Report by Jo Cruickshank, Churchill Fellow

2017 Churchill Fellowship to investigate successful cycling policies and programs in regional centres and smaller cities in the UK, Denmark, Sweden, Norway and France.

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Indemnity

THE WINSTON CHURCHILL MEMORIAL TRUST

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Signed: Jo Cruickshank       Date: May 2019
Acknowledgements

There are many people and organisations I would like to acknowledge in assisting me at various stages of undertaking my Fellowship. Firstly, I would like to thank the Churchill Trust and the NT Board of the Trust for providing me with this life changing opportunity. I would also like to personally acknowledge my referees, May Taylor and Annie Villeseche who provided such enthusiasm and support for my initial application. I acknowledge my workplace, the NT Department of Infrastructure Planning and Logistics for their positive approach to my Fellowship and allowing me to take extended leave to complete my travel.

The wonderful people I met and interviewed through my Fellowship are too many to acknowledge individually here (although are listed later in this report) however I wish to sincerely thank them all for their warm welcome and generosity with their time.

I would like to acknowledge the Churchill Fellows’ Association of the Northern Territory for their local leadership and encouragement and 2017 Churchill Fellows Netanela, Marlene and Penny for their assistance and support in preparing for my Fellowship.

Special thanks to Brenden Whittred at Campus Travel for his assistance in booking my flights and updating my constantly changing itinerary. I would also like to acknowledge the Churchill Trust’s staff who have been so responsive to all my enquiries and a great source of support in undertaking my Fellowship.

On a personal level, I wish to acknowledge my family, Simon, Jed and Frances for their unfailing support, belief in my abilities, acceptance of the many hours I have spent with my laptop (rather than with them) planning my trip and writing my report and most importantly for accompanying me on this journey. Finally, a special thank you to my daughter Frances, for being such a positive, loyal, tolerant and adventurous travel companion.
Introduction

It's 8.00 am and dark. There is snow on the ground and it is silent, but already, there is a stream of red and white lights steadily flicking along. This is the street I stayed in while I was in Zutphen, a small town in the east of the Netherlands. As I open the front door of my temporary home and step onto the narrow street, there is a constant flow of people on bikes, silently slipping by. These are some of the 85% of the population in the Netherlands that ride a bike. They come in waves, friends chatting, school students laughing and others hurrying to work. It's -3°C and overnight snowfall has made the road icy. There are cars too, but they are parked in allocated places along the street. They are covered in snow and probably won't be used today. So the cobbled, one-way street (which is two-way for bikes) belongs to the people, gliding along quietly on their bikes.

I continue my journey and this scene is repeated across the town. As I get closer to the station, there are more people on bikes, converging on this central point. We all wheel our bikes quietly and efficiently down the purpose-built ramp to the well designed and brightly lit parking space for hundreds of bicycles. Then straight up the internal stairs and onto the platforms.

Why do so many Dutch people ride their bikes for daily transport? This is essentially the question I set out to answer when I set off on my Churchill Fellowship. Not just the Dutch, by why do so many Europeans see the bicycle as a natural transport choice and how are some cities making it easier for their communities to cycle?

The answers to these questions are numerous, complex and varied, however, this is fundamentally the focus of my research. How can towns and cities in Australia learn from these places and provide Australians with the opportunity to embrace the bicycle and the economic, health and lifestyle benefits that come with cycling.

My name is Jo Cruickshank and I work for the Northern Territory Department of Infrastructure, Planning and Logistics in Darwin, Australia. In my current role, I am responsible for policy and planning for sustainable and active transport, with a particular focus on cycling and walking. I have over 20 years’ experience working in transport and land use planning and have previously worked for the NSW Roads and Traffic Authority and the NSW Department of Planning. I have a BA in Geography and a Masters of Environmental Management. I am passionate about the potential for cycling and walking to create more liveable and connected communities and delivering the infrastructure, policies and programs to encourage people to choose active transport for short trips and daily commutes.

Discovering the Copenhagenize Bicycle Friendly Cities Index through my work started me on an amazing adventure. It led me to successfully apply for a Churchill Fellowship and travel across the globe to visit some of the top cycling cities in the world and learn how some places make the leap to become truly bicycle friendly cities.
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Key words

Cycling, cities, transport, health, environment, liveability
Contents

Executive Summary 8
Itinerary at a glance 11
Detailed itinerary 12
Introduction
Fellowship methodology 19
Experience and findings 22
• Governance and leadership 22
• Cycling plans, strategies and programs – the role of policy 26
• Monitoring and measuring cycling 31
• Managing vehicle access and prioritising bikes 32
• Infrastructure 37
• Bike parking and integration with public transport 57
• Technical guidance 72
• Bikes fit for purpose 73
• The role of advocacy 78
• Travel behaviour change 81
• The role of universities 84
• Driver training and awareness 85
• Is climate and issue? 86
• Should I even mention helmets? 89
• A cycling culture? 90
• Cycling cities – case studies 91
  o Odense 91
  o Houten 98
  o Groningen 102
Conclusions and recommendations 108
Dissemination and implementation 112
References 113
Executive summary

Through my Churchill Fellowship, awarded in 2017, I set out to investigate successful cycling policies and programs in regional centres and smaller cities in the UK, Denmark, Sweden, Norway, the Netherlands and France. My project aimed to investigate how and why cycling has become a mainstream transport option in these towns and cities and to share this knowledge on my return to Australia.

Why is cycling such a fundamental part of the transport system in some European cities? What does this mean for the health, environment and liveability of these cities and what can Australia learn from these places? These are the key questions I set out to answer through my Fellowship.

In each location I visited, I met with a wide range of people actively working to make cycling part of everyday transport including government agencies, councils, universities, businesses, non-government organisations and community bike groups. This took me to places as varied as the lounge room of Cycling Campaign volunteers, to the Danish and Norwegian Road Directorates in Copenhagen and Oslo and an All Party Parliamentary Cycling Group meeting in the Houses of Parliament. I met volunteers, public servants, consultants, academics, advocates, politicians, council officers, community groups, bloggers and journalists, all of which were passionate about cycling in their communities.

I hired or borrowed a bike in every city I visited which gave me a real insight into how these cities work as cycling places. It wasn’t all glamourous, I had several trips in the pouring rain and temperature often hovered around zero in Scandinavia, with Oslo’s daily maximum of -9 C being the coldest. People often ask me, how can anything in snowy Norway or the historic, compact Netherlands be relevant to Australia? My Fellowship has clearly demonstrated that there is so much that can be learned. I experienced many initiatives which are simple, low cost and readily transferable and it is these learnings which are presented in this report.

The intended audience for this report is anyone working to improve or revitalise Australia’s towns and cities and all who are working to increase the levels of cycling as a form of transport in Australia. The report focusses on transport or utility cycling and does not address issues more specifically relevant to cycling as a sport. However, many of the issues discussed and the final recommendations are likely to be of interest to anyone who rides a bike. This report presents the findings from my Fellowship according to a number of themes which I developed throughout my research, interviews and investigations.

Several cities I visited exemplified many of the themes discussed in this report and stood out because of their high-level commitment and comprehensive approach to encouraging cycling. Consequently, these cities experience some of the highest mode shares for cycling in the world. Three city case studies are presented at the conclusion of the report to illustrate the transformative impact of cycling and how bold cycling policies and programs can create vibrant, liveable towns and cities.
After eight weeks of visiting and experiencing some of the best cycling cities in the world, meeting some of the most experienced cycling practitioners, immersing myself in city cycling culture and documenting my findings in this report, I feel that I have achieved the aims of my Fellowship. I set out to investigate why so many Europeans see the bicycle as a natural transport choice and how some cities are making it easier for their communities to cycle.

Fundamentally, the simple answer is it is quicker, easier and more convenient to go by bike in many of the cycling cities I visited. Why this is and how this can be achieved varies from place to place, but all cycling cities benefit from the social, environmental and economic outcomes that arrive with higher levels of cycling. Reaching similar levels of cycling in Australia’s towns and cities will take a monumental shift in governance, planning, expertise and community perceptions. But one of the key learnings from my trip is that with bold political leadership, a sustained, consistent policy approach and passionate support from at least some in the community, change can happen.

Many of Europe’s cycling cities were not always cycling places. Most followed the path of car orientated development in the 1960s and 1970s. However, consensus for change and brave political decisions were a turning point in many places, with incremental improvements in cycling infrastructure over a period of 30 years or more resulting in today’s cycling havens.

