

Benchmarking Sustainable Urban Mobility

How do our urban centres compare on their journeys toward delivering a low carbon, safe and healthy urban mobility environment



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Introduction and background



Paving the way for healthy, safe and vibrant cities

We must adapt the process to enable future action

Aotearoa New Zealand has some of the most liveable cities in the world, full of diversity and opportunity. Naturally, that means more people want to call our largest cities home.

With that shift come some big challenges, and now more than ever, councils are looking at how their transport networks can enable change in their communities – for the outcomes they’re trying to achieve.

The solution? A standardised, evidence-based process that helps us take action.

This process must:



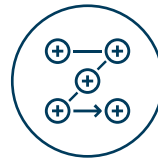
Shine a light on hidden data

In the past, we have been utility-focused, and so have our support systems. Not all modes or voices have been measured equally, and that means a lack of transparency across our transport network.



Fill gaps and replace assumptions with evidence

Without that big picture view, there are gaps. These voids are often filled with long-held assumptions and those with the loudest voices. What we need is a process that exposes those blind spots and listens to diverse voices in our communities.



Connect the dots on key outcomes

We acknowledge there are strong outcomes needed for our urban centres, whether that be climate emissions targets, safety precautions or supporting our growing and diversifying populations. An evidence-based process will show us how to achieve those key outcomes together.

The sum of all our parts

Benchmarking - a new approach with plenty of potential

A Sustainable Urban Mobility (SUM) benchmarking process can be used as an effective tool towards driving impactful change.

The desired outcomes include:

- **Assumptions to evidence** - we can spot gaps and work to fill them with evidence-based data.
- **Hidden data to a full-picture view** - we can be confident the data we're using is a fair representation of many voices and communities.
- **Simplistic to deep understanding** - we can use richer insights and wisdom to inform continuous improvement.
- **Individualistic to collective measures** - we measure, then share - giving everyone a view of cause and effect.
- **Singular approach to stronger and better together** - we can learn from one another and implement actions that will drive us all forward.
- **Isolated to tracked and measured outcomes** - we understand how we arrived at an outcome and why.



The power of a collective framework

The vision is clear

We all want sustainable, equitable and vibrant cities. To overcome the challenges we face, knowing what key indicators to measure is critical
- what we monitor defines our progress.

Sustainable Urban Mobility explained

Sustainable Urban Mobility (SUM) refers to transport and systems of transport planning that are sustainable across social, climate and environmental outcomes. In Aotearoa New Zealand, this is largely (but not limited to) walking, cycling and public transport.

Sustainable Urban Mobility benchmarking explained

Sustainable Urban Mobility benchmarking is a collection of measures that are common across councils. These indicators are important because they lead to significant outcomes for our communities - health, environment, connectedness and safety.

Benchmarking is best practice

Benchmarking is commonly used around the world to help 'connect the dots' from policy to campaign level - with great results. For example, the Dutch Cycle Balance, the London Cycling Benchmarking Project, the EU's Velo Info and here in Aotearoa New Zealand we have Yardstick - a well used benchmarking for our parks management.

This is the first year of an exploratory process

We're on a journey - and there is room to adapt and change. That's what will lead us to create impactful and lasting solutions that are fit-for-purpose.

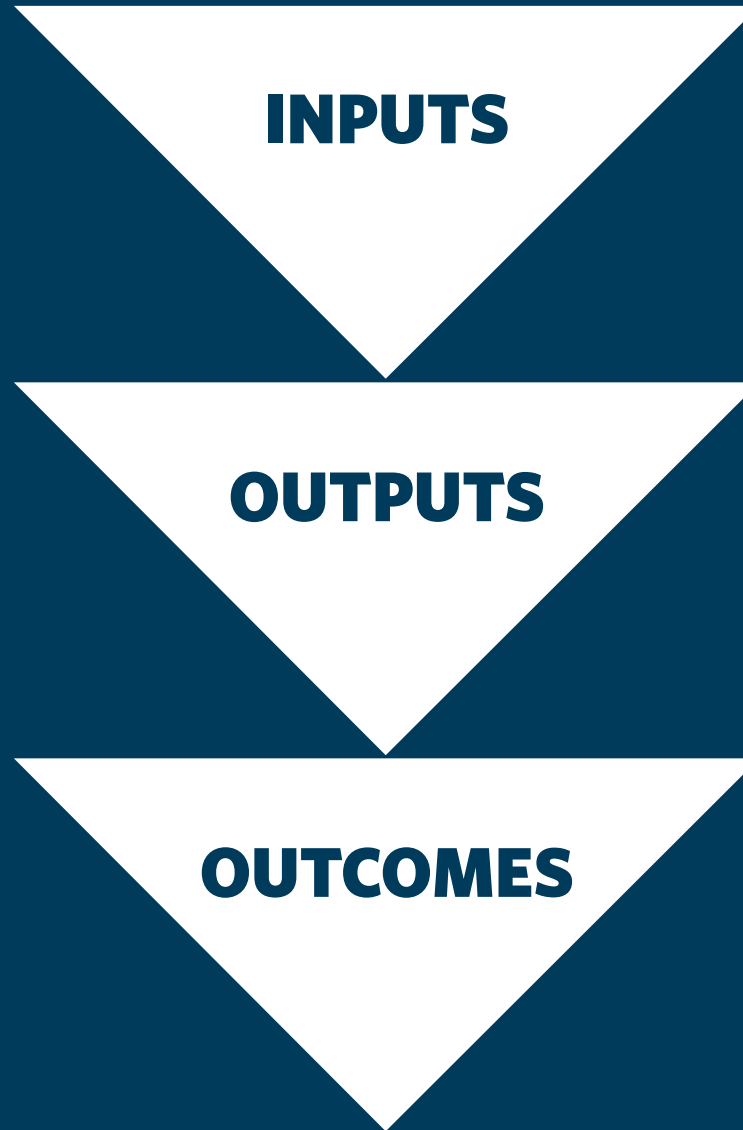
There will be gaps - and they're important

Gaps are inevitable. We need to know where the gaps are in order to improve. The benchmarking process is an opportunity to identify these gaps and start to close them.

We're at different stages, but we're all progressing

We must recognise the inherent differences between councils. Each council will be at a different stage and face unique challenges. Councils know their networks and communities best, so that's how things should stay. What matters is that we all progress towards achieving the right outcomes.

Our inputs and outputs determine our Sustainable Urban Mobility outcomes

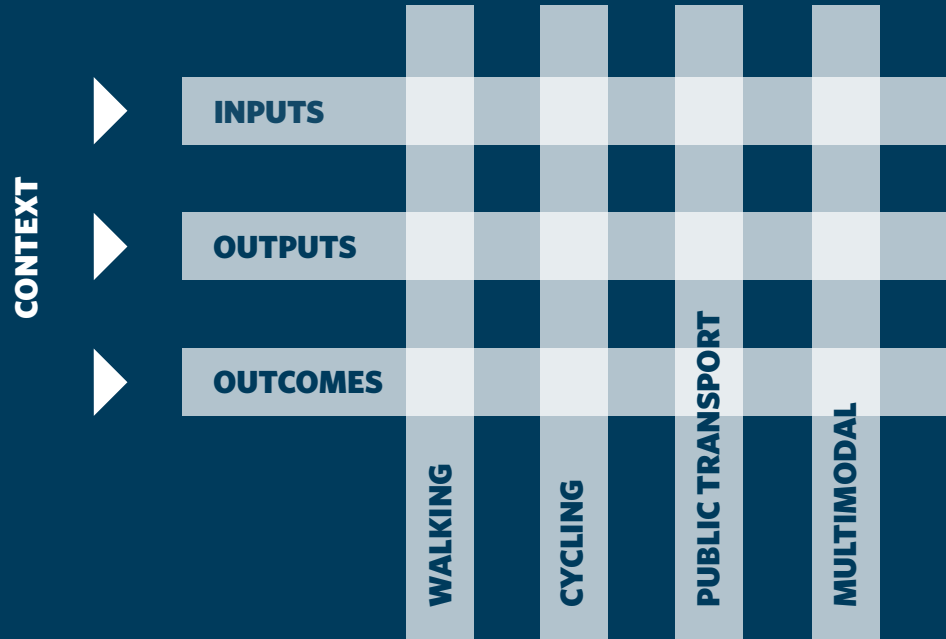


**SUSTAINABLE URBAN MOBILITY PLANS
LOW CARBON PLANS
MAPS
FUNDING**

**SPATIAL DISTRIBUTION
INFRASTRUCTURE AND SERVICE QUALITY
ACCESS
TRAVEL CONCESSION PASSES
SPEED LIMITS**

**TRAVEL BEHAVIOUR
TRAVEL BEHAVIOUR BY KEY AUDIENCES
ENVIRONMENTAL EMISSIONS
SAFETY
COST AND TIME**

The Sustainable Urban Mobility Framework



Multimodal refers to inputs, outputs, and outcomes that cross modes, for example, speed management plans.



Data was gathered from a range of sources

An overview of some of the key data sources:

- **Stats NZ Census data**
- **Ministry of Transport New Zealand Household Travel Survey**
- **Waka Kotahi Land Transport Benefits Framework StoryMap**
- **RAMM (Road Assessment And Maintenance Management)**
- **Waka Kotahi Communities at Risk Register**
- **Regional Public Transport Plans**
- **Council's strategies and plans**
- **Interviews with council staff.**

⊕ Please see technical report for more details



The benchmarking results have been aligned to the Transport Outcomes Framework

Specific benchmarking indicators have been aligned to the relevant five outcomes.

