

AUCKLAND'S FUTURE MOBILITY – DOING WELL INTERNATIONALLY?

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1. Introduction

How cities are planned, designed, serviced, governed and financed is material to our happiness and prosperity. All life depends on the health of our society and the natural systems. The WSP cities index research is intended to help decision and policy-makers and other professionals to be future-focused by leveraging the best-practice policies and initiatives that are being deployed around the world. This is an important opportunity for Auckland.

The WSP Cities index 2018¹ provides a snapshot of how global cities are preparing themselves for a future shaped by the major urban transitions of our day: urbanisation, density and growth, the digital revolution, emerging mobility and urban utilities models (e.g. power, water, waste), and a changing climate. The assessed cities are ones that a global consulting company WSP (44,000 employees as of 2018) has a presence in.

The assessment was completed by WSP professionals who live and work in the respective cities. There were over 100 contributors from WSP businesses globally who assessed the city planning and investment frameworks in each city. The assessments of local WSP professionals were reviewed by the WSP global peer review team which has a comprehensive experience of global activities and assessed cities.



Figure 1. The map of assessed cities (WSP, 2018).

The following sections provide a discussion around Auckland's performance amongst the global cities assessed. This paper also discusses key success factors of the cities performing well to highlight opportunities that could of value to Auckland.

2. How Auckland performs in the global “competition”

The overall position for Auckland is thirteenth in WSP's Global Cities Index. WSP reviewed 24 prominent cities, assessing the planning and investment frameworks for places, mobility, technology and urban systems. The index assessments have a view to the readiness of global cities to effectively meet the challenges and opportunities of their growth.

This paper presents key metrics within the Mobility theme of the WSP Cities Index. Benchmarking

¹ www.wsp-futurecities.com

the best performing cities raise awareness of how well these cities are performing and dealing differently with similar issues. There is an opportunity to learn from the better performing cities especially where Auckland has achieved less than the global average.

Table 1. The results of the city score by key themes and overall scores.

RANKING	CITY	PLACES	MOBILITY	TECHNOLOGY	URBAN SYSTEMS	CITY SCORE (max 40)
1	Seattle	6.9	6.8	8.5	7.4	29.58
2	Copenhagen	8.0	7.5	7.7	6.4	29.52
3	Stockholm	7.3	7.4	8.2	6.3	29.19
4	New York	7.3	6.3	7.5	7.5	28.59
5	Vancouver	8.2	5.9	7.8	6.6	28.56
6	Singapore	7.2	7.4	7.8	5.6	27.97
7	San Francisco	7.2	7.4	7.0	6.2	27.84
8	Montreal	7.0	6.9	7.7	6.2	27.73
9	Washington DC	7.1	6.2	8.3	6.1	27.71
10	Toronto	7.9	5.9	7.7	6.1	27.55
11	London	6.3	7.0	7.4	6.8	27.51
12	Manchester	6.6	6.3	7.0	6.8	26.60
13	Auckland	7.2	5.4	8.0	5.2	25.76
14	Melbourne	6.7	6.7	7.0	5.2	25.60
15	Sydney	6.9	6.7	7.5	4.5	25.54
16	Dubai	5.6	5.9	7.7	6.3	25.40
17	Beijing	5.6	7.2	6.0	6.4	25.25
18	Seoul	6.4	6.5	8.3	4.0	25.22
19	Edinburgh	6.5	5.7	6.2	5.8	24.17
20	Calgary	7.0	4.6	8.2	4.0	23.76
21	Brisbane	7.1	5.1	7.3	3.5	23.02
22	Mexico City	4.5	4.3	7.1	2.8	18.61
23	New Delhi	4.3	4.8	4.7	3.8	17.50
24	Bogota	3.9	3.6	3.8	3.0	14.36

Methodology

The research assessed the cities on the basis of planning aspirations and preparedness. The assessment comprises two components:

- **Part One:** Scored qualitative assessments of city plans.
- **Part Two:** Socio-economic statistics for today, and projections to 2025 and 2035.

Part One of the city assessments are focused on four themes which shape the built environment: Places, Mobility, Technology and Urban Systems. Underpinning each theme are key metrics that were assessed. The scores ranged from 1 (poor) to 10 (outstanding). The subjective scoring approach is based on evidence of forward looking policies, initiatives and funding, as outlined in the city plans (1 point = No plan in place / 10 points = Funded, in excess of minimum needs-based funding projections). The key metric scores are averaged to achieve a total theme score out of 10. The theme scores are averaged to achieve a total city score out of 40.

A summary of key metrics assessed under each theme is shown in Figure 2. Each city has a detailed assessment in the index which can be clicked for further studies (Auckland²).

² <https://www.wsp-futurecities.com/assets/pdf/en/auckland.pdf>





THEMES	 PLACES	 MOBILITY	 TECHNOLOGY	 URBAN SYSTEMS
KEY METRICS	Housing	Infrastructure: Public Transit	Fixed Internet	Power Generation & Distribution
	Public Realm	Logistics & Freight Productivity	Fixed Internet: Speeds & Feeds	Water Treatment & Distribution
	Urban Green Space	Global Connectivity	Mobile Internet: Wi-Fi, 5G, Narrowband & IoT	Waste Management
	Social Infrastructure	Infrastructure: Pedestrians & Cycling	Open Data	
	Climate Change	Built Form: Parking Provisions	Information & Data Security	
	Future Mobility: Services	Planning & Policy		
	Future Mobility: Technology			

Figure 2. The Themes and Key Metrics of qualitative assessments (WSP, 2018)

Part two of this index tells a tale by numbers, with statistics sourced from The Economist Intelligence Unit (EIU). In part two the city trends for preparedness for growth, in terms of population, economy and stability provides context for the study. The numbers for each city are presented by:

Population and Demography

- Population
- Gender
- Education
- Labour force
- Net foreign migration
- Household size

Economy

- GDP
- Employment
- Median household income
- Personal disposable income

Stability

- Threat of terrorism
- Prevalence of petty crime
- Prevalence of violent crime
- Overall stability rating

3. Future focussed Index

Planning and investing for the future

WSP's research reveals cities are acutely aware of the issues that impact on their liveability³, both now and into the future. On their journey of change, sometimes cities are challenged to fulfil their plans as they try to obtain political support and alignment from various tiers of government. Also, in the cities where residents can vote, change is influenced by community sentiment.