While detailed recommendations are provided at the conclusion to this report, my major findings are summarised below:

- Strong political support is essential. Appointing a high-profile spokesperson and advocate for cycling such as the Commissioners for cycling in London and Manchester has been very influential. Support from local mayors has been a catalyst for action in cycling in many cities. Local champions are needed to understand the issues and lead change.
- Cycling plans and strategies at all levels of government are important to commit to a vision and communicate targets and outcomes. Consistency of policy is critical to sustain change.
- Data is an essential tool and monitoring and measuring levels of cycling is important to demonstrate success, engage decision makers and the community and plan for the future.
- Making cycling a faster, easier and more convenient choice for short journeys is fundamental to increasing levels of cycling. Many cities achieve this by restricting vehicle access through city centres and residential streets.
- The most liveable cities are also cycling cities.
- Cities without cars are thriving, but unbelievably quiet.
- Cycling networks which are useable by eight year-olds and by 80 year-olds are useful for everyone who wants to ride a bike.
- A connected network of separated cycling infrastructure is a key requirement for improving perceived safety and increasing levels of cycling.
• Cycling infrastructure doesn’t have to be grand and shiny, it just has to provide a safe and connected space for cycling.
• Urban speed limits can have a significant impact on levels of cycling. In the Netherlands, all local streets have a 30 km/h speed limit.
• High quality, convenient bike parking is important and strong bike parking policies for new developments and buildings are essential.
• Effectively integrating cycling and public transport can extend the benefits of cycling to longer trips.
• Strong advocacy is really important, those cities with strong campaign groups drive change and demand political support. However, where there is little or no local advocacy, there is potential to build support through social media networks.
• E-bikes have significant potential to extend cycling distances and attract more people to cycling.
• Infrastructure is important, but behaviour change programs to support the provision of new infrastructure are equally important. Behaviour change programs also need to be ongoing to maintain momentum.
• Universities can be a catalyst for providing cycling infrastructure and significantly increasing levels of transport cycling. Many cycling cities are university cities.
• Climate may have an impact on cycling, but where appropriate infrastructure is in place to support cycling, this impact should not be overstated. Most climatic impacts can be mitigated.
• A bike culture is developed, this may take time, but even the most car orientated cities can become cycling cities with appropriate interventions.

“Wherever there is a problem for cycling, there is usually a solution: if there are hills, there are e-bikes, where there is snow, it can be cleared, if it is hot, shade can be provided”

Marianne Weinreich, Chairperson, Cycling Embassy of Denmark – 10 January 2019
• 6 Countries
• 17 towns and cities
• 37 meetings, infrastructure inspections and seminars
• Volunteers, public servants, consultants, academics, politicians, advocates, council officers, community groups and bloggers
• 18 different bicycles
• 700 photos
**Detailed itinerary – meetings and inspections by country**

**United Kingdom**

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<td>Andy Summers Policy and Strategy Manager (Active Travel and Health)</td>
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<td>Rajiv Ratan Senior Engineer, Louise Gold Head of Behaviour Change, Tobey Jones NCN lead and Quietways, Theo Highland, Roxanne Hackwood Volunteer Lead</td>
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<td>John Richards, Public Realm Engineering and Project Delivery Team Leader Claire Rankin Cambridge County Council</td>
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<td>University of Cambridge</td>
<td>Andrew Coleman Transport Manager and Sara Aziz Transport Coordinator</td>
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<td>Department for Transport</td>
<td>Dr Kevin Golding-Williams Head of Cycling and Walking Policy</td>
<td>London</td>
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<td>Florent Coignac Head of bicycles and pedestrians</td>
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<td>Velophonie</td>
<td>Annie-Claude Sebban Vice President</td>
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<td>Danish Road Directorate</td>
<td>Mette Dam Mikkelsen Project Manager Safety and Cycling</td>
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Introduction

I work for the Northern Territory Department of Infrastructure, Planning and Logistics in Darwin, Australia. In my current role, I am responsible for policy and planning for sustainable and active transport, with a particular focus on cycling and walking.

Through my work, I became aware of the Copenhagenize Bicycle Friendly Cities Index published every two years by the Danish based consultancy, Copenhagenize Design Co. The Index is considered to be one of the world’s most comprehensive inventories of bicycle friendly cities and has been published biannually since 2011. The Index is informed by other city rankings measuring liveability and ranks cities according to a number of criteria such as advocacy, bicycle culture, bicycle infrastructure, mode share and gender split. The list doesn’t rank every city in the world, but ranks a sample of cities and in 2017, 136 cities were included in the Index. Although initially developed as an internal tool, the Company realised that there would be a benefit in making some of the information publicly available, however, only the top 20 cities are published, with the remainder of the Index used to inform internal projects.

Figure 1: Top 20 bicycle friendly cities - Copenhagenize Index

While reading about the top 20 cycling cities in the world, I began thinking about how far down the list most Australian cities would be. Although my home city of Darwin, in the Top End of Northern Territory, performs very poorly in terms of cycling at a global scale, in the Australian context, Darwin (and the Northern Territory) has relatively higher rates of cycling for transport, with around 3% of the population cycling for the journey to work. I know there is real potential to do so much more to lift the levels of cycling in the Northern Territory and I began investigating the high ranking Copenhagenize cities and their policies and programs in detail. I also began thinking about visiting some of
these top Copenhagenize cities to really understand how they have achieved such high rates of cycling.

Figure 2: Copenhagenize Index, Copenhagenize Design Company

![Copenhagenize Index](image)

In 2017 I applied for a Churchill Fellowship which supports international travel and research which will be of benefit to Australians. I was surprised and delighted to be successful and was awarded a Churchill Fellowship in 2017 to travel to the UK and Europe to investigate successful cycling policies and programs. My itinerary included five of the top six cities on the Index including Copenhagen, Utrecht, Amsterdam, Malmo, and Bordeaux.

My itinerary also included a number of other smaller regional cycling cities such as Aarhus and Odense in Denmark, Cambridge in the UK and Groningen in the Netherlands. A lot of the research on successful cycling in Australia and internationally has focussed on major cities, and I saw a need to consider smaller cities and regional centres and investigate how these places have prioritised cycling with a smaller budget and on a smaller scale. This work will be directly relevant to many of the smaller towns and centres across Australia, where cycling could contribute significantly to transport systems and networks.

As well as visiting the top bicycle cities, I also included on my itinerary some of the towns and cities which are only just starting on their journey to become bicycle friendly. There is as much to learn from these places, as well as from the global leaders.

**The benefits of increased cycling**

There is enormous potential for cycling to be a healthy, sustainable and low cost mobility option across Australia, in both the major cities and smaller regional centres. In many communities cycling can provide realistic options for local short trips. Cycling can also be easily combined with public transport for longer distance journeys.
There are broad community benefits to increased levels of cycling including:

**Health:** Regular physical activity can assist in preventing diseases such as heart disease, stroke, diabetes and some cancers. Physical activity can also help in lowering blood pressure and reducing obesity and improve mental health, quality of life and general well-being. Physical inactivity has been identified as the fourth leading risk factor for mortality in Australia, behind smoking, high blood pressure and obesity. More than half of adults are not meeting the current Australian guidelines for physical activity. Physical activity is also important in preventing or reducing obesity, which is a leading contributor to disease in Australia. Cycling for transport and short trips can incidentally contribute to increasing physical activity and reduce the significant health implications of physical inactivity.

**Environmental:** Increased cycling has the potential to reduce car use leading to lower levels of congestion, fuel use and greenhouse gas emissions. In Australia, transport is the second largest source of greenhouse gas emissions after electricity generation, with private vehicles contributing approximately half of all transport emissions. Cycling can effectively contribute to lowering transport emissions and improving air quality.

**Social and economic:** More people cycling for transport creates more liveable and connected communities and provides greater opportunities for social interaction. With more people cycling, there is increased passive surveillance which can improve local safety and security. Cycling provides a low cost transport option and also has the potential to contribute economic benefits for towns and cities. There is evidence both internationally and within Australia to indicate higher levels of retail spending where improvements have been made to the urban environment to encourage cycling. Studies comparing spending according to transport mode have indicated that cyclists spend more than people arriving by car.

**The Australian context**

The Australian National Cycling Strategy 2011-16 was active until the end of 2017. Although there is no current national cycling strategy, a new national coordination group, Cycling and Walking Australia and New Zealand (CWANZ) was established in 2018 which aims to improve conditions for walking and cycling and increase the uptake of Active Transport. There are a number of other national level policies which encourage and support cycling including the National Road Safety Strategy 2011 – 2020 and the National Preventative Health Strategy 2020.

Most Australian jurisdictions have introduced Active Transport policies, either through separate cycling and walking strategies or combined, Active Transport frameworks. At the local level, many local governments in Australia have developed local or regional Bike Plans.
Current levels of cycling in Australia

The 2017 biennial Australian Cycling Participation survey which has been undertaken in Australia since 2011 indicates that levels of cycling participation have been declining. Compared with levels of cycling globally, the levels of cycling in Australia are very low.

