedestrian-only street
	Significant public building

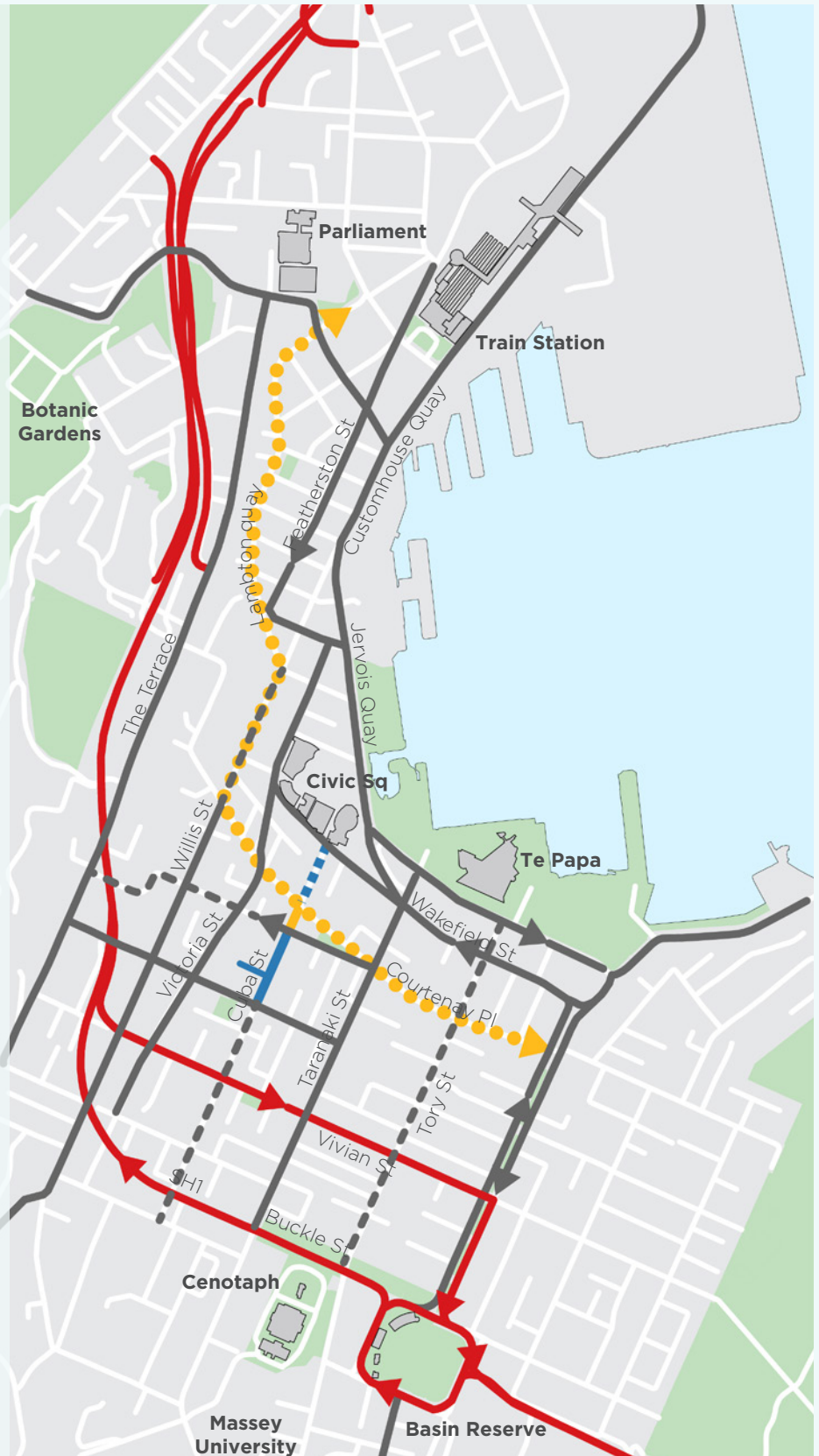
Routes through and to.

Vehicle access to Wellington's central city currently comes from several main arterials and five State Highway 1 off-ramps. State Highway 1 traverses the western and southern edges of the city, while the harbour side of the central city is bounded by Customhouse and Jervois Quays.

The city's main public transport spine, known as the Golden Mile, travels directly through the central city, and shares its path with general traffic in a number of locations.

Under the umbrella of LGWM, there are plans for Mass Rapid Transit to run from Wellington Station along the Quays and through the city on an alignment yet to be determined.

In addition to this, the City Streets programme, under LGWM, introduces a series of cycling, pedestrian and public transport improvements across the central city. The city's cycle network is imagined as a north/south and east/west connected grid of cycleways on central city streets.



The case for change in Wellington

Setting the scene


The number of people living, visiting, studying, and doing business in Wellington’s central city is increasing and with it, the need to access and move around the area.


