UBER

SUBMISSION TO THE INQUIRY INTO THE AUSTRALIAN GOVERNMENT'S ROLE IN THE DEVELOPMENT OF CITIES

HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON INFRASTRUCTURE, TRANSPORT AND CITIES

UBER | JULY 2017

Uber | Future of Cities

UBER

CONTENTS

UBER

FOREWORD

Cities around the world are experiencing an unprecedented period of growth and change. As they develop, the challenges and opportunities facing global urban environments are become more pronounced.

Australian cities are no exception - significant demographic shifts, unique geographic challenges, and dynamic changes as a result of the rapid progression of technological development make fulsome consideration of urban development a priority for all levels of government.

It is essential to recognise that these challenges present tremendous opportunities for cities. It is incumbent on governments to reassess the way they view the development of cities and holistically consider the way national policy shapes the future of cities.

Uber commends the Standing Committee on Infrastructure, Transport and Cities for exploring the opportunities associated with these changes, and welcomes the opportunity to participate in the Committee's Inquiry into the Australian Government's role in the development of cities.

Since launching the Uber app in Australia in 2012, it has changed the way people move around Australian cities - connecting riders and drivers at the push of a button. Through our bespoke technology, we are working on a range of new products to help our cities move better.

Uber's technology has the power to transform the way we think about transport, infrastructure and urban development, and improve urban mobility and the quality of life for people living in cities around the world.

Although Uber has a significant role to play in growing and transitioning regional cities and towns, the focus of this submission is existing cities and the opportunities for technology to better utilise existing assets, promote a more sustainable urban environment and enhance livability in cities at a time when they face new and increased demands.

Uber looks forward to working with the Parliament to progress a shared vision for the future of Australian cities.

INTRODUCTION

Australian cities rank among the most extraordinary in the world. They are globally awarded, and renown for their vibrancy, connectivity and liveability[1].

However, cities around the world are experiencing a rapid period of growth and change. Not only are cities themselves evolving, but the people who inhabit them are changing too - the way we communicate, work and move around our cities would be unrecognisable to the planners and architects who mapped out our cities years ago.

So too, the future of government engagement with cities has changed significantly. With increased demand for government services comes an increasingly constrained fiscal position - governments are now expected to do more with less.

---

[1] The Economist Intelligence Unit, *The world's most liveable cities*, 2016.

UBER

Infrastructure expenditure is one of the most significant items in each federal and state budget, with the Federal Government alone committing over $70 billion to infrastructure investment across Australia[2]. Finding smarter, more efficient ways to utilise this investment and maximise its value to the community is vital. At the same time, technology has reshaped the way we live. From desktop computing through to the scale of the internet and the market penetration of smartphones, technology has become an indispensable part of life in Australian cities.

These factors combined, with a particular focus on the digital revolution, provide today's cities with an exciting opportunity to leverage technology and connectivity. We believe that cities and governments across Australia should embrace technology and explore new, innovative ways for cities to benefit from technological development.

Uber has a significant role to play in this space.

Uber is a technology company that provides a smartphone application to connect driver partners with people who need safe, reliable rides[3]. Founded in 2009, Uber now serves over 600 cities in 77 countries, and facilitates more than five million rides every day.

Since our Australian launch in 2012, Uber is now available in 17 cities across the country, with 3.1 million active riders and 65,000 active driver partners.

This submission outlines some of the ways that technology is already changing cities, future opportunities and how governments can leverage technology to deliver better outcomes for Australians. It will explore:

- **How ridesharing is already changing how our cities move;**
- How technology like Uber can **complement and expand the reach of public transport;**
- The role that **advanced carpooling solutions** can play;
- How ridesharing and Uber can help solve **congestion, parking** and **environmental** issues in modern urban environments;
- Opportunities for cities to use advanced data like Uber's **Movement** tool in order to better understand urban transit; and
- The impact that future developments in urban mobility - particularly the increased prevalence of **self driving vehicles** - will have on cities.

In its deliberations on the future of cities, Uber encourages the Committee to:

1. Acknowledge the Federal Government's role in leading public debate on urban development and the future of cities;
2. Acknowledge the significant role that technology, including ridesharing and Uber, can play in improving the mobility of cities;
3. Urge governments to direct state and federal regulators to embrace innovative technologies that deliver net benefits to cities;
4. Explore opportunities to work within existing resources to achieve positive outcomes for cities; and
5. Urge all Australian governments to investigate innovative partnerships with third party organisations to deliver better transit solutions for Australian cities.

We look forward to working with the Committee to explore new, innovative ways to deliver better outcomes for Australian communities.

---

[2] Australian Government, *Budget Paper No. 2*, Budget 2017-18.
[3] See Appendix 1: What is ridesharing?

Uber | Future of Cities

UBER

KEY ISSUES FACING AUSTRALIAN CITIES

The urban landscape is experiencing an unprecedented era of global change.

In 1900, just one in seven people worldwide lived in cities. Today, it is one in two[4]. The global urban population has experienced rapid growth, increasing from 746 million in 1950 to 3.9 billion in 2014[5]. Urbanisation is expected to increase average city density by 30 percent over the next 15 years[6].

By 2030, it is expected that around 60 percent of the world's population will live in cities, up from 50 percent today[7].

By 2050, UN projections show that overall population growth coupled with increased urbanisation could add another 2.5 billion people to urban populations[8].

Significantly, a large portion of this growth will take place in the Asia Pacific region, with India and China projected to add 404 million and 292 million urban dwellers respectively by 2050[9]. In China, 90 cities boast a population of more than 5 million people, with 20 million people moving from the regions to urban centres each year[10].

In 1990, there were ten 'mega-cities' with 10 million inhabitants or more, home to slightly less than 7 percent of the global urban population. By 2014, that number had grown to 28 mega-cities worldwide, with 12 percent of the urban population. By 2030, the UN projects that the world will have 41 mega cities, with growth centred in Asia Pacific and Africa. However, nearly half of the world's 3.9 billion urban dwellers reside in relatively small settlements with fewer than 500,000 inhabitants - many of the fastest growing cities are relatively small urban settlements.

Rapid urbanisation presents serious challenges to cities, including the tremendous burden it places on cities' transportation systems.

There are currently 1.2 billion cars in the world, equivalent to the population of the United States and Europe combined. These cars sit idle 96 percent of the time. In sprawling metropolitan areas, parking can take up to 15 percent of public space[11]. In the United States, there are eight parking spots for every car - this covers an area twelve times the size of New York City.

Australian cities are not immune to these prevailing global trends.

Australians are predominantly urban dwelling people, with more than 75 percent of the population living in the country's 20 largest cities, and 60 percent concentrated in Australia's 5 largest cities - Sydney, Melbourne, Brisbane, Perth and Adelaide[12]. The Australian Bureau of Statistics (ABS) projects that Australia's population will double to 46 million by 2075. Under a 'high growth' scenario, the ABS suggests that this could occur as early as 2058[13]. The majority of this growth is expected to occur in and around Australia's capital cities.

---

[4] United Nations, *World Urbanization Prospects*, 2014 Revision.

[5] United Nations, *World Urbanization Prospects*, 2014 Revision.

[6] Eric Hannon et al., *An integrated perspective on the future of mobility*, McKinsey & Co., October 2016.