Figure 3: Cycling participation as a proportion of Australian resident population in 2017

Mode share for the journey to work is often used as an indicator of the levels of cycling. The 2016 Australian census indicated a 1.1% mode share for cycling for travel to work across Australia, ranging from 0.9% in NSW to 3% in the NT and ACT. Although there are pockets of higher mode share in some inner-city areas, levels of cycling are much lower in Australia than in other countries, particularly towns and cities in Europe. For example, mode share for cycling in Cambridge in the UK is around 25% and in Groningen in the north of the Netherlands, 60% of all traffic movement in the city is by bicycle.

Barriers to increasing Active Transport

When asked about barriers to increased cycling through the National Cycling Participation Survey, respondents in the Northern Territory indicated that distance is an issue. For those who had not ridden to work, 69% said the distance was too far. For those who had not ridden to school or education, the most commonly cited reasons were that they preferred another method (35%) or that it was too far (34%). Weather and safety were also raised as factors to a lesser extent (10% and 9% respectively).

Fellowship methodology

As indicated in the Introduction above, initial cities for investigation and comparison were identified through the Copenhagenize Index. Other towns and cities to visit were identified through a literature review of places that are already achieving high levels of cycling or have great ambitions to become cycling cities. City population was also used to identify smaller regional cities with potential relevance to regional and remote centres of a similar size in Australia. Table 1 summarises locations visited, population size and cycling mode share as reported during interviews. However, it should be noted that it is difficult to compare cycling mode share across cities, as data sources vary in
terms of year recorded, area covered (metropolitan area or CBD) and trip purpose (for example, all trips or journey to work trips).

Prior to visiting each identified location, a literature review of available bicycle policy, strategies and plans was undertaken. At each location, prior to travel, contact was made with a wide range of potential stakeholders in order to obtain different perspectives and experiences regarding cycling policies and programs. Initial email enquiries were followed up with further email or phone contact in order to make arrangements for meetings. In many locations, initial meetings arranged were supplemented by further meetings identified through the original contacts. Meetings were arranged with national road and transport agencies with responsibility for cycling, local municipalities, universities, volunteer and community groups, consultancies and other individuals including politicians, bloggers and journalists.

Table 1: Key locations visited, population and cycling mode share (source: reported at interview)

<table>
<thead>
<tr>
<th>Location</th>
<th>Population</th>
<th>Cycling mode share</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>8 million</td>
<td>1% (up to 25% in some boroughs)</td>
</tr>
<tr>
<td>Manchester</td>
<td>3 million</td>
<td>2%</td>
</tr>
<tr>
<td>Cambridge</td>
<td>123,000</td>
<td>30% journey to work</td>
</tr>
<tr>
<td>Bristol</td>
<td>500,000</td>
<td>8% journey to work</td>
</tr>
<tr>
<td>Bordeaux</td>
<td>250,000</td>
<td>10% (15% CBD)</td>
</tr>
<tr>
<td>Copenhagen (city)</td>
<td>620,000</td>
<td>62%</td>
</tr>
<tr>
<td>Odense</td>
<td>200,000</td>
<td>26% (50% CBD)</td>
</tr>
<tr>
<td>Aarhus</td>
<td>340,000</td>
<td>20%</td>
</tr>
<tr>
<td>Malmo</td>
<td>310,000</td>
<td>30%</td>
</tr>
<tr>
<td>Oslo (city)</td>
<td>600,000</td>
<td>6%</td>
</tr>
<tr>
<td>Houten</td>
<td>50,000</td>
<td>40%</td>
</tr>
<tr>
<td>Utrecht</td>
<td>335,000</td>
<td>51%</td>
</tr>
<tr>
<td>Groningen</td>
<td>200,000</td>
<td>60%</td>
</tr>
</tbody>
</table>
Each meeting varied in format, although a standard proforma was developed as a basis for all interviews. Meetings ranged in length from around two hours to full day agendas and multiple meetings with different representatives at one location. Notes were taken at all meetings and reviewed and compiled at the end of each day. A number of seminars and presentations were also attended including a full day seminar in Bordeaux, France, reviewing the city’s Bike Plan and an All Party Parliamentary Cycling Group meeting in the UK.

Figure 4: Bordeaux Metropole Bike Plan Review Seminar, 13 December 2018

In addition to meetings, at all locations visited, infrastructure inspections were undertaken, either guided by local contacts or undertaken individually. Photos, videos and notes were taken during inspections and reviewed each day. At many locations relevant cycling strategies, plans and other policy documents were provided in hard copy or online links were forwarded. These documents provided additional material to supplement the information obtained through interviews and inspections.

Figure 5: Meeting with Florent Coignac, Bordeaux Metropole
Experiences and findings

My Fellowship findings are loosely grouped according to the key themes which have emerged through my research. Three city case studies are also provided which illustrate how action across the identified themes combine to create world leading, cycling cities.

Governance and leadership

Almost all of the cities I visited emphasised the crucial role of leadership, political support and bold decision making. In addition, an understanding of the enormous benefits of cycling at the political level and consistent policy settings are considered essential.

Although London has relatively low levels of cycling in terms of mode share across the broad urban area, there is high level support for increasing the level of cycling in London, with the 2017 London Transport Strategy prioritising cycling as a mode of transport. Greater London Mayor, Sadiq Kahn has indicated strong support for cycling with the appointment of Walking and Cycling Commissioner, Will Norman. While I was visiting London, the 2018 London Cycling Action Plan was launched by the Mayor and Transport for London, with the ambitious aim of ‘Making London the World’s Best Biggest City for Cycling’\textsuperscript{10}. In his forward to this new Plan, Cycling Commissioner, Will Norman suggests that:

“For too long we’ve heard that people cycle more in countries such as Denmark and the Netherlands because it’s part of their culture, or because it’s flat, or because the cities there are compact. But none of those are the reason why cycling is more popular in these places. In truth, these cities see more cycling because their streets have been designed to prioritise people, not car”\textsuperscript{10}.

The same comments could be applied to Australia’s towns and cities, where often I hear about it being too hot, too cold, too hilly or too low density for cycling, yet fundamentally, a key issue is that Australian cities prioritise vehicles, not people.

While in London, I was very fortunate to attend a meeting of the All Party Parliamentary Cycling Group (APPCG) at the Houses of Parliament. The group’s members aim to “use our role as Parliamentarians to promote all forms of cycling”\textsuperscript{18} and the group meets periodically to review research and discuss current best practice. The meeting was chaired by Ruth Cadbury MP and included presentations from both the London and Manchester Cycling Commissioners on progress in both cities.

London Cycling and Walking Commissioner, Will Norman, noted that he had been in his role for 2 years and that for the first time in history, life expectancy is declining in London. He highlighted that improving health is at the core of London’s Transport Strategy. Air quality is a public health crisis in London and cycling is a part of the solution. The evidence of the economic benefits of cycling is very strong in London, across a number of recent projects there have been 17 % fewer vacancies in local businesses due to higher footfall. These results are a powerful tool for demonstrating the benefits of cycling to local politicians and the broader community. In London, a
number of major businesses are very supportive of cycling and are collectively advocating for good cycling networks and facilities to attract high quality staff. Experience in London has demonstrated that collecting data is essential to making the case for cycling and also celebrating success to illustrate positive cycling interventions.

Chris Boardman, Cycling and Walking Commissioner for Manchester also provided an update to the APPCG on Manchester’s landmark ‘Made to Move’ proposal which has been in place for 18 months. Chris noted that Manchester is at a very different stage from London in terms of cycling. Made to Move Focuses on 15 steps which will achieve modal change and the underpinning philosophy is a system which is easy to use by 12 year-olds. 80% of journeys in Manchester are less than 5 miles so there is significant potential for cycling. A comprehensive community process was implemented to identify issues and over 1500 problem crossing points were identified. Manchester has been deliberately careful with terminology, Made to Move is a proposal, not a strategy. A key message in Manchester has been about enabling people to not use the car, rather than explicitly focussing on cycling and walking.

Following the presentations by the two Cycling and Walking Commissioners at the APPCG, there was an informative question and answer session and robust debate. Some of the highlights included:

Q: What do politicians need to make brave decisions about cycling infrastructure?

A: Chris Boardman indicated that politicians should be provided with initiatives which will be positive for constituents. Crossings are also a good focus, few people object to an improved crossing. Wil Norman indicated that putting local Councillors on bikes and taking them through local areas has been very effective in gaining support in London.

Q: Why design for 12 year-olds?

A: Chris Boardman suggested that planning needs to start with something tangible and designing for 12 year-olds is a proxy for designing for everyone. For example, with bike share schemes, why not allow 12 year-olds to use the bikes?

Q: What about e-bikes?

A: Chris Boardman suggested that e-bikes are not what people need, but what people want! If e-bikes get people out of the car, that’s a good thing. He also suggested don’t stifle innovation with regulation, allow room to experiment.