The central city resident population has increased from 9378 in 2003 to 14,823 at the last census, and is predicted to reach more than 30,000 by 2050. Central city employment continues to grow, and has been entirely accommodated by an increase in use of public transport and active modes for accessing the central city, rather than an increase in private vehicles.


Change is also coming as a result of the city’s climate commitments. Building energy and urban form, and transport account for large proportions of the city’s emissions, 34% and 53%, respectively. WCC has committed to a 43% reduction in both of these sectors.


What’s the Wellington we want to see?


This work seeks to help Wellington achieve key goals for the central city, as set out in the strategic documents opposite and listed below. This concept represents a significant change in approach to the city’s streets which can support higher population densities, unlock road space which can be reallocated for urban greening, and support a shift to low-emission transport modes. All of these are aims Wellington’s strategic documents have expressed as important.


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Compact: We build on the city’s layout and structures (its urban form), and make sure we have quality development in the right places.
- 

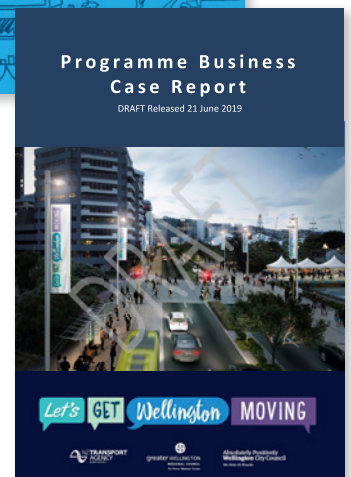
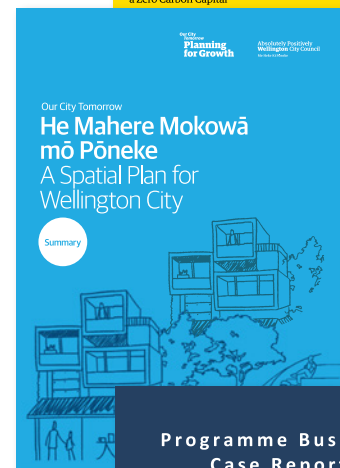
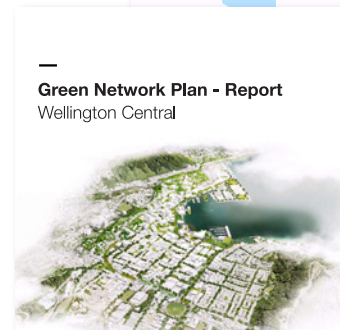
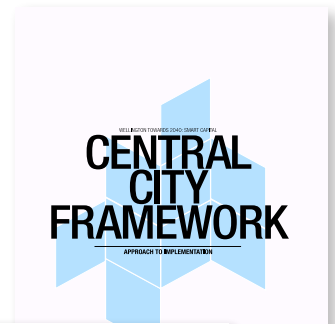
Resilient: Our city’s natural and built environments are healthy and robust. Good design encourages physical activity and interaction that fosters social resilience.
- 

Vibrant and prosperous: We welcome social and cultural diversity. We support innovation and invest strategically to maintain a thriving economy.
- 

Inclusive and connected: We’re connected by a world class transport system, and have attractive and accessible public spaces that support our diverse community and cultural values.
- 

Greener: We protect and value our natural environment, and enjoy thriving pockets of nature in the city.
- 

In partnership with Mana Whenua: We recognise Mana Whenua’s important role and actively partner with them.



Wellington's transport history

The ideas which inform this report are not new.

In the 1960s, the De Leuw Cather transport plan for Wellington presented a major change in how transport is delivered in the city. The plan recommended extending the motorway system into the central city, with a vision for later improving public transport by extending rail services the full length of the Golden Mile, and removing on-street parking to create more space. This plan was only half realised: the Foothills Motorway system was partially completed, but, the expansion of the rail network did not occur and on-street parking was retained in most of the central city. In the meantime, Wellington's extensive tram network was removed between 1949 and 1964.

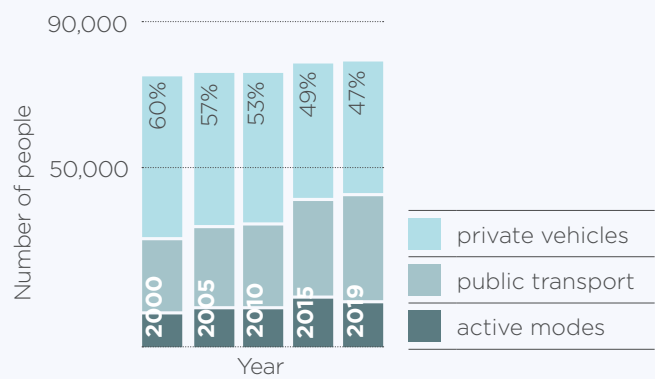
Into the 1990s, transport planning in Wellington largely continued to focus on moving vehicles either into or through the central city, with significant focus on State Highway 1 and its route through the city.