[7] Shannon Bouton et al., *How to make a city great*, McKinsey & Co., September 2013.

[8] United Nations, *World Urbanization Prospects*, 2014 Revision.

[9] United Nations, *World Urbanization Prospects*, 2014 Revision.

[10] The State Council of the People's Republic of China, *National New-type Urbanization Plan (2014 - 2020)*, 2014.

[11] Eric Hannon et al., *An integrated perspective on the future of mobility*, McKinsey & Co., October 2016.

[12] Infrastructure Australia, *State of Australian Cities 2014-15*, December 2014.

[13] Australian Bureau of Statistics (ABS), *3222.0 - Population Projections, Australia, 2012 (base) to 2101*, 26 November 2013.

UBER

There are over 13.5 million cars in Australia today. Private car ownership has grown over 12 percent in the past five years, while population has grown less than 8 percent. Around eight in ten Australians travel to work by car, with the average weekly commuting time for full time workers in Australia's largest cities increasing by almost 20 percent from 2002 to 2011[14].

Recent research shows that if you lived in Parramatta and worked in Sydney's CBD and drove to work, you would spend an extra two and a half hours stuck in traffic every week[15]. In Sydney more broadly, people waste two whole working weeks stuck in traffic each year.

The growth of a country's cities is closely linked to the growth of its economy and the development of its social and political life. The issue of transport and mobility flows directly into other important factors impacting life in cities - connectivity can play a critical role in the productivity of business and industry. Cities are the gateway to the global economy, which is even more consequential in a landlocked country like Australia.

The changes in Australia's economic structure and the broad growth in global trade mean that Australia's major ports and airports - all located close to major urban hubs - are more important than ever. A noted increase in globalisation and international trade leads to greater pressure being placed on existing infrastructure within cities. As such, greater and more efficient connectivity is essential.

Australian cities have a tremendous opportunity to learn from urban shifts in neighbouring regions, and leverage technology to develop more liveable cities for Australian communities.

TECHNOLOGY, SHARED MOBILITY AND THE FUTURE OF CITIES
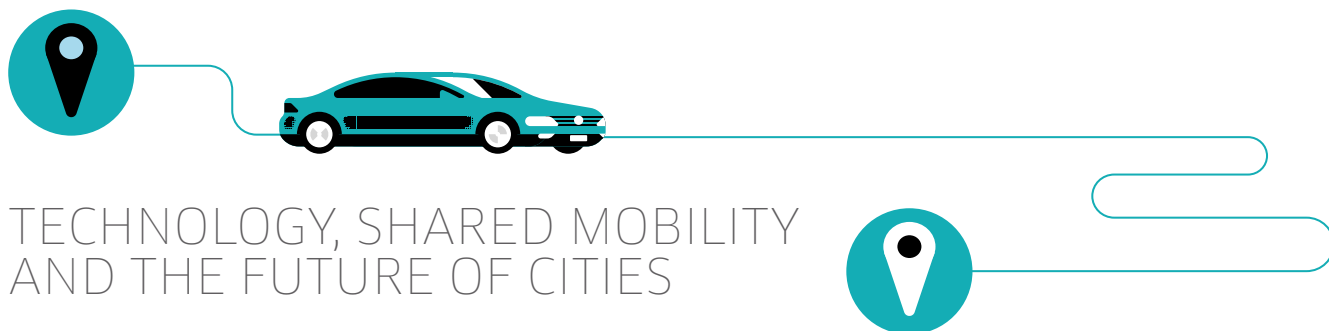
Technology has changed the way we live. Take the smartphone - a tool that has made the previously impossible, possible: the ability to share photos with family and friends in seconds; to stand in one store and compare prices in other stores across town; or to get driving directions wherever you are in the world. Smartphones are fast becoming indispensable, with users now spend as much as five hours a day on their phone.

The switch from desktop to mobile and the rise of the app economy has happened quickly. Apple only launched its app store in 2008 and just six years ago an iPhone lacked the battery power for a service like Uber to function. Today well over 60 percent of all internet traffic comes from mobile, and half of that is driven by apps[16].

The impact of this smartphone-based app revolution is being felt in almost every industry: from communications and commerce to banking and entertainment.

Urban transport has also experienced its own revolution, with ridesharing apps allowing riders to connect with drivers through an app by just pushing a button. Passengers no longer need to call and book, or stand on a street corner or queue in a taxi stand hoping a taxi will come along. Within an average of three to four minutes in Australian metropolitan cities, you can now get ride from A to B at the touch of a button.

---

[14] Australian Bureau of Statistics (ABS), *9309.0 - Motor Vehicle Census, Australia*, 31 January 2016.
[15] Infrastructure Partnerships Australia (IPA), *IPA Transport Metric*, October 2016.
[16] InMobi, *Mobile Media Consumption Third Wave Report*, February 2014.

Uber | Future of Cities

UBER

Uber is a technology company that provides a smartphone application to connect driver partners with people who need rides. Founded in 2009, Uber now serves over 600 cities in more than 77 countries, and facilitates more than five million rides every day. Uber launched in Australia in 2012 and is now available in 17 cities across the country.

UBER IS USED IN AUSTRALIA BY VISITORS FROM AROUND THE WORLD

The line thickness indicates the volume of Uber users.

Data from April 2016 to April 2017. Includes riders who have completed trips only. Only countries with at least five riders are shown.

Basemap courtesy of OSM and Mapbox

Uber's goal is to provide safe, reliable, affordable and convenient transportation within minutes, including to parts of cities that do not have easy access to public transport today, or where other forms of point to point transport have historically been scarce.

One recent study attempted to quantify the value of improved mobility provided by Uber, and found that for every $1 users spent on UberX they received $1.6 worth of gain[17]. This means that the value of reliable transportation at the push of a button is worth sixty percent more to riders than what they pay for it.

Ridesharing apps are also creating new economic opportunities around the world, including for those who have otherwise had difficulty entering the labour market or working as much as they would like. For many, ridesharing apps are a way to escape unemployment or underemployment, both significant issues facing cities across Australia. A recent study in Queensland showed that 1 in 3 Queenslanders were unemployed before they started using the Uber app to share rides.

When Uber was founded in 2009, these are the issues that our team were focused on - providing safe, reliable, affordable rides and providing flexible opportunities for work. However, once the ridesharing market became more established and Uber began to assess transport trends and patterns, we began to better understand the inefficiencies in today's transport system.

Uber's technology, coupled with a deeper understanding of the transport market, has enabled Uber to improve urban mobility and the quality of life for cities that we operate in. By using technology to get more people into fewer cars, we believe in a future where every journey is a shared journey - reducing congestion, pollution and the need for parking in cities around the world.

---

[17] P. Cohen, R. Hahn, J. Hall, S. Levitt & R. Metcalfe, *Using Big Data to Eliminate Consumer Surplus: The Case of Uber*, 30 August 2016.

7

Uber | Future of Cities

UBER

RIDESHARING AND THE FUTURE OF CITIES

Uber's technology has allowed us to improve urban mobility and the quality of life for urban dwellers.

Uber is able to access parts of cities where other means of transportation do not go. City transit systems provide important mobility options, but often do not cover all areas. This leaves many neighbourhoods underserved by affordable and reliable access. Uber is able to extend the reach of public transportation by providing reliable services for areas that are traditionally underserved.

