



**URBAN
MOBILITY**

10

CITIES

**LEADING THE WAY
IN ASIA-PACIFIC**

CENTRE for
LiveableCities
SINGAPORE

ULI Urban Land
Institute
Asia Pacific



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How Well Are We Moving?

The future is now, are we ready?

Urban Mobility: 10 Cities Leading the Way in Asia-Pacific presents 10 city cases exploring innovative methods to solve urban mobility challenges. This joint publication by the Urban Land Institute (ULI) and Centre for Liveable Cities (CLC) commemorates the 2017 ULI Asia-Pacific Summit.

The fourth publication in a series championing a sustainable and healthy future, *Urban Mobility: 10 Cities Leading the Way in Asia-Pacific* hopes to inspire citizens, city leaders and professionals to develop solutions to their own cities' challenges, being mindful of their unique resources, capabilities and needs.

Asia-Pacific is a region rapidly becoming denser. In terms of population density, development level and cultural diversity, significant variations have emerged among cities across the region, and indeed, even between cities in the same country.

As population density increases, so do issues of congestion, pollution and stress. Even in the face of common challenges, the 10 cities featured here have forged their own paths to improve the health and quality of life of their residents in holistic, integrated ways through the use of alternative, green modes of transport or new technology.

Urban Mobility: 10 Cities Leading the Way in Asia-Pacific analyses each city's most strategic plans and boldest mobility projects. The cities have brought about physical, social and environmental change, and in particular, healthy solutions.



How We Move

Urban mobility is integral to city living. How do you move around cities? How do your movements, affect your fellow citizens and the city, in terms of sustainability and liveability?



Two Feet



Bicycle

Active Mobility

Walking, cycling, or using personal mobility devices get the body moving and the heart pumping. These modes produce minimal carbon emissions, making this category the greenest and healthiest mobility option.



Train



Bus

Public

Daily commutes typically include a combination of rail and bus travel. Rail systems serve main transport corridors and can carry the most people, while buses and shuttles serve shorter, more intricate routes.



Digital Platform



Taxi

Shared

For conventional taxis and car-sharing services like Uber and Grab, car-pooling options and technological innovations can better match drivers to commuters. Such innovations help to minimise carbon output and maximise the use of resources.



Car



Motorbike

Private

Car drivers and motorcyclists enjoy much flexibility and comfort—but at a high spatial footprint per user, along with congestion and pollution if demand for such vehicles is not properly managed. A balance with more sustainable transport modes must hence be promoted.

Who's Moving Better: Established, Trending and Emerging Cities

All cities have developed along different trajectories. Some cities have developed based on compact, pedestrian-friendly models, while others were planned to be car-centric. In this publication, cities are classified according to the positioning and maturity of their mobility ecosystems.

Established

Cities in this category—such as Copenhagen and Atlanta—have cultivated a strong culture of active mobility, to the extent that active, sustainable commutes now form a way of life. Key enablers include compact urban forms, mixed-use environments, good public transit, and an ingrained civic and sharing culture.

Trending

Such cities—like Seoul, Shanghai, Singapore, Suwon, Taipei and Tokyo—are highly committed to shifting away from policies and infrastructure development that prioritise motorised transport. Their successes motivate them to further develop robust systems of sustainable urban mobility.

Emerging

These cities—such as Bandung, Ho Chi Minh City, Sydney and Yangon—recognise the urgency of having sustainable mobility for long-term development. They are in a unique position to learn from other cities and so, with the right planning, can avoid the negative effects of car-dependent mobility.

Looking to Copenhagen and Atlanta



Cycle Superhighways

Supercykelstier, Copenhagen

Already internationally recognised for its strong cycling culture, Copenhagen aimed to increase the reach and accessibility of its cycling network, to encourage even more residents to cycle.

Connecting the Suburbs

A network of 28 “cycle superhighways” radiating from the city centre was planned to serve residents in outer regions. These high-quality routes encourage people to cycle even for longer journeys beyond 5 km.

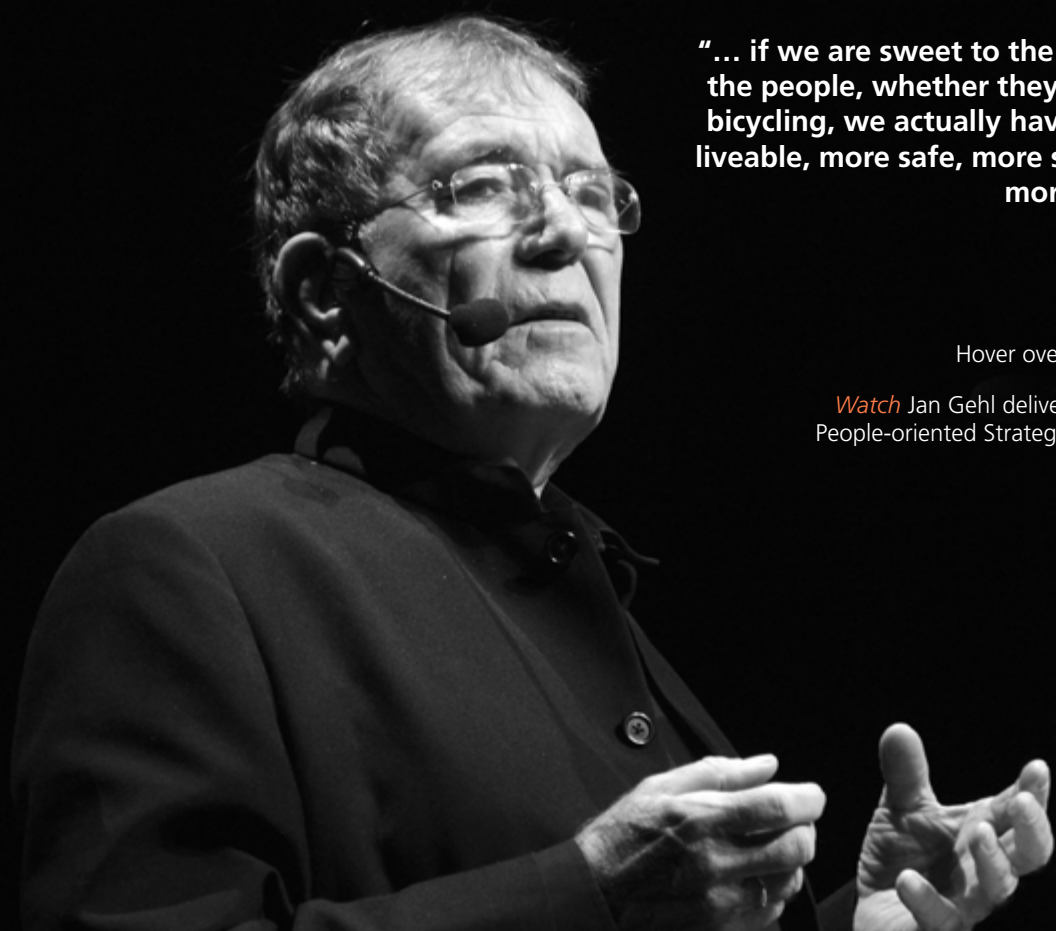
Enjoying the Ride

These superhighways link existing routes to create seamless paths. Innovative en route design features, such as motion-sensing LED lights, bike pumps and “green wave” technology, were installed to enhance the cycling experience.