More recently, transport planning in Wellington has seen increased focus on the role of public transport, walking and cycling. This includes the redevelopment of the city's bus network, and the identification of a key public transport spine in the city.

People's travel choices reflect this. The

absolute number of people traveling into Wellington's central city by car has decreased since 2000, while the total number of trips has increased, meaning demand for public transport and active modes is on the rise.

Travel to central city by mode



The current Let's Get Wellington Moving (LGWM) programme is addressing many of the areas unresolved in the last 50 years, including the introduction of MRT through the central city and the creation of more space for walking and cycling. However, these plans will require a reconsideration of how the city's street space is allocated. This work seeks to support that change by providing a solution to the central city's space limitations.



Post Office Square in 1909 (left) and 2021 (right)

How could a traffic circulation plan work in Wellington?

A **limited traffic zone** would be defined by boundary roads, which could include Jervois Quay and Vivian Street (SH1) and Kent and Cambridge Terrace. This would mean that through traffic with a destination outside the central city would be directed to these boundary roads and would not be able to use local central city streets, such as Tory Street, to complete their journey.

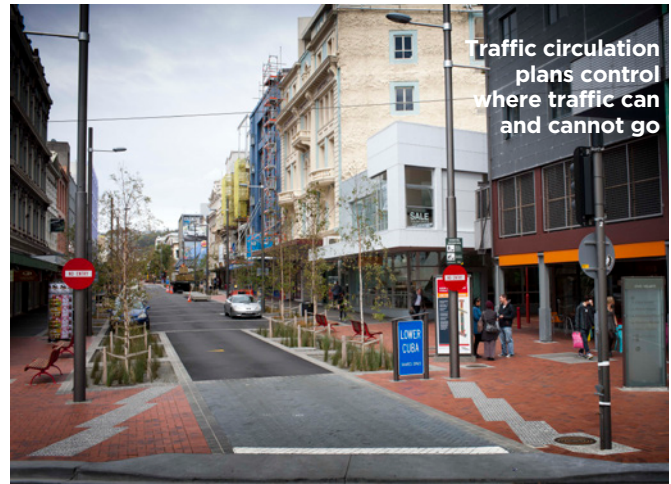
Modal filters or 'snips' would restrict through traffic on these streets by bus only sections, pedestrian-only areas, or lane closures that force turning movements or restrict straight ahead travel.

Traffic circulation patterns would have to be reconfigured to retain vehicle access to all areas of the city including off-street car parks. Further consideration should be made about whether some streets should still be accessible for kerbside pick-up/drop-off and/or on-street parking.

Traffic cells are accessible to cars via the **boundary roads** using prescribed routes. Some streets would change travel direction and some would go from 1-way to 2-way operation, or vice versa. In no cases would streets need to be multiple lane one-ways.

Traffic circulation patterns should be coordinated with **public transport and cycling networks, and safety objectives**. They should be designed to enhance urban amenity, improve residential environments, and make it easier for people to move around by walking and cycling.

A traffic circulation plan could be **implemented at one time** as in Groningen, The Hague or Ghent. It could also be **staged for progressive implementation** as is planned in Auckland. Both approaches take numerous years of planning before kick-off.



Traffic circulation plans control where traffic can and cannot go



Bus-only streets make public transport faster and more reliable



Multiple-lane one-way roads would be reduced



Traffic circulation plans consider how different transport networks work together

A traffic circulation concept for Wellington

LEGEND

- Traffic cells
- Golden Mile
- Mass rapid transit
- Traffic perimeter route
- Significant public building





Wellington’s central city is divided into 5 ‘traffic cells’.

These are bounded by through-routes for traffic. Cars have access to most streets within each cell, but are unable to travel through one cell to the next. Instead, they must return to the nearest through route.

Public transport and walking and cycling routes are unaffected.



Wellington's central city traffic circulation detail

LEGEND	
	Key street changes
	Very low-traffic area
	Traffic perimeter route
	Significant public building



This map provides detail of the location of potential street changes in Wellington's central city. Numbers refer to the key on the following page.

Wellington's central city traffic circulation detail - Key

The function of central city streets will change to enable the circulation concept.

1. Lambton Quay: Bus transit street and possible cycleway.

2. Willis Street: Bus transit street between Manners Street and Hunter Street. New 2-way traffic between Ghuznee Street and Vivian Street.

3. Victoria Street: No traffic between Manners Street and Wakefield Street. Possible service lane in southbound direction. Key cycleway.

4. Mercer Street: No traffic. Key pedestrian and cycling connection to the waterfront and MRT.

5. Featherston Street: 2-way traffic operation. Key cycleway.

6. Tory Street: May be a cycleway or part of a 'low traffic' cycling route.

7. Courtenay Place: Bus transit street and key cycleway.

8. Wakefield Street: From 3 lanes 1-way to a 1+1, 2-way and MRT between Taranaki Street and Cambridge Terrace. Through traffic restricted between Mercer Street and Taranaki Street.