In Los Angeles, a study found that on average, UberX rides in lower income neighbourhoods are less than half the price of taxis, and arrive in less than half the time[18]. In Mumbai, 34 percent of Uber trips serve suburban areas, which traditionally have fewer transportation options available. Similarly, by meeting riders where they are located, ridesharing has created an entirely new transportation option, growing the whole category of point to point transportation services and complementing the transportation network as a whole.

By extending the reach of public transit and helping bridge the gap in areas typically underserved by transit, ridesharing is able to help connect individuals to economic opportunities. A recent Harvard study found that one of the biggest factors in determining whether someone can escape poverty is not the crime rate or test scores, but commuting time[19].

Uber's aim to get more people in fewer cars has the potential to have a dramatic impact on the global transport market. Uber's platform enables us to use the cars that are already on the road more efficiently. In the long run, we are working towards a world where every car on the road is shared. When this happens, the potential exists for enormous mobility benefits.

By getting more people into fewer cars, Uber can provide an affordable alternative to car ownership. In the United States, 10 percent of riders under 30 say that they have either given up their car or are no longer planning to buy one. Similarly, in a recent YouGov poll in London, 28 percent of Londoners who used to own a car say they longer do so because they can use alternatives like Uber instead. This rises to 42 percent among recent Uber users. 1 in 5 Londoners say they are less likely to buy a car in the future because of alternatives like Uber[20].
In Victoria, a Monash University study noted a steady decline in the rate of licensing for millennials, with licensing rates for people under 25 years of age falling from 77 percent in 2000-01 to 66 percent in 2012-13[21].

Increased adoption of ridesharing in Australian cities, which leads to higher utilisation of individual personal vehicles, would lead to lower rates of car ownership and have significant flow on benefits to urban environments. Further, according to research by the American Public Transport Association, people who don't own cars are more likely to walk or use public transport or bike-sharing services[22].

[18] R. Smart, B. Rowe, A. Hawken, M. Kleiman, N. Mladenovic, P. Gehred & C. Manning, *Faster and Cheaper: How Ride-Sourcing Fills a Gap in Low-Income Los Angeles Neighborhoods*, BOTEC Analysis Corporation, July 2015.

[19] R. Chetty & N. Hendren, *The Impacts of Neighborhoods on Intergenerational Mobility*, Harvard University, April 2015.

[20] YouGov poll commissioned by Uber and conducted from 28 October to 1 November 2016.

[21] Dr Alexa Delbosc, *Why are young Australians turning their back on the car?*, The Conversation, 5 January 2015.

[22] American Public Transport Association (APTA), *Shared Mobility and the Transformation of Public Transit*, March 2016.

8

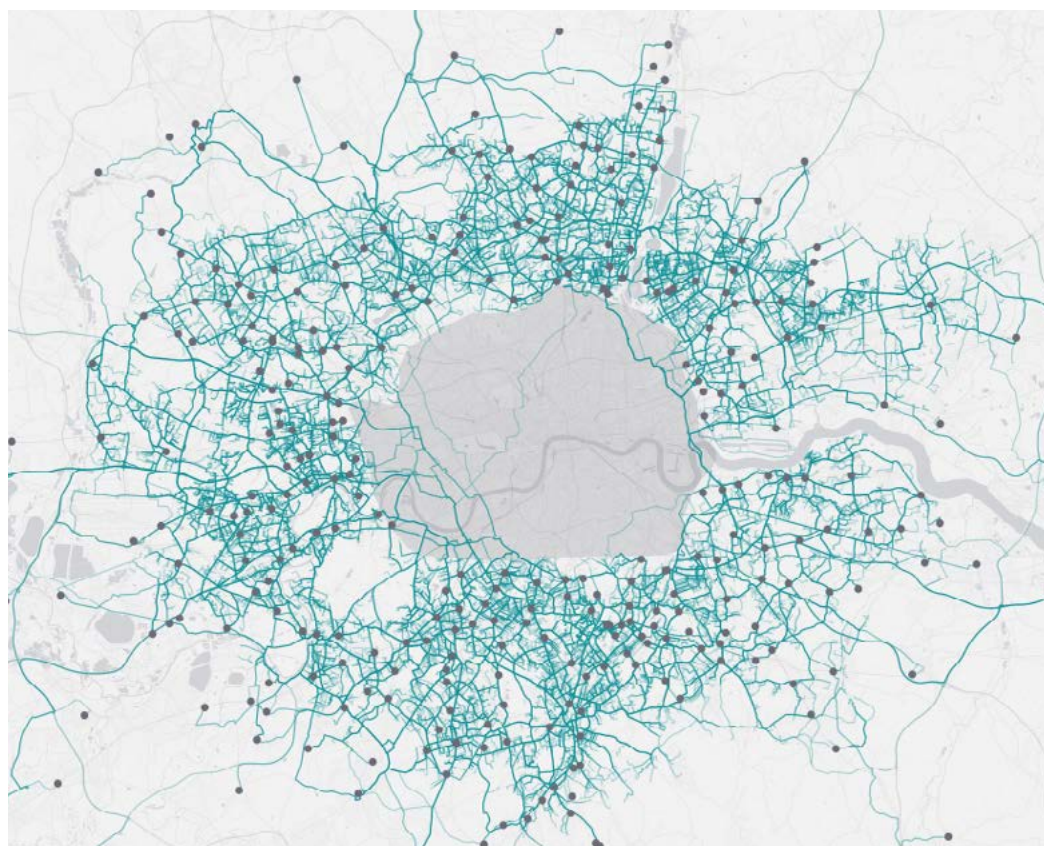Uber | Future of Cities

UBER

COMPLEMENTING PUBLIC TRANSPORT

Public transit is the mobility backbone of cities around the world. It is also an essential option for people without personal automobiles, an important alternative to driving for car owners, and an integral part of making cities more accessible and sustainable.

Ridesharing complements and extends the reach of public transport, and for the first time, makes carpooling a reality at scale, reducing congestion and emissions.

In Australia, over 60 percent of Uber trips start or end in a public transport desert[23]. And almost half of all trips are one-way, implying that for some suburbs, for at least part of the day, public transport is unavailable to cover either the outbound or return leg. In this way, ridesharing complements public transport where reliable service is unavailable. Ridesharing provides a flexible and scalable solution to the 'last mile' problem, connecting riders from their door to a transport hub.

In London, 4 in 10 Uber trips start or end within 200 metres of a tube stop, and 20 percent of Uber trips start or end in an area underserved by public transport.

LONDONDERS USE UBER TO START THEIR MORNING COMMUTE

Lines indicated Uber trips start started in Outer London on weekdays between 5 and 10 in the morning, and ended at a train station.

- TRAIN STATIONS
- UBER TRIPS
- ZONES 1 & 2

Data from March 2016. Complete trips only. Points away from train stations have been jittered to preserve privacy

Similarly, in London people are also combining the new Night Tube service and Uber to get home. In the six weeks following the launch of this service, a number of stations within Zone 1 saw a decline in pick-ups during Night Tube hours, while those outside Zone 1 starting near Night Tube stations rose by 63 per cent, and Uber trips starting within 200 metres of Night Tube stations increased by 22 percent. This shows that people are using the Night Tube in London to get out of central areas in the early hours before relying on Uber to travel the last mile safely home.