Inclusive access

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

Economic prosperity

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



Healthy and safe people

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

Environmental sustainability

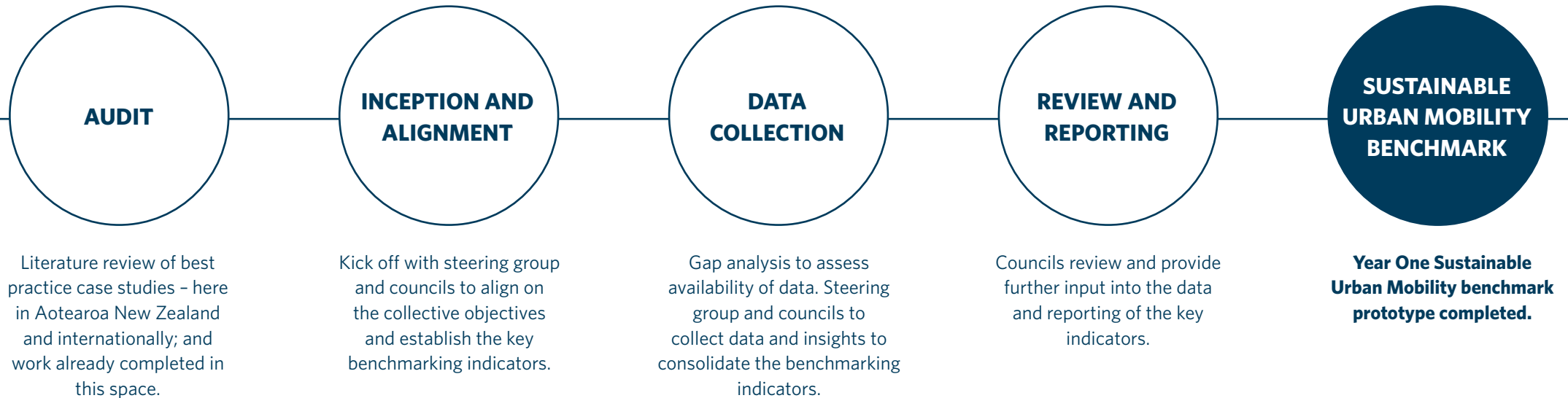
Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

Resilience and security

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

Methodology and approach

A collaborative methodology with the support and input of the five councils



The Sustainable Urban Mobility benchmarking results



The context of the five urban centres

Tāmaki Makaurau Auckland

- Auckland is New Zealand's largest city, with over 1.5 million residents.
- Auckland is facing a range of transport challenges, compounded by fast population growth increasing the demand for travel. Auckland's primary transport challenges relate to high carbon emissions, safety issues, and reduced access due to high levels of car use resulting in congestion and high travel times, as well as a need for a more competitive range of travel choices.
- Accordingly, Auckland has set a goal for people to be able to get where they want to go more easily, safely and sustainably. To achieve this, Auckland is prioritising better connections and increasing travel choices, while maximising safety and environmental protection.

<https://www.stats.govt.nz/tools/2018-census-place-summaries/auckland-region#population-and-dwellings>
<https://at.govt.nz/about-us/transport-plans-strategies/regional-land-transport-plan/>
<https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-by-laws/our-plans-strategies/auckland-plan/transport-access/Pages/default.aspx>



Kirikiroa Hamilton

- Hamilton is home to over 160,000 residents, with population growth expected to place increased pressure on the transport system.
- Hamilton has identified its major future transport challenges to relate to safety, declining walking, cycling and public transport use, high levels of car use for short trips, increasing congestion and travel times, and a lack of infrastructure.
- Hamilton city defines its successful transport future as being one which is multimodal, where people are provided with a range of safe and reliable travel choices.
- This includes setting a new standard for streets that prioritise people, to increase the ease and safety for people walking and cycling. Hamilton is also prioritising travel safety and a transport system that is adaptable and resilient while supporting growth.

<https://www.stats.govt.nz/tools/2018-census-place-summaries/hamilton-city>
<https://www.hamilton.govt.nz/our-services/transport/accesshamilton/Pages/default.aspx>
<https://www.hamilton.govt.nz/our-services/transport/accesshamilton/Pages/default.aspx>; <https://www.futurehamilton.co.nz>



Tauranga

- Tauranga city has a population of over 135,000 people, and is currently facing traffic challenges, such as congestion and safety issues, due to decades of significant investment in the car-based transport network and under investment in other travel modes.
- Tauranga has now set the goals of making it easier for people to get around without relying on their cars and reducing the impacts of transport on the environment.
- To achieve this, Tauranga aims to make the most of the existing transport network by using planning to reduce private vehicle travel demand, encouraging walking, cycling and public transport, and through better management of the transport network.

<https://www.stats.govt.nz/tools/2018-census-place-summaries/tauranga-city>
https://www.tauranga.govt.nz/Portals/0/data/council/strategies/files/tauranga_transport_strategy.pdf
<https://www.tauranga.govt.nz/exploring/transportation-and-roads/sustainable-transport>
<https://www.tauranga.govt.nz/exploring/transportation-and-roads/sustainable-transport>



Pōneke Wellington

- Wellington city is home to over 200,000 people, facing challenges related to population growth and congestion, with the goal of moving more people with fewer vehicles.
- To achieve this, the city is planning to create more attractive travel choices as well as a more compact and sustainable urban environment.
- The city is working on the Let's Get Wellington Moving programme with the Wellington Regional Council and Waka Kotahi. The objectives are enhanced liveability and safety, resilience, efficient and reliable access with reduced reliance of private vehicles.
- This will be achieved through:
 - Urban design and transport principles, which includes better walking facilities, connected cycleways, and high-quality mass rapid transit.
 - More reliable buses and improvements to the road network.
 - Accommodating population growth through intensification of the city centre and suburban centres.

<https://www.stats.govt.nz/tools/2018-census-place-summaries/wellington-city>
<https://lgwm.nz/about/our-plan/>
<https://wcc.maps.arcgis.com/apps/MapSeries/index.html?appid=5d8f3900b7cf4fa99acc218c3d149247>



Ōtautahi Christchurch

- Christchurch city has a population of almost 370,000 people, with recent transport and other infrastructure investments shaped by recovery from the major 2010-2011 earthquakes.
- Rebuilding from the earthquakes has allowed the city a rare opportunity to transform the way it moves and how the transport system performs. Other challenges to overcome include congestion, high levels of reliance on car travel, growth, safety and the environment and climate change.
- The overarching vision for recovery of the transport system is to keep Christchurch moving forward by providing transport choices to connect people and places.
- To achieve this, Christchurch is focussing on improving multimodal access and choice, creating safe, healthy and liveable communities, supporting economic vitality, and environmental enhancements.

<https://www.stats.govt.nz/tools/2018-census-place-summaries/christchurch-city>
<https://www.greaterchristchurch.org.nz/assets/Documents/greaterchristchurch/Plans/ChristchurchStrategyTransportPlan2012.pdf>



OUTCOMES

TRAVEL BEHAVIOUR
TRAVEL BEHAVIOUR BY KEY AUDIENCES
ENVIRONMENTAL EMISSIONS
SAFETY
COST AND TIME

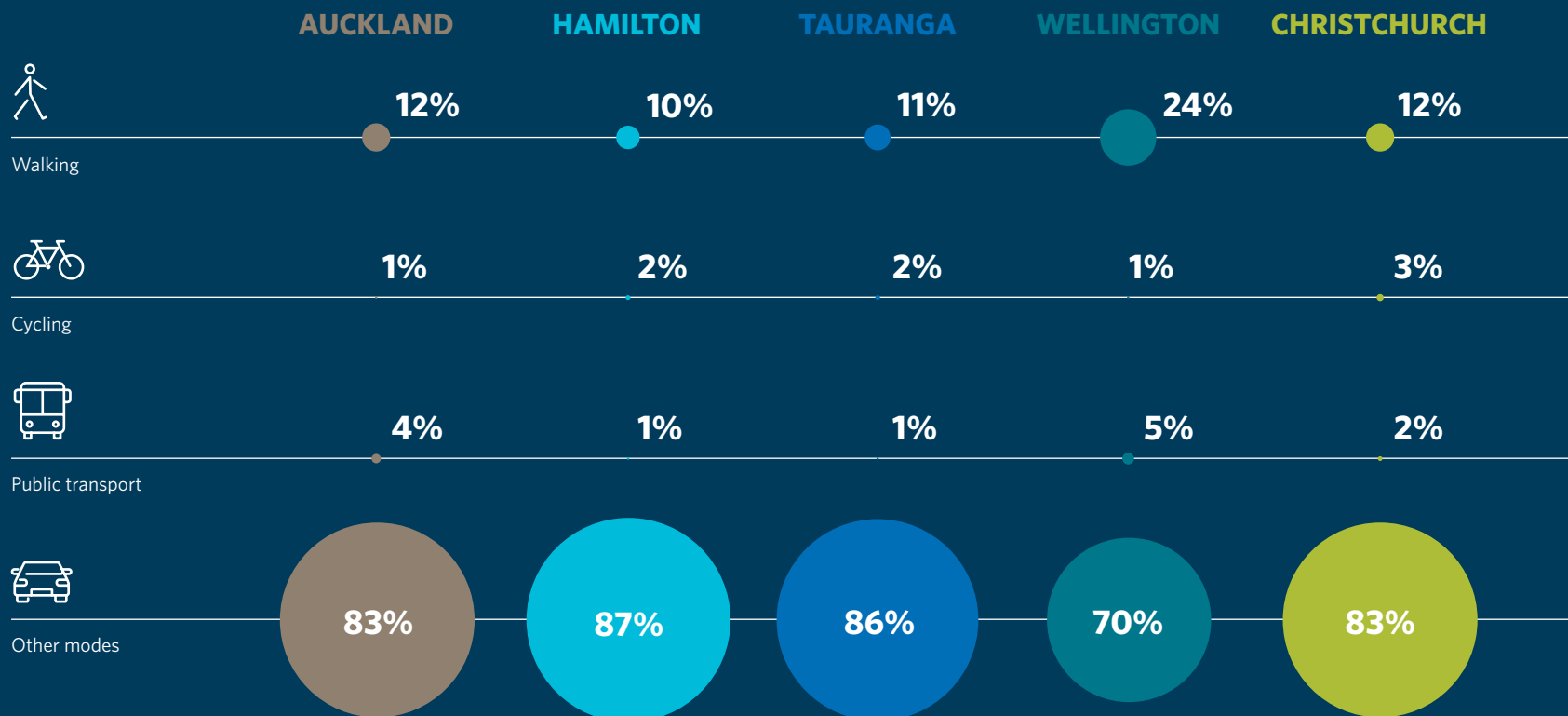
Our inputs and outputs determine the travel outcomes for each of our key urban centres.

Are our outputs helping achieve optimal outcomes?

How might we adjust and enhance our inputs to improve our outputs and outcomes?

Our current Sustainable Urban Mobility behaviours

TRAVEL BEHAVIOUR - TRANSPORT MODE SHARE (ALL TRIPS)



⊕ Please see Table 13 in technical report for more details

Mode share data from the Ministry of Transport New Zealand Household Travel Survey, 3 year moving average from 2015-2018. 'Main Urban Area' boundaries are provided by the survey and are defined as Stats NZ meshblocks in areas with a population >30,000.

Are these SUM behaviours at the level we want them?
 What is holding back further SUM behaviour? Let's explore...

The majority of our trips are short trips

These short trips are a key opportunity for growing Sustainable Urban Mobility behaviour and reducing our emissions.

TRAVEL BEHAVIOUR FOR TRIPS UNDER 5KM

65.5%

of all trips (across all modes, including private vehicles) are under 5km

The high percentage of short trips by car are contributing to our carbon emissions.