The next meeting of the of All Party Parliamentary Cycling Group will be a joint meeting with the peak health advisory group in the UK, Public Health England. This is an excellent opportunity to discuss common issues and this collaborative approach could be considered at the national level in Australia through peak cycling and walking groups.

In the UK, the introduction of metropolitan Mayors (combing a number of local authorities) has been a major shift in UK in terms of transport funding and planning. Previously, transport funding had been very centralised in UK. At the national level, around 2010, British Cycling, a major sporting cycling organisation, started campaigning
for utility or transport cycling. Establishing a Cycling Commissioner for Manchester was local government election commitment. In appointing a Commissioner for Cycling, Manchester’s Mayor, Andy Burnham noted that cycling has the greatest potential to impact on the greatest number of people. Councils in Manchester were supportive of increased cycling given the health, environment and air quality benefits and the December 2017 Made to Move announcement provided funding for cycling and walking.

In Manchester, appointing a high-profile Commissioner for Cycling and Walking, has been a significant step. Chris Boardman is a highly successful racing cyclist, Olympian, businessman and former policy advisor to British Cycling. As well as having a high-profile sports role, Chris Boardman is also a strong campaigner for utility cycling and is locally based in the north-west of England. Dominic Smith, Senior Transport Strategy Officer Cycling and Walking with Transport for Greater Manchester (TfGM) noted that the role of political leadership has been significant in Manchester and Greater Manchester has excelled at getting governance right.

At the same time as raising the status of cycling, there has also been a significant increase in funding in Manchester. 70% of the 243 million pound budget for transport in Greater Manchester (around 160 million pounds) has been allocated to walking and cycling over 4 years.

Mark Wagenbuur, author of the widely read ‘Bicycle Dutch’ blog highlighted that consistent political support is also essential. In Utrecht in the Netherlands, there has been three electoral cycles supportive of cycling and consequently, there has been eight years of planning and four years of implementation of cycling infrastructure.

Morten Kabell, Chief Operating Officer of the Copenhagenize Design Company also emphasised the importance of high-level political support in encouraging cycling. Morten has extensive experience as a local politician and prior to joining Copenhagenize was the Mayor of Technical and Environmental Affairs of Copenhagen. To engage with local politicians, Morten suggested the following priorities:

- Provide data and evidence through modelling
- Document the demand and show community support
- Show good examples
- Show how improved mobility is a way to make a positive impact for the whole community

**Cycling plans, strategies and programs – the role of policy**

Commitment to clear and consistent policy which has involved the community in development, is essential to sustained increases in cycling mode share. There were varying levels of commitment to national level cycling policies in the countries I visited. However, all of the cities I visited have high profile and clearly articulated cycling plans or strategies or comprehensive mobility plans. Regardless of the level of funding commitment, cycling policies and plans are in place and clearly indicate an ambition to increase levels of cycling.
While in London, I met with Dr Kevin Golding-Williams, Head of Cycling and Walking Policy from the UK Department for Transport. Although based in London, the Department of Transport aims to encourage ‘more people to cycle, more safely and more often’ across the whole of England and Wales. Kevin provided some background and context for the current approach to cycling policy in the UK, culminating in the comprehensive and significant 1.2 billion pound Cycling and Walking Investment Strategy (CWIS) in 2017.

In the UK there has been a history of cycling strategies and plans with actions and targets that followed the electoral cycle. Funding varied between years and it was difficult to plan strategically for cycling. The CWIS was a reaction to this and enabled cycling to be embedded in legislation so that core work would continue. The first step in 2010 was the release of a Cycling Delivery Plan which aimed for a cycling revolution. In 2015 the Infrastructure Act was introduced which set up a process for planning and implementing national level infrastructure without local planning. Roads were included in a five-year program and the question was asked, if roads are included, why not cycling? Driven by a coalition of groups, the Walking and Cycling Alliance, there was pressure to include cycling within the Infrastructure Act. As a result, the CWIS was developed to go beyond electoral cycles. This set an ambition and statutory requirement for funding over five-year periods with the current period extending until 2020-21. This five-year program of funding will continue regardless of government (unless revoked). Australia could consider a similar approach at the state or national level to ensure a consistent planning approach to cycling infrastructure beyond electoral cycles.

For the first time, funding was mapped out in advance and there was devolution of funding to the local level through local growth funds. This was the basis for the CWIS. Funding was also provided for the Local Cycling and Walking Investment Plan (LCWIP) process which involves development of plans at the local level to create a ten-year pipeline of work for funding when it becomes available. 60 councils in the UK are currently working on these plans which are funded through the CWIS. Similarly, in 2012 Wales enacted an Active Travel Act and network travel maps are required for every council to map networks and identify gaps.

The governance approach for the CWIS process included the development of an expert committee, however over the terms of three Ministers, this committee has yet to be established. A stakeholder advisory group has been formed which includes cycling groups, Transport for London and the Royal Automobile Club Foundation. There is no official funding for this group, however the group meets quarterly. The Department for Transport provides the Secretariat and the Minister meets with the group twice a year. The group considers emerging issues, such as establishing links with Public Health England. This group is similar to the Cycling and Walking Australian and New Zealand (CWANZ) peak group which has recently been established. The Department for Transport has undertaken modelling to investigate the impact of different investment scenarios which is something CWANZ could also consider.
In 2018 a CWIS Safety Review commenced as it was recognised that a greater focus on cycling safety was required. The catalyst for the Review was in 2017, when a pedestrian was killed by a cyclist riding a track bike with no brakes. The issue received significant media coverage and the Minister for Transport, Jesse Norman MP, wanted to respond and review historic legislation regarding this issue. In response, cycling groups highlighted the number of cyclists killed by vehicles each year and lobbied to include broader cycling safety issues in the Review.

Consultation sessions were undertaken and there was a call for evidence to improve safety for cycling and walking. In November 2018, the Government published a response to the call for evidence which is based on five key themes. Recommendations include guidance, a review of the Highway Code (similar to Australia’s Road Rules) and standards for heavy vehicles. Many of the recommendations in the report are applicable to Australia and could be considered for implementation.

In contrast, at the national level, Denmark is experiencing the impact of changing political commitment to cycling. As a consequence, car use is increasing and outside Copenhagen, levels of cycling are declining. In Denmark, I met with Mette Dam Mikkleson and Zofia Jagielska from the Danish Roads Directorate and they provided an overview of cycling policy in Denmark at the national level. The Danish National Cycling Strategy was released in 2014, but is no longer current. However, the general approach and many of the strategies are still relevant, but there is very limited funding currently available. The national government manages transport and the Roads Directorate builds, operates and maintains the national network including the national level cycle network. The National Cycle Program focusses on national cycle routes, guidelines and communication, statistics and data and grants to Councils.

Between 2009 – 2014 there was significant national investment in cycling in Denmark which was part of a broader infrastructure spend. This included a Bicycle Fund and Super Highway Fund for the whole of Denmark. Funding was holistic and split across several programs including:

- Cycle cities
- Commuter cycling
- Cycling to school
- Recreational cycling (wayfinding and maps)
- Campaigns
- Demonstration projects

Applications were sought for a wide variety of projects with 1000 applications received and 338 funded. For most projects, 40% of funding was provided through the fund, though for some small projects, 100% funding was provided. Evaluation was undertaken mid-way through the funding period and a report presents case studies of funded projects. The final evaluation report is still being prepared as some projects are yet to be completed.
Project examples include:

- **Aalborg Cycling Cities Project** which included several infrastructure projects as well as a behaviour change program.
- **Cycling Concepts project** – digitising of the Danish Design Guide by the Danish Cycling Embassy.
- A range of smaller projects such as a bicycle library where the community could borrow a range of bikes.

All projects included evaluation, though the evaluation method wasn’t prescribed. 116 projects were evaluated through the mid-way evaluation\(^2\). 59 projects had before/after cycling counts and over 112 km of new cycling tracks there was an average increase of 24% in cycling. At eight locations, there were intercept interviews before and after implementation which indicated 3% had shifted from cars and 17% had changed route. Evaluation has shown that municipalities that participated in the program have subsequently increased funding for cycling. The Danish Cycling Fund and subsequent evaluation demonstrates the potential impact of funding for cycling at the national level.

The Norwegian Cycling Strategy 2014-2023 is part of the National Transport Plan and goals include promoting cycling as a mode of transport in every-day life, bicycle traffic in cities at least doubled, improved infrastructure and safety for cyclists and 80% of students walking and cycling to school. Half of all car trips in Norway are under 5 km and the average cycle trip is 5 km. In the smaller cities, public transport is not viable, so cycling may be a solution to some of these trips. For the nine largest cities in Norway, the aim is for no increase in kilometres travelled by car, despite population growth and not just within cities, but also suburbs, so this is a challenge. Agreements have been developed between the national government, counties and local government. The best mode share is investigated for each city before developing agreements. Nationally, the target is 8% mode share for cycling, with a target of 20% for larger cities by 2029.