Financing projects is another critical part of city development and innovative solutions are being embraced. For example, innovative financing for projects means that much of the up-front capital to pay for the public investments can come from bonds, which are repaid through revenues tied to the increase in land value and other sources. The biggest issues that most demand cities' attention are housing, both the cost and availability, followed by public transport.

Climate change is also growing in importance. The IPCC's report published in October 2018 states that limiting global warming to 1.5°C would require "rapid and far-reaching" transitions in land, energy, industry, buildings, transport, and cities. The WSP's cities index research found that even among cities where planning for climate change is not a leading priority, most have a blueprint to

³ Liveability here refers to factors assessed in the global cities index i.e. places, mobility, technology, urban systems.

reduce their Greenhouse Gas (GHG) emissions. With a few exceptions, all have set a target, ranging from the extremely ambitious to the conservative. On climate change front, Auckland wants to reduce emissions by 40 per cent by 2040 and has devised a Low Carbon Strategic Action Plan to achieve this (Auckland Council, n.d.).

Visionary planning can prepare a city for success, even in the face of extreme uncertainty and change. It plays a critical role in good amenity, services, and economic infrastructure and risk management. As with all plans, the political will, administrative capability and most importantly, financing, are necessary to implement them. At the very least good plans, with clear goals and pathways to fulfil them, give cities a yardstick by which they can measure their progress.

Auckland’s overall results

Forecasts to 2043 suggest Auckland can be home to 39 per cent of the New Zealand’s population, however 34 per cent of New Zealanders already call Auckland home (Stats NZ, 2017). Auckland Council, the city planning authority, believes that the city will cope this projected growth and is committed to making Auckland a place that is renowned for its lifestyle and environment.