9. Ghuznee Street: Snipped. No through traffic between Taranaki Street and the Terrace. May be a key cycleway or a 'low traffic' cycling route.

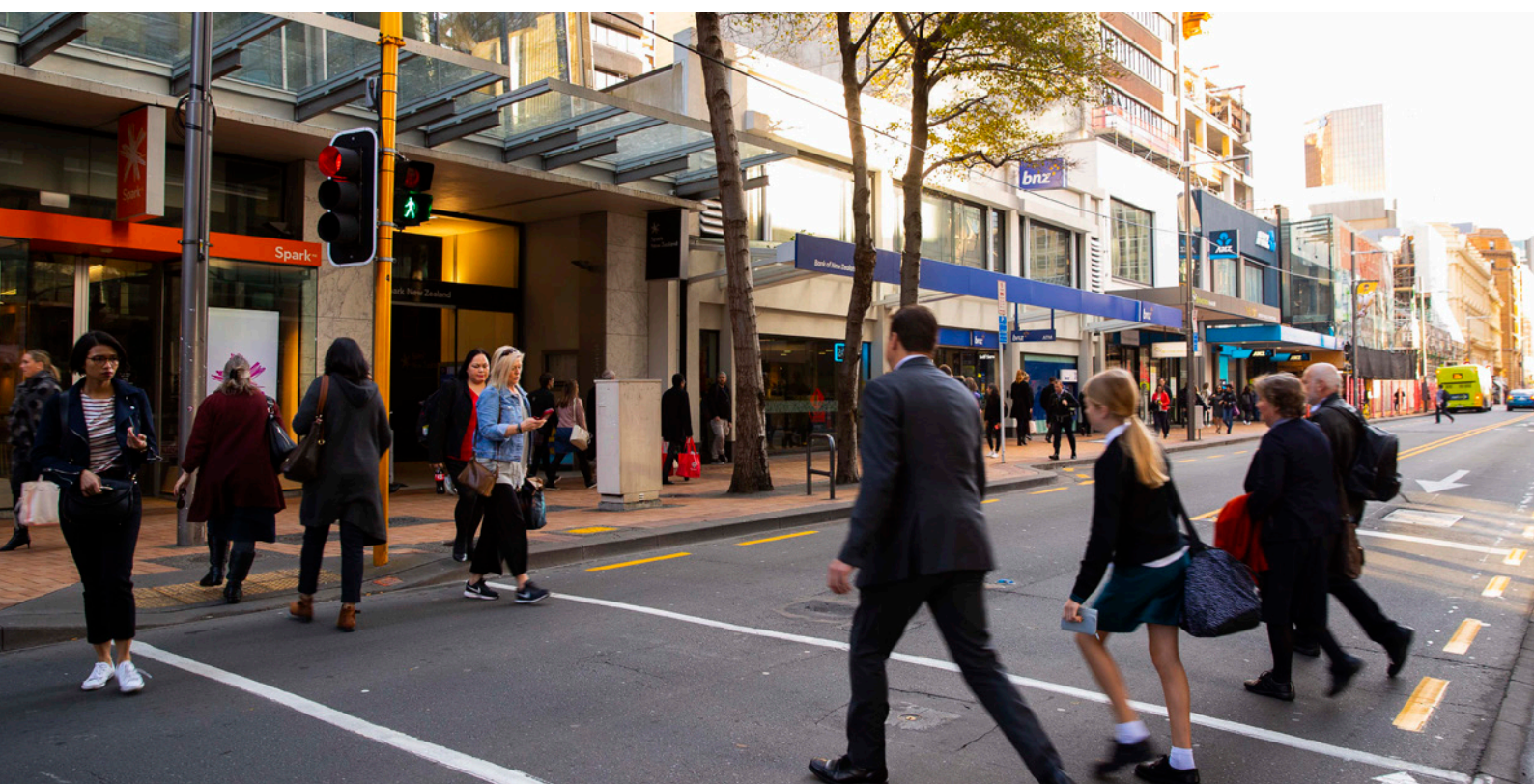
10. Dixon Street: Snipped. No through traffic between Taranaki Street and the Terrace. May be a cycleway or a 'low traffic' cycling route.

11. Quays: MRT alignment. Reduced to 2 + 2 lanes. 1 + 1 lanes between Hunter Street and Harris Street. Key cycleway.

12. Cable Street: From 3 lanes 1-way to 2+1, 2-way.

13. Kent and Cambridge Terrace: Traffic distributor and key cycleway.

14. Taranaki Street: Taranaki Street snipped. No traffic across Courtenay Place. Cycleway and main bus route. Forms boundary of traffic cells. Left in and left out access along the corridor.