At the city level, I experienced various policy and planning approaches, however a consistent theme is that a local or regional level bike policy document is essential. At Westminster University I met with Dr Rachel Aldred, Reader in Transport and Rachel provided some background and context for the development of cycling policy in London. In the mid 1990’s to early 2000 there was a move by Government to reduce car use, including increasing cycling as a way to achieve mode change. However, the mode shift to cycling which has occurred has not necessarily been from the car and there is evidence that some people have transferred from public transport to cycling. At the local level, some boroughs are more progressive than others. Some have bike plans and most have integrated transport plans and some of these plans include cycling.

In 2013 a Cycling Vision for London was launched, which included 913 million pounds to be invested in cycling over 10 years. The Vision included a target of 1.5 million trips by bike per day by 2026. The program included a mix of route and area-based projects and supporting measures. The most successful elements have been the Cycling Super Highways, partly because these were routes were based on arterial roads which are
managed by Transport for London. The other key approach was Quietways, which are low traffic, strategic routes. However, these routes need support from multiple councils with differing levels of commitment to cycling, so they have been harder to deliver. As a result, only a limited number of Quietways have been successfully completed. Other Cycling Vision projects included the selection of three boroughs as ‘Mini Hollands’. 30 million pounds was allocated in each of the selected boroughs for cycling infrastructure.

During my infrastructure inspection in central London, I experienced some impressive new infrastructure. Through a mixture of quiet streets and separated cycle ways, I was felt comfortable cycling through the very centre of London. This is not something I would have even contemplated, five to ten years ago. On the December day I met Transport for London’s Andy Summers, Policy and Strategy Manager, Active Travel and Health, Andy had just returned from the Mayor of London’s launch of the new Cycling Action Plan. The Plan is a five-year investment Plan and aims to build on recent initiatives and growth in cycling by understanding cycling in London, setting ambitious targets and making it easier to get around London by cycling.

The new Cycling Action Plan is taking an evidence-based approach, focussed on seven key barriers to cycling identified through customer surveys. A cycling model has been developed which is based on existing levels of cycling and potential for cycling trips under 10 km. This has identified 8 million trips per day which are potentially switchable trips. Analysis has also been undertaken to identify potential strategic routes. The approach is agnostic of ownership and many are hybrid routes managed by both Transport for London and Councils. The approach is based on building partnerships and upfront collaboration rather than a top down approach. The new Plan moves away from the previous Super Highways and Quietways terminology as there is evidence that users were being negatively influenced by the terms. Some users perceived ‘Super Highways’ to be fast routes not suitable for less confident cyclists, while others thought ‘Quietways’ would be traffic free. It is likely that a more generic, unified cycle network terminology will be used, though this is yet to be determined. The new focus will be on a London Design Standard with consistency of the route and quality of standard. The new five-year plan aims to meet the goals of the long-term London Transport Strategy.

In December 2017, as Cycling and Walking Commissioner for Manchester, Chris Boardman released ‘Made to Move: 15 steps to transform Greater Manchester, by changing the way we get around’ which has a key goal “to double and then double again cycling in Greater Manchester and make walking the natural choice for as many short trips as possible”. An initial step in delivering the Made to Move plan was to define a key route network and in June 2018 Greater Manchester’s Cycling and Walking Infrastructure Proposals (or Beelines, as they have become known) were released for consultation. A ‘bottom up’ design approach was used and proposals were developed through a series of focus groups. Maps were used to identify major barriers and a series of cells which require crossing points, links and connections. An interactive GIS system was also developed and over 4000 individual community comments were received. Analysing these comments has been a significant task for Transport for Greater
Manchester. Proposed Beeline routes use existing infrastructure where possible and mostly quiet streets, while adding crossing points where necessary, as well as high priority corridors.

In Cambridge, Council’s Strategic Plan has embedded cycling in strategic planning and includes a section on new developments with very specific requirements. Bike parking standards are also very prescriptive, requiring high standards for all new developments and these are followed by other Councils in the UK. The Cambridge Partnership (or City Deal) includes Cambridge Council, South Cambridge Council, the County Council and the University. The five-year plan includes funding from Government to develop the area, may potentially include congestion charging and provides funding for new projects beyond the city centre. There is also significant funding for Greenways which are cycleways connecting the city centre to villages and business parks.

Bordeaux Metropole is responsible for all roads in the metro area and works with the 28 towns which make up the area to prioritise missing links for cycling. The first Bordeaux Bike Plan was released in 2012, however, the cycle network was not connected and there were many missing links. The second Bike Plan was released in 2016 and aims to fill in the gaps in the network, with the region’s towns identifying priorities and allowing for 3 years planning and 3 years implementation. Bordeaux Metropole implements the identified projects and the budget for the Plan is 70 million Euros. There is strong political will in Bordeaux to support cycling, particularly from the high-profile Mayor, Alain Juppé (who stepped down the role in February 2019). The first Plan in 2012 had agreement from all 28 towns to develop cycling as the local towns could see the benefits of cycling. However, selecting roads for redesign and prioritising cycling has not been so easy.

While in Bordeaux, Florent Coignac, Manager of Cycling and Walking for Bordeaux Metropole invited me to attend a full day seminar focussing on the progress of Bordeaux’s second Bike Plan. The seminar included a number of presentations from Bordeaux Metropole as well as an external review of Bordeaux’s Bike Plan presented by consultants and other partner organisations. In 2011 the bike network was 650 km in total length and by 2017 the networks have been extended to 1182 km. 90% of the major routes/paths and 70% of the minor routes identified in the Plan are complete. It was noted at the presentation that the major cycling cities in France are Bordeaux, Strasbourg and Grenoble. However, many cities in France have a cycling mode share similar to that of Darwin and other Australian cities.
In Malmo, the current cycling program 2012-2019 still has a number of tasks to complete. Initially 350 million SEK ($50 million) was allocated to implement the program, but in 2014 the budget and scope were reduced. However, there is also a nationally funded plan to increase housing which is supported with funding for infrastructure including public transport and cycling which provides additional funding.

Malmo’s cycle program focusses on infrastructure, bike parking, communication and links to public transport. A new Transport Strategy for Malmo includes a 30% bicycle mode share target by 2018/20. The Malmo Mobility Plan extends this target to 2030.

The City of Oslo has set ambitious targets to increase cycling and has established a large team to work on implementing these targets. I met with the City of Oslo’s Ellen Munden Paalgard who works in the Cycling Team. Historically, in the 1940s there was relatively high levels of cycling in Oslo, however as with other cities, levels of cycling decreased with increased car use. In 2013 the mode share for cycling in Oslo was 7%. Most car trips are under 3 km in Oslo and many are under 1 km and bikes are a highly competitive transport choice for these short trips. The new City Council has set a target of 16% cycling by 2025 and this has subsequently been increased to 25% by 2025. However, there is very limited infrastructure in the City and in 2015, the City of Oslo introduced a Strategy to achieve these ambitious targets. Community surveys have indicated there is
great potential for increased cycling, with two thirds of the population indicating that they want to cycle, or cycle more. However, in 2014 only 9% of those surveyed considered that cycling in Oslo was safe and 75% identified increased safety as the most important factor for increased cycling.

**Monitoring and measuring cycling**

Without exception, all the cities that I visited nominated cycling data and monitoring of trends as essential tools for planning for and promoting cycling. However, the approaches to data collection and surveys vary significantly.

In the UK, the National Travel Survey involves a week-long travel survey of 8000 residents and cycling is included in this survey. There are also separate travel surveys in London and Manchester. The national census is also a good source of data for journey to work data, however the UK census is only every 10 years. Through a collaborative project involving a number of partners, census data been used to develop a ‘Propensity to Cycle Tool (PCT) for England’ which is a freely available planning tool to assist in identifying those areas with the greatest cycling potential. Although there have been some attempts to develop a similar index by consultants in Australia, there could be some benefit in developing a freely available, nationally consistent tool similar to the UK index.

There are around 3000 permanent count sites across Greater London and also visual counts are undertaken before and after project implementation. Some of this data is available publicly. Mode share varies across London, with some boroughs such as Hackney having mode share up to 25% and some city areas experiencing 20-30% cycling mode share. The gender split is around 70% male and 30% female. Data analysis has indicated that the new London Cycling Plan needs to focus on encouraging older people and children to cycle.

The Greater Manchester Travel Diary Survey is undertaken annually and includes all trips, not just travel to work. The data is aggregated across three survey years to increase the 2,000 households sample size. There are also 60 permanent bike counters across Greater Manchester. Transport for Greater Manchester has just appointed a dedicated walking and cycling data collection position which demonstrates the importance of cycling data to the delivery of cycling programs. Data from Manchester’s digital bike counter (and other counters worldwide) is available publicly on-line at [http://eco-public.com/ParcPublic/?id=4586](http://eco-public.com/ParcPublic/?id=4586).