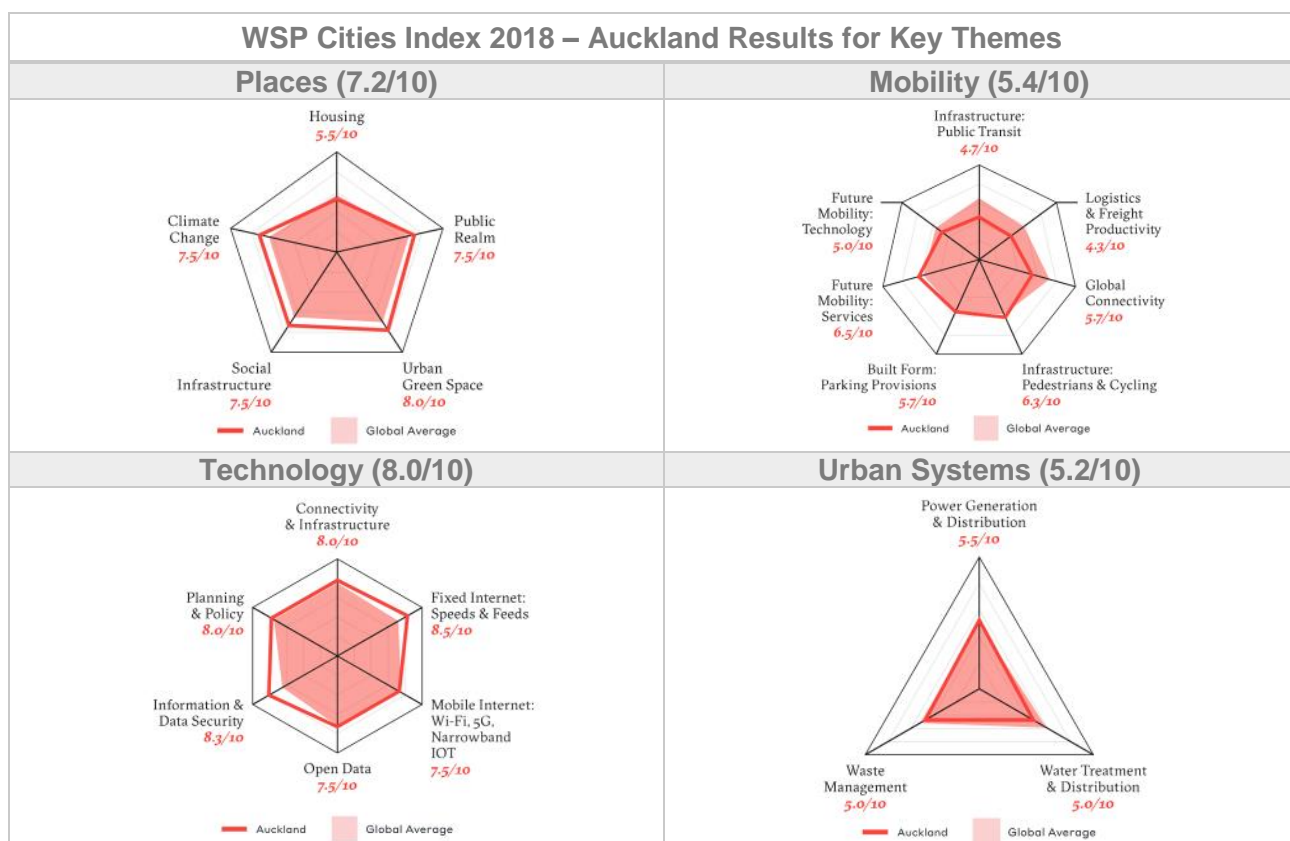


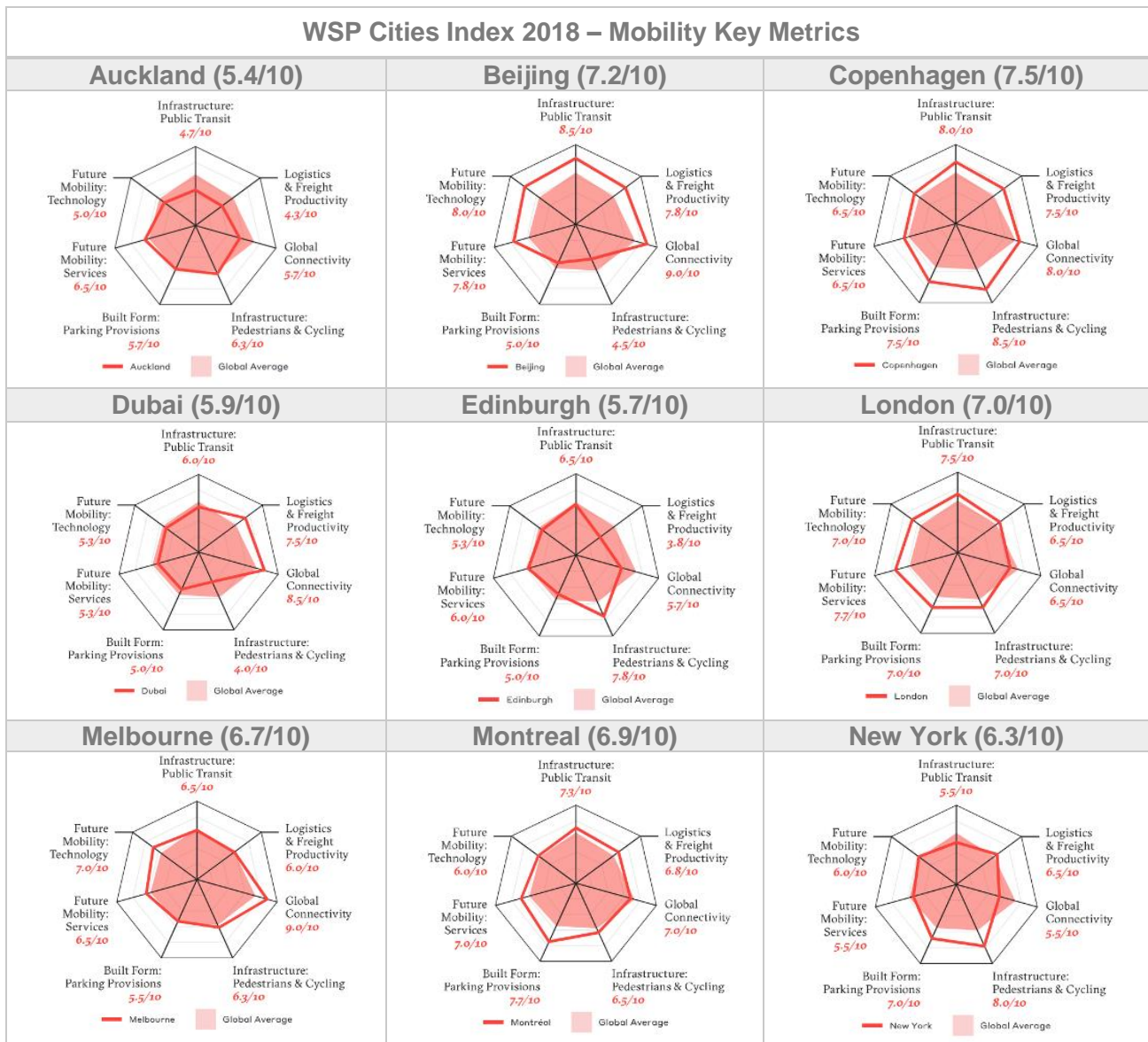
Figure 3. The Auckland results for Themes compared to Global Averages (WSP, 2018)

Amongst the key themes shown in Figure 3 Mobility was scored the poorest in Auckland achieving the 19th place (more detailed assessment will be presented in the following sections). The Places theme got relatively high points being above average at 8th place. The Technology theme was ranked 6th and was Auckland’s best achieving theme. The Urban Systems theme was not far from the average with the 16th position.

Auckland is among the most advanced cities with regard to long term strategic plans. Its spatial plan, Auckland Plan 2050, has four key directions including providing public space and places that are “inclusive, accessible and contribute to urban living” and improving housing availability. With this plan (supported by the Auckland Regional Land Transport Plan 2018-2028) Auckland is certainly committed to achieving its ambitions.

4. Auckland's mobility key metrics compared to the best performing cities

As with most growing cities, Auckland is navigating through some legacies including a highway and land-use system that leads most commuters to use private vehicles, and challenges surrounding housing affordability. Auckland's relatively lower rating on mobility reflects the city's high dependence on cars, and on road for freight and logistics. The recent shift to public investment in rail infrastructure and other public transport will set Auckland well on the path to a stronger global position. Figure 4 below shows the Mobility Key Metrics compilation of the cities that are referred in the following sections.