Measures of Success


Copenhagen is a healthier, less polluted city. A 52% increase in usage was seen on the Farum route, the first superhighway to open in 2012. When the network is complete, the city anticipates a \$60-million drop in healthcare costs and an 856-tonne cut in carbon emissions.





"... if we are sweet to the pedestrians, to the people, whether they are walking or bicycling, we actually have a lively, more liveable, more safe, more sustainable and more healthy city".

Jan Gehl
Danish Architect

Hover over for sound bite. 

Watch Jan Gehl deliver his CLC Lecture on People-oriented Strategies for City Planning.

A Whole New Market

Ponce City Market, Atlanta

Once a plain brick building in Atlanta's Old Fourth Ward neighbourhood, Ponce City Market blossomed into a vibrant community hub in 2015. The Market is linked to the 35.4-km Atlanta BeltLine, a multi-use trail connecting the city's neighbourhoods along a former rail corridor. As a mixed-use development, the Market provides bike-friendly facilities and health amenities alongside its residences, office space and retail areas.

Welcoming Cyclists

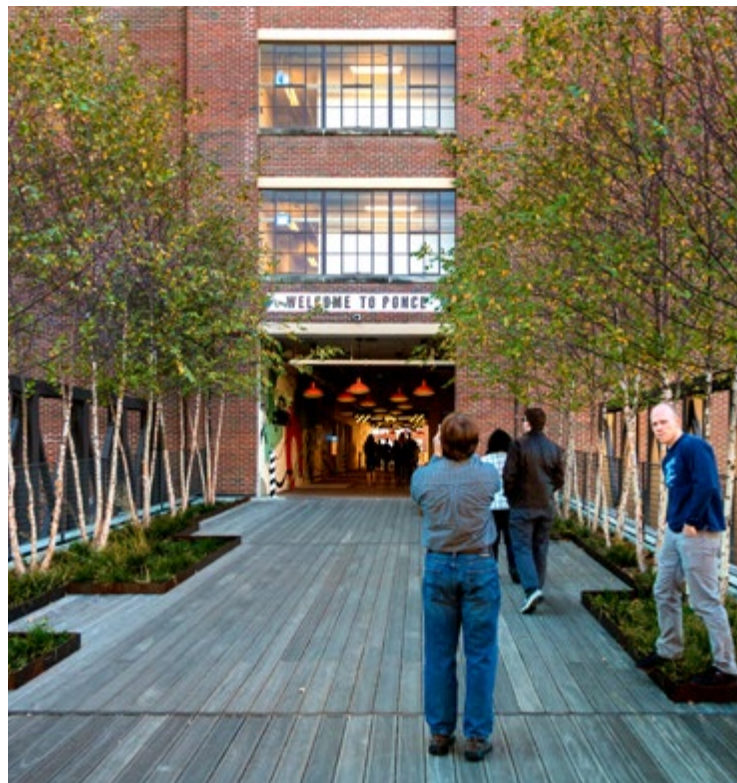
With wide hallways, shower facilities, storage spaces for bicycles and even bicycle valet services, the Market makes cyclists feel welcome and secure. To support the BeltLine, the Market donates the first \$1 of each car parking session to the project.

Repurpose and Rejuvenate

With steady streams of active mobility users visiting the Market, many new developments that encourage car-free lifestyles have sprouted. Homes near the BeltLine were sold within 24 hours, as opposed to taking 60 to 90 days previously.

Catalyst for Investment

Active transport infrastructure can certainly attract more development—over \$400 million of public and private investment in the BeltLine has led to more than \$2.4 billion in further private development along the corridor.





10 Cities on the Map



These examples from across Europe and the United States show how active mobility and innovative use of space can create healthy communities and liveable cities. These cases are presented in detail in *Active Transportation and Real Estate: The Next Frontier*.

Read on for more exciting examples from across the the Asia-Pacific region.

- Trending
- Emerging

Seoul

Population:
10,300,000

City Area:
605 km²

Density:
17,018 ppl/km²



City Map

Shaping a Car-free Zone

Seoul

Challenges

In the past four decades, Seoul's population quadrupled while cars increased fiftyfold. In Yonsei-ro, a popular 550 m-long commercial street in Seoul's Sinchon district, the average travel speed in 2013 was only 10 km/h—far slower than the 25 km/h average on main roads. Pedestrians were confined to narrow sidewalks, causing crowding in the streets.

Solutions

The Seoul Metropolitan Government implemented two car-free days in Yonsei-ro, and collected data for planners to fully analyse the impact of vehicle restrictions. The results showed that vehicles travelling north to south were successfully redirected, but a detour had to be identified for vehicles going in the opposite direction.


Results

Yonsei-ro was transformed into Seoul's first public transport-only zone. A transit mall was completed in January 2014, and the benefits were almost immediate—traffic accidents fell by 34% just six months after its opening, and visitors using public transport increased by 11%. Compared to 2013, shoppers in Sinchon increased by 29%, bringing 4% more revenue.

Takeaways

Measures were taken to prevent worsening congestion around the transit mall, showing that pedestrian-friendly projects need not always adversely affect businesses. Seoul's evidence-based approach—combining localised pilots with rigorous data collection—led to better-informed solutions and helped generate support among multiple stakeholders.



A black and white photograph of Mayor Park Won-soon of Seoul. He is an older man with glasses, wearing a dark suit and a patterned tie, smiling broadly. He is holding a brochure or pamphlet in his hands. In the background, there are several people, including a man with sunglasses and a woman, and a camera operator with a microphone. The scene appears to be outdoors, possibly at a public event or press conference.

"I have been envious of the pedestrian streets in world-famous cities for a long time. Now Seoul has some pedestrian roads of its own. A human-centered Seoul, a pedestrian-friendly Seoul—we have just laid the first milestone".

Park Won-soon
Mayor of Seoul

Read Mayor Park Won-soon's blog post on The Dawn of a Pedestrian-Friendly City.