Bordeaux Metropole has more than 20 permanent counters across the road network and is planning to expand the counter network so that there is at least one counter in each town. Visual counts are also undertaken biannually at 120 sites across the metro area, however, the aim is to eventually replace the visual counts with permanent counters. A mobility survey is also undertaken every 10 years and the next survey is due in 2019, with a sample size of 5000. A smaller survey using the same methodology was undertaken in 2017 with a sample size of 3000. Modal share varies from 5% in the City’s outer areas to 19% in the metro area and cycling for short, 2-3 km trips is most popular.
In Oct 2018 a survey was undertaken in Bordeaux to understand why people cycle and how often, indicating similar results to the other surveys and confirming an 8% mode share across metro area as a whole. The methodology is comparable with surveys in other cities and the mode share is very high compared to other French cities. All ages cycling is encouraged, however, the surveys show that Bordeaux needs to encourage women and students at the University to cycle more. The surveys also show that senior executive staff cycle more and lower income employees are cycling less. Cycling in the eastern suburbs is also lower, probably due to topography to the east of the Garonne River. The target for the current Bordeaux Cycling Plan is 15% across the metro area by 2020. This will be difficult to achieve and will require a mode share of around 25% in the city centre and 10% in the outer suburbs.

There are 60 permanent counters around Denmark and the data is available online. Nationally, the data has indicated a downward trend in bicycle use in Denmark until the year 2000 and since then the level of cycling has been relatively stable. A national transport survey is undertaken annually by the University of Denmark which includes children. The survey indicates that more people cycle in Denmark’s cities than in smaller towns and that the level of support for cycling is generally less outside Copenhagen. The survey also indicates that cycling is normalised in Denmark and is not dependant on gender, income or other factors.

Currently in Australia, national cycling data is derived from the five-yearly census for journey to work data or via a National Cycling Participation Survey\(^8\). Dr Rachel Aldred, Reader in Transport at Westminster University commented that a separate cycling survey is not preferred, as mode shift or integration cannot be measured. There is currently no national travel survey undertaken in Australia and this could be a useful tool for further investigation.

**Managing vehicle access and prioritising bikes**

A common theme I encountered amongst some of the cities with the highest cycling mode share was the role of traffic planning and specifically, diverting vehicles around and not through city centres. At the same time, cyclists and pedestrians have direct and unimpeded access across city centres, making journeys by bike quicker, easier and more convenient than by car. In the Netherlands in particular, many towns and cities are divided into compartments and although vehicle access is allowed to all these compartments, access between them is restricted.

Some cities are taking this approach a step further and removing vehicles from city centres altogether. At a street level, a similar approach, known (particularly in the UK) as ‘filtered permeability’ allows through access for cyclists and pedestrians, but restricts vehicle access. This may be achieved by bollards which are potentially retractable to allow access for deliveries etc or electronically, through for example number plate recognition.

While in Manchester, I met with Paul Bruffle, Network Development Manager for Sustrans Northwest. Paul provided a presentation on personal research he has
undertaken to compare cities with higher cycling participation, particularly for journey to work and other cities with lower participation. Paul’s research emphasises that increasing cycling is not just related to infrastructure provision, but also requires traffic control on local streets and development of alternative fast, convenient arterial roads for traffic. Paul’s analysis of UK and European cities has shown that in Europe, many cities have high quality vehicle access around city centres, which means neighbourhood streets between major arterial roads can be restricted to car access, leaving them quieter and available for cyclists.

Historical towns in the UK such as York, Cambridge and Oxford have natural traffic constraints in the town centre with old, narrow street networks, high parking costs and historical arterial ring roads. Correspondingly, levels of cycling are relatively higher. Paul highlighted that travel choices are based on convenience, cost and journey time and without changes to these, people won’t get out of their cars to cycle. He noted that in many Dutch towns, there is segregation of traffic and cycling in town centres and vehicles can’t drive across cities, therefore, it is often quicker and more convenient to cycle. This is a common theme I encountered in many of the cities I visited, mostly in Europe, but also in higher cycling cities in the UK such as Cambridge. In the Australian context, this approach would be difficult to implement in major cities given a historically low density and car orientated approach to urban planning. However, elements of filtered permeability and vehicle segregation could be considered in smaller cities and towns in Australia and at the local level in larger cities. Fundamentally, any traffic management and urban planning techniques with makes cycling quicker and more convenient than the car will increase levels of cycling.

Paul noted that European cities tend to have multiple motorway junctions along key routes which encourages vehicles to use arterial roads rather than local streets. Europe, also uses grade separation at interchanges whereas in the UK roundabouts are frequently used which forces traffic onto local routes. European arterial roads cross pedestrian and cycle routes above or below, while pedestrians and cyclists continue at grade which also encourages use. Paul’s research has found common factors in successful cycling cities which includes fast flowing ring roads, high parking costs and managing vehicle access through residential areas to reduce rat-running. Paul feels that in Manchester, the planned Beeline routes are likely to be successful in central Manchester as there are congestion and parking constraints, however, outside of the central area, there are limited disincentives to driving. Paul noted that Milton Keynes in the UK is a classic example where there is extensive cycling infrastructure, but low levels of cycling because the infrastructure is not direct and there are no disincentives to driving.
Cambridge case study

Arriving in Cambridge by train and stepping out of the station, it is immediately obvious that there is something different happening in the City compared with many other towns and cities in the UK. There are people cycling in all directions, substantial provision of bike parking, a bike shop and bike hire located at the station, bike routes from the station to the City centre and all ages cycling, including teenagers and seniors.

The 2011 census indicates that the inner-city population of Cambridge is 123,000 and 30% cycle for the journey to work, which is one of the highest mode shares in the UK. There are three major employment areas including the city centre, the west Cambridge research park and Addenbrookes, a hospital, pharmacy and biomedical precinct. Population and employment is increasing in Cambridge, yet the car mode share is stable, and cycling is filling this gap. The challenge for Cambridge is to keep developing cycling infrastructure to the new development areas to sustain the current levels of cycling.

In Cambridge, I met with Cambridge Cycling Campaign’s Executive Director Roxanne De Beaux and volunteer Robin Heydon. The catalyst for higher levels of cycling in Cambridge was the introduction of a Core Traffic Scheme in the 1980s which restricted through traffic in the city centre. Vehicle access was moved from where people were (city streets) to where people were not (the periphery). Robin noted that businesses were not happy about the Scheme and made a lot of noise, but cyclists were louder. Bollards were used initially to restrict traffic, which could be retracted for deliveries and other essential access, but now electronic monitoring is used with no barriers, using electronic recognition of number plates. Traffic has to move around the edge of the centre rather than through, which means that cycling has become faster than a vehicle for many trips.

Roxanne and Robin highlighted some of the key reasons they believe so many people cycle in Cambridge compared to other UK cities:

- Traffic restrictions in city centre and quiet residential streets (filtered permeability). Cyclists use one-way streets in both directions in most places.
- University students are not allowed to own a car if they live within 3 km of the city centre and students create a critical mass of cycling.
- Lots of children cycle in Cambridge and there is a culture of family cycling.
- For many trips, cycling is the easiest option.
- The population is relatively young and educated.
- Many cyclists are higher income earners and can afford to live within a cycling distance from their workplace.
Figures 7 and 8: Filtered permeability allows for pedestrian and cyclist access throughout Cambridge city centre and suburbs, while restricting vehicle access creating quiet streets, an incentive to cycle and a disincentive to drive.
**Bordeaux’s experience**

In Bordeaux, a significant factor which encourages cycling in the city centre is the restriction of traffic. Introduction of a tram into the city in 2011 made a significant difference to cycling, traffic has to give way to trams and traffic was restricted in the city centre which has also been positive for cycling. Oriane Hommet is the Coordinator of Velo Cite, a bike advocacy organisation in Bordeaux. Oriane emphasised that there are different ways to encourage cycling, providing bikes and other incentives, however, she feels that there also needs to be constraints on car use too. Oriane described a recent project to close one of the main bridges into the centre of Bordeaux to vehicles (the Pont de Pierre Figure 9). Local businesses did not support the move and claimed there would be serious impacts on business. However, the closure went ahead and the bridge is now only available to trams, buses, bikes and pedestrians and yet businesses are thriving. Levels of cycling have increased by 20%, with 11% of cyclists and 13% of pedestrians who now use the bridge, formerly drove across the bridge before it was closed.

Bordeaux Metropole’s Florent Coignac highlighted that the Pont de Pierre bridge now carries 10,000 cyclists per day (compared with 7000 before closure) and more people cross the bridge daily now (walking, cycling and on the tram) than crossed the bridge daily when it was open to traffic. Strong political will was needed to make this happen as there were significant objections from businesses and some residents before the closure.