---

[23] Deloitte Access Economics, *Economic effects of ridesharing in Australia*, July 2016.

Uber | Future of Cities

UBER

UBER EXTENDS EXISTING PUBLIC TRANSPORTATION IN SYDNEY

Lines represent Uber trips that began or ended near rail stations.

• RAIL STATION
— UBER TRIPS

Data from the city of Sydney between August 1st and August 7th, 2016. Completed trips only. Points have be jittered for privacy. Actual trip routes have been replaced by routes generated using open source routing process. Stations © OpenStreetMap contributors. For more visit http://www.openstreetmap.org/copyright

These trends provide an opportunity for governments to partner with technology companies like Uber to find innovative ways to solve pressing mobility issues. In cities around the world, a number of city authorities and transport operators are partnering with Uber to provide better access to public transport and ease congestion, be it for particular events or over extended periods. For example:

- In Summit, New Jersey, the City recently agreed to partner with Uber to help local residents access the rail station, whereby trips are subsidised to match the price of an all-day parking permit, thus reducing demand for parking and helping taxpayers avoid the need to fund an expensive new car park.

- In Florida, Uber and the Pinellas Suncoast Transit Agency (PSTA) have been working together to increase the use of public transport, jointly subsidising Uber fares to and from bus stops to solve the 'first and last mile' problem in the county.

- In the UK, Uber has partnered with Mobicia, London's leading bus times app with almost one million users per month. Uber is now integrated into the Mobicia experience, enabling customers to order a ride via the Uber app to the nearest convenient bus stop for their onward journey, improving access to public transport, especially in areas that are beyond an easy walk to the bus.

- In Canberra late last year, Uber partnered with the ACT Government and Transport Canberra to extend the reach of Canberra's 'Night Rider' service. We jointly subsidised a $10 discount to get passengers home from bus stations late at night, which broadened the scale of the Government's service, as well as providing safe transport options at night.

As more people continue to make the switch away from private cars, Uber can make it even easier to connect with public transport, easing the strain on the roads and cutting congestion.

10

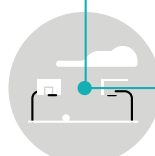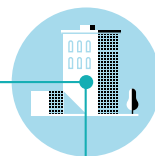Uber | Future of Cities

UBER
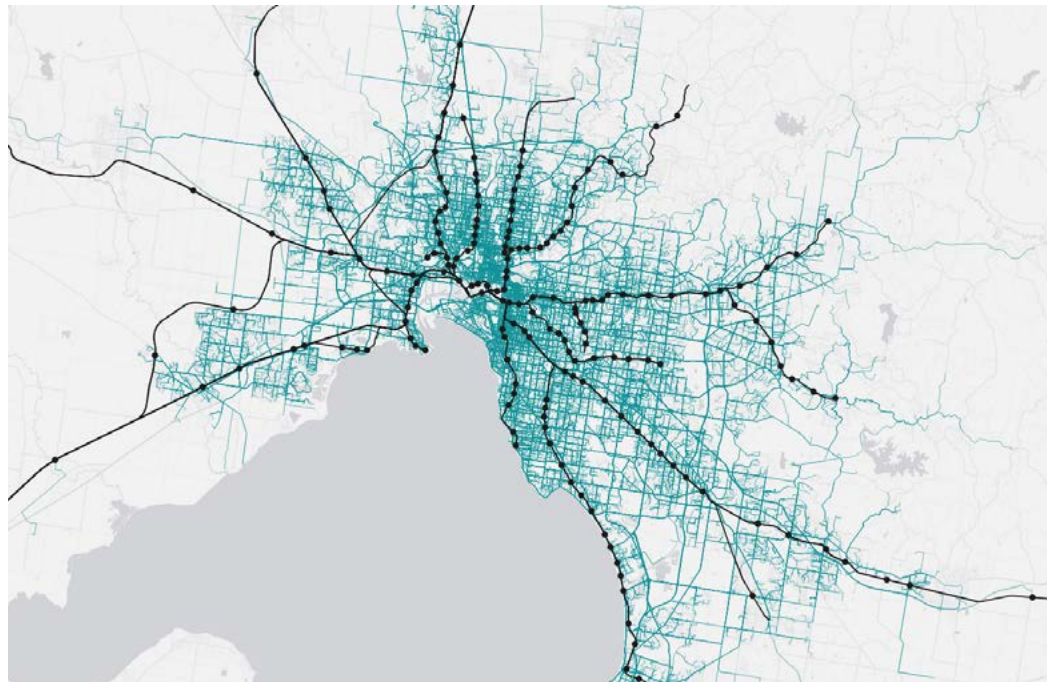
Please see Appendix 3 for Brisbane and Perth maps.
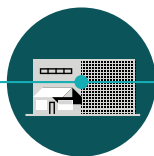
ADVANCED CARPOOLING SYSTEMS AND ON DEMAND PUBLIC TRANSPORT

Perhaps most importantly, smartphones have made carpooling possible at scale for the first time. One of the products we have in placed in large cities, UberPOOL, makes it easy for people headed in the same direction at the same time to share the journey, getting more people in fewer cars.

In cities where we have launched the option, 20 percent of trips on Uber are now UberPOOL, saving millions of miles of car journeys that otherwise would have been taken. In San Francisco, that number is as high as 50 percent. In just the first 7 months of 2016, if Uber riders had driven alone instead of sharing their rides using UberPOOL, we estimate that 312 million more miles would have been travelled, consuming more than 22 million extra litres of petrol and emitting 55,000 metric tons of carbon dioxide.

A report conducted by the International Transport Forum - a research arm of the OECD - describes a future in which all trips are completed by a fleet of shared-use vehicles in a configuration similar to UberPOOL. The report predicted that such a model would result in congestion disappearing, a 33 percent reduction in traffic emissions, and that the distance driven by shared cars would be 37 percent less than today, even during peak hours[24].

Additionally, analysis by Massachusetts Institute of Technology's SENSEable City Lab suggests that a system like UberPOOL can reduce cumulative trip kilometres by 40 percent or more[25].

---

[24] International Transport Forum (ITF), *Shared Mobility: Innovation for Liveable Cities*, May 2016.
[25] MIT SENSEable City Labs, *Quantifying the benefits of vehicle pooling with shareability networks*, March 2014

11

Uber | Future of Cities

UBER

Over time, these trips become a perpetual ride: a driver picks up one person, then another, then drops one off, then picks up another. It is on demand, hyper convenient and more affordable because the cost of the trip is shared. That makes it less expensive than owning a car and a real game-changer for cities - by providing a convenient, cost effective alternative to ownership, we can start to reduce the total number of cars.

Pooling technology is about using private cars for public good, because by getting more people in fewer cars, we can increase urban mobility and help reduce congestion and pollution over time, all within existing taxpayer resources.

In Australia, some governments are already exploring how other models of shared transport can positively impact urban mobility. For example, the New South Wales Government has recently proposed an on demand transport trial, with the NSW Transport Minister suggesting that "trials could include special bus services on suburban routes that respond to where and when extra buses are needed"[26].