Shanghai

Population:
24,153,000

City Area:
6,341 km²

Density:
3,809 ppl/km²



Humanising the Streets Shanghai

Challenges

As Shanghai grew in affluence, more people aspired towards the status symbol of owning private cars. Between 2009 and 2014, motor vehicle mileage doubled. By 2014, the city's car ownership exceeded 10% of the national car population. Cars dominated Shanghai's 12,000 km of road space, leaving little room for much else.

Solutions

Shanghai created a mission to return streets to its people, and make streets "Safe, Green, Vigorous and Smart" through a set of urban development guidelines. This sparked a shift in focus from engineering and road traffic towards design of spaces and the environment. Artistic and cultural attractions were set up to encourage walking, while smart technologies improved the monitoring and integration of public street facilities.

Results

Shanghai's spaces became more interactive, accessible and aesthetically pleasing. By downplaying vehicular transport, streets were made safer and more convenient to walk and cycle. Community life and leisure activities flourished, while neighbourhoods became cleaner and greener.

Takeaways

Shanghai got the fundamentals right by reviewing traffic planning and street design, before fine-tuning it in favour of pedestrians, cyclists and public transit users. Widened walkways became common ground for people-public-private collaborations, bringing life and personality to the streets.

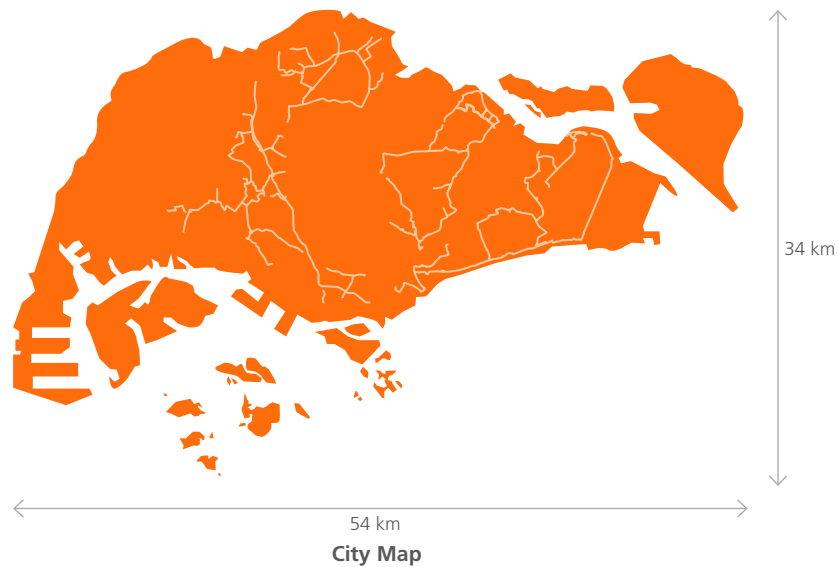


Singapore

Population:
5,607,000

City Area:
719 km²

Density:
7,796 ppl/km²



Leaving Cars Behind Singapore

Challenges

Singapore already has a robust system of integrated land use and transport planning, but accommodating a growing population on limited land has required a shift towards more space-efficient modes of transport.

Solutions

More incentives are being introduced for people to use public transport and embrace new options such as personal mobility devices (PMDs). Folding bikes and PMDs are now allowed on trains and buses all day, and numerous bike-sharing services have kicked off. From 2016, property developers are required to submit a walking and cycling plan in development applications.

Results

Public transport usage now makes up 66% of all peak-hour journeys. Various transport forms are common these days, including Uber and Grab ride-share services and PMDs. Riding a PMD is even seen as fashionable. Since the passing of the Active Mobility Bill in 2017, PMD users have increased significantly to at least 25,000, with about 25% using their devices daily.

Takeaways

By welcoming new technologies while helping stakeholders and users adapt to change, Singapore is focusing on people's needs and working with the market to find mutually beneficial solutions. This allows for greater systemic innovation, and is a prerequisite for achieving "mobility as a service".

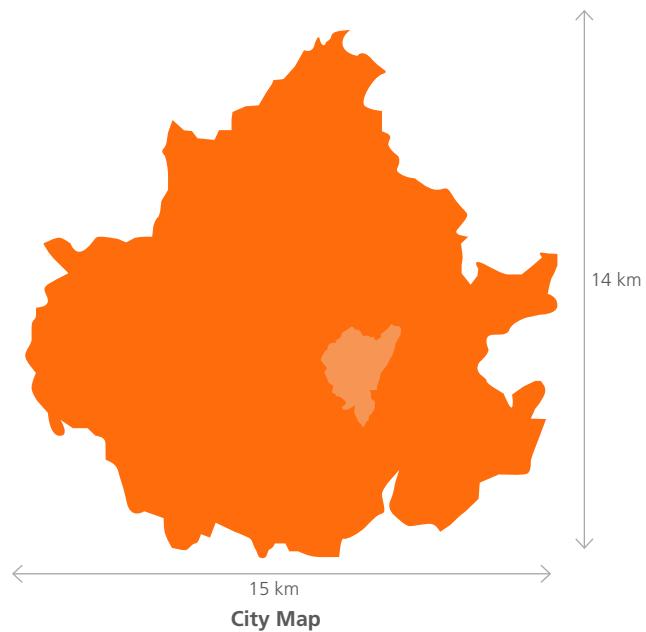


Suwon

Population:
1,170,000

City Area:
121 km²

Density:
9,666 ppl/km²



Every Day Can Be a Festival

Suwon

Challenges

Haenggung-dong, a mixed-use neighbourhood in the historic town centre of Suwon, had been in decline and was slated for urban renewal. Cars filled its streets and alleys; the area was home to only 4,300 residents, yet there were 1,500 cars registered.

Solutions

In September 2013, residents explored a futuristic car-free neighbourhood. Haenggung-dong was transformed into an “ecomobility village”. Residents parked their cars outside the neighbourhood, and used city-provided shuttle buses, innovative e-bicycles and personal mobility devices. Suppliers transferred goods from outside the car-free zone to an electric shuttle service for deliveries.