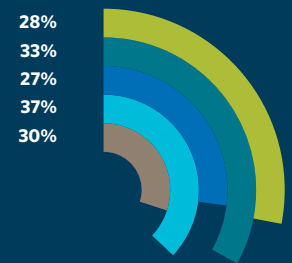
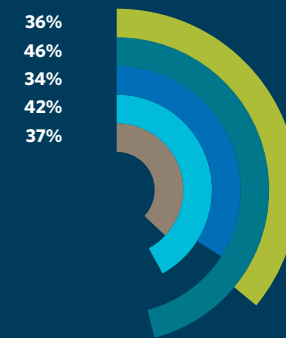
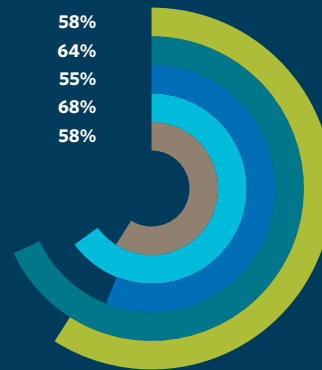
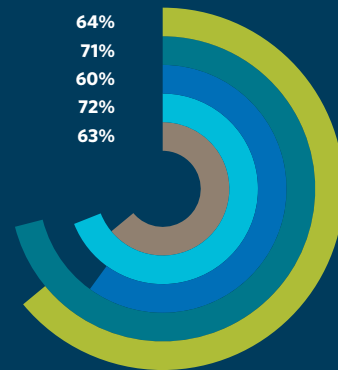


All trips (across all modes) less than 5km

Trips by car less than 5 km

All trips (across all modes) less than 2km

Trips by car less than 2 km



KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 17 in technical report for more details

Data from the Ministry of Transport New Zealand Household Travel Survey, 3 year moving average from 2015-2018. 'Main Urban Area' boundaries are provided by the survey and are defined as Stats NZ meshblocks in areas with a population >30,000. Trips by car include trips by van with a driver. 65.5% of all trips by each mode are less than 5 km, and are less than 2 km across modes

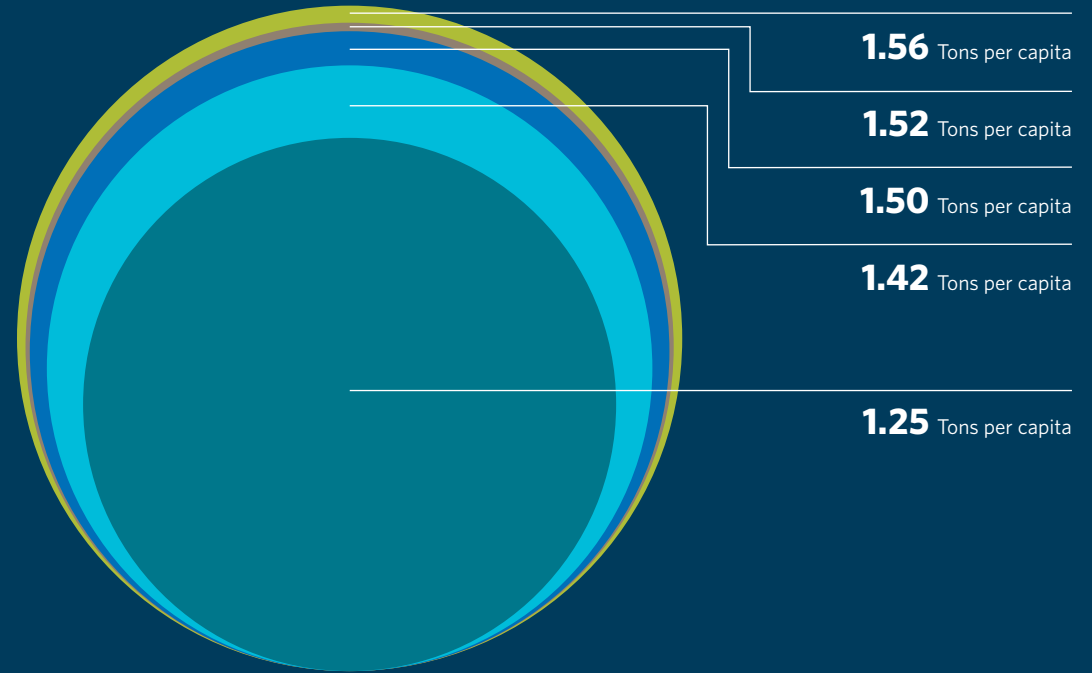
NUMBER OF KILOMETRES TRAVELLED BY VEHICLE

Annual vehicle kilometres travelled (VKT)



ENVIRONMENTAL EMISSIONS

Quantity of greenhouse gas emissions from land transport



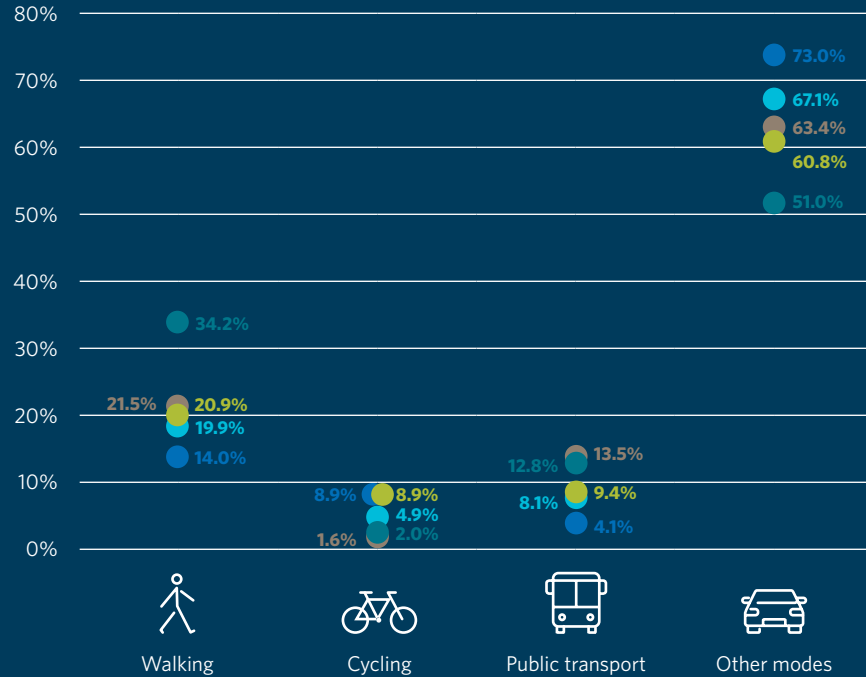
KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 15 and 22 in technical report for more details

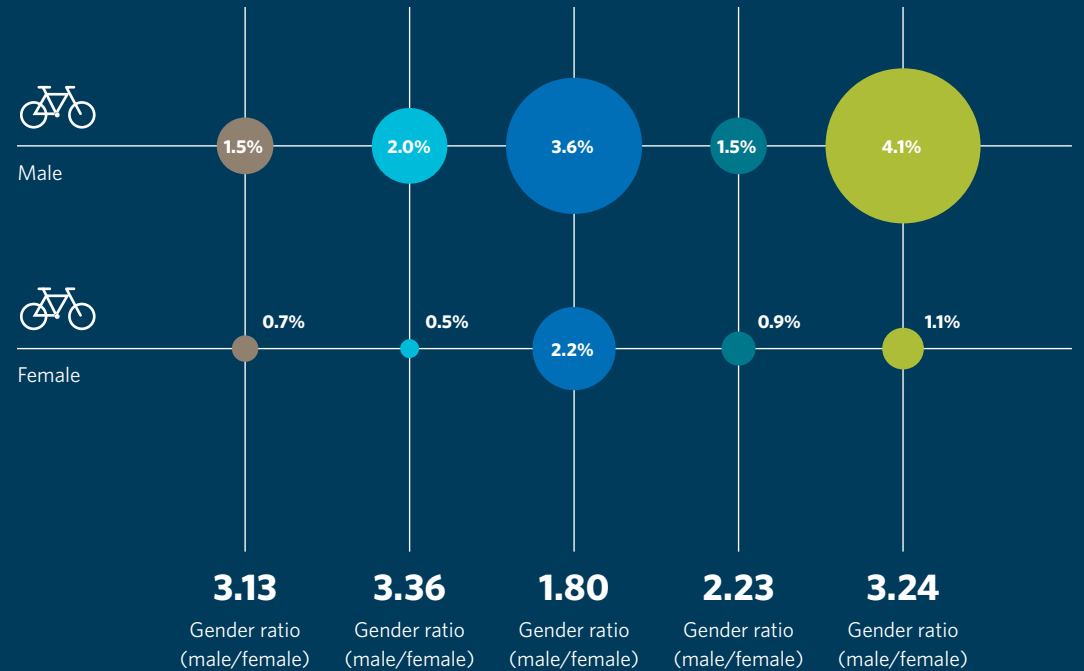
VKT data from 2019/2020 (from 1 July 2019 to 30 June 2020, includes COVID lockdown). Population data from the Stats NZ subnational population estimates (at 30 June 2020) by Statistical Area 2. Greenhouse gas emissions data sourced from the Waka Kotahi Benefits Framework StoryMap. Population data from the Stats NZ subnational population estimates (at 30 June 2020) by Statistical Area 2. Urban area boundaries from the Stats NZ Urban Rural Boundaries 2020.

Let's continue to explore what inputs and outputs can be adjusted to grow SUM and improve our environmental outcomes...

TRANSPORT MODE SHARE TO EDUCATION



CYCLING MODE SHARE BY GENDER



KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 14 and 43 in technical report for more details

Mode share from the Stats NZ 2018 Census ('Main means of travel to education by Statistical Area 2', Urban area boundaries from the Stats NZ Urban Rural Boundaries 2018. Mode share data from the Ministry of Transport New Zealand Household Travel Survey based on total population, 3 year moving average from 2015-2018. 'Main Urban Area' boundaries are provided by the survey and are defined as Stats NZ meshblocks in areas with a population >30,000.

What is contributing to SUM's accessibility to different types of people?