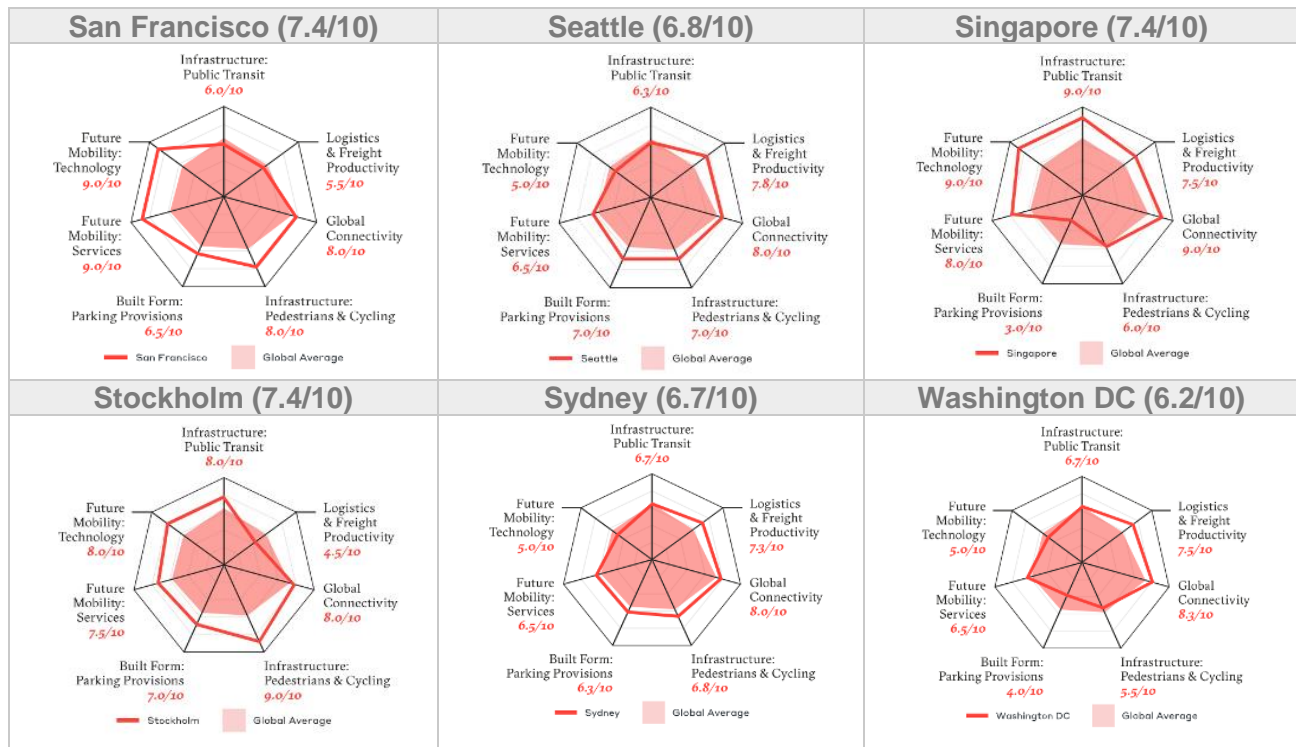


Figure 4. Auckland's mobility key metrics compared to the best performing cities (WSP, 2018)

Infrastructure: Public Transport, Score 4.7/10

Auckland has been growing rapidly. During the next 30 years the city is projected to accommodate another one million people. Due to this rapid growth and historic underinvestment in transport infrastructure, Auckland has become increasingly congested.

In 2018, the Auckland Transport Alignment Project (ATAP)⁴ was updated to reflect the priorities of the new Labour-led Government, including the promotion of light rail and a greater focus on safety and access. ATAP 2018 outlines the government's and the Auckland Council's shared direction for transport in the city. It is a transformative plan that includes accelerating the development of Auckland's rapid transit network through investment in light rail and new busways.

For Auckland, new funding is identified for the rapid transit network that forms the backbone of the public transport system. It is recognised that investment in rapid transit will also have a significant impact on shaping Auckland's urban form and development as shown in Figure 5.

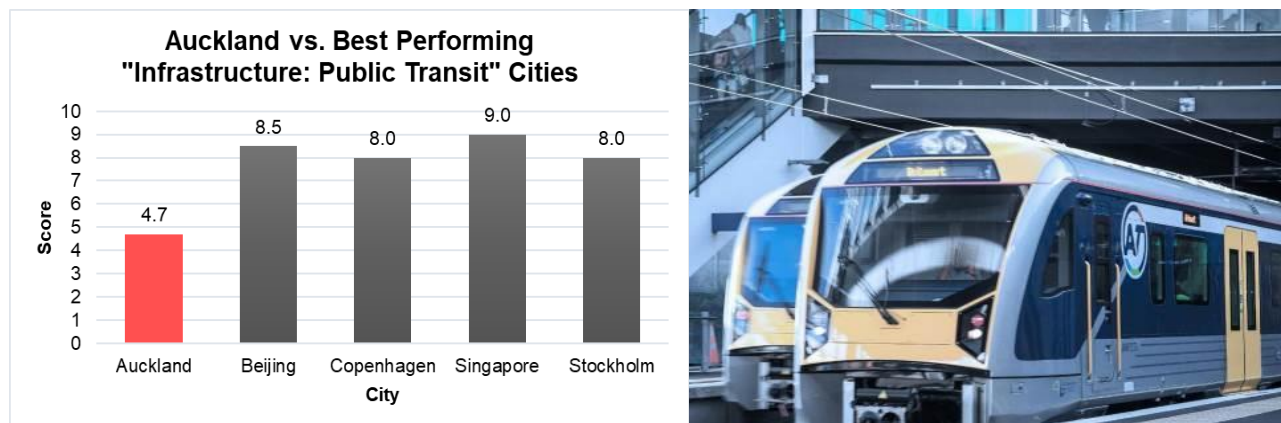


Figure 5. The best performing "Infrastructure: Public Transit" cities and Auckland (WSP, 2018,

⁴ ATAP is the Aligned Strategic approach between Auckland Council & the Government and makes recommendations on transport investment priorities in Auckland.

Photo: WSP)

The best performing cities in terms of public transit are Singapore, Beijing, Seoul, Copenhagen and Stockholm. Cities that are highly liveable emphasise walkability and tend to have extensive, affordable and high quality public transport that connects people to jobs, schools and amenities in an efficient and reliable way.

In Singapore (Score 9.0/10), travel needs are largely met by trains and buses. The rail network in Singapore is the backbone of its public transport system.

Beijing's (Score 8.5/10) five-year plan includes the expansion of its subway transit network. Construction of four subway lines will begin this year and two railway lines will be completed. Beijing already has 12 transport hubs where passengers can change from subway to bus or vice versa. Three new hubs are being built at Science City, Wangjing West subway station and Tonzhou district, of which the latter will cover 70 hectares and be the biggest in China. All transport modes have used a contactless ticketing system since 2006. A newer system allows passengers to download a mobile application, which scans QR codes when taking the subway.

Copenhagen and Stockholm (both Scores 8.0/10) are close to Auckland's size in population. Copenhagen residents have plenty of public transport options: local train, regional train, ferry, bus and an underground metro system. A second metro route with 17 stations is due to open in 2019, with further extensions to the metro network already underway. In 2024, a 28-kilometre light rail line in northern Copenhagen will connect with six local train lines and numerous bus routes.

All trains, metros and ferries in Copenhagen allow cyclists to take their bicycles along for the ride. It is free to take your bicycle on the local train, and there are at two dedicated carriages on each train fitted so cyclists can park their bikes and sit nearby. Cyclists taking their bicycles on the metro, ferry or regional trains need to pay for a bicycle ticket. All local train, regional train, metro and most bus stations have bicycle parking facilities.



Figure 6. The Stockholm subway is the most popular public transport mode within city limits (Illustration: WSP)

In Stockholm, the rail transport via the subway remains the backbone of Stockholm's urban infrastructure and helps explain why it has such a high rate of public transport use; about 70 per cent of all journeys are in peak hours. The city has also successfully implemented congestion charging in the city and on major thoroughfares.