At scale, on demand services like this have the capacity to dramatically increase the efficiency of existing public transport networks.
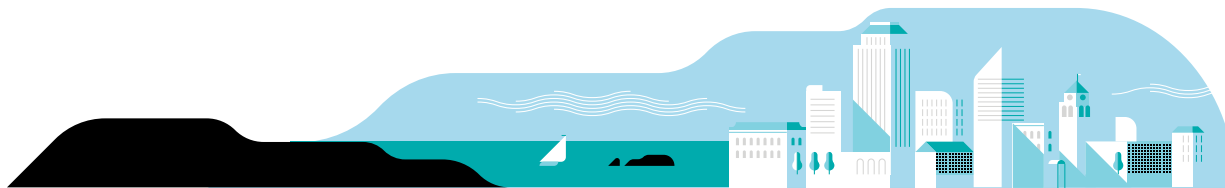
CONGESTION

Congestion is a serious problem for urban environments globally, and cities across Australia are no exception. In the United States alone, congestion costs the nation $160 billion in lost productivity, not taking into account gas burned while idling in traffic and additional wear and tear on vehicles[27].

Over time, as more people travel in fewer vehicles, ridesharing has the power to help cities fight congestion.

Uber is most popular during traditionally off-peak hours and in uncongested locations. While congestion is a problem during morning and evening rush hours in dense city centres, Uber is typically most dominant for rides during late nights, on weekends, and increasingly in noncentral locations underserved by traditional forms of transportation. For example, in Los Angeles peak demand for Uber occurs at almost exactly the opposite of morning and evening commuting peaks.

In 2016, Uber commissioned a report from INRIX, a global leader in measuring and understanding congestion in cities around the world. The findings state that Uber was not generating new trips at congested times and locations. In fact, despite Uber's growth, total automobile travel into the London CBD has shrunk in recent years. The report identified increasing economic activity and significant construction and roadway work as the causes of growing congestion in London[28].

As aforementioned, ridesharing helps to reduce dependency on private vehicles and ultimately provide a viable alternative to private car ownership. Shared cars means fewer empty seats and less duplication, which reduces congestion. And beyond the benefits of ridesharing itself, innovative carpooling products like UberPOOL can have an even more significant positive impact on congestion in cities[29].

[26] NSW Government, *On-Demand Transport Trial*, November 2016.
[27] Texas A&M Transportation Institute (TTI), *2015 Urban Mobility Scorecard*, August 2015.
[28] INRIX, *London Congestion Trends*, May 2016.
[29] International Transport Forum (ITF), *Shared Mobility: Innovation for Liveable Cities*, May 2016.

UBER

PARKING

Parking inefficiencies create wasted time, excess traffic and increased expenses.
Highly congested areas see large proportions of cars in traffic circling for a parking spot,
up to 30 percent in some cases[30].

This is not only a congestion issue. As aforementioned, cars sit idle 96 percent of the time[31].
In sprawling metropolitan areas, parking can take up to 15 percent of public space[32].
In the United States, there are eight parking spots for every car - this covers an area
twelve times the size of New York City.

Uber helps riders get to transit hubs without having to find parking. It also saves users
time having to search for parking, and saves them money since they do not have to pay
to park. In turn, with the increased prevalence of ridesharing, cities can plan to reduce
the number of parking spaces and use the space more efficiently - from road widening
to green space.

Uber is finding innovative ways to partner with governments and third parties to help
reduce the amount of space in cities occupied by idle cars.

A partnership with a residential developer encourages new residents in San Francisco's
Parkmerced community to leave their cars behind by providing them with a $100 monthly
stipend toward multimodal transportation, which includes Uber and public transit.

Similarly, in the UK, Uber has developed a partnership with UK property developer Moda
Living as part of our efforts to discourage private car ownership and reduce demand for
parking bays, thus easing congestion and freeing up urban space for other purposes.

In Summit, New Jersey, Uber has offered free or extremely cheap rides to commuters
who have struggled to find parking at Summit's New Jersey Transit Station. In exchange,
the city will pay Uber to subsidise the rides and cover the cost of trips. The city says the
deal will help free up nearly 100 parking slots at the transit station as well as keep it from
having to spend millions of dollars to build additional parking.

ENVIRONMENT

Environmental impact is now a key pillar of urban planning. For cities, vehicular traffic
plays a significant part in this debate. In the US alone, nearly 20 percent of harmful
carbon emissions come from the vehicles we drive.

However, ridesharing can play positive role in driving environmental benefits for cities
- getting more people in fewer cars, offering an alternative to car ownership and use
and complementing public transport.

Already, compared to other forms of point to point transport, UberX drivers spend a
significantly higher fraction of their time, and drive a substantially higher share of miles
with a passenger in their car. For example, in Los Angeles taxi drivers have a passenger
in the car for 40.7 percent of the miles they drive, while UberX driver partners have
a passenger in the car for 64.2 percent of their miles, resulting in a 58 percent higher
capacity utilization rate for UberX driver partners. That means for every mile that taxi
drivers in LA drive with a passenger in the car, they drive 1.46 miles without a passenger,
while the comparable figure for UberX drivers is only 0.56 mile[33].

We may already be seeing positive environmental impact from the use of UberPOOL.

[30] IBM, *IBM Global Parking Survey*, September 2011.

[31] Eran Ben-Joseph, *'When A Parking Lot Is So Much More'*, The New York Times, 25 March 2012.

[32] Eric Hannon et al., *An integrated perspective on the future of mobility*, McKinsey & Co., October 2016.

[33] J. Cramer & A. Krueger, *'Disruptive Change in the Taxi Business: The Case of Uber'*, National Bureau of Economic Research (NBER), March 2016.

13

UBER

Between January and mid-April 2016, people opting to share their ride instead of driving alone have helped eliminate over 90 million miles, reducing gas consumption by 1.8 million gallons and cutting CO_2 emissions by 16,000 metric tons. That is equivalent to the distance between Earth and the Sun.

At the one-year anniversary of UberPOOL in San Francisco in August 2015, nearly half of all rides in San Francisco were UberPOOL rides. In one month alone, the service saved 120 metric tons of CO_2 emissions when compared with non-pooled trips, the equivalent to the output of over 128,000 pounds of coal.

In New York City, during the last week of October 2015, nearly 50,000 riders took an UberPOOL trip. In one week alone, more than 60,000 miles of car travel on New York City streets were eliminated by riders taking matched UberPOOL trips instead of single-occupancy trips.

In the first eight months after launching UberPOOL in Los Angeles, riders have saved over 7.9 million miles by sharing rides, translating to over 1,400 metric tons of CO_2 emissions saved if all those riders had been single-occupancy car trips instead.