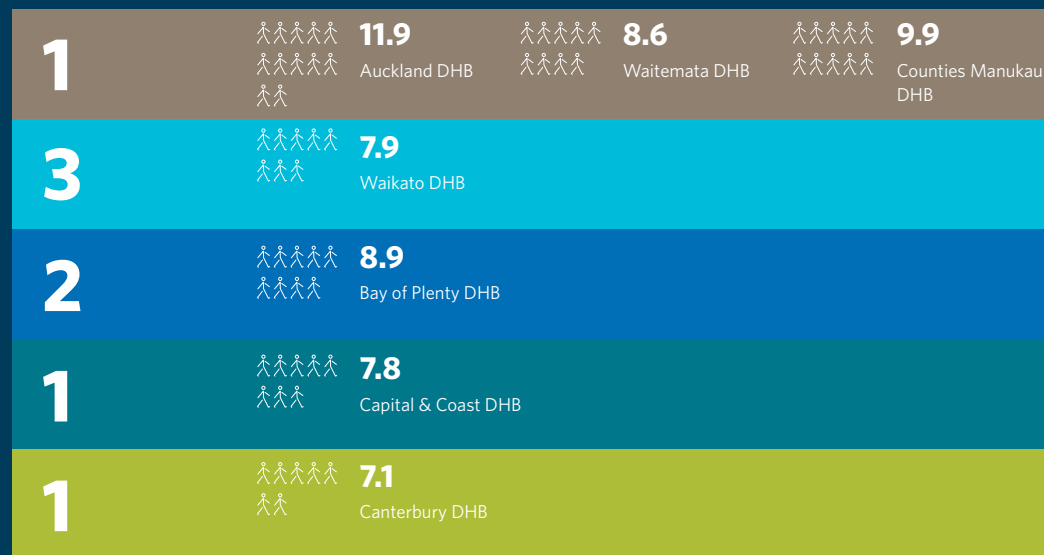
Cycling and walking safety

WALKING SAFETY

Reported pedestrian injuries and fatalities

Personal risk
(pedestrian involved)

Pedestrian hospitalisations per 100,000 people (over a 2-year period from 2016-2018)



CYCLING SAFETY

Reported cyclist injuries and fatalities

Personal risk
(cyclist involved)

Cyclist hospitalisations per 100,000 people
(over a 2-year period from 2016-2018)



KEY: **AUCKLAND** **HAMILTON** **TAURANGA** **WELLINGTON** **CHRISTCHURCH**

 Please see Table 33 and 44 in technical report for more details

The 'personal risk (pedestrian involved)' score was obtained from Waka Kotahi's Communities at Risk Register for 2020 (pedestrian Deaths and Serious Injuries (DSI) / million hours of travel). Pedestrian hospitalisation data from Massey University's Environment Health Indicators New Zealand report (2020).

The 'personal risk (cyclist involved)' score was obtained from Waka Kotahi's Communities at Risk Register for 2020 (cyclist Deaths and Serious Injuries (DSI) / million hours of travel). Cyclist hospitalisation data from Massey University's Environment Health Indicators New Zealand report (2020).

Are our streets safe for SUM behaviour?

Case study

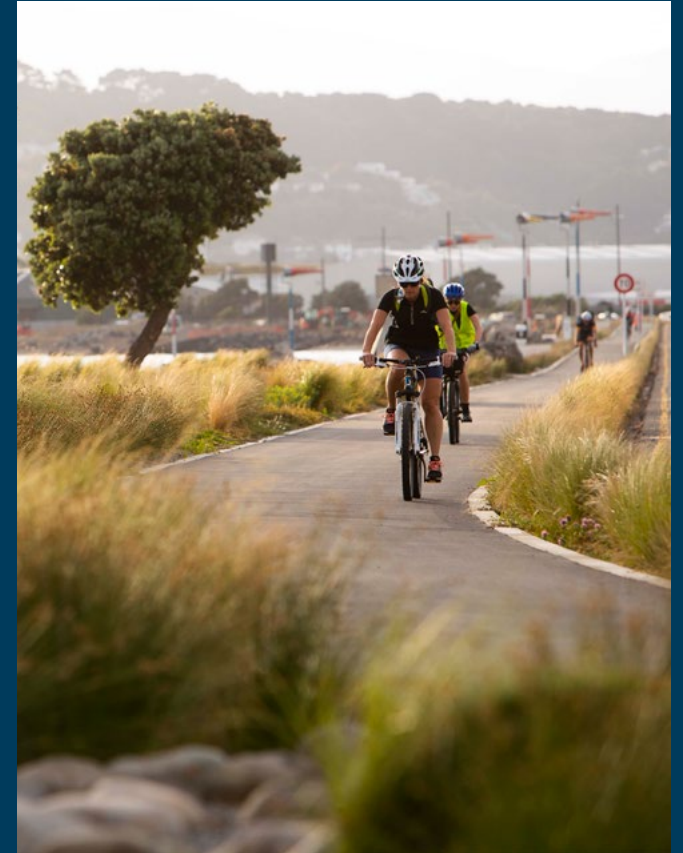
Cobham Drive – Tahitai path

The changes along the seaward side of Cobham Drive have transformed this coastal recreation area to be a safer walking and biking route and a more attractive gateway to Wellington from the east.

The two-way bike path and separate footpath have made things safer and more enjoyable for everyone, and will help to encourage more sustainable ways to travel. Landscaping, planting, seats and bike parking provide places where people can enjoy the views.

This part of Wellington’s coast holds strong connections for mana whenua iwi (Taranaki Whānui ki te Upoko o te Ika, Ngāti Toa Rangatira). Taranaki Whānui gifted the name Tahitai (one tide, one journey) for the walking and biking route to the central city, and worked closely with Wellington City Council on place names and landscape design – the tohu pattern etched onto walls and viewing platforms along Cobham Drive and at Ōmarukaikuru (Point Jerningham) depicts Taranaki maunga and ancestral origins.

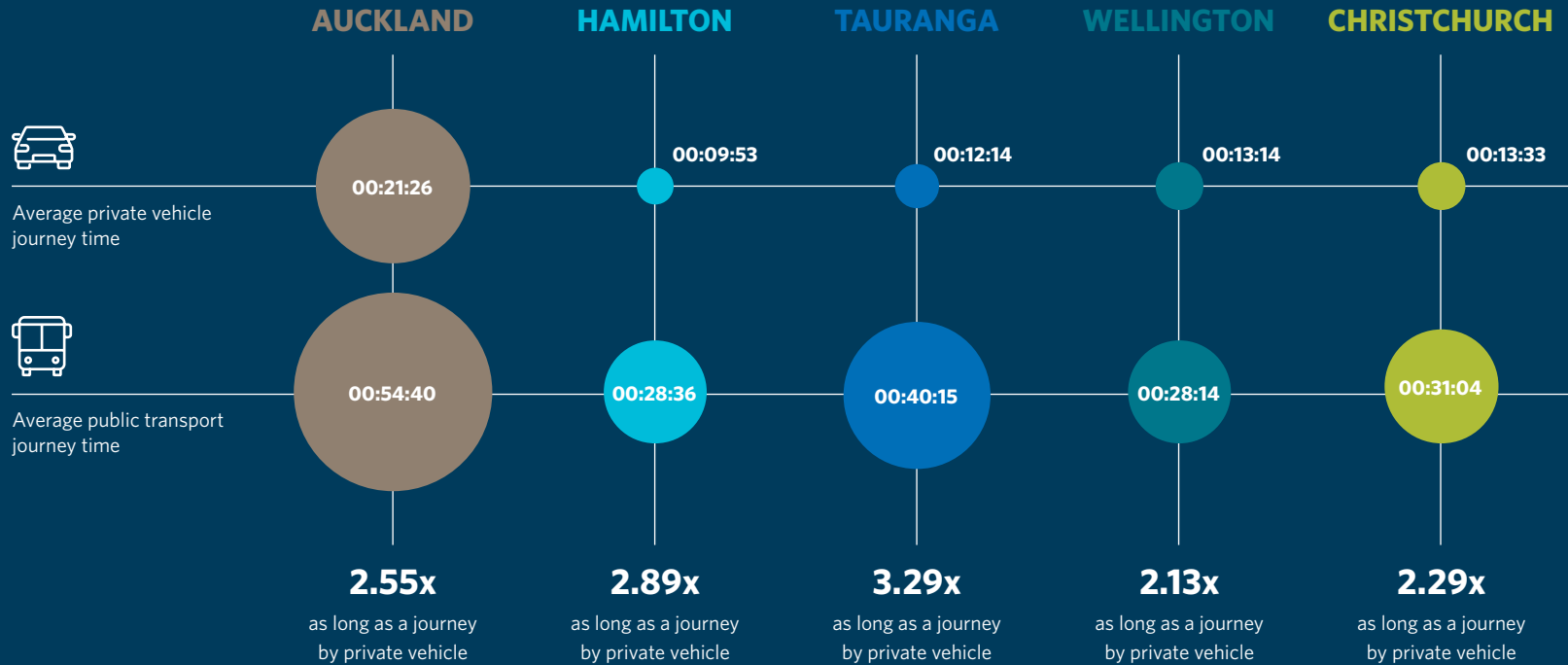
Coastal protection was a big part of this project and the 430m of new rock revetment has strengthened the most vulnerable section of Cobham Drive from erosion and storm damage. The nooks and crannies in the rock bank will also provide more secure and appealing places for kororā (little blue penguins) to nest and moult. As one of the city’s busiest cycling commuter routes, and a popular visitor and recreational destination, the new paths form part of Tahitai and Te Aranui o Pōneke / the Great Harbour Way – the 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.



Time effectiveness of public transport

TIME COMPARISON BETWEEN PUBLIC TRANSPORT JOURNEYS AND PRIVATE VEHICLE JOURNEYS

An average journey (leaving after 8 AM on a Wednesday) to the CBD takes...



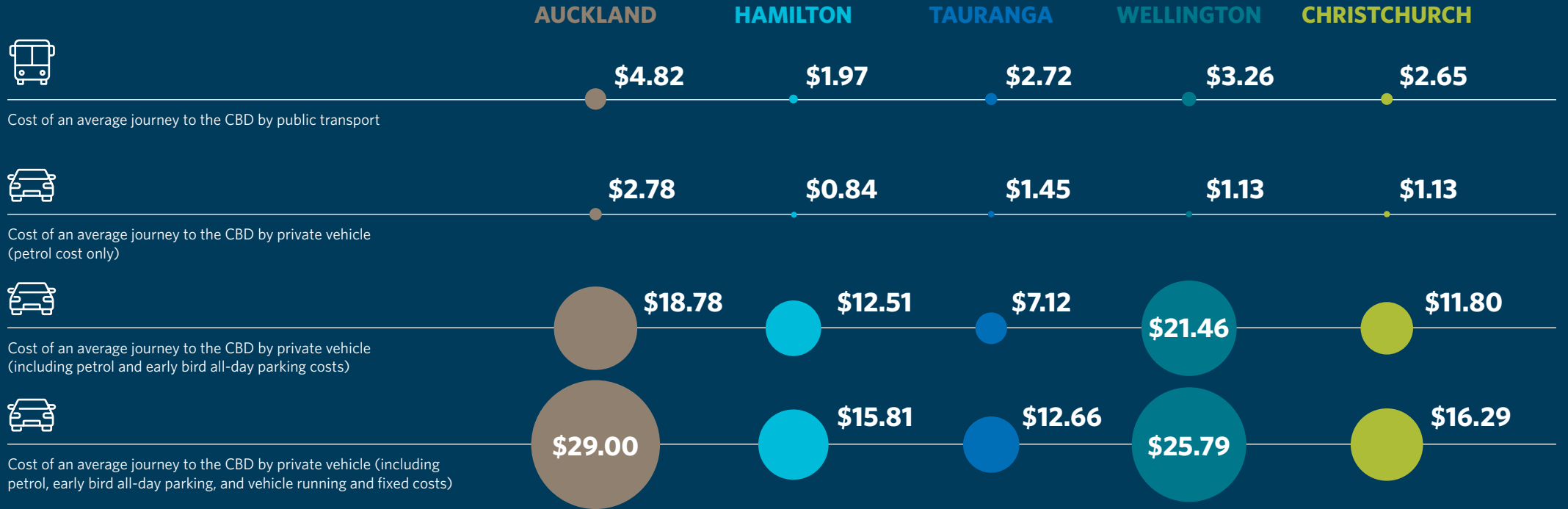
⊕ Please see Table 58 in technical report for more details

Public transport journeys included walk times to get to the most suitable public transport stop, but did not include any extra time between 8:00 AM and when the journey began (i.e. if the journey began at 8:05, the 5 minutes from 8:00 to 8:05 was not included). However, time spent waiting for public transport was included (Google includes some waiting time in their calculation). Transfer time between services was also included. Congestion delays for both public transport and private vehicle journeys was also factored into the overall time (as the start time was specifically chosen to represent rush hour traffic conditions).