What sort of streets would this create in Wellington?

Low traffic streets.

With a traffic circulation plan in place, traffic volumes and speeds are greatly reduced across the limited traffic zone. Removing on street parking further reduces vehicle numbers and frees up space that can be used for loading zones, wider footpaths, seating and greenery.

These streets can be embellished in many ways at a range of costs but their key feature is very low traffic which creates a safe, spacious, pleasant environment.

Removing traffic frees up space for public transport and walking and cycling networks. Almost car free streets can work harmoniously with special purpose streets that are important sustainable transport corridors.

Low traffic 'shared street'

Local access only streets, like Blair and Allen Streets, could become shared spaces with low traffic and high amenity for pedestrians.



Low traffic street

Streets like Dixon and Ghuznee Streets could have such low traffic that they become safe cycle routes.



Cycle Street

Areas such as lower Tory Street could have very little traffic other than local access, with increased potential for residential development and quiet streets connecting to the waterfront.



Bus Transit Street

Streets intersecting with key bus corridors like Courtenay Place and Lambton Quay could utilise bollards to ensure bus routes are kept clear. Bollards can be used to regulate vehicle access to pedestrian streets for certain purposes and times.



Staging a circulation plan in Wellington

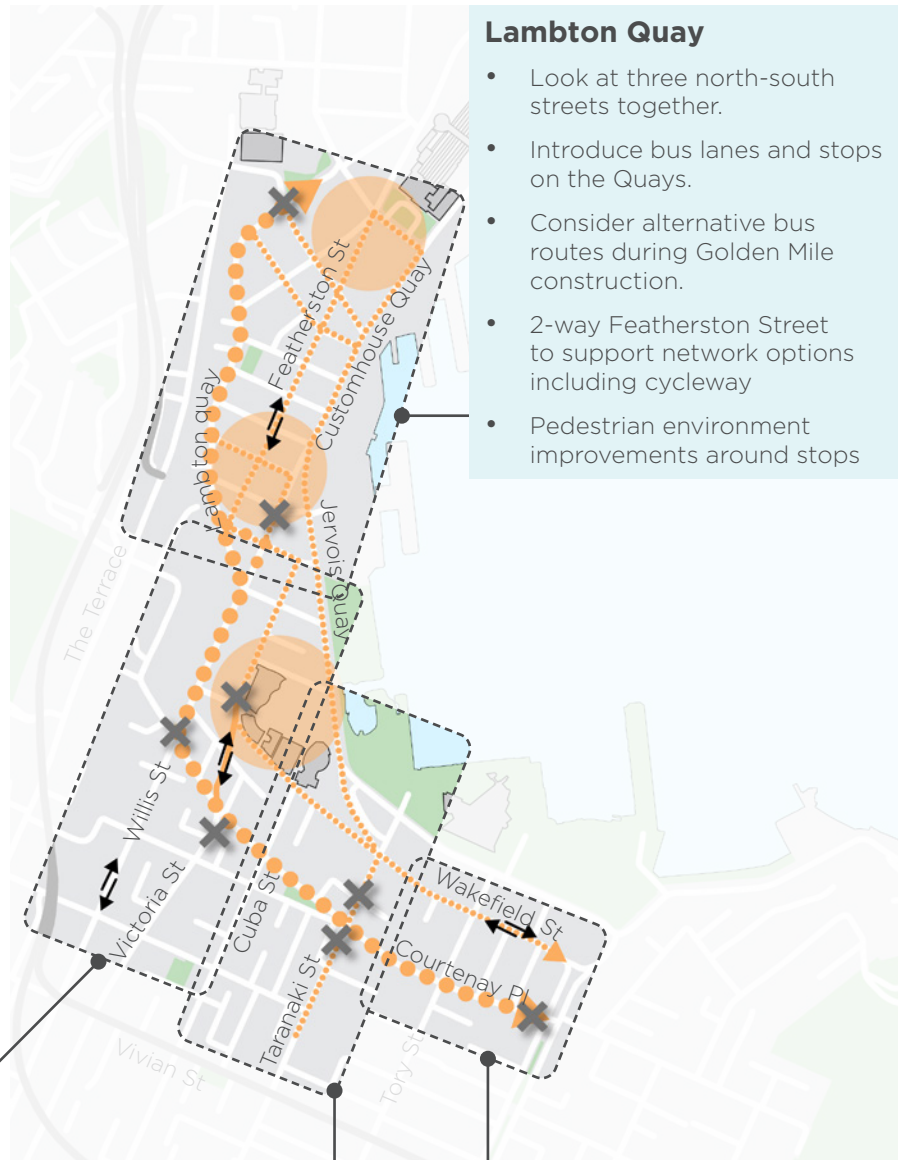
The LGWM programme presents opportunities to make long-term street changes that are steps towards a low traffic central city.