URBAN PLANNING AND UBER MOVEMENT
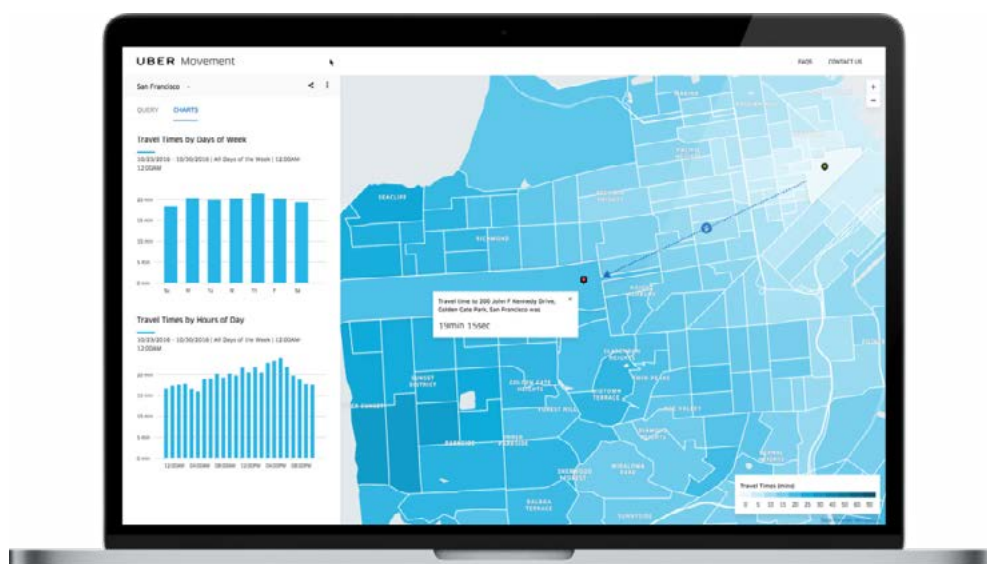
**EXPLORE INSIGHTS
TRAVEL TIMES**

Discover patterns and analyze the impact of rush hours, events, and road closures in cities worldwide.

Cities and regulators should embrace technology in their efforts to tackle big problems like congestion. That means harnessing not only the technology they can deploy themselves, but also third party technology which can help deliver solutions at scale.

Over the past six and a half years, we have learned a lot about the future of urban mobility, and what it means for cities and the people who live in them. We have seen how more access to transportation and the use of private cars for public good can change both where and how we live for the better.
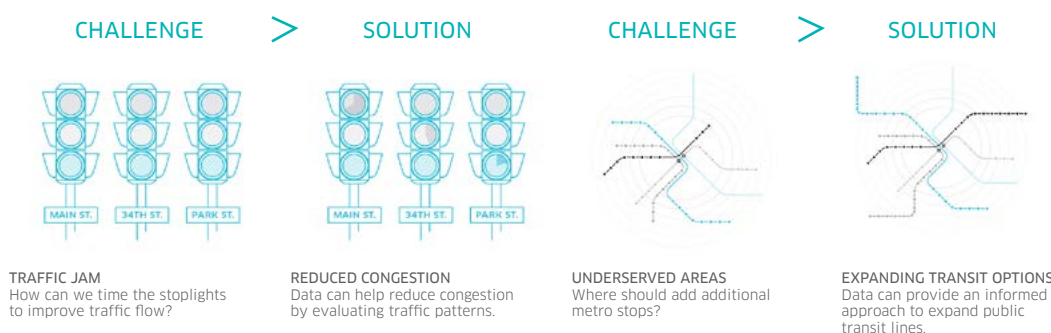
In select jurisdictions around the world, including Sydney, Uber has also launched Movement, a website that uses Uber's data to help urban planners make informed decisions about our cities[34].

---

[34] Uber *Movement*.

14

Uber | Future of Cities

UBER

Uber trips occur all over cities, so by analysing a lot of trips over time we can reliably estimate how long it takes to get from one area to another. Since Uber is always available, we can compare travel conditions across different times of the day, days of the week, or months of the year, as well as how travel times are impacted by big events or road closures.

For city officials, Movement gives detailed historical insights to enable them to measure the impact of road improvements, major events, new transit lines and new traffic policies. For planners and policymakers, the tool enables them to conduct complex analysis on transportation patterns, which allows for better decision making around future infrastructure investments.

This is only the first step. City planners face a myriad of challenges, and we hope to help tackle more of them over time. We are excited to partner with city officials, urban planners and research organizations to continue building features that today's transportation planners need.

CHALLENGE > SOLUTION   CHALLENGE > SOLUTION

HOW CAN DATA HELP CITIES?

These are just a few of the ways in which data collection can help cities.

TRAFFIC JAM
How can we time the stoplights to improve traffic flow?

REDUCED CONGESTION
Data can help reduce congestion by evaluating traffic patterns.

UNDERSERVED AREAS
Where should add additional metro stops?

EXPANDING TRANSIT OPTIONS
Data can provide an informed approach to expand public transit lines.

GROWING THE POINT-TO-POINT TRANSPORT MARKET

Uber helps to grow the overall transportation market by increasing the density of mobility choices for more people in more places, and around the clock. Data and research shows that ridesharing is actually adding to the overall transport network.

In Portland, Oregon, following the launch of ridesharing, the number of trips across point-to-point transport services, including taxi, grew by approximately 40 percent. A study by the Portland Bureau of Transportation concluded "consumer demand for retail transportation service is now being much better served by Portland's taxi companies and TNCs [transportation network companies]." The same study found that Portland experienced dramatic increases in overall ridership, while experiencing only a small decrease in demand for taxis. TNC ridership increased by 125 percent in those first four months, while taxi ridership decreased by only 16 percent during the same period[35].

The Australian Competition and Consumer Commission (ACCC) concluded that services like Uber meet previously unmet consumer demand, citing in its June 2014 report that "one of the benefits of such services is that they appear to be responsive to passenger needs (making it easier for consumers to locate, arrange and pay for transportation services) and allow provision of services (reliability, cleanliness etc.) to meet unmet consumer demand."[36]

By improving connectivity across the city, ridesharing also supports local economic activity. For example, over 60 percent of ridesharing trips are new to the point to point market, suggesting that many of those riders may be travelling to destinations they would not have visited otherwise[37].

---

[35] Portland Bureau of Transportation, *Portland's Private For-Hire Transportation Market: Summary Report of the PFHT Innovation Pilot Program*, October 2015.

[36] Australian Competition and Consumer Commission (ACCC), *Reinvigorating Australia's Competition Policy*, June 2014.

[37] Deloitte Access Economics, *Economic effects of ridesharing in Australia*, July 2016.

UBER

SELF DRIVING VEHICLES

At Uber, we believe cities of the future will be moved by shared, self-driving technology and will as a result be less congested, less polluted, and more affordable and accessible for everyone.

Shared, self-driving rides will bring untold benefits to cities:

- Significant safety benefits, with 1.3 million people dying each year as a result of car crashes, 94 percent of which are due to human error.
- Models built by the International Transport Forum (ITF) demonstrate that a city that moves to a shared, self-driving future will require a vehicle fleet less than 10 percent its current size[38].
- Self-driving vehicles will be able to operate at higher efficiency than today's cars, which sit parked 96 percent of the time. Increased utility rates will lead to a subsequent decrease in the requirement for car parking, which in turn will mean more land to develop into commercial, residential and public spaces.
- Because of the more intense utilisation and more rapid fleet turnover, the adoption of self-driving vehicles will enable faster adoption of electric vehicles. Because of these factors, a Berkeley study estimated that the use of self-driving technology in combination with electric vehicle technology could help reduce emissions per vehicle mile by more than 90 percent[39].
- Research conducted by University of Texas has indicated that 100 percent adoption of self-driving vehicles could lead to cost savings of $1.4 trillion per year in avoided car crashes, productivity gains and reduced congestion delays[40].

Uber's investments in self-driving technology began two years ago in Pittsburgh where we established our Advanced Technologies Center.

Self driving technology will help improve transportation - especially road safety - and can help improve mobility for everyone.