The present long-term masterplan (2014-2025) calls for a focus on development of regional infrastructure to improve connections to neighbouring regions. High-speed rail connecting Stockholm to Gothenburg and Malmo is being planned, although financing of the project is problematic. Other capacity-increasing rail and infrastructure projects are under way, such as Bypass Stockholm, which reroutes traffic from the major freeway passing through the city.

Logistics and freight productivity, Score 4.3/10

This key theme is an important component of economic growth of a city. Here the leading cities are Beijing, Seattle, Copenhagen, Washington DC, Dubai and Sydney (Figure 7).

Auckland has an important logistics function in the production and distribution of freight to the rest of New Zealand and internationally. Freight in Auckland is expected to grow substantially in the next 30 years, with total freight carried projected to increase from 63 million tons to 109 million tons by 2046, an increase of 72 per cent.

Analysis undertaken for the Ministry of Transport has found that 87 per cent of the 63 million tons was carried by road (MoT, National Freight Demand Study, 2014). The key challenge will be to limit the growth in congestion on the freight network, particularly at peak times, and to improve the efficiency of connections to major freight hubs. ATAP 2018 identifies rail infrastructure improvements that would enable more freight to be transported by rail in the future.

Ports of Auckland Limited's main cargo wharves sit in a sensitive location adjoining Auckland's city centre and harbour front. The container port can grow on its current footprint for about 20 years, assuming it continues to benefit from productivity improvements. For the proposed central wharves plan to proceed more wharf capacity is needed. Many possibilities for the relocation of the freight port outside Auckland have been studied, but no easy solution has been found. This decision has a national importance and it is very challenging to get approved. The port of Auckland has a big influence also for the Global Connectivity key metric.

Seattle's (Score 7.8/10) Freight Master Plan (FMP), adopted in 2016, was developed to address the characteristics, needs and impacts of freight mobility. The Duwamish Manufacturing/Industrial Centre (MIC) and the Ballard-Interbay Northend MIC account for more than 64,000 jobs, which is 15 per cent of all jobs in Seattle. A network of marine terminals, railroads and rail spurs, roadways, and airports serve the MICs. A big proportion of the freight industry is reliant on the road network to transport goods. In 2011, 68.5 per cent of freight tonnage and 80.7 per cent of freight-related revenue in Washington State was carried by truck.

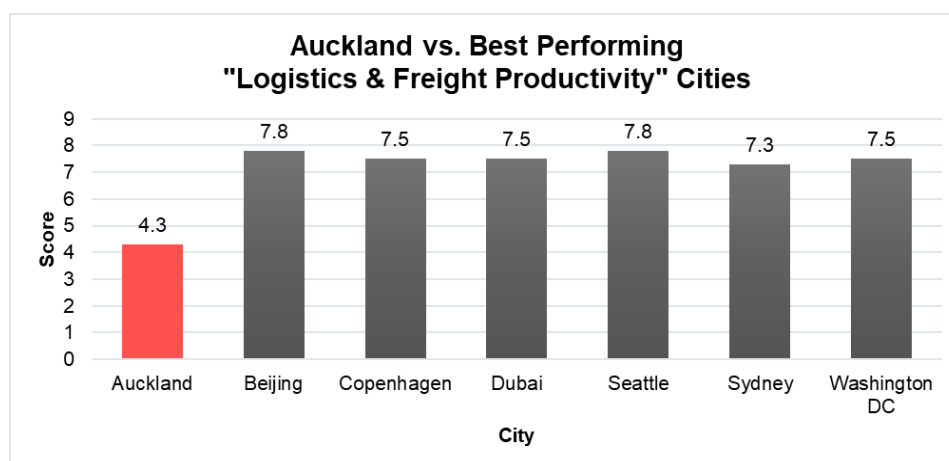


Figure 7. The best performing "Logistics & Freight Productivity" cities and Auckland (WSP, 2018)

With so much of the Seattle economy reliant upon truck movements, roadway infrastructure is critical to the local, regional, and state economy. The FMP identifies a network of over-legal and heavy-haul routes that can accommodate oversized truck loads and provides funding to repair and build roadways within the network, calls for semi-annual safety inspections of heavy-haul trucks, and aligns city weight regulations with those of the state and other municipalities across the country. In addition to a heavy-haul network, the City of Seattle outlines a Downtown Traffic Control Zone, which prohibits heavy freight from operating without a permit during peak hours in highly congested transit corridors.

Copenhagen (Score 7.5/10) is the preferred hub for logistics and supply chain management across many industries. It offers big cargo and logistics parks with direct access to highway, railway and sea transport to the rest of Denmark, the Nordics and the rest of continental Europe. Approximately 58 per cent of goods going in and out of Copenhagen, are transported by road and 10 per cent of all global trade is transported by Danish shipping companies.

Copenhagen Airport provides the perfect gateway for transport and logistics to Scandinavia, the Baltic Sea region and Northern Europe. Freight giants use Greater Copenhagen as their logistics hub. Large investments in cross-border freight connections are being prioritized, including the Fehmarn Belt Fixed Link between Denmark and Germany. Other projects being studied include the three-kilometre Helsingborg–Helsingor crossing to replace traffic ferries between Denmark and Sweden, and an extended metro from Copenhagen to Malmö to relieve road traffic on the Oresund Bridge.

Global connectivity, Score 5.7/10

The objective of the country's international air transport policy is to help grow the economy and deliver greater prosperity, security and opportunities for New Zealanders. This will be achieved by seeking opportunities for New Zealand-based and foreign airlines to provide their customers with improved connectivity to the rest of the world, and to facilitate increased trade in goods and services (including tourism).

In 2014, Auckland Airport announced its 30-year vision to build the airport of the future. Implementation of that vision is now underway - to ensure that Auckland Airport can accommodate 40 million passengers and 260,000 flights by 2040.

Several cities ranked highly for Global Connectivity, specifically, Beijing, Melbourne, Singapore and Mexico City (all score 9.0/10). They all are international and strategically well located important cities. With robust growth forecast for Melbourne, planning is well advanced on projects to improve its air and sea gateways. The curfew-free Melbourne Airport provides benefits to available capacity, and planning is underway to develop a third runway. At the Port of Melbourne, capacity is being expanded to meet the increasing number of units/containers that will utilise the port.