Golden Mile, MRT and City Streets programmes cover nearly every street in the central city. LGWM projects could be coordinated using this concept as the organising ‘game plan’. This would mean looking at area-wide transport networks together when constructing the Golden Mile.

Diverting buses to the Quays during construction of the Golden Mile could kick-start a new PT corridor.

Changes could be implemented one area at a time based on other project triggers.

LEGEND	
	Completed Golden Mile
	Temporary bus re-routing
	Change to two-way
	Removal of car traffic



Lambton Quay

- Look at three north-south streets together.
- Introduce bus lanes and stops on the Quays.
- Consider alternative bus routes during Golden Mile construction.
- 2-way Featherston Street to support network options including cycleway
- Pedestrian environment improvements around stops

Willis Street and Victoria Street

- Look at these streets together.
- Victoria Street 2-way, bus only during Willis Street construction.
- Lower Victoria Street returned as a cycle street with no traffic.
- Pedestrian connections to new MRT station at Te Ngakau

Taranaki Street and Courtenay Place

- Through traffic is removed at this intersection simplifying construction.
- Changes to Dixon Street to maintain access but remove through traffic.
- Pedestrian connections along Cuba Street to new MRT station at Te Ngakau

Courtenay Place

- Buses re-routed to Wakefield Street during construction. New contra-flow bus lane makes Wakefield Street two-way.
- Wakefield Street becomes a low-traffic street between Taranaki Street and Kent and Cambridge Terrace.

Why is this good for Wellington?

A traffic circulation plan responds to the trends that already exist in Wellington's central city: a growing population and increasing demands for public transport access to the central city.

LGWM will deliver a step change in public transport access and service, which will increase capacity on the public transport network and require central city space.

Space for other central city projects

Reducing or removing traffic frees up space. This space can be re-allocated to space-efficient transport modes, to enable more people to easily reach the central city. Several projects could use this space, such as MRT, The Golden Mile bus improvement project and the City Streets projects to provide improved walking and cycling. The space could also be used for urban realm projects to improve public realm amenity across the entire central area. While incremental space reallocation is inevitable as part of other transport projects in the city, this concept represents a transformational change.

Better access for more people

This traffic circulation concept prioritises public transport on key routes within the central city, and creates space for people to walk and cycle within the central city without interacting with heavy vehicle traffic. By doing this, these efficient modes of transport can move quickly and pleasantly through the city, which creates overall efficiencies of movement compared to car travel.

A healthy and safe environment

These changes would establish parts of the city as very low traffic, which could later be classified and enforced as Zero Emissions Areas, contributing to an improvement to public health outcomes through improving air quality in the central city and towards the city's carbon emissions goals. A reduction in private vehicle traffic also has the opportunity to reduce deaths and serious injuries in the central city by reducing interactions between people and cars. In the last five years, Wellington had 79 serious or fatal crashes, in the central city. This approach also allows for improvements in city space that can enhance personal safety, such as well lit urban spaces.

An attractive central city for people and businesses

Creating a central city that is easy to access for a wider range of people will continue Wellington central city's trajectory as a place people want to live and where businesses want to be located. Providing space on the city's streets where chance meetings with others are more likely creates opportunity for innovation and creativity, furthering Wellington's reputation as a place for new ideas and as a business hub.

Construction disruption

A traffic circulation plan can be used as a cohesive strategy to manage the effects on traffic circulation of construction activity around the central city. By doing this, projects can be coordinated in a way that takes advantage of disruption to make key changes in the city, and coordinates projects at a high level.



Key considerations

When ways to access the central city change, there are some groups whose access should be maintained.

There are also key considerations about the way such changes will affect some Wellingtonians and visitors. These are discussed below and should be an integral part of any further work in this space.

What about access for disabled people?

It is essential that everyone who lives, visits, work, studies, or plays in the central city can access everything they need. A range of tools will be tested with disabled communities to ensure their access to the central city is improved. This could include:

- Retaining access with a vehicle permit system for disabled people, potentially integrated with the mobility parking permit scheme.
- Public realm upgrades to make walking routes smoother and more accessible.
- Public transport accessibility improvements such as improved accessibility to stops within and surrounding the city centre.
- Supporting transport services, such as on-demand affordable mobility vehicles inside the central city.
- Promoting access through mobility parking and drop-off zones in accessible places

How will emergency services get around the city?

Emergency services are essential to keeping people safe and protecting property. When designing traffic circulation patterns, places should be easily reachable by emergency vehicles. This can be achieved through:

- Allowing emergency vehicles access to all areas of the central city, including traffic restricted areas.
- Where bollards are used, using retractable bollard technology with automated access for emergency vehicles.

What about loading and servicing?