CONCLUSION

As urban environments around the world face a period of unprecedented change, Australian cities have the opportunity to get ahead of the curve and develop a national strategy for addressing these important issues.

Mass urbanisation is one of the defining trends of our generation. By embracing shared modes of transportation we can make all cities less congested and polluted, with more space for people and parks, where everyone, wherever they live and whatever their income, has access to affordable, reliable transportation.

Ridesharing will play a key role in the future of cities around the world. Today ridesharing accounts for under 4 percent of the miles driven globally, but by 2030, Morgan Stanley estimates that number will rise to more than 25 percent[41].

A better future is within our grasp, and available within our existing resources - with more shared rides and public transit, fewer cars and better use of public space, Australian cities will continue to go from strength to strength.

[38] International Transport Forum (ITF), *Urban Mobility System Upgrade*, March 2015.

[39] J. B. Greenblatt & S. Saxena, *'Autonomous taxis could greatly reduce greenhouse-gas emissions of US light-duty vehicles'*, Nature Climate Change 5, 860–863, July 2015

[40] P. Mackie, *'Fully autonomous vehicles may make us safer, but could add to traffic'*, Mobility Lab, 20 March 2017.

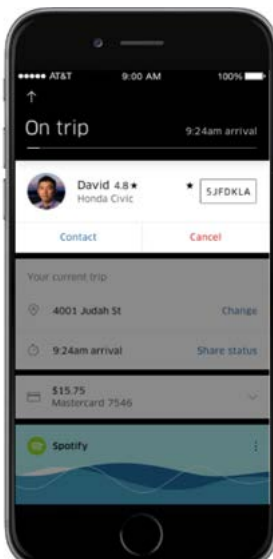[41] Morgan Stanley, *Shared Mobility on the Road of the Future*, June 2016.

Uber | Future of Cities

UBER

APPENDIX 1: WHAT IS RIDESHARING?

① REQUEST
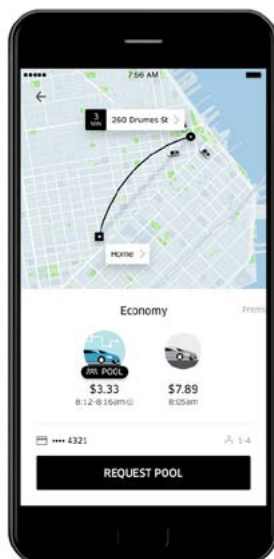
② RIDE

③ RATE
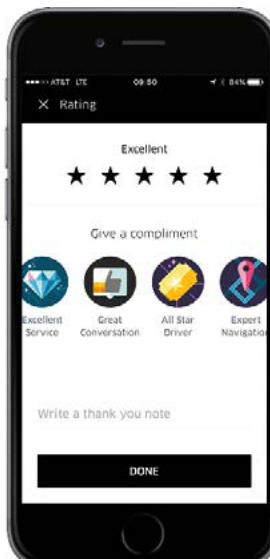
RIDERS SET THEIR LOCATION AND GET AN ESTIMATED ARRIVAL TIME AND A FARE ESTIMATE BEFORE BOOKING.

RIDERS GET DRIVER INFORMATION LIKE NAME, MODEL, LICENSE PLATE AND RATING BEFORE THE CAR ARRIVES.

RIDERS RECEIVE AN EMAIL RECEIPT AFTER EVERY TRIP. INSTANT TWO-WAY FEEDBACK KEEPS QUALITY HIGH.

PUSH A BUTTON AND GET A RIDE IN MINUTES

Uber's innovative techonolgy platform connects riders with drivers in over 600 cities around the world.

Uber is the safe, reliable and affordable choice for millions of people every day.

UBER DELIVERS MORE

RIDER SAFETY

Our technology enables us to focus on safety before, during, and after every trip in ways that weren't possible before. Riders see their driver's information upfront, can track their route on a live map, share trip details with loved ones in real-time, and provide feedback.

ECONOMIC OPPORTUNITIES

More than a million people have signed up to make supplemental income while driving on the Uber platform. Uber is a flexible option for individuals who want to set their own schedules and be their own boss.

CONGESTION RELIEF

Uber complements public transit by reaching underserved neighborhoods and offering consumers an affordable alternative to car ownership. Innovative products like uberPOOL help cities reduce congestion and carbon emissions.

DRIVER SAFETY

With no anonymous pick-ups and the ability to rate riders, drivers-partners benefit from manyof the same transparency and accountability features that riders do. They can also contact our 24/7 support teams or stop by partner support centers to speak to someone.

REAL-TIME GPS

We use GPS to map and follow every trip in real time, which provides detailed records of every transaction and allows us to verify that the most efficient routes are being used. In rare cases where necessary, GPS also enables us to respond to law enforcement requests quickly.

ENHANCED TOURISM

Visitors can relax because they know that a safe, reliable and affordable ride is available when they land in a new city. Uber takes the stress out of travel with a familiar, easy to use service with a standard electronic payment option.

17

Uber | Future of Cities

UBER

APPENDIX 2: UBER IN AUSTRALIA

Uber is a technology company that provides a smartphone application to connect driver partners with people who need safe, reliable rides. Founded in 2009, Uber now serves over 600 cities in 77 countries, and facilitates more than five million rides every day.

Since our Australian launch in 2012, Uber is now available in 17 cities across the country, with 3.1 million active riders and 65,000 active driver partners.

WHERE IS UBER IN AUSTRALIA?

Adelaide, South Australia

Brisbane, Queensland

Byron Bay, New South Wales

Cairns, Queensland

Canberra, Australian Capital Territory

Geelong, Victoria

Gold Coast, Queensland

Hobart, Tasmania

Melbourne, Victoria

Mornington Peninsula, Victoria

Newcastle, New South Wales
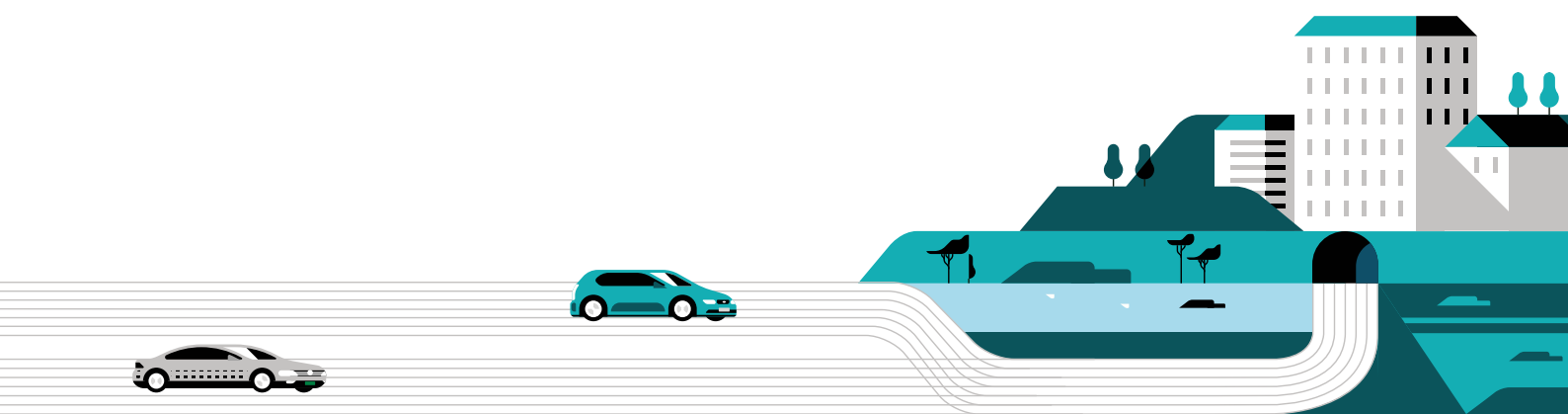
Perth, Western Australia