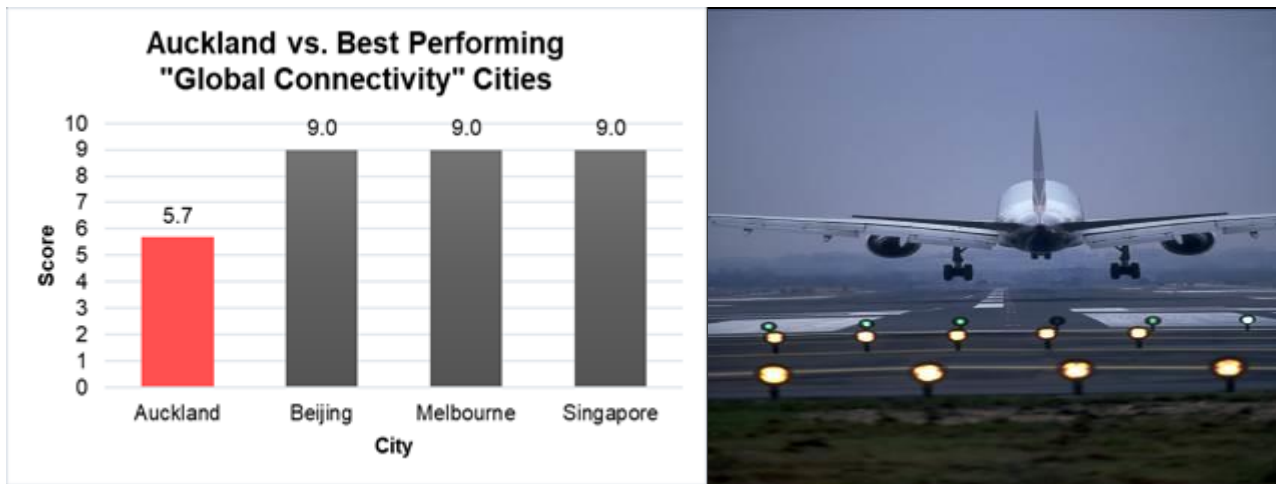


Figure 8. The best performing "Global Connectivity" cities and Auckland (WSP, 2018, Photo: WSP)

Changi Airport is Singapore's gateway to the world, it can handle up to 85 million passengers, but is fast reaching its capacity. The new Changi East will allow Singapore to cope with future growth in air traffic and make the most of the benefits that air connectivity brings to Singapore. A network of tunnels and systems, including the baggage handling system and automated people mover system, to allow for the efficient transfer of passengers, baggage and airside vehicles within Changi East and between Changi East and the existing terminals.

Infrastructure: Pedestrians and Cycling, Score 6.3/10

In Auckland, the variable quality and an unsafe environment can be a barrier to increasing the movement of pedestrians. Ensuring Auckland street design standards focus on providing safe and attractive facilities for pedestrians is also key to improving walkability. These standards have been updated recently to place greater priority on pedestrians.

In the past few years, investment in cycling has doubled in Auckland. Most investment has focused on providing safe and protected cycling infrastructure, which previously only existed along a few corridors in Auckland. Despite this recent increase, Auckland's safe cycling network is still very underdeveloped and will take sustained investment and effort to be completed. A program business case to guide the next 10 years of investment in cycling was approved by Auckland Transport and the NZ Transport Agency at 2017. The analysis undertaken as part of this work emphasized the need to provide complete networks and improve cycling infrastructure in an area-focused way to achieve the greatest gains.

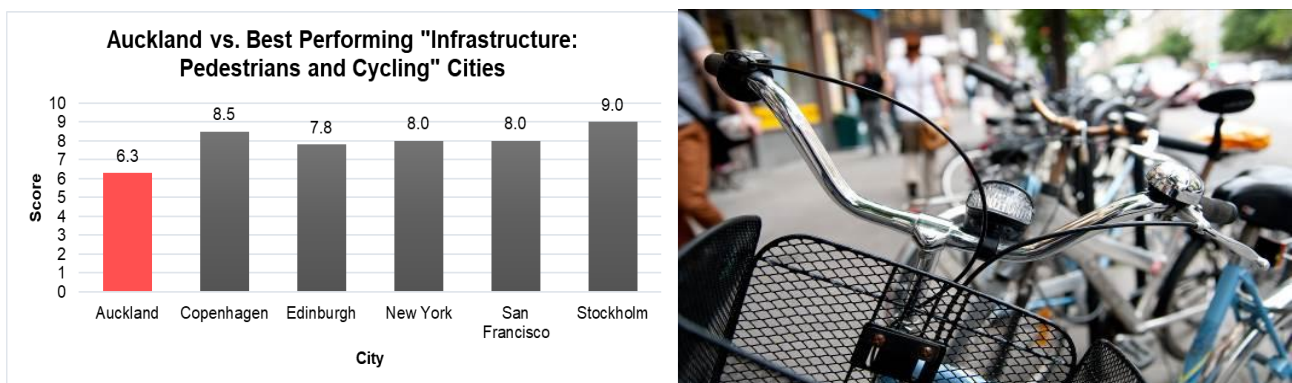


Figure 9. The best performing "Infrastructure: Pedestrians and Cycling" cities and Auckland (WSP, 2018, Photo: WSP)

Stockholm, Copenhagen, San Francisco, New York City and Edinburgh are standing tall on their commitments to foot and pedal power (Figure 9). Cycling is the active transport of choice for many Stockholmers, especially in spring and summer. The city has set itself the ambitious goal of increasing bicycle traffic from five per cent to 20 per cent by 2030 and has put in place a regional cycle plan that includes a review of what should be done and the estimated cost. Part of the plan is for 850 kilometres of dedicated bicycle paths to be built. Stockholm has developed a plan to make the city more pedestrian-friendly as part of its Urban Mobility Strategy. The city traffic council recently adopted a new parking plan, which included new zones and price structures aimed at reducing congestion and increasing parking capacity. Development of a pedestrian-friendly urban environment is a prioritised area in city planning documents, and long-term plans include prioritising pedestrians, cyclists and public transport in local streets.