Loading and servicing is essential to ensuring central city businesses receive the products they need, repairs and maintenance can be undertaken, and waste can be removed from the central city. Loading and servicing is currently constrained by other traffic on the road and competition for kerbside space. Changes to traffic circulation must also address changes to servicing and loading opportunities in the central city. Potential solutions include:

- Reallocating space currently assigned to on-street parking to increased kerbside loading space
- Providing dedicated time frames during which servicing and loading vehicles have access to restricted areas. Such time frames should also be outside of peak hours for general traffic and public transport in/out of the central city.
- Providing service and delivery “hubs” from which larger vehicles can distribute goods and services using smaller vehicles.
- The uptake and encouragement of other new service and delivery technologies, including cargo bike, shared loading docks, and street space allocation apps.

How does this plan support equitable access to the city?

Providing equitable access to the central city becomes increasingly important as cities grow, and as transport costs change. Equitable access does not mean providing the same for everyone, but providing transport that meets everyone’s needs. By reallocating space towards public transport priority into the central city and investing in accessible walking and cycling routes, Wellington has the opportunity to make it easier to access the central city for those who currently have fewer choices. This including access for people who cannot or choose not to drive a vehicle for their independent travel, including teenagers and older people.

How will people get around Wellington?

The maps on this page give some idea of how journeys in Wellington might change under the traffic circulation concept.

Nikau

Nikau lives in Newtown and drives to work on Lambton Quay. Nikau usually drives past the Basin Reserve, along Tory Street and Jervois Quay. Since was implemented, Nikau now takes a similar route, but travels along Cambridge Terrace instead of Tory Street. Since the rest of the streets in the central city are less busy, Nikau likes to bike into work in the summer when the weather is nice, as he can take a more direct route.

The Smith family

The Smith family lives in Kilbirnie and goes to church on Willis Street every Sunday. They are a family of six and drive their seven-seater car through the city each week to get to work. Their journey time to church hasn't changed since was implemented and they still have the same access by car to their church.



Kelsey

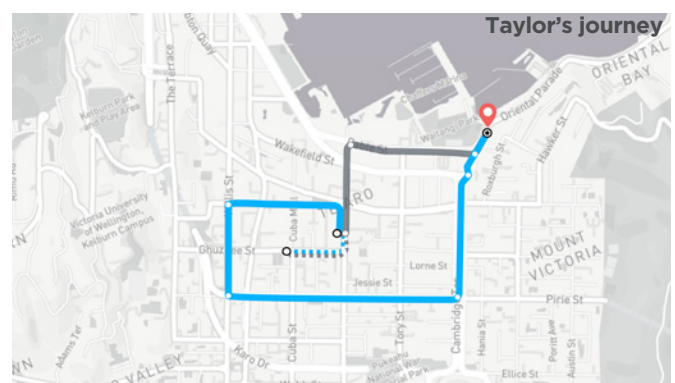
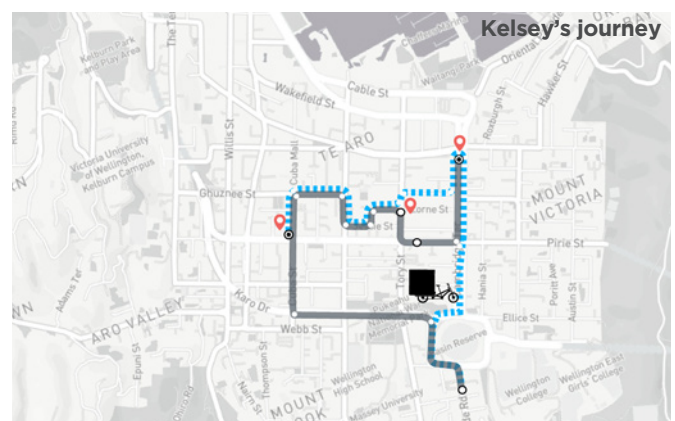
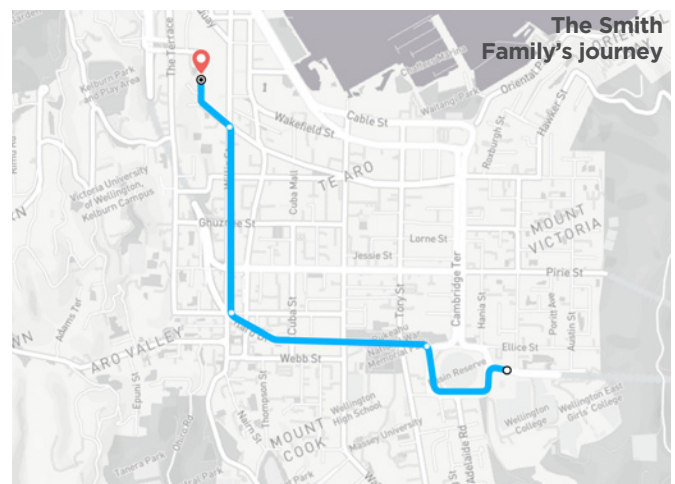
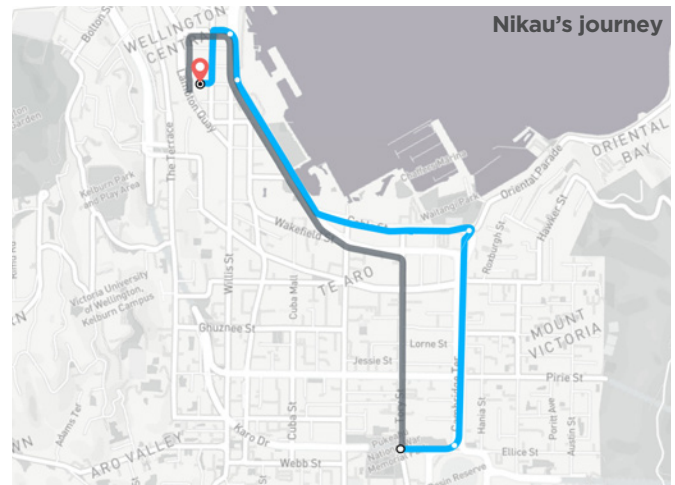
Kelsey owns a bakery in Newtown and drives a van into the city around 8am each day to deliver to the pastries to four cafes. Finding a loading zone and negotiating traffic can be difficult. Since was implemented, Kelsey has invested in an e-cargo bike. She takes protected cycleways to get to Te Aro and can now easily navigate to multiple destinations using a combination of quiet streets and new cycleways. She can bike directly to the door of each cafe cutting down on the amount of time it takes to make each delivery.