Are our public transport options as fast as they can be to compete with driving?

Cost effectiveness of public transport

COST COMPARISON BETWEEN PUBLIC TRANSPORT JOURNEYS AND PRIVATE VEHICLE JOURNEYS



KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

+ Please see Table 59 in technical report for more details

The snapped SA1 centroids used in the 'Time to travel by public transport compared to the time to travel by private vehicle' indicator were used as the journey starting points for the cost comparisons, and the snapped CBD SA1 centroid was used as the destination. As with the time comparison indicator, only SA1 centroids within the Stats NZ 2018 major urban area boundaries were modelled. Any journey where the walk time was less than the public transport journey time was excluded. Results will be sensitive to the time of day and week. To generate the average cost of a public transport journey, a map of the public transport fare zones was obtained for each city from their respective provider (Auckland Transport, Busit (Hamilton), Baybus (Tauranga), Metlink (Wellington), and Christchurch Metro). To generate the average cost of a private vehicle journey, average fuel cost information was obtained for each area using PriceWatch, and average parking cost information was obtained by getting the mean cost of the early bird all-day parking fare from three Wilsons parking buildings offering early bird pricing which were located closest to the destination point for each urban area. For Tauranga, early bird all-day parking fares from TCC parking buildings were used instead, as Wilsons does not operate there. Please see technical report for further detail.

Are our public transport options as cost effective as they can be to compete with driving?

OUTPUTS

SPATIAL DISTRIBUTION
INFRASTRUCTURE AND SERVICE QUALITY
ACCESS
TRAVEL CONCESSION PASSES
SPEED LIMITS

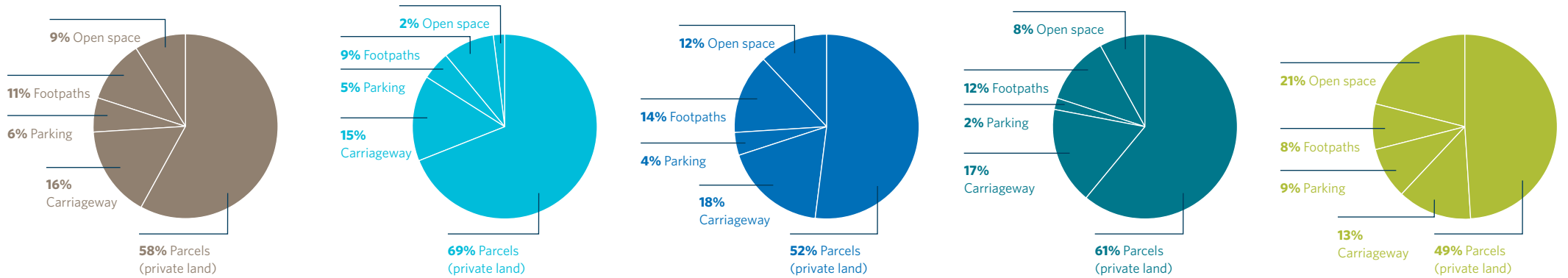
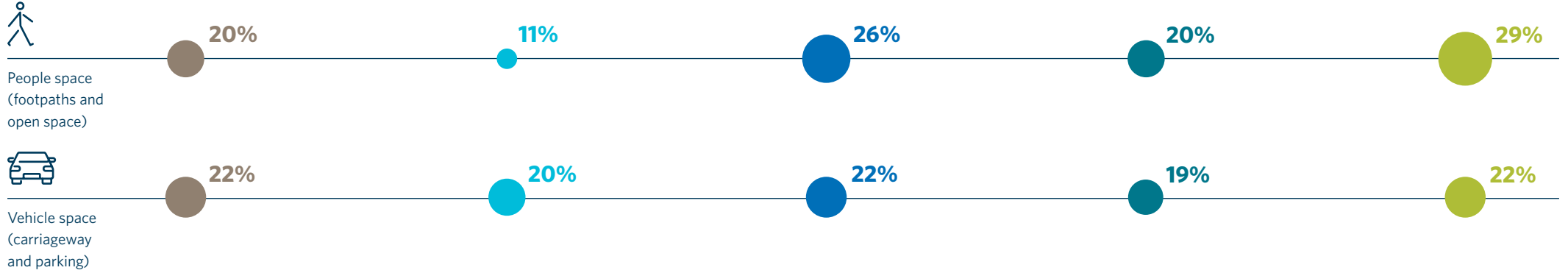
Our inputs and outputs play a key role in determining the outcomes for each of our key urban centres.

Are our outputs helping achieve optimal outcomes?

Are our inputs supporting the optimal outputs we want to see?

Space dedicated to Sustainable Urban Mobility

PROPORTION OF TOTAL CENTRAL CITY STREET SPACE DEDICATED TO SUSTAINABLE URBAN MOBILITY



KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 9 in technical report for more details

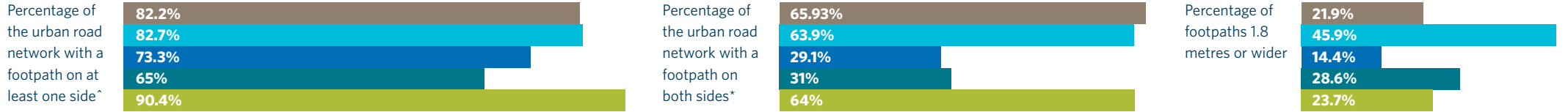
Street space calculated by AitkenTaylor using data from LINZ and Google

YEAR ONE SUM BENCHMARK

Are we dedicating enough space and infrastructure for our desired Sustainable Urban Mobility outcomes?

Walking infrastructure and service levels

FOOTPATH LEVELS OF SERVICE

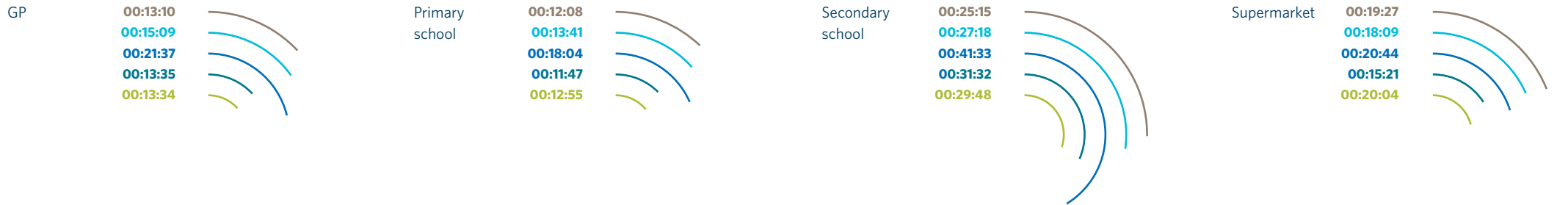


PEDESTRIAN CROSSINGS



AVERAGE WALKING TIME TO KEY DESTINATIONS

Average walking time from where people live to key destination



*Where at least 70% of the road length is covered by a footpath on at least one side

*Where at least 70% of the road length is covered by a footpath on both the left and right

#Condition grade 1-3 is considered an 'acceptable' standard (where 1 = very good, 2 = good, and 3 = average).

Auckland, Hamilton, Tauranga, and Christchurch data obtained from RAMM. Wellington data obtained from a footpath network GeoJSON file from Wellington City Council.

Method: Total number of pedestrian crossings (both signalled and zebra) / total urban area size.

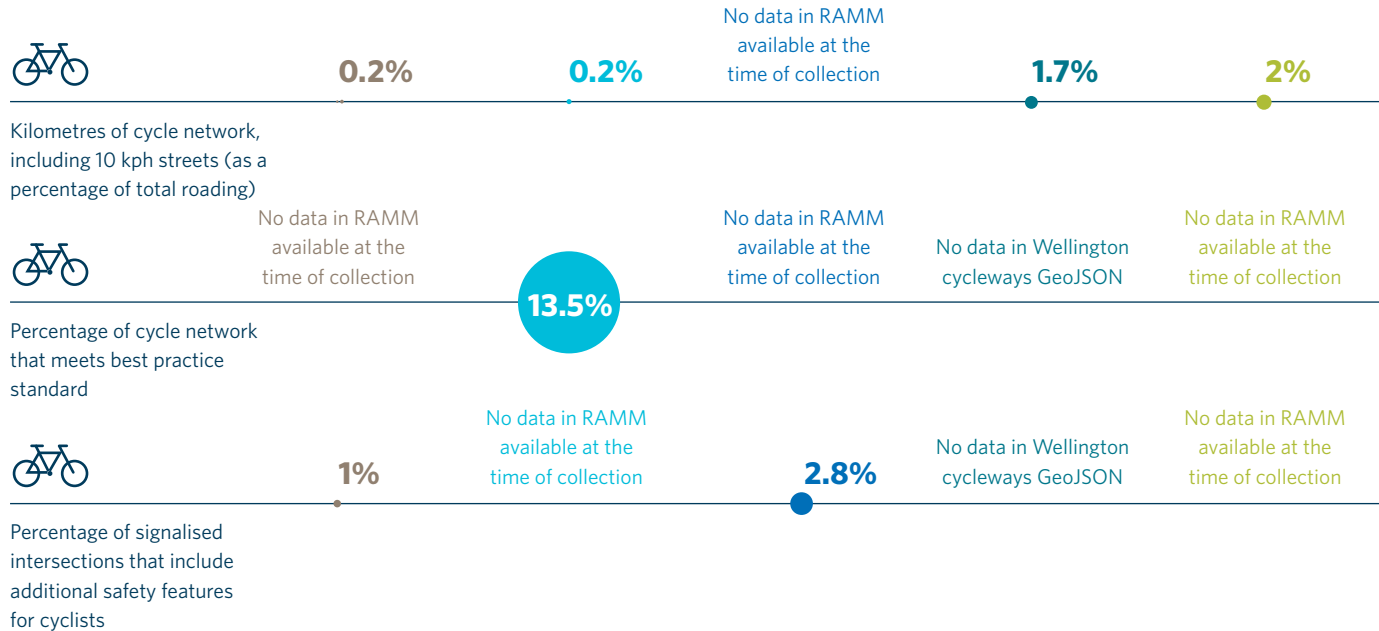
Data from the Ministry of Transport New Zealand Household Travel Survey, 3 year moving average from 2015-2018. 'Main Urban Area' boundaries are provided by the survey and are defined as Stats NZ meshblocks in areas with a population >30,000.

KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 20 and 26-30 in technical report for more details

Cycling infrastructure and service levels

LEVEL OF SERVICE OF OUR CYCLE NETWORKS



KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 38, 40 and 41 in technical report for more details

Auckland, Hamilton, Tauranga, and Christchurch data obtained from RAMM. Wellington data obtained from GeoJSON files from Wellington City Council.

YEAR ONE **SUM BENCHMARK**

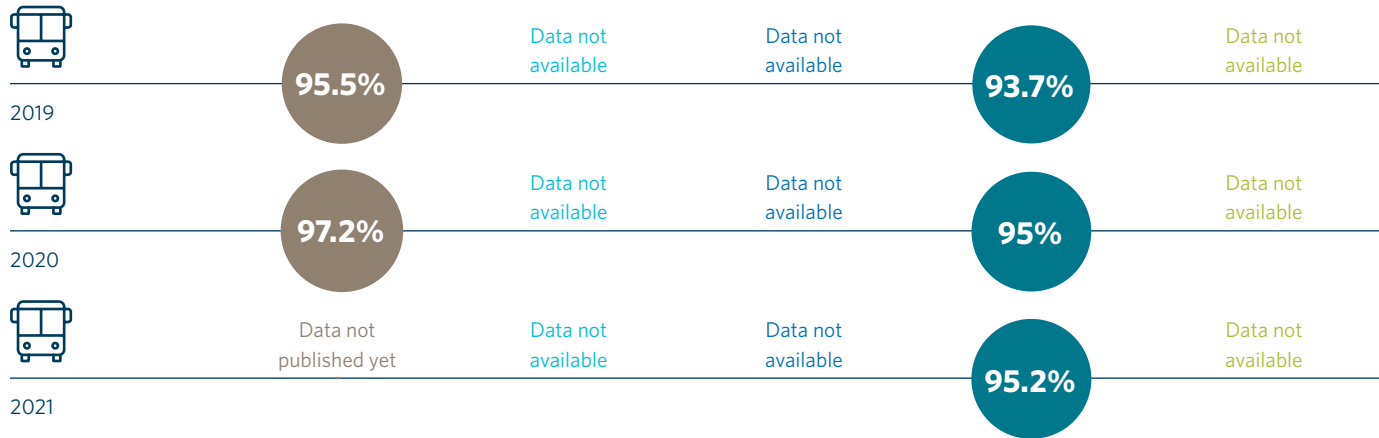
Are we gathering sufficient cycling infrastructure data?

Do our cycle networks support the cycling outcomes we are looking to achieve?



Public transport and service levels

AVERAGE PUNCTUALITY OF BUS SERVICES



PERCENTAGE OF BUS FLEETS THAT RUN ON CLEAN ENERGY



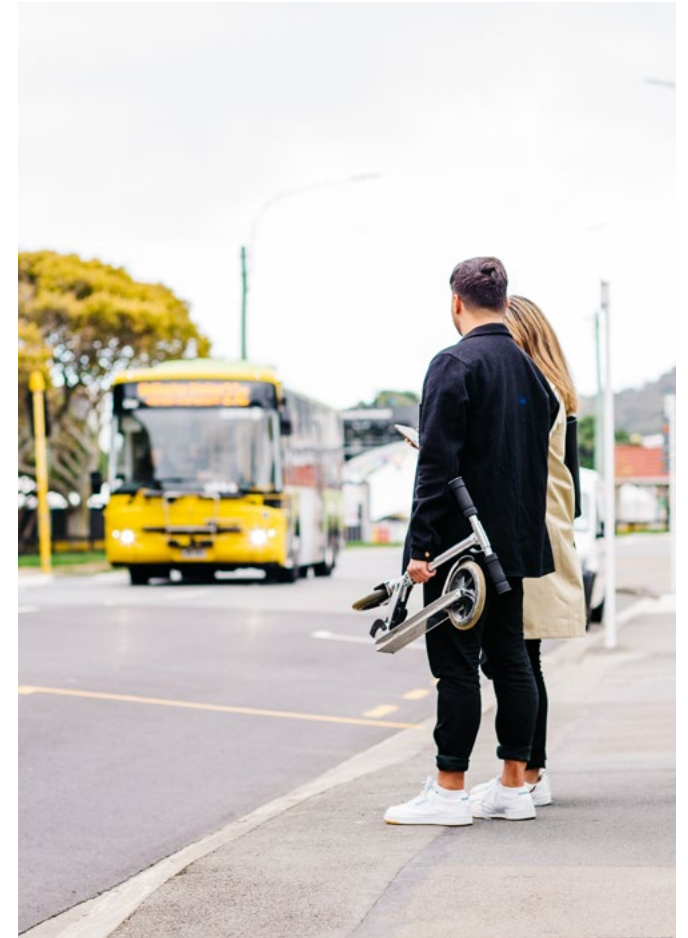
KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 51 and 54 in technical report for more details

Data from public transport providers
Data from Waka Kotahi (May 2021). Details of Auckland buses from Auckland Transport (June 2021).

Do our public transport levels of service support the outcomes we are looking to achieve?

Do our inputs (plans and funding) allow us to improve the levels of service?



Case study

Tāmaki Makaurau Auckland

Auckland's CityLINK Electric Bus Fleet

As part of Auckland's Low Emission Bus Roadmap, Auckland Transport and operator NZ Bus unveiled the new electric fleet for the CityLINK bus service in April 2021.

"The introduction of these new fully electric buses is another step toward electrifying the rest of Auckland's bus fleet. When completed, this will stop around 93,000 tonnes of CO₂ entering the atmosphere every year compared to 2019 emissions levels.

We are working with central government towards bringing forward the transition to a fully electric bus fleet, and we're looking to halt the purchase of new diesel buses from July this year as part of our commitment to a carbon-free city."

This GHG emissions value is equivalent to:

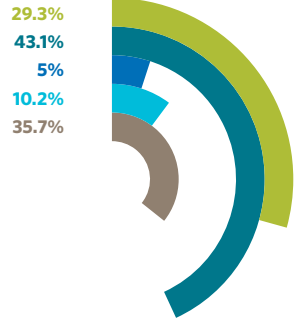
- 915 number of typical NZ homes' electricity use for one year. (Typical NZ residential electricity use 7133 kWh/year - 0.75 tonne of CO₂e per house per year)
- 299 number of average petrol car (1600< Car cc <2000 cc) driven for one year. (Average VKT/capita of light passenger vehicle is 9265 km/year @2017 MOT; GHG emissions of passenger petrol car travel 0.248 kgCO₂e/km @2019 MOE) - 2.30 tonne of CO₂e per car per year)



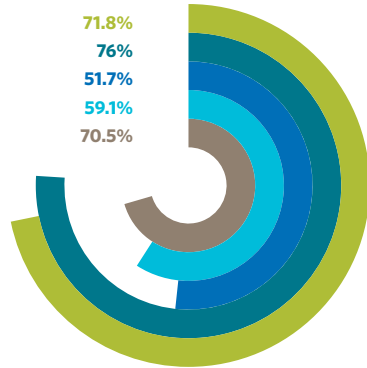
ACCESS TO PUBLIC TRANSPORT

Percentage of the population who live within a 500-metre walk of a public transport stop by frequency - this includes all modes of public transport*

Public transport service every 15 minutes



Public transport service every 30 minutes



Average number of jobs that can be reached by a 45-minute public transport journey - this includes all modes of public transport*

268,141

36% of jobs within the urban area can be reached by a 45-minute public transport journey

110,491

100% of jobs within the urban area can be reached by a 45-minute public transport journey

48,636

73% of jobs within the urban area can be reached by a 45-minute public transport journey

75,936

48% of jobs within the urban area can be reached by a 45-minute public transport journey

193,902

91% of jobs within the urban area can be reached by a 45-minute public transport journey

KEY: **AUCKLAND** **HAMILTON** **TAURANGA** **WELLINGTON** **CHRISTCHURCH**

⊕ Please see Table 55 and 57 in technical report for more details

*Service area polygons of access to public transport stops with service every 15 minutes and every 30 minutes obtained from Waka Kotahi's Land Transport Benefits Framework StoryMap (where 15-minute service areas are based on public transport data from 2019, 30-minute service areas are based on public transport data from 2018, and the walking network is from OpenStreetMap). Major Urban Area boundaries obtained from Stats NZ Urban Rural Boundaries (2018). Population data obtained from Stats NZ Census 2018 Statistical Area 1 (SA1).

#Meshblocks with the average number of jobs a person could reach within a 45-minute public transport journey were obtained from Waka Kotahi's Land Transport Benefits Framework StoryMap, using meshblock boundaries and population data from the Stats NZ 2013 Census. Major Urban Area boundaries were obtained from the Stats NZ Urban Rural Boundaries 2018.

The number of jobs that could be accessed for each meshblock was multiplied by the total population within that meshblock. The totals were then summed for all the meshblocks that intersected the Major Urban Area boundary for each city and divided by the total population of all the intersected meshblocks to produce a population weighted average number of jobs per person within each urban area. Journey time will be sensitive to time and day.

Are our public transport services accessible enough?
Do our inputs (plans and funding) allow us to improve the levels of service?

Public transport concessions

Concession type	AUCKLAND		HAMILTON		TAURANGA		WELLINGTON		CHRISTCHURCH	
	Free	Discounted	Free	Discounted	Free	Discounted	Free	Discounted	Free	Discounted
Under 5 years	✓		✓			✓	✓			✓
5-14/15 years	On weekends ✓		✓		✓	✓		✓		✓
Secondary school students		✓	✓		For selected school routes ✓	✓		✓		✓
Tertiary students		✓	✓		✓		✓			
Senior citizens	During off-peak ✓		During off-peak ✓		Anytime ✓		During off-peak ✓		During off-peak ✓	✓
Mobility impaired		✓	Free also for companion ✓		✓		✓			✓
Frequent users				Weekly fare cap ✓						
Off peak							✓			

Are there key sectors of the public we need to consider providing further concessions for?