One of my key observations of Bordeaux is how quiet the city centre is. The central retail area is thriving and busy, and the streets are bustling with pedestrians and cyclists, yet the experience is calm, almost peaceful. Something I noted repeatedly during my journey is that cities without cars are amazingly quiet places.

*Figure 9: The Pont de Pierre, Bordeaux was closed to private vehicles in 2017 and is now only accessible by pedestrians, cyclists, trams and buses*
Infrastructure

There is no doubt that high quality cycling infrastructure is an essential component of the road network in any cycling city. However, the form and design of this infrastructure is varied and there is no universal solution. A key observation from Copenhagen is that the provision for cyclists there is very low key. In contrast to cycling infrastructure in Australia’s major cities which is highly designed and often accompanied by complex line marking and signage, in Copenhagen (and other cities in Denmark), cycling infrastructure is often simple and low tech. The focus is on ensuring all roads have separated space allocated to cyclists to provide a comprehensive network, rather than few, unconnected routes built to very high specifications.

Despite these observations of Copenhagen’s infrastructure, there is also some very impressive examples of new cycling infrastructure which have recently been constructed such as the elevated cycling ‘snake bridge’ which weaves through a new commercial development area.
Figure 11: On one of Copenhagen’s main bridges, the digital bike totem indicates that the temperature is 30°C at midday and 1794 cyclists have passed the counter so far that day.
In London, the infrastructure focus has been on changing intersections in inner London and the Quiet Streets program in outer London. In a presentation to the All Party Parliamentary Cycling Group at Westminster, Wil Norman, Cycling and Walking Commissioner for London noted that key learnings from the projects to date have been that the quality of infrastructure hasn’t been good enough and that high-quality infrastructure is essential. Walthamstow Forrest’s Orford Road in London provides a good example of what can be achieved through improvements to cycling infrastructure. Businesses were initially very opposed to the introduction of cycling infrastructure, but subsequently there has been a very positive impact on business and no retail vacancies since the cycling infrastructure was installed.

Transport for London has invested significantly in Cycle Super Highways, mainly on arterial roads and they are a good demonstration of what can be achieved. The Super Highways are very visible and have resulted in significant increases in ridership in some areas. However, only a small proportion of the community is serviced by the Super Highways and they are only meeting some of the trip demand. In London, there is a tendency to focus on boroughs which are receptive and where there is less resistance, however these locations are potentially not the greatest areas of need.

Sustrans is a UK charity which focusses on sustainable transport and partners with a range of organisations to make cycling and walking easier. At Sustran’s London office I
met with a range of teams who are working on cycling and walking projects. The Urban Design team has worked with Transport for London and the London boroughs to design a number of projects which are part of the Quietways program. At the detailed design stage projects are handed over to the local authority to implement. Sustrans has been the delivery agent for the Quietways program on behalf of Transport for London and has been responsible for program management, delivery of design and community engagement.

Sustrans has used a collaborative community design methodology working with communities to determine how Quietways projects should be delivered. Engagement has increased community understanding of transport and the design process. Transport for London initially identified seven pilot Quietway routes. Initially this was a top down approach however, there has been some potential to redesign. Different routes are at different stages. The timeframe for delivery has been very challenging and for many routes it has not been possible to deliver the projects within the timeframe. Most Quietways are mixed with general traffic, use parks or other corridors or involve traffic closures or one-way streets.

During the design process, Sustrans undertakes retail surveys before the start of a project, usually by an independent company, to show how customers are arriving at businesses. Focus groups are also held with business owners to increase understanding. This work has often demonstrated that parking adjacent to businesses is most often used by business owners and not customers. Delivery access is another issue for businesses however, there are options for providing alternative access such as rear access deliveries or time slots for deliveries. Working with businesses in this way prior to project implementation could assist in the delivery of cycling projects in Australia.

The Streatham Quietway provides a good case study of implementation. A one-way traffic scheme was trialled to improve access for cyclists. Following the trial half of the local community voted to keep the scheme and even those originally most vocal against the scheme voted to retain it. Implementing the changes took time and needed resources. A temporary van was placed on the street to promote the scheme and answer questions and a lot of issues were dealt with through this method. It took two years from the first on-street pop up to commencement of the trial. This has been the only situation where a traffic filter has been successful. With similar projects which have failed, often there was not enough resources or commitment available.

In Manchester, mapping has been an important part of implementing Made to Move projects. Using a community mapping tool, the community had early access to the planning process and over 4000 comments were received. The majority of identified routes will interact with the train system. In developing infrastructure, a key criteria was ‘would a 12 year old use this?’ If the answer was no, the project wasn’t built. Also, with a community planning approach, if a project was not supported by the local community, the funding would be used elsewhere. For example, with public bike parking, various locations were trialled and if the parking was not used, it was moved elsewhere.
One of the major projects recently completed in Manchester was removing private vehicles from Oxford Road, a major arterial route into the centre of Greater Manchester which runs through the University precinct. At the same time, separated cycleways have been installed in both directions. Oxford Road is now accessible only to pedestrians, cyclists, buses and taxis and the project has transformed this major transport corridor. Manual counts pre and post implementation have demonstrated an 85% increase in bikes on the route with around 1500 average daily bike trips. 1 million bike trips have recently been recorded on the project’s digital bike counter since counting began in September 2017. Manchester’s Cycling Commissioner, Chris Boardman commented “I’m not surprised that the Wilmslow Road and Oxford Road cycleway has been a huge success. It proves that, if you build high-quality cycle lanes that are separated from other traffic, people will use them” 16.

Figure 13: Manchester’s Oxford Road cycleway digital counter records around 1500 bikes a day

Transport for Greater Manchester has recently consulted on a new proposed 5 km separated cycleway route from the city centre to the suburb of Chorlton. The project includes a high quality separated route with protected intersections included in the design (figure 14).
In the UK, the Cycling Ambition Fund was a three-year program funded by central government between 2015-18 and involved key cities including Bristol, Manchester, Oxford and Cambridge. In Bristol in the south-west of England, projects have included Quietways on streets and off-road shared use paths. A filtered permeability project was also trialled, but the project has been hard to implement and there has been some resistance from the local community. 80% of Bristol City Council’s (BCC) Cycling Ambition Fund (CAF) projects have now commenced, however, there has been limited time to develop projects and planning and engagement has taken time. The Department for Transport has acknowledged the difficulties in implementing projects and now is supporting the development of Local Cycling and Walking Investment Plans, so Councils are ready to implement projects when funding becomes available. Central government has provided funding for development of these plans. CAF projects have also included a “Bugbears” project using a community mapping tool ‘Common Place’ and to date, over 1700 comments received. Examples of CAF projects in Bristol include:

- Baldwin Street – construction of a separated cycleway which has reduced road space to add a separated cycleway. 900/day cyclists used the street in 2014 and after implementation of the project, 2896/day used the cycleway in November 2018.
- Whitehouse Street – combination of separated cycleway and Quietway.
- Clarence Road – separated cycleway 190/day cycles before implementation, 850/day afterwards.
• Malago Greenway – minor interventions at intersections.

Routes were originally determined by where they could be quickly and easily implemented, however, a more strategic approach is now being implemented using the Propensity to Cycle Index. The index has been developed further by Leeds University to create a Cycle Infrastructure Prioritisation Toolkit and this approach is something which could be investigated for implementation in Australia.

Figure 15: Whitehouse Street, Bristol - a separated cycleway has priority at intersections with minor roads

Malmo in Sweden has very few painted bike lanes and aims to separate all bike infrastructure, particularly at intersections. Many of Malmo’s bike tracks are bi-directional and are located on both sides of the road. These bi-directional tracks function well at low volumes, but where there are higher volumes there are issues, particularly at intersections. The next phase of development for Malmo’s network is more uni-directional tracks and possibly converting some of the older bi-directional tracks. On key networks there are uni-directional bike tracks. Separation is achieved
through pavers separating pedestrians and the road, however the bike track is at same level as the road.

Figure 16: Separated cycling infrastructure in Malmo, Sweden
Separation of cycleways was a key theme I encountered in many cities and in newer cities, such as Malmo, it is easier to build in separation at the time of construction. However, retrofitting separated cycling infrastructure in older, established environments is harder to achieve. Cambridge has designed a mountable kerb which is used to achieve separation, particularly in residential areas with multiple private driveways. The ‘Cambridge kerb’, as it has become known is a practical solution to providing separation while maintaining access and could be a useful technique for achieving separation in Australia.

Figure 17: The Cambridge Kerb, a mountable kerb which provides separation, but maintains access.
I visited Oslo, not because of high rates of cycling or extensive cycling infrastructure (Oslo comes in at 19 on the Copenhagenize Index), but because of Oslo’s ambitious plans to prioritise cycling and to rapidly transform the city. More broadly, Oslo has a strong focus on mobility and a vision for a car-free city centre.