Taylor

Taylor works at a bar on Ghuznee Street, and drives as public transport isn't running at 3am at the end of their shift. Taylor usually parks at the Taranaki Street parking building. Taylor then drives through the central city to their home in Oriental Bay. Since was implemented, Taylor still makes this trip by car, but uses a different route, via Willis and Victoria Streets. The change adds about one minute to the journey time.

LEGEND

-  Journey before
-  Journey after



Next steps and recommendations

This work has sought to establish whether there is viability for a circulation plan in Wellington's central city, and give an initial concept of what that may look like.

A high level concept has been developed for this work and a logical next step would be to both test the idea in more detail, and consider where it sits within Wellington's wider transport planning agenda. The development of this concept has found strong ties to LGWM and its expected programme of work. It is recommended that potential partnership with LGWM in the delivery and further development of this concept be explored.

Expected next steps for Wellington City Council

- Consider in more detail how a traffic circulation plan can be integrated with LGWM
- Seek approval for the approach from Councillors and the public
- Investigate the appropriate governance model for further investigations into the concept
- If approved, establish preferred funding mechanism for the next stage of detailed investigations and planning
- Establish necessary supporting work streams to be developed as part of this concept, for example service and delivery planning, inclusive access planning, parking strategies for the central city.

In addition to this, there is an opportunity for Wellington to recognise the opportunity for "quick wins" in the central city. These may include:

- Moveable or temporary barriers to test circulation changes
- Events, pilots and promotions to test different uses of space in the city
- Identification of streets already ready for change



Conclusion

This report outlines a concept for a low traffic central city for Wellington. The concept is achieved through using a series of low traffic cells bounded by the Quays, Kent and Cambridge Terrace, and Vivian Street/ State Highway 1, all of which maintain vehicle access. The nature of the Quays, however, would change and be expected to serve a lower volume of vehicles compared to the other access streets. Congestion charging could help ease the transition of the Quays to a public transport corridor that supports local vehicle access

This concept fits strongly with the current LGWM programme and creates an opportunity to deliver circulation changes in tandem with its activities. For instance, maintaining reliable, legible and attractive bus services while any construction is completed on the Golden Mile may lead to suggested changes on the Quays in order to provide a secondary public transport corridor. This in turn can contribute in advance of any MRT planning along that same route.

In some cases, the proposed traffic circulation plan can help solve key network challenges, such as the need for space for a cycleway on Victoria Street. In other cases, removal of through-traffic and reduced traffic

volumes will create useful low-traffic cycling and micro-mobility routes.

Removing through traffic on Tory, Ghuznee, Dixon and Tory Streets could enhance area-wide objectives of urban regeneration, provide space for greenery, and create conditions better suited to residential living and public life.

When combined with planned LGWM investments, a low traffic central city significantly contributes to achieving Wellington's goal of a zero-carbon capital by 2050. By increasing the attractiveness of walking and cycling and reducing reliance on private vehicle travel, a low traffic central city could substantially reduce emissions from transport in central Wellington.

In general, the creation of low traffic spaces in the city delivers more space for Wellington's core overall, and opens up opportunities to connect to the waterfront, proposed MRT, and other urban realm projects the city has signaled.

A traffic circulation plan provides an opportunity to sit alongside and enhance the outcomes of the LGWM, by coordinating investment and delivery in a way that can deliver on climate, public realm and urban regeneration goals.