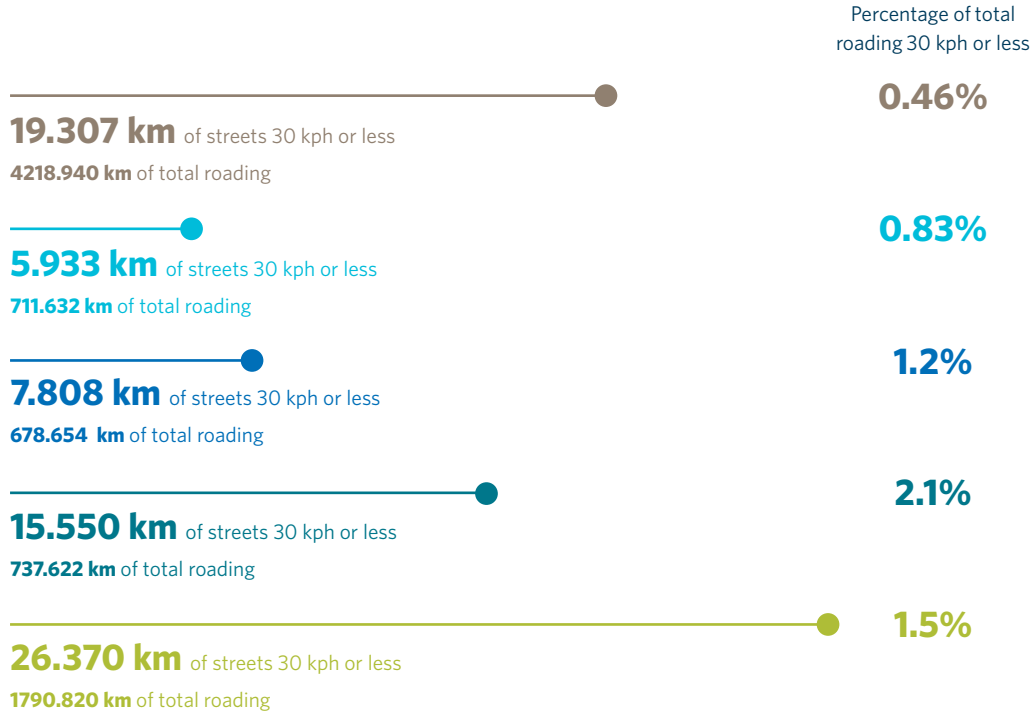


⊕ Please see Table 47 in technical report for more details

Street speed limits

Healthy and safe people

STREETS WITH A SPEED LIMIT OF 30 KPH OR LESS



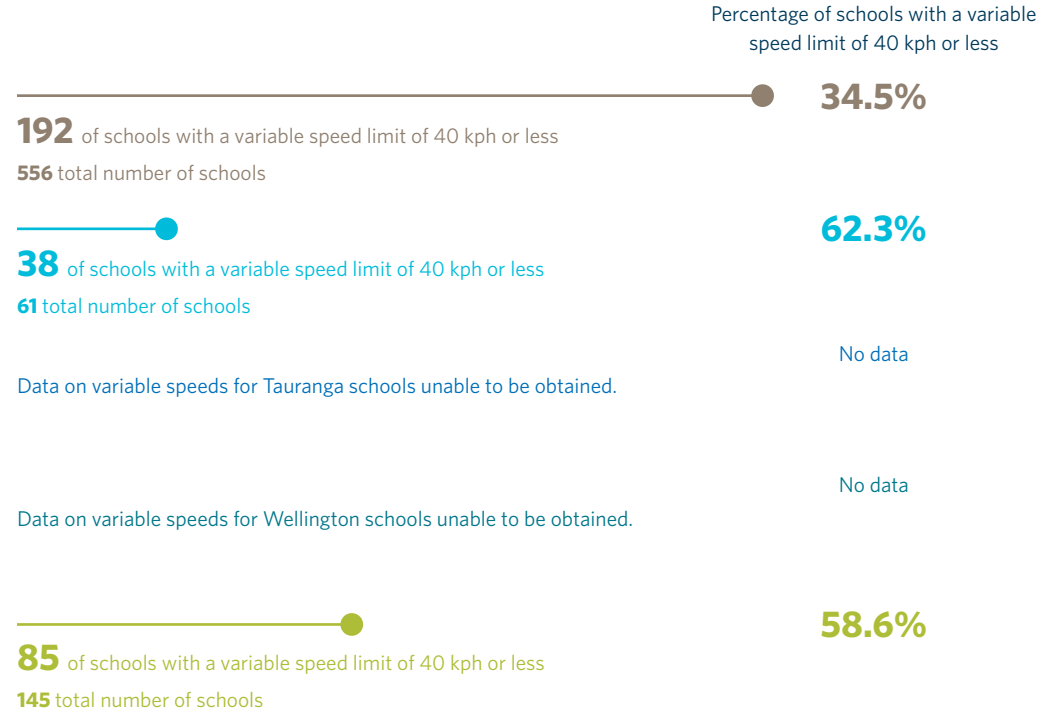
KEY: AUCKLAND HAMILTON TAURANGA WELLINGTON CHRISTCHURCH

⊕ Please see Table 10 and 11 in technical report for more details

Data sourced from MegaMaps (2021). MegaMaps incorporates Stats NZ Urban Rural 2020 boundaries. Method: Streets within the urban area were exported from MegaMaps, which includes the speed limit of each street as well as its length. Data on schools with variable speed limits sourced from Waka Kotahi. Data on the total number of schools sourced from the Ministry of Education.

YEAR ONE SUM BENCHMARK

PERCENTAGE OF SCHOOLS WITH A SPEED LIMIT OF 40 KPH OR LESS



Are our roads safe enough to encourage Sustainable Urban Mobility?

How do our speed limits compare to our safety outcomes?

INPUTS

SUSTAINABLE URBAN MOBILITY PLANS
LOW CARBON PLANS
MAPS
FUNDING






Our inputs play a key role in determining the outputs and outcomes for each of our key urban centres.

Are our inputs helping achieve optimal outputs and outcomes?

How might we adjust and enhance our inputs to improve our outputs and outcomes?

Multimodal plans and targets





OVERARCHING SUSTAINABLE URBAN MOBILITY PLAN

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Plan	 <p>Auckland Plan 2050 (2018) Better Travel Choices (2018)</p>	 <p>Access Hamilton Strategy, (2010)* *A new Access Hamilton Strategy is currently under development.</p>	 <p>Urban Form and Transport Initiative (2020)</p>	 <p>Wellington Urban Growth Strategy 2014-2043 (2014)* *This will be superseded by the Wellington Spatial Plan, currently under development. Let's Get Wellington Moving programme</p>	 <p>Christchurch Transport Strategic Plan 2012-2042, 2012* *A new Transport Strategic Plan is currently under development.</p>
Indicators	<p>✓ Yes – the Auckland Plan 2050 does include indicators. Better Travel Choices does not currently include any indicators.</p>	<p>✗ No – it remains to be seen whether the new Access Hamilton strategy will include indicators.</p>	<p>✓ Yes</p>	<p>✓ Somewhat – the current Wellington Urban Growth Strategy includes one relevant indicator. It remains to be seen whether the Wellington Spatial Plan will include indicators.</p>	<p>✓ Yes</p>
Targets	<p>✗ No</p>	<p>✗ No – it remains to be seen whether the new Access Hamilton strategy will include targets.</p>	<p>✗ No</p>	<p>✗ No – it remains to be seen whether the Wellington Spatial Plan will include targets.</p>	<p>✗ Not currently – the new Transport Strategic Plan will include targets.</p>
Reporting and monitoring of the targets	<p>✓ Yes</p>	<p>✗ No</p>	<p>✓ Yes</p>	<p>✓ Somewhat</p>	<p>✓ Somewhat</p>
Is a multimodal network map present?	<p>✓ Auckland Transport Future Connect Map</p>	<p>✓ Hamilton City Council maintains an internal GIS map which includes multiple modes and a hierarchy of the network.</p>	<p>✗ No multimodal hierarchical network map.</p>	<p>✗ No multimodal hierarchical network map.</p>	<p>✓ Christchurch City Council ONF Map</p>

⊕ Please see Table 1 in technical report for more details

Low carbon plans and emissions targets

LOW CARBON PLAN

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Is a plan present?	 Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan	 Hamilton 2020/2021 Climate Change Action Plan Hamilton City Council are also currently working on a 2050 climate strategy.	Not currently – but a process is underway to produce an environment strategy which will include a carbon reduction focus.	 Te Atakura: First to Zero	 Ōtautahi Christchurch Climate Change Strategy (draft)
Targets	✓ Yes – To reduce emissions to zero by 2050.	✓ Somewhat – A target to reduce Hamilton City Council's emissions by 50% by 2030 is included, but it does not include an overall target for the city. It is expected that this will be set in the 2050 climate strategy.	× Not applicable	✓ Yes – To reduce emissions to zero by 2050.	✓ Yes – To reduce emissions to zero by 2045.
Reporting and monitoring of the targets	✓ Yes – Annually. 'Auckland's Greenhouse Gas Inventory' which is released on the Knowledge Auckland website. Emissions are also reported in Council's Annual Reports.	✓ Yes – Annually. Yearly emissions profile showing Council's emissions and an emissions profile for the city, but this is not yet linked to an emissions reduction target.	✓ Yes – Although Tauranga City Council does not yet have a low carbon strategy, it does still publish an emissions profile for the city.	✓ Yes – Annually. Te Atakura: First to Zero strategy. Greenhouse Gas Inventory Report has been released on Wellington City Council's Zero Carbon Capital website. Included in Council's Annual Report 2019–2020.	✓ Yes – Christchurch City Council currently publishes an emissions profile on their climate change page. The draft Ōtautahi Christchurch Climate Change Strategy also identifies the need for more substantial reporting to be established.

Are we on track to meet our emissions targets?
 How could we further incorporate Sustainable Urban Mobility to lower our emissions?