The City of Oslo has set ambitious targets to increase cycling and has established a large team to work on implementing these targets. I met with the City of Oslo’s Ellen Munden Paalgard who works in the Cycling Team. Historically, in the 1940s there was relatively high levels of cycling in Oslo, however as with other cities, levels of cycling decreased with increased car use. In 2013 the mode share for cycling in Oslo was 7%. Most car trips are under 3 km in Oslo, with many under 1 km, and bikes are a highly competitive transport choice for these short trips.

60 km of new infrastructure is planned in 2019 and implementation will controversially involve removing parking and lowering speed limits. Since the introduction of the Cycling Strategy there has been a very aggressive campaign by a vocal minority against cycling, however, there is very strong political support for cycling. Much of the provision for cyclists in the city is currently painted lanes, but the first separated cycle tracks was installed in 2018. Quiet streets, where ‘cars are guests’ are also being implemented, although there have been some initial issues with definition of space and Council is learning with the implementation of each project. A key focus is reallocating space from cars to bikes and making the bicycle the fastest option for short trips. More than 1000 on-street parking spots are being removed to make space for bike lanes.

Figure 18: Huitfeldts gate – before and after – source: City of Oslo
Figure 19: Many European cycling cities provide basic bike maintenance tools and air at key public locations.
Cycling infrastructure in the Netherlands

There is no-where else in the world which has prioritised cycling and has perfected cycling infrastructure to the extent that the Netherlands has. Consequently, levels of cycling are amongst the highest in the world. Therefore, the next section of this report is dedicated to some of the extraordinary infrastructure I experienced while in the Netherlands.

The Dutch Cycling Embassy has been established to share the Netherlands extensive cycling knowledge and provide an intermediary between the demand for Dutch cycling expertise and Dutch parties that can deliver this knowledge and experience. The Embassy connects private companies, NGO’s, research institutions and national and local governments with foreign parties who are seeking to learn from the Netherlands. In 2018, the Embassy released the “Dutch Cycling Vision” which documents the history of cycling in the Netherlands, the benefits of cycling and key steps on ‘how to get there’.

Through the Dutch Cycling Embassy, I arranged to inspect some of Utrecht’s impressive cycling infrastructure and was guided by Bas Hendrikson, a Bicycle Policy Advisor with the Loendersloot Groep. Bas works for a consultancy firm and is currently based for three days a week in Amsterdam City Council. There are currently 25 people in Council’s cycling team and Bas is focussing on infrastructure and bike parking.

Bas noted that historically in the Netherlands everyone cycled pre-WW II. With the introduction of the car after the war, cars became a status symbol, much in the same way that cars have replaced bikes in China recently. In other countries, cycling almost disappeared completely, but in the Netherlands, people kept cycling. Levels of cycling dropped to around 15-20% of all trips and in the 1970s, existing paths began to disappear and parking increased. There was a high number of road fatalities, including children and the community demanded safe places for children to play and get to school. In the bigger cities, the cycle network became safer. In 1990, the first national cycle plan was released.

The national government has recently allocated funding for construction of Super Highways and parking at train stations in collaboration with cycling groups. 30 m Euros has been allocated to Super Highways and 100 m Euros to bike parking. Town to town routes are also being constructed such as the 20 km Utrecht to Amsterdam route, however these projects rely on cooperation between local councils. Key features of the Super Highways include 4 m width, high quality surfaces and priority at intersections (although this is not always possible).

Bas provided a fascinating tour of Utrecht’s cycling infrastructure. I am particularly grateful to Bas as the day of the tour coincided with the first day of snow for the year in Utrecht and throughout the tour, snow fell heavily. However, we cycled on regardless, as did thousands of other residents of Utrecht.
Figure 20: The partially heated approach to the Dafne Schippers bridge, which also forms the roof of a school

Figure 21: One of the key arterials in central Utrecht where road space has been reduced to allow for separated cycling infrastructure
Bike Streets, where ‘cars are guests’ are used extensively in the Netherlands. In these streets, bikes have priority and low vehicle speeds reduce the potential for conflict. However, several people I interviewed in the Netherlands commented that Bike Streets should not be implemented without a widespread acceptance of cycling as a mode of transport first. For this reason, it is unlikely that Bike Streets will be appropriate for implementation in Australia in the short to medium term. However, implementation of a 30 km/h speed limit across all residential streets in the Netherlands is highly effective in calming streets. Some towns and cities in Australia have implemented low speed limits in local streets and could be considered more broadly across Australia.

The towns of Nijmegen and Arnhem are located in the centre of the Netherlands and are 20 km apart. The population of Nijmegen is 175,000 and the cycle mode share is 26%. In Arnhem, the population is 153,000 and cycle mode share is 19%\(^2\). Nijmegen was awarded the prestigious Netherlands Cycling City title in 2016 and the major international bike conference, Velo-City, was held there in 2017. A Cycle Super Highway, the RijnWaalpad, was completed between the two cities in 2015. I cycled between Nijmegen and Arnhem to inspect some of the infrastructure which makes up this route.
Figure 23: Bike Streets where ‘cars are guests’
Figure 24: The impressive Snelbinder (or Fastener) was added to an existing rail bridge to provide a convenient cycle crossing of the Waal River in Nijmegen
Figure 25: Wayfinding signage is an important element of the RijnWaalpad route

Figure 26: Where possible the RijnWaalpad route has priority over traffic
Before leaving the Netherlands, I was determined to visit an internationally renowned piece of cycling infrastructure, the spectacular Hovenring, a suspended roundabout for cyclists which hovers above a major road intersection. Several of the people I interviewed in the Netherlands dismissed the Hovenring as ‘car thinking’, because the structure effectively removes bikes from the traffic network rather than prioritising or integrating cycling. However, I was still intrigued to witness this innovative approach to cycling infrastructure. So, I set off from the far west of the Netherlands where I was staying, cycled to the local station and took my folding bike on three trains (and a bus, due to a rail incident) to reach the southern city of Eindhoven.

Eindhoven has a population of 225 000, a cycling mode share of 22% and is the fifth largest city in the Netherlands. Post war, Eindhoven became a car-centric city and pursued a policy of constructing separate paths for cyclists and traffic, in contrast to many other Dutch cities. Eindhoven has had a mixed history of cycle policy, planning and implementation, often mirroring political cycles. However, in 2013, a mobility policy was introduced which included reducing car use and increasing levels of cycling and

Figure 27: The RijnWaalpad route passes under major arterial roads to reduce interaction with traffic. The underpasses are wide and allow natural light to avoid the perception of a tunnel.
public transport use. In 2014, Eindhoven was runner up in the Netherlands Bicycle City of the Year competition.

I left the station on my bike and navigated my way to the Hovenring, which is a 20 minute cycle from the city centre. Having heard about Eindhoven’s car-centric planning, I was surprised to find the route was mostly on well-designed and comfortable separated cycleways.

Figure 28: Eindhoven’s cycle network
Figure 29: After four hours of travel, eventually the Hovenring appeared on the horizon.

Figure 30: The Hovenring is connected to four major bike routes
To conclude this section on Infrastructure, I have included a summary provided by the Copenhagen Design Company’s Morten Kabel in response to my question about the priorities for creating cycling cities, which provides sound advice for Australian cities:

- Just get started! Start building a good, safe network.
- Separation is essential – there are different options for separation such as blocks or kerbs (but don’t use poles).
- Cyclists need to be protected from parking.
- The network needs to feel safe. Perceived safety is important, if the infrastructure doesn’t feel safe, parents will not allow children to use it.
- Connecting routes to a network – this will mean tough decisions about where infrastructure is prioritised.
- Avoid bidirectional cycleways in cities, they can be an issue for drivers at intersections, drivers are not used to looking in both directions and this can create high crash potential.
- Dialogue with the local community is needed – showing that cycling works and supports mobility, not hindering it.
- Avoid the mistakes made in other cities – but acknowledge that there will be mistakes, don’t be afraid and be honest.

**Bike parking and integrating cycling and public transport**

Across the UK and Europe, convenient and well-designed bike parking is an essential component of bike networks. In many of Europe’s dense and historic city centres, space is highly contested and there are also heritage restrictions on building new infrastructure. Much of the bike parking I observed in the UK and Europe was associated with public transport, with cycling providing an attractive option for short trips to and from train stations, tram and bus stops. Although many Australian cities have provided bike parking at train stations, there is often also extensive car parking provided and the potential for encouraging cycling for these short trips has not been realised.

Transport for London’s Andy Summers highlighted that more work is needed on bike parking at stations, however, there are significant demands on space at stations and other historic city locations. Provision of bike parking needs to be built into specifications when stations are built or upgraded.

Bike parking is also an issue in the historic centre of Bordeaux and although there are lots of bike racks in the city there is still demand for more bike parking. There are challenges in providing bike parking as a result of Bordeaux’s UNESCO World Heritage listing and constraints on new infrastructure.