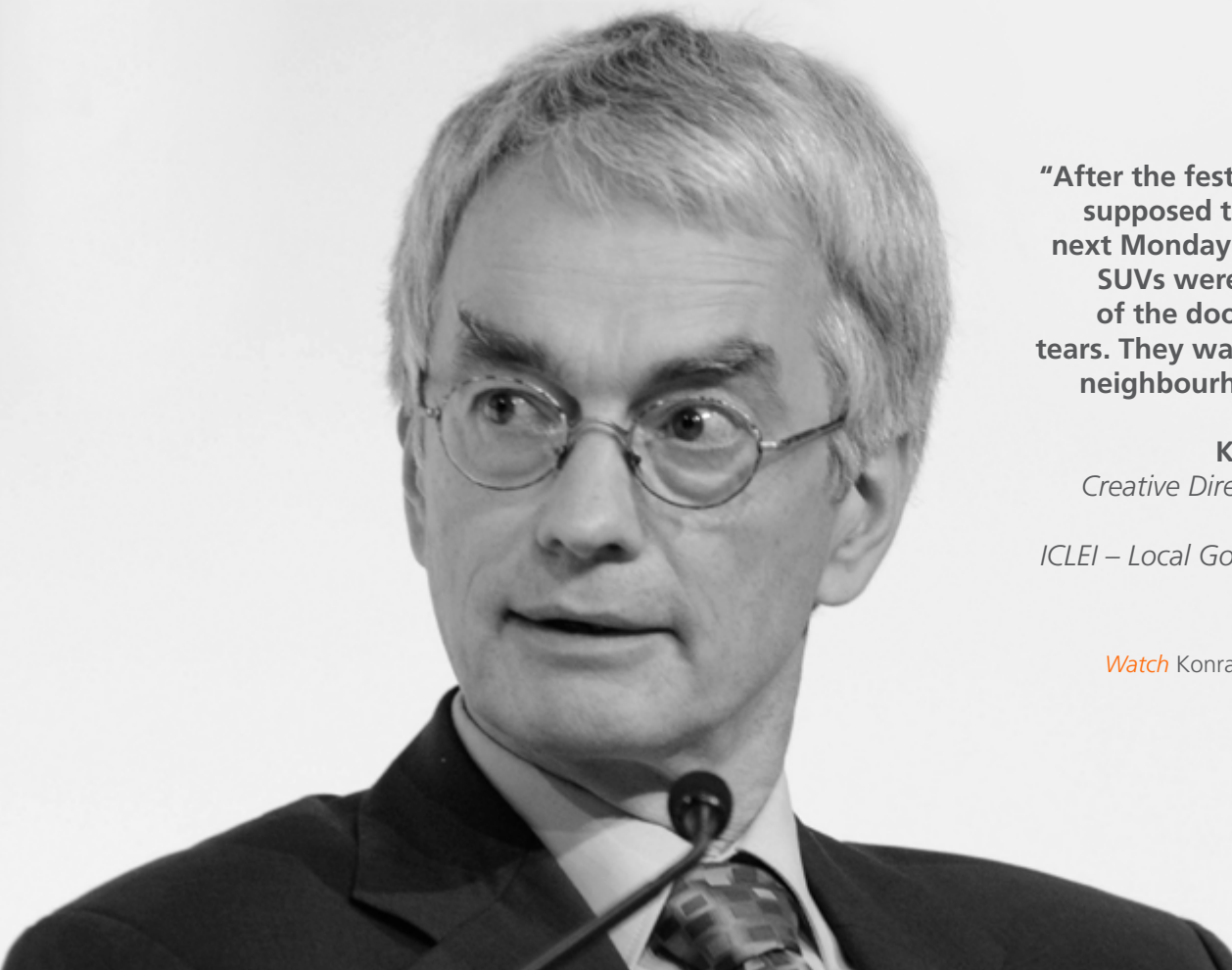
Results

The EcoMobility Festival helped move people from driving to using public transport. Four years on, car speeds are limited to 30km/h, and parking lots on main streets have been removed. Haenggung-dong is now a thriving food hub with more home-based businesses, and still holds monthly car-free Saturdays to relive the festival experience. Real estate values have also appreciated. Suwon hopes to replicate this model in other parts of South Korea.

Takeaways

Despite being a one-off event, the festival represented a bold commitment to changing mobility preferences and demonstrated the value of continual experimentation and improvement. It mobilised residents and stakeholders, made urban mobility a subject of public debate, and aligned municipal departments and provincial authorities.





“After the festival closed, the cars were supposed to come back; and on that next Monday they came back—the big SUVs were again being put in front of the doors. Many people were in tears. They wanted to keep this car-free neighbourhood as it was, forever...”

Konrad Otto-Zimmermann

Creative Director, The Urban Idea GmbH

Former Secretary General,

ICLEI – Local Governments for Sustainability

Hover for sound bite. 

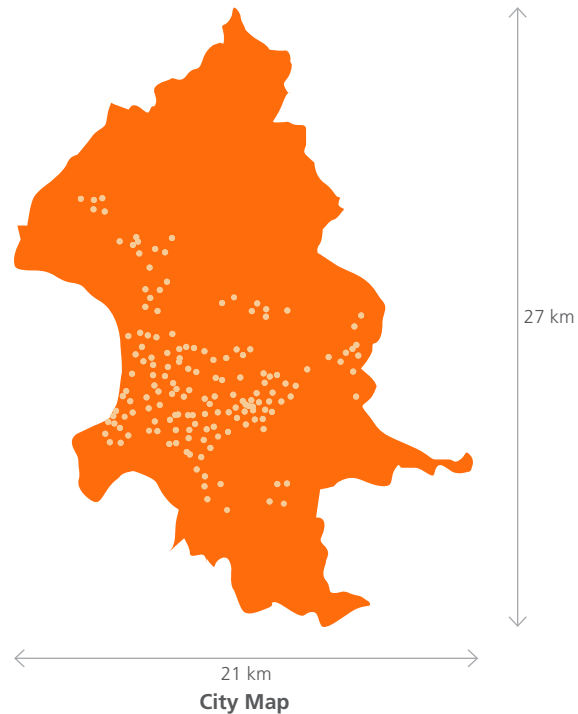
Watch Konrad Zimmermann's interview during the 2016 World Cities Summit.

Taipei

Population:
2,694,000

City Area:
272 km²

Density:
9,912 ppl/km²



Sharing the Ride Taipei

Challenges

On average, more than one million motorcyclists commute from New Taipei City to Taipei daily. Bicycles have often had to compete with motorbikes and motor vehicles for roadscape, posing high risks to cyclists.

Solutions

A world-class cycling environment and a public bike-sharing scheme, called YouBike, was developed in 2011. The idea was to have cycling compete with motorbikes, and to create parking spaces for bicycles that do not mix with motorbikes or scooters. The government also rationalised car usage fees and increased dedicated spaces for walking and cycling. Real-time traffic and Youbike data was made public, which allowed users to predict YouBike's usage and availability.


Results

Taipei is on track to build an extensive cycling network of more than 500 km. Cycling is now an established part of urban mobility, with 5% of all journeys made on bicycle, and 50% of cyclists are women. By 2018, people will be able to access one of 400 YouBike stations within a 10-minute walk from anywhere in the city. The Taipei government aims to achieve a 12% modal share for bicycles by 2020.