+ Please see Table 1 in technical report for more details





Walking, cycling and public transport plans

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
WALKING PLAN	Auckland Plan 2050	Access Hamilton Strategy Council have advised that a new Active Travel Plan will be created as part of the new Access Hamilton Strategy	Tauranga Transport Strategy 2012-2042	Wellington City Walking Policy	Christchurch Transport Strategic Plan 2012-2042 (currently in the process of being updated)
Indicators	✓ Yes - Indicators are quite broad and look at multiple modes.	✗ Unable to confirm - It remains to be seen whether the new plan will include any indicators or targets.	✗ No	✓ Yes	✓ Yes - Indicators are quite broad and look at multiple modes.
Targets	✗ No	✗ No	✗ No	✓ Somewhat - the Wellington Annual Plan includes some indicators relating to walking.	✗ Not currently - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ No	✗ No	✓ Somewhat	✓ Somewhat
CYCLING PLAN	Auckland Plan 2050	Hamilton Biking Plan 2015-2045	Tauranga Cycle Plan	Wellington City Cycling Policy	Included as part of the Christchurch Transport Strategic Plan 2012-2042 (currently in the process of being updated).
Indicators	✓ Yes - Indicators are quite broad and look at multiple modes.	✓ Yes	✓ Yes	✓ Yes	✓ Yes
Targets	✗ No	✗ No - Except for the user satisfaction indicator.	✗ No - Except for the mode share indicator.	✗ No	✗ Not currently - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ Unclear	✗ Not currently	✓ Somewhat	✓ Somewhat
PUBLIC TRANSPORT PLAN	Auckland Regional Public Transport Plan 2018-2028	Waikato Regional Public Transport Plan 2018-2028	Bay of Plenty Regional Public Transport Plan 2019	Wellington Regional Public Transport Plan , soon be replaced by the Wellington Regional Public Transport Plan 2021-2031 (currently in draft).	Canterbury Regional Public Transport Plan 2018-2028
Indicators	✓ Yes	✓ Yes	✓ Yes	✗ Not currently - The new Wellington Regional Public Transport Plan 2021-2031 (currently in draft) includes a set of indicators to measure performance, all of which include specific targets.	✓ Yes
Targets	✓ Yes - Plan includes expected outcomes for 2021.	✗ No - Except for the user satisfaction indicator.	✓ Yes	✗ Not currently	✓ Yes
Is performance monitored and reported on?	✓ Yes	✓ Yes	✓ Yes	✗ Not currently	✓ Yes

⊕ Please see Table 1 in technical report for more details

Infrastructure improvement programmes

PRESENCE AND COMPREHENSIVENESS OF AN INFRASTRUCTURE IMPROVEMENT PROGRAMME

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Is the programme present?	 Auckland Transport Asset Management Plan 2018-2021	 The Hamilton Network Operating Framework, which comprises three documents — the Network Operating Framework Overview, the Network Operating Plan, and the Network Improvement Plan	Details of an infrastructure improvement programme were not provided and has not been located.	 Wellington Transport Activity Management Plan	 Christchurch Road Operations Activity Management Plan
Does the programme incorporate the delivery of walking and cycling improvements as part of road maintenance and renewals?	✓ Yes – the plan mentions that footpath and cycleway renewals should be treated as an opportunity to improve amenity and safety.	✓ Somewhat – the Network Improvement Plan identifies locations where changes will be required to achieve the level of service set out in the Network Operating Framework Overview and sets out a plan for how and when those changes will be made. It prioritises based on demand.	× Not applicable	✓ Not yet – the current plan generally only requires replacement to current standards, but Wellington City Council are working on developing a ‘build back better’ strategy which will trigger a fuller consideration of improvements to implement their Sustainable Transport Hierarchy. The delivery of walking and cycling improvements is incorporated into Let’s Get Wellington Moving projects.	✓ Somewhat – the Christchurch Long Term Plan includes a Cycleway Improvement Reseal Support programme.

⊕ Please see Table 3 in technical report for more details

Funding for walking

FUNDING FOR FOOTPATH MAINTENANCE AND RENEWALS

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Funding for footpath maintenance and renewals per capita 2020/21	\$14.44	\$31.08	\$21.71	\$39.61	\$11.21
Total funding for footpath maintenance and renewals 2020/21 FY	\$22,700,000* *Part of the total funding figure includes cycleway maintenance costs so the actual funding for footpaths will be somewhat less than is reported.	\$5,079,000	\$2,991,000	\$8,286,000	\$4,246,000
Cost breakdown	<ul style="list-style-type: none"> • \$3,300,000 for footpath and cycleway maintenance (combined total). • \$19,400,000 for footpath renewals. 	<ul style="list-style-type: none"> • \$5,079,000 for replacement of footpaths. 	<ul style="list-style-type: none"> • \$2,991,000 for local roads pedestrian improvements. 	<ul style="list-style-type: none"> • \$390,000 for street furniture maintenance. • \$6,775,000 for footpaths asset stewardship. • \$921,000 for pedestrian network maintenance. • \$200,000 for pedestrian network structures maintenance. 	<ul style="list-style-type: none"> • \$4,246,000 for footpath renewals.
Data source	Auckland Transport Asset Management Plan 2018-2021	Hamilton City Council 2020/21 Annual Plan	Tauranga City Council 2020/21 Annual Plan	Wellington City Council 2020/21 Annual Plan	Christchurch City Council 2020/21 Annual Plan

⊕ Please see Table 24 in technical report for more details

Funding figures are based on information reported in the relevant plans but may not fully account for actual spending on footpath maintenance and renewals. Per capita funding should therefore be treated with caution.

Funding for cycling

FUNDING FOR CYCLEWAY MAINTENANCE AND RENEWALS

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Funding for cycleway maintenance and renewals per capita 2020/21	A total funding figure of \$3,300,000 is included for footpath and cycleway maintenance in the Auckland Transport Asset Management Plan 2018–2021.	Funding for cycleway maintenance and renewals not provided in the Hamilton City Council 2020/21 Annual Plan.	Funding for cycleway maintenance and renewals not provided in the Tauranga City Council 2020/21 Annual Plan.	\$6.97	Funding for cycleway maintenance and renewals not provided in the Christchurch City Council 2020/21 Annual Plan.
Total funding for cycleway maintenance and renewals per capita 2020/21	–	–	–	\$1,458,000	–
Details	<ul style="list-style-type: none"> Scale: Auckland Council Time period: 2020/21 prospective funding 	<ul style="list-style-type: none"> Scale: Hamilton City Council Time period: 2020/21 prospective funding 	<ul style="list-style-type: none"> Scale: Tauranga City Council Time period: 2020/21 prospective funding 	Cost breakdown from the Wellington City Council 2020/21 Annual Plan: <ul style="list-style-type: none"> \$176,000 for cycleways maintenance. \$1,282,000 for cycleways asset stewardship. Other details: <ul style="list-style-type: none"> Scale: Wellington City Council Time period: 2020/21 prospective funding Wellington City population: 209,181 (from Stats NZ 2018 Census) 	<ul style="list-style-type: none"> Scale: Christchurch City Council Time period: 2020/21 prospective funding
Data source	Auckland Transport Asset Management Plan 2018–2021	Hamilton City Council 2020/21 Annual Plan	Tauranga City Council 2020/21 Annual Plan	Wellington City Council 2020/21 Annual Plan	Christchurch City Council 2020/21 Annual Plan

⊕ Please see Table 35 in technical report for more details

Funding figures are based on information reported in the relevant plans but may not fully account for actual spending on cycleway maintenance and renewals. Per capita funding should therefore be treated with caution.

Case study

Major cycleways

The major cycleways are designed to be a safe and convenient option to get people on bikes to where they want to go. Getting more people cycling is key to addressing climate change, creating healthier communities and reducing congestion. The city is building 13 cycleways, connecting key destinations across the city. The cycleways were a key action in implementing the Christchurch Strategic Transport Plan.

In 2021, seven routes had been fully or partially opened. Councils annual cycle count data (covering seven sites at morning peak) has shown that there has been significant growth in people cycling:

- 80% growth since 2016
- 20% growth between 2019-2020
- 32% women in 2016
- 41% women in 2020



Funding for public transport

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
Funding for public transport per capita 2020/2021	\$313.51 *2019/20	\$78.53	No details on public transport funding in the Bay of Plenty Regional Council Annual Plan 2020/21.	\$734.71	\$140.97
Total funding for public transport 2020/21	\$492,697,225* *2019/20	\$36,602,000	-	\$378,204,000	\$86,639,000
Details	<ul style="list-style-type: none"> Scale: Auckland Region Time period: 2019/20 FY actual funding Auckland Region population: 1,571,556 (from Stats NZ 2018 Census) 	<ul style="list-style-type: none"> Scale: Waikato Region Time period: 2020/21 FY prospective funding Waikato Region population: 466,113 (from Stats NZ 2018 Census) 	<ul style="list-style-type: none"> Scale: Bay of Plenty Region Time period: 2020/21 prospective funding 	<ul style="list-style-type: none"> Scale: Wellington Region Time period: 2020/21 FY prospective funding Wellington Region population: 514,767 (from Stats NZ 2018 Census) 	<ul style="list-style-type: none"> Scale: Canterbury Region Time period: 2020/21 FY prospective funding Canterbury Region population: 614,586 (from Stats NZ 2018 Census)
Data source	Auckland Transport 2020 Annual Report	Waikato Regional Council Annual Plan 2020/21	Bay of Plenty Regional Council Annual Plan 2020/21	Greater Wellington Regional Council Annual Plan 2020/21	Environment Canterbury Annual Plan 2020/21

⊕ Please see Table 46 in technical report for more details

Funding figures are based on information reported in the relevant plans but may not fully account for actual spending on public transport operations. Per capita funding should therefore be treated with caution.

Vehicle and roading plans

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
PARKING PLAN	Auckland Transport Parking Strategy (Auckland Transport, published 2015)	Access Hamilton Parking Management Action Plan (Hamilton City Council, published 2010) Council have advised that a new Parking Management Action Plan will be created as part of the new Access Hamilton Strategy (currently under development).	No parking policy/plan.	Wellington Parking Policy (Wellington City Council, published 2020)	Christchurch Suburban Parking Policy (Christchurch City Council, published 2019) A Christchurch Central City Parking Policy is also under development. A draft of the policy has not yet been published, but some details are available online.
Are indicators / targets included?	✓ Yes — target peak occupancy rate of 85% for on-street parking.	✗ No indicators/targets.	✗ Not applicable (no parking policy/plan).	✓ Yes — the Wellington Parking Policy includes a range of broad measures and indicators which aim to show the impact of the policy's objectives and principles over time.	✗ No — the current Suburban Parking Policy does not include targets. It is unclear whether the new Central City Parking Policy will.
Is performance against the indicators/targets is monitored and reported on	✗ Not available.	✗ Not applicable (no indicators/targets).	✗ Not applicable (no parking policy/plan).	✓ Somewhat — the policy does specify that three performance measures related to parking will continue be reported on in Wellington City Council's Annual Plan, but no mention is made of a monitoring and reporting process for the other targets.	✗ Not applicable (no indicators/targets).
SPEED MANAGEMENT PLAN	Auckland Safe Speeds Programme (Auckland Transport, published online)	Hamilton Speed Management Plan (Hamilton City Council, updated 2019)	No speed management policy/plan	Wellington Transport Activity Management Plan 2021–2051: Speed Management Programme (not publicly available) (Wellington City Council, published 2021)	No citywide speed management policy/plan has been created yet, but a speed management plan for the Marshland, Spencerville, and Kainga areas is currently under development.
Are indicators / targets included?	✓ Somewhat — Auckland Transport carries out resident satisfaction monitoring on safety perceptions before and after changes are made.	✗ No indicators/targets.	✗ Not applicable (no speed management policy/plan).	✓ Yes — the Speed Management Programme includes targets around consultation and implementation of speed management interventions.	✗ Not applicable (no citywide speed management policy/plan, and a draft of the area specific plan has not yet been published).
Is performance against the indicators/targets is monitored and reported on	✓ Yes — Auckland Transport publishes the results of resident satisfaction monitoring on their Safe Speeds Programme page.	✗ Not applicable (no indicators/targets).	✗ Not applicable (no speed management policy/plan).	✗ Unclear — monitoring and reporting details are not included.	✗ Not applicable (no citywide speed management policy/plan, and a draft of the area specific plan has not yet been published).

⊕ Please see Table 1 in technical report for more details