Sunshine Coast, Queensland
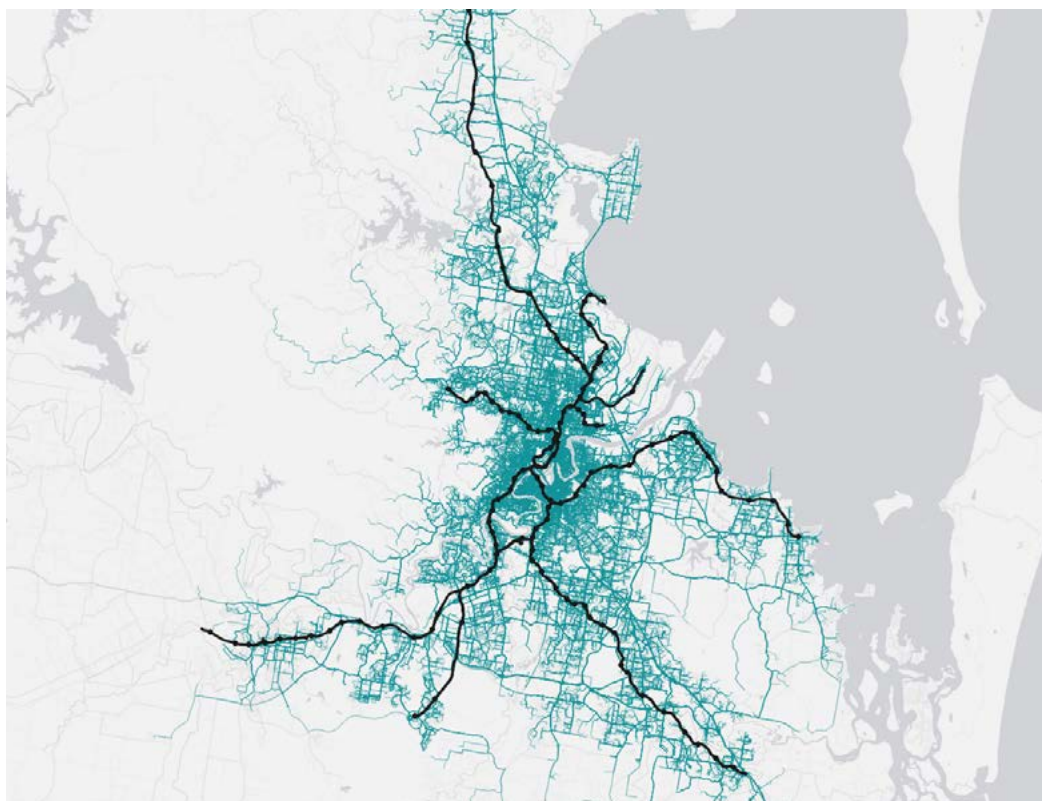
Sydney, New South Wales

Toowoomba, New South Wales

Townsville, Queensland

Wollongong, New South Wales

Uber | Future of Cities

UBER

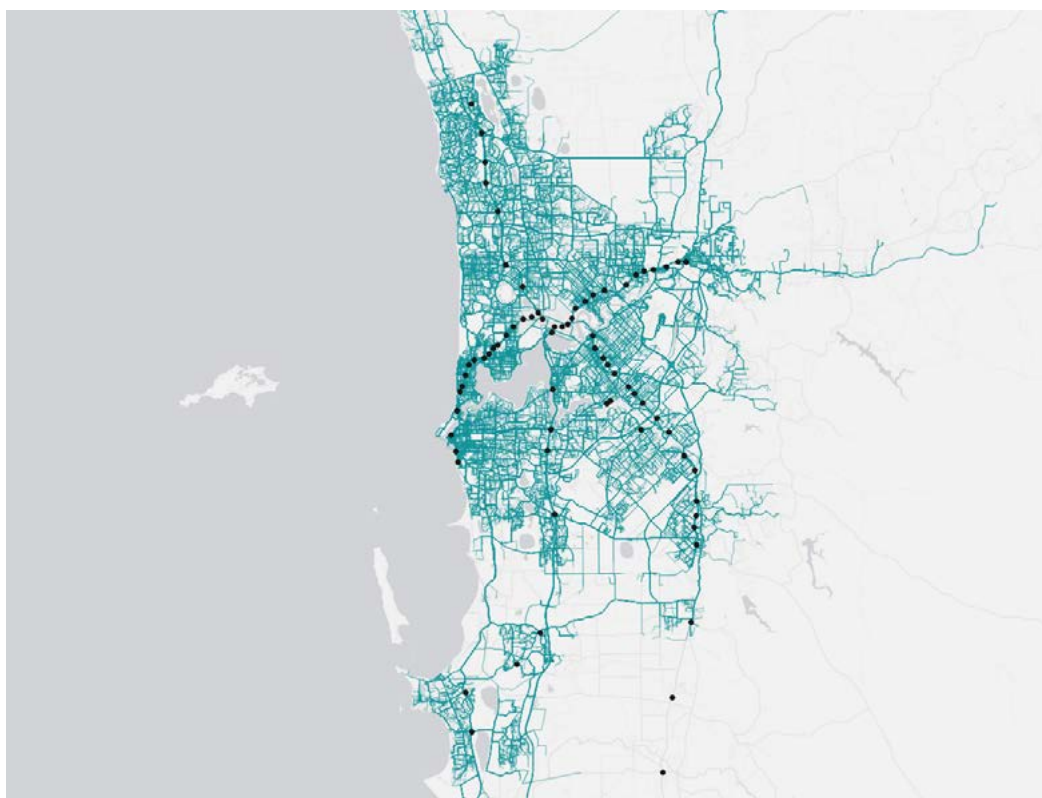# APPENDIX 3: COMPLEMENTING PUBLIC TRANSPORT (ADDITIONAL MAPS)

UBER EXTENDS EXISTING PUBLIC TRANSPORTATION IN BRISBANE

Lines represent Uber trips that began or ended near rail stations.

• RAIL STATION
— UBER TRIPS

Data from the city of Brisbane between August 1st and August 29th, 2016. Completed trips only. Points have be jittered for privacy. Actual trip routes have been replaced by routes generated using open source routing process. Stations © OpenStreetMap contributors. For more visit http://www.openstreetmap.org/copyright

UBER EXTENDS EXISTING PUBLIC TRANSPORTATION IN PERTH

Lines represent Uber trips that began or ended near rail stations.

• RAIL STATION
— UBER TRIPS

Data from the city of Perth between August 1st and August 29th, 2016. Completed trips only. Points have be jittered for privacy. Actual trip routes have been replaced by routes generated using open source routing process. Stations © OpenStreetMap contributors. For more visit http://www.openstreetmap.org/copyright