Figure 10. Cycle park in Stockholm next to pedestrian & cycling area (Photo: WSP)

The Danish capital, Copenhagen is strongly committed to cyclists and pedestrians. It has commissioned the building of 16 bridges encouraging further adoption of walking or cycling in a city already leading on active transport. Getting around Copenhagen from the outskirts has been made easier for the public by providing several options to combine cycling and walking with forms of public transport (The European Prize for Urban Public Space 2016). Copenhagen is rated the best of 136 global cities in the Bicycle Friendly Cities Index. Copenhagen is continually striving to introduce measures to deter citizens from driving and instead invest in pedestrian, cycling and public transport options.

San Francisco has been a magnet for smart, creative and mostly young people who want to be part of its burgeoning tech industry. The rapid growth has been accompanied by social and infrastructure problems too. The booming economy has increased the demand for accommodation and the house building is occurring at a slow rate.

San Francisco is one of the most prosperous cities in the world but equally has a large homeless population. San Francisco Municipal Railway (Muni) provides bike racks to cater for more than 10,000 bikes in 3,000 locations. A Complete Streets group has produced the Better Streets Plan containing unified standards, guidelines and implementation strategies to govern how the city designs, builds and maintains its pedestrian environments. However, much of the city was built before pedestrian environments were front of mind.

Built form: Parking Provisions, Score 5.7/10

Historically, Auckland authorities required minimum parking ratios for developments, leading to big expanses of off-street car parking in and around metropolitan and town centres. The strategic direction for parking is set out in the Auckland Plan 2018, the Auckland Unitary Plan 2018, the Regional Public Transport Plan 2015 and in Auckland Transport (AT) Parking Strategy 2018. These includes the introduction of maximum car parking ratios in the central city and around town centres. Auckland Transport has set objectives for the management and supply of parking in Auckland.

Montreal (Score 7.2/10) tops the list on the metric of Parking Provisions followed by Copenhagen (Figure 11). The parking policy that Montreal has developed aims to redefine dedicated space by considering the environmental impact of on-street and off-street parking, and the willingness of citizens to reduce their private vehicle dependency.

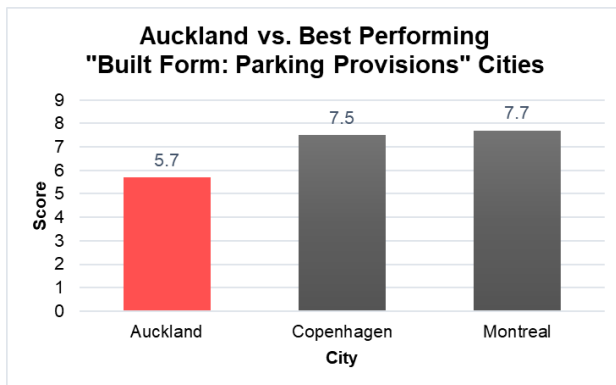


Figure 11. The best performing “Built form: Parking Provisions” cities and Auckland (WSP, 2018)

The Montreal Parking policy revises this space by proposing new pricing, a city centre parking optimisation for economic vitality, a public transport service harmonisation, a better sharing of the street, dedicated parking spaces for the BIXI bike-sharing service and real-time information system integration. The action plan is well-developed and presents implementation strategies, including the revision of the regulatory framework and strategic measures.

In Copenhagen (Score 7.5/10) motorists can pay for parking at one of the 1,600 solar-powered parking machines or by using a smartphone app that allows for additional time to be purchased. There are four color-coded parking zones in Copenhagen, decreasing in price per zone when moving away from the city centre. Copenhagen has also experimented with other smart-parking initiatives including multiuse parking spaces in busy areas where a street carpark is available only for cyclists to use between 7:00am to 5:00pm, and between 5:00pm to 7:00pm is available for car parking only. The city is also developing a smart parking app to help motorists find available parking spaces.

Future Mobility: Services, Score 6.5/10

The strategy being developed by AT recognizes that a customer's journey begins with the commute from home to the nearest transport hub and ends with a similar commute home (AT Technology Strategy 2016). Therefore, AT is planning to improve first and last leg connections to transport hubs. These strategies will facilitate a seamless and convenient travel experience for its customers.

AT is trialling an on-demand ride-share service to address customers' first and last leg connections. Customers will communicate with the service through a mobile application to book, manage and pay for services as well as monitor vehicle location and expected pick-up times. Hireable electric-scooters were also introduced in the city on a trial basis in October 2018.

Based on assessment, the top five performers for Future Mobility Services are San Francisco, Singapore, Beijing, London and Stockholm (Figure 12). San Francisco (Score 9.0/10) has many point-to-point services, including electric scooters, mopeds and bikes. There is a permit process in place and pilot programmes allowing the city to examine the data collected by the service providers. Also, app-based on-demand services, as well as ride-share and car-share services, are everywhere, so much so that ride-share usership is potentially threatening public transport patronage. The widespread use of ride-share services combined with the car sharing services also reduces the need for car ownership.

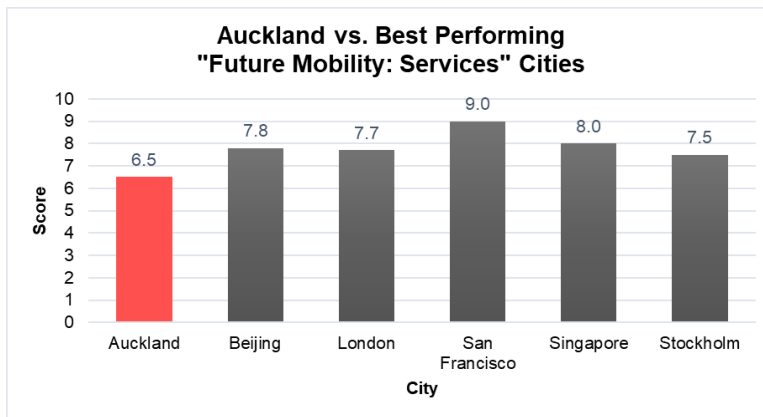


Figure 12. The best performing "Future Mobility: Services" cities and Auckland (WSP, 2018)

In Singapore (Score 8.0/10), 12 per cent of land is set aside for roads and transport infrastructure. With a growing population and more than one million vehicles on the road, the challenge lies in optimizing the use of limited space. Shared bicycles and the use of personal mobility devices have been legalized for the last mile of journeys to encourage use of public transport. Through separate partnership agreements with the Land Transport Authority (LTA), Delphi Automotive Systems and nuTonomy are trialling their shared autonomous mobility-on-demand concepts. The nuTonomy Singapore autonomous concept trial comprises 12 vehicles like those shown in Figure 13. If these trials prove successful, the projects will be developed into full-scale mobility solutions for towns in



Singapore, bringing more comfort and convenience for commuters, especially for first-and-last-mile and intra-town travel.