Takeaways

Taipei's success is due to sustained efforts in understanding the public's evolving behaviours and preferences. With sufficient infrastructure and meaningful data, commuters are encouraged to use the bike-sharing service, making cycling trendy and an everyday mode of transport. This also generates data, which the city capitalises on to further improve its systems and planning decisions.





"In the future, Taipei City will build separate lanes for pedestrians and cyclists on the twin principles of expanding the pavement and separating it from the cycle lane".

Dr Ko Wen-je
Mayor of Taipei

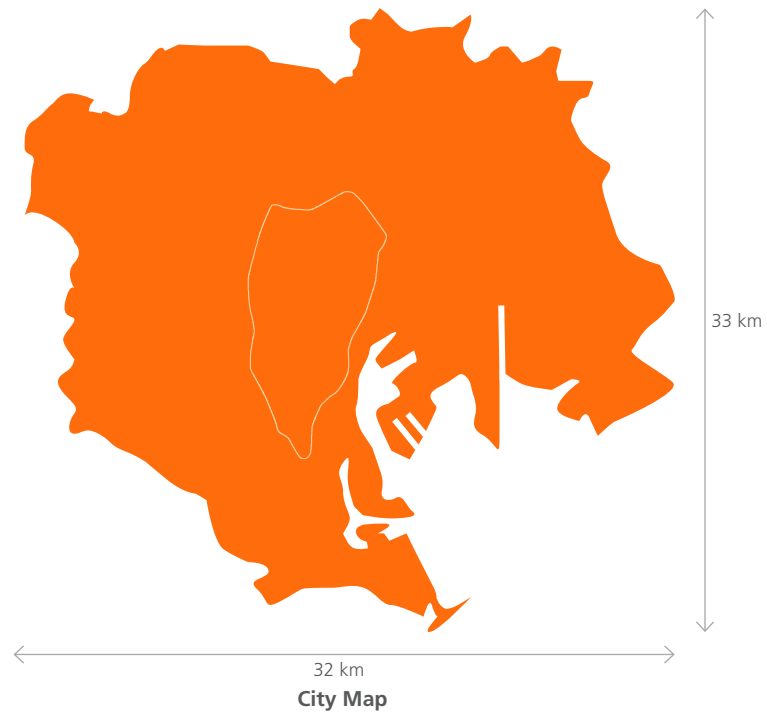
Read Mayor Ko Wen-je's views
on transportation innovation.

Tokyo

Population:
9,240,000

City Area:
627 km²

Density:
14,737 ppl/km²



Connecting the Flows

Tokyo

Challenges

As Tokyo's urban landscape evolved, developments became increasingly sophisticated and complicated. There has been an increasing concentration of people in the city centre, for work and recreation. The metro system is one of the world's busiest, serving some 3.3 billion passengers annually.

Solutions

To prevent crowding and disorder in key locations, the city created connections to allow pedestrian traffic to flow better. Efficient, layered connections were built to link sprawling underground pedestrian networks at metro stations. Walkways were widened, some even doubled in width. These were joined to improved street-level infrastructure, all designed to link seamlessly.

Results

A new core retail area was established, linking Tokyo and Yurakucho stations, and serving a combined 1.2 million passengers daily in 2016. Spaces were opened for events and exhibitions. The Central Business District (CBD) became a highly accessible, attractive public space drawing large crowds, with visitors to the office district more than tripling on weekends.

Takeaways

Planning matters. A key enabler was the established, widespread underground network at these transport nodes—all that was left to do was connect them. By creating compact, mixed-used developments around public transport nodes, workplaces and social activities were brought closer to the people.

An increase in human traffic can be induced and accommodated through infrastructural enhancements, creating a busy yet vibrant and orderly environment.

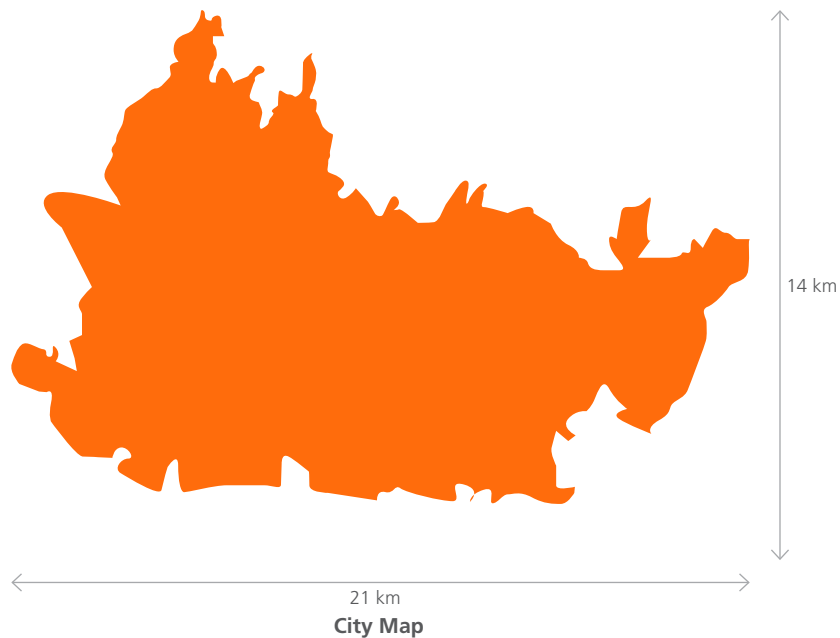


Bandung

Population:
2,482,000

City Area:
167 km²

Density:
14,835 ppl/km²



Walking the Talk

Bandung

Challenges

Bandung is Indonesia's third-largest city by population, but only 20% of the Greater Bandung population use public transport. The city's hilly topography limits mobility options. In areas such as the Jalan Cihampelas shopping district, vendors line the streets, causing traffic congestion.

Solutions

To relocate the many street vendors and provide an accessible and safe shopping space, the Teras Cihampelas elevated deck was built to allow visitors to walk from the nearby zoo to Jalan Cihampelas without having to enter the congested city centre.

Results

Pedestrians can now stroll freely and safely on the skywalk, away from traffic. The 450 m-long elevated deck has space for close to 200 street vendors. There is a bolder plan to build Bandung Skywalk, a series of bridges and skywalks across the city, creating better connectivity over the hilly terrain between east and west Bandung.


Takeaways

Urban mobility extends beyond moving people around by machines or cars—it is also beneficial to offer people a range of travel options. The Skywalk plan focuses on walking as the more attractive option, by allowing people to walk safely in the city without having to cross busy traffic intersections.



“...by giving option[s] for people to choose how to get connected in the city, I think that more or less, [t]hat is the vision we want to have for a more sustainable and liveable Bandung...”

Ridwan Kamil
Mayor of Bandung

Hover for sound bite. 

Watch Ridwan Kamil's full interview during the 2014 World Cities Summit.

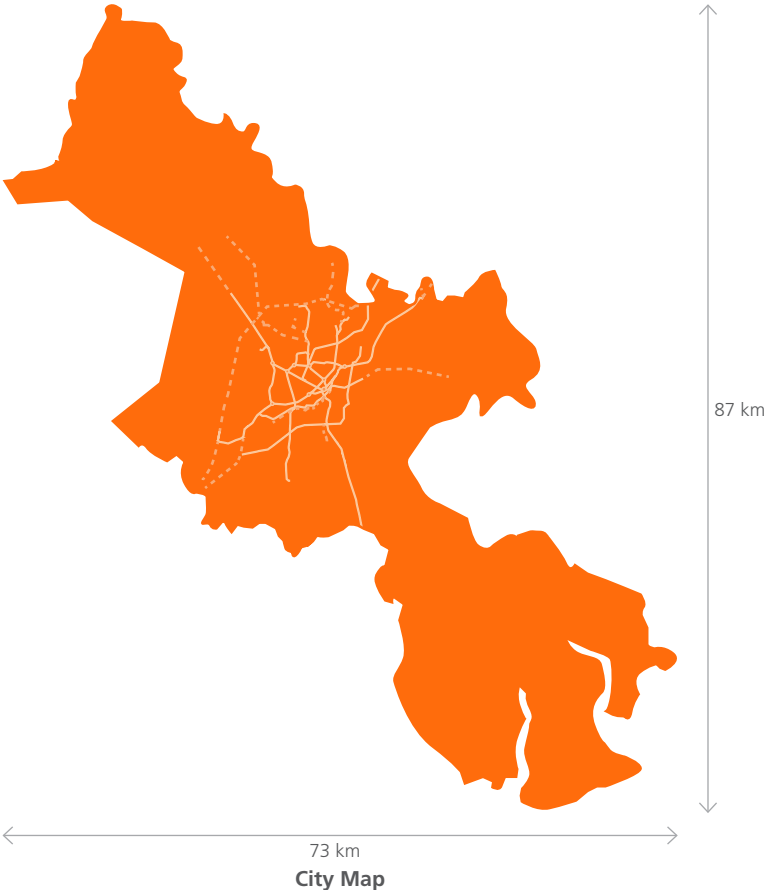


Ho Chi Minh City

Population:
8,147,000

City area:
2,096 km²

Density:
3,888 ppl/km²



Moving on from Motorbikes

Ho Chi Minh City

Challenges

Ho Chi Minh City (HCMC) is the economic heart of Vietnam. With robust economic growth and an increasing population, it has become a “motorcycle-dependent city” with nearly 6 million motorbikes and various affiliated problems. Pedestrian walkways are congested due to poorly regulated motorcycle parking. In 2014, 65% of the 875 traffic accidents involved motorbikes, resulting in 713 deaths.

Solutions

HCMC has an ambitious plan to build an extensive public transport system, which will include Mass Rapid Transit and Bus Rapid Transit corridors. With this, public transport is slated to make up 25% of city travel by 2020 and 60% after 2030. To reduce traffic accidents, the new Traffic Safety Year 2017 campaign hopes to build a healthier, safer traffic culture.

Progress

It continues to be an uphill task for public transport to gain a foothold in HCMC. Besides having to raise capital to build the new public transport system within a short timeframe, the city faces difficulties such as fragmentation of funding, land acquisition and resettlement challenges, as well as administrative issues.

Takeaways

Time is a key factor in real estate development. Complex projects require a longer, phased implementation, with flexibility in timing. Construction costs in HCMC’s growing infrastructure sector will make progress uncertain until contract experience is gained, and local industry capacity and skills are further developed.

In the long run, with more funding and project management, HCMC is in a good position to become a society of shared mobility, completely bypassing the car-dependant stage.

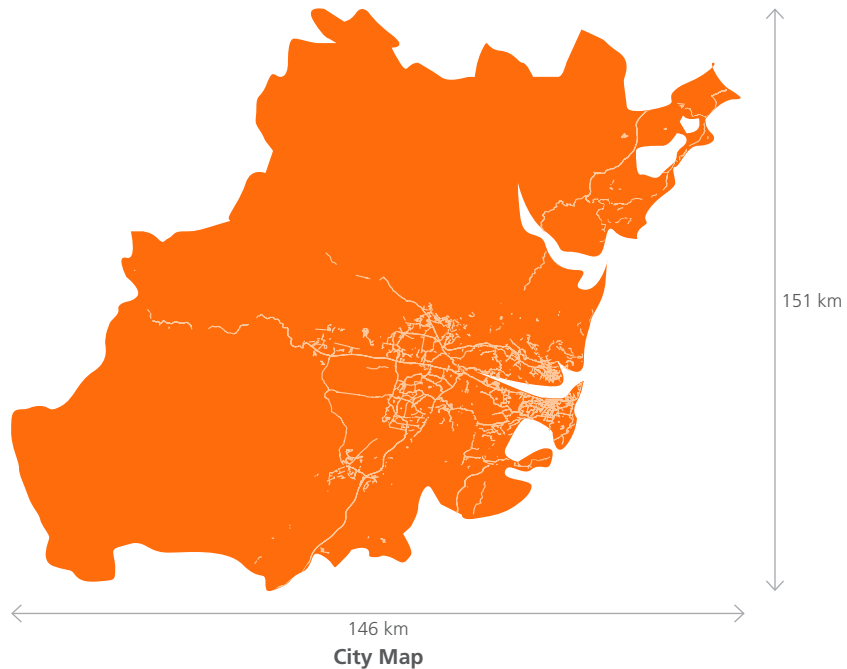


Sydney

Population:
5,006,000

City area:
12,368 km²

Density:
405 ppl/km²



Reclaiming the Streets Sydney

Challenges

In 2015, Sydney—home to seven of Australia's 10 slowest roads—earned the title “congestion capital”. That year, congestion ratings—especially on prominent streets like George Street—hit a high of 34%. Vehicles moved 20% slower in the CBD.

Solutions

The state's transport authority launched an initiative to replace the numerous bus services plying George Street with a resource-efficient light rail service, and to transform a portion of the street into a pedestrianised boulevard. From 2019, a 1.2-km stretch will be fully pedestrianised, with light rail as the main form of transport.


Results

A reduction in traffic demand was achieved to great effect—more than 39,000 pedestrians now walk down George Street every day. Thus far, sections of the street have been gradually closed in preparation for the light rail service. Commuters have generally welcomed the change, although taxi drivers and couriers were inconvenienced by road diversions.

Takeaways

Sydney was determined to fix its congestion problems and transform its roads into assets. Gaining buy-in from the public was important. The city is moving closer to realising the Sustainable Sydney 2030 Plan to become “green, global and connected”.





“The key to a successful global city is one that is environmentally sustainable, is actively serviced with community infrastructure and parks and green spaces with a rich variety of choices and activities, and has a lively social and cultural life”.

- Clover Moore

Lord Mayor of Sydney

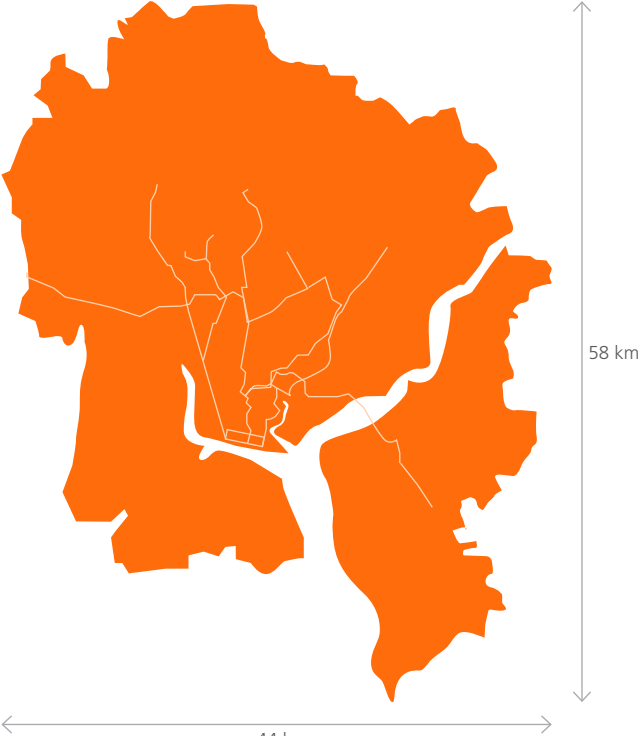
Read Lord Mayor Clover Moore's visions for the City of Sydney.

Yangon

Population:
7,360,000

City area:
1,500 km²

Density:
4,907 ppl/km²



City Map

Moving the Masses

Yangon

Challenges

In Yangon, people spend hours each day travelling on heavily congested streets. A lack of planning and government funding led to poor road infrastructure and an overstretched public transport system. The private car population doubled from 2011 to 2015 due to relaxed import limits. Indiscriminate roadside parking eats up road capacity and worsens the public transport experience.

Solutions

The Project for Comprehensive Urban Transport Plan for Greater Yangon (YUTRA) was formed in 2013, with long-term plans up to 2035. Public-private partnerships oversee implementation of proposed solutions and provide much-needed funding. Aside from a Bus Rapid Transit (BRT) system, circular railway improvements are planned, to cut waiting times from 45 minutes to 10 minutes.

Progress

A BRT Lite scheme was launched in 2016 to gradually replace the notoriously dangerous “BM” buses. Street infrastructure has been improved to enhance safety and flow, and to shape courteous road behaviour. This includes constructing flyovers, planting concrete blocks to delineate lanes and installing smart traffic lights. Citizens have responded positively, and are demanding more.

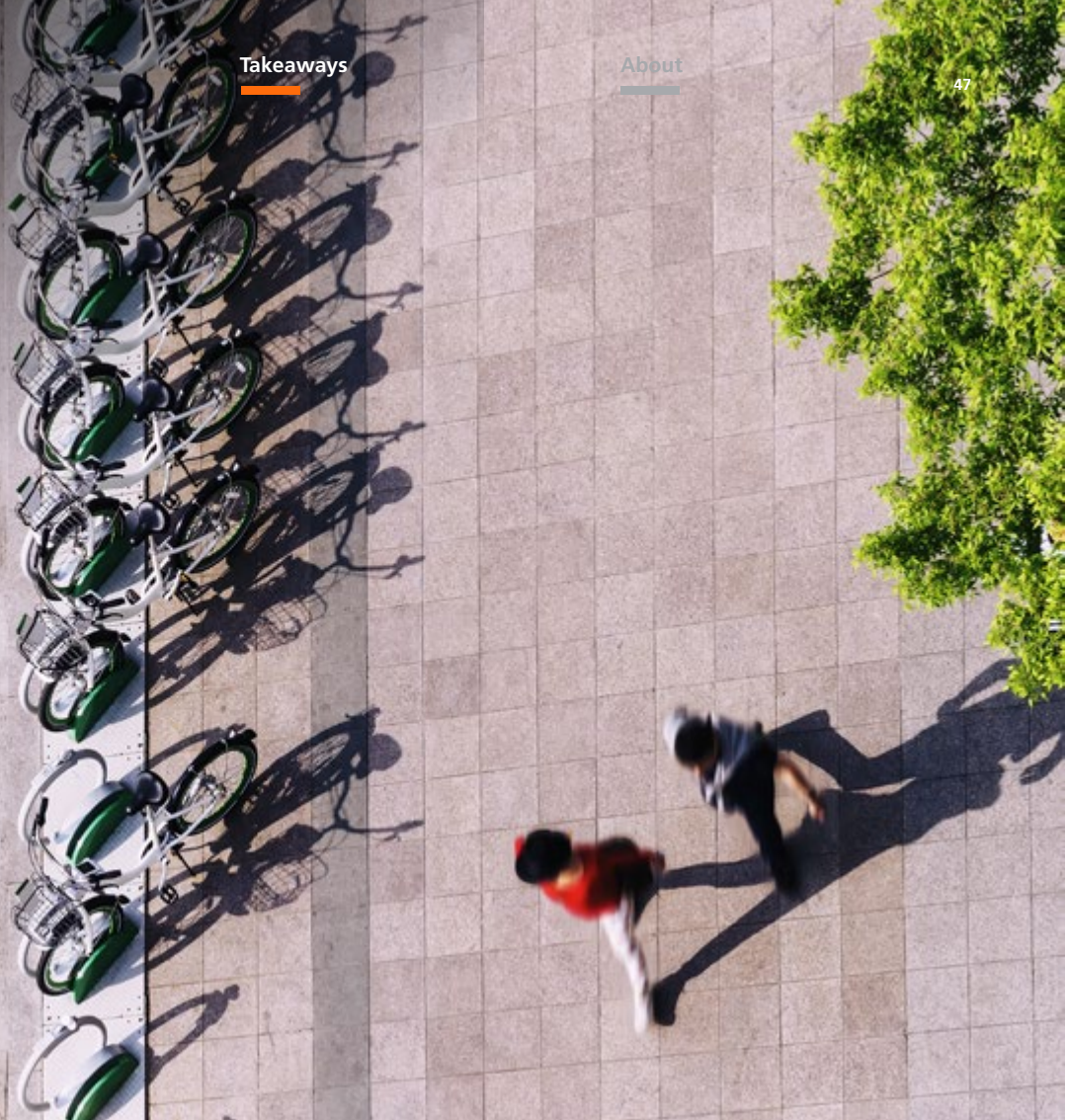
Takeaways

Improvements take time, especially for backward infrastructure such as Yangon’s railway signal systems, dating back to the 1960s. But with a comprehensive, detailed plan to introduce various forms of rapid transport (bus, light rail and metro) and a new inflow of investments, the city can use its existing transport corridors to reduce dependency on cars, and develop shared mobility.

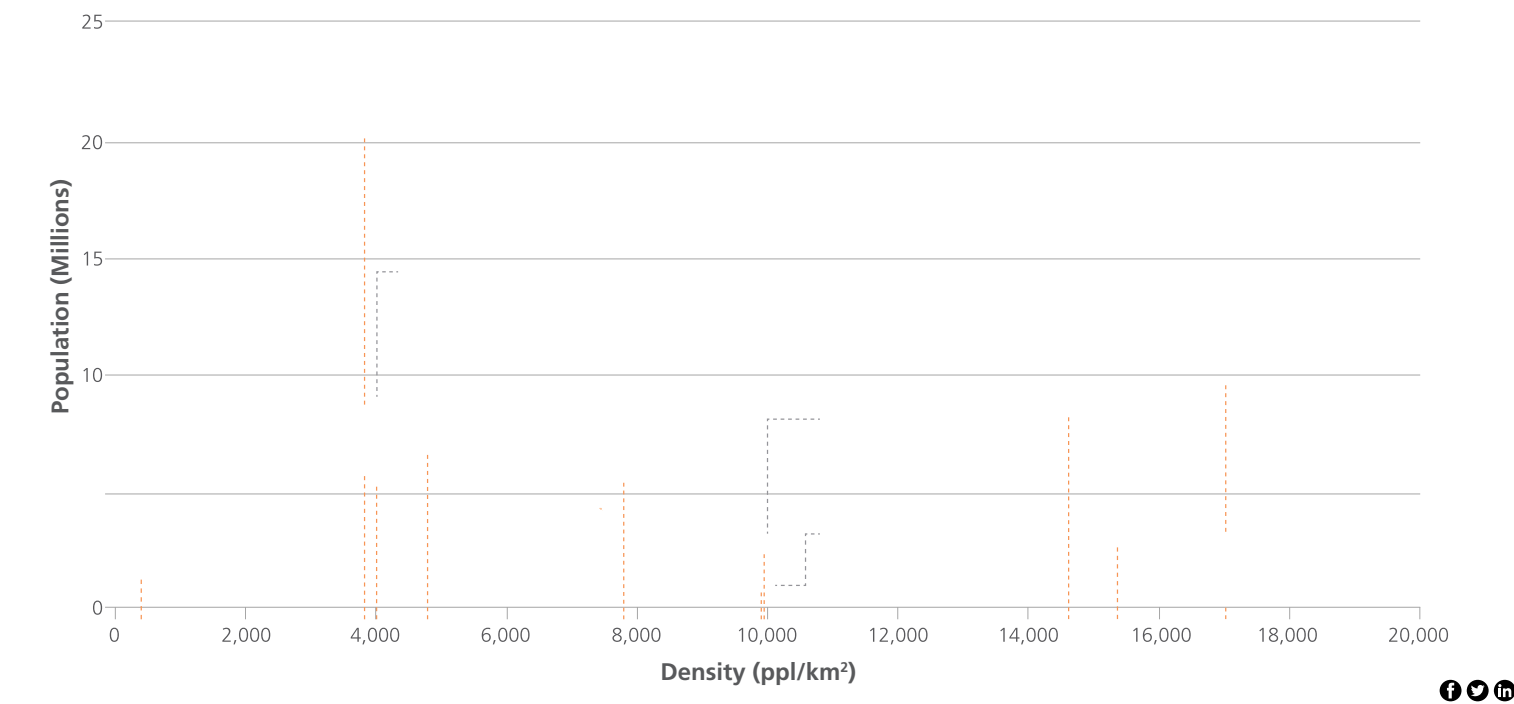


Takeaways

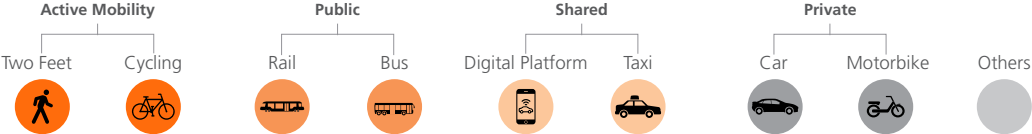
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Comparing the 10 Cities



Mode Share Across the 10 Cities



What Makes Your Heart Beat Faster?

Healthy practices lie at the heart of thriving cities. The way we shape and connect our spaces can have far-reaching impacts on our communities. Our hearts can race either from stress caused by traffic congestion or from invigorating active mobility.

While each of these 10 cities has its own set of problems, they all share a common goal: to establish a sustainable mobility system. The benefits of such a system are diverse: reduced congestion and stress, improved quality of the environment, healthier choices and expanded development opportunities.

As urban mobility choices increase with the wider use of personal mobility devices and technology enhancements such as autonomous vehicles, greater pressure will be placed on shared roadways. There is a need to consider the speed of travel rather than simply differentiating by type of vehicle. This will require a re-engineering of the public right of way to ensure that multiple flexible modes of transport can be accommodated.

Together, the strategies adopted by each city form ecosystems of mutually reinforcing solutions. This emphasises our collective role in shaping real estate developments and cities, so that movement and mobility create positive social, physical, economic and environmental value. We share the power to create healthy cities—the future starts now!



Further Reading

Urban Mobility: 10 Cities Leading the Way in Asia-Pacific builds upon the work of ULI and CLC and champions the vision of sustainable and active mobility in cities.

Active Transportation
and Real Estate

Building Healthy
Places Toolkit

Urban Solutions:
Active Mobility

Creating Healthy
Places through
Active Mobility

Creating Liveable
Cities through
Car-Lite Urban
Mobility

Walkable and Bikeable
Cities: Lessons from
Seoul and Singapore

Megacity Mobility
Systems & Solutions

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