Figure 13. The nuTonomy Singapore autonomous concept trial (Photo: nuTonomy, n.d.)

Future Mobility: Technology, Score 5.0/10

AT and the NZ Transport Agency have signed a Technology Partnership to develop a 10-year future transport technology roadmap and strategy that includes:

- Intelligent transport systems
- The introduction, extension and use of mobility as a service and Mobility Operating Systems (MOS)
- Technology that will support Auckland Transport Operations Centre, CCTV and Analytics predictive modelling
- Any future dynamic pricing systems
- Management of third-party suppliers of transport technology solutions
- Leading the communication and promoting the program of work

Nationwide, the Transport Agency is committed to delivering a step change for customers using digital technologies. It wants to grow a digitally-savvy, innovative culture within its agency and the wider sector. The Ministry of Transport is working to clarify the legal situation for the deployment of autonomous vehicles in New Zealand, although there are no obvious legal barriers to their testing. Unlike some countries, the country has no explicit requirement for a driver to be present. New Zealand is also well-placed to benefit from Electric Vehicles (EV). More than 80 per cent of electricity is generated from renewable sources.

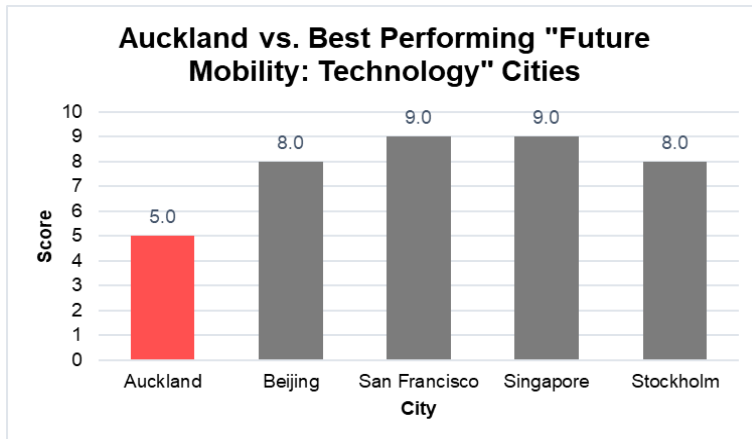


Figure 14. The best performing "Future Mobility: Technology" cities and Auckland (WSP, 2018)

Four cities lead on the metric of Future Mobility Technology (Singapore, San Francisco, Stockholm and Beijing). In Singapore (Score 9.0/10), the LTA has signed agreements with companies to develop solutions for autonomous truck platooning to transport containers from one port terminal to another, as well as having issued a request for information for the development of self-driving utility vehicles for waste collection and road sweeping.

Singaporean trials for autonomous mobility on-demand services were launched. These comprise a fleet of shared self-driving shuttles or pods that commuters will be able to book through their smartphones to bring them in air-conditioned comfort from their doorstep to the train station or other neighbourhood amenities. This provides for a more comfortable option for first-and-last-mile connectivity and brings greater mobility to the elderly and other commuters. In addition, a 3.5-year project is underway to develop and trial autonomous buses with the possibility of being deployed to serve fixed and scheduled services for intra- and inter-city travel.

Stateside in San Francisco (Score 9.0/10), policy and strategy surrounding connected and autonomous vehicles is set by the state. A trial of an autonomous shuttle is underway at Treasure Island in San Francisco Bay. The City Fleet Zero Emission Vehicle Ordinance mandates the electrification of the city's light duty passenger sedan fleet by 2022. The EV Readiness Ordinance mandates all new parking spaces must be able to support electric vehicle charging. The citywide Electric Mobility Strategy, which is focused on electrification of private vehicles, will lay out a vision for reducing adverse impacts of private transport and identify pilots, programs, policies and partnerships to help create a zero-emission transport sector.

In Stockholm, a project called eRoad Arlanda, will be seen as a world leader in allowing electric vehicles to recharge as they drive. In addition, several moves have been made to promote electrification. The number of electric cars in Stockholm is increasing, as well as the charging infrastructure. The City Council has voted to execute a ban, expected to be implemented in 2020, on some fuels in inner-city areas to improve air quality. The major bus distributor of public transport in Stockholm is investigating the possibility of most of their fleet becoming electric by 2026.

5. Auckland's future mobility – doing better internationally

Diverse trends are impacting the world we live in. So how do we make sound decisions during rapid change? Can we help societies thrive in a world we do not control?

Copenhagen demonstrated that good planning results can lead to good outcomes. Today, Copenhagen is leading the way when evaluated against the key metrics in WSP Cities Index (Public Realm, Urban Green Space, Social Infrastructure, Pedestrians & Cycling) and it was amongst the best performing cities in four Mobility key metrics.

Auckland is on the right path and with the right kind of aspirations reflected in its long terms plans. Auckland has all the possibilities to thrive as long as all the factors line up and what's planned is delivered e.g. future Auckland development is focused within its current urban footprint. The Mayor of Auckland, Phil Goff, in a recent media release quoted; “we've got to turn this city into a city that's focused on people not cars” (Newshub, 2018). That is why Auckland needs to take steps that will change the whole city (not just the transport) to support more sustainable way of living.

Auckland's long-term plans also need long-term funding with commitments over the electoral cycles in order to stay on track. The recent implementation of the regional fuel tax as of 1st July 2018 can enable numerous transport project that would otherwise face difficulties with “normal” funding decisions.

Let us see if we can hold true to our ambitions and hold ourselves accountable both for now and for our coming generations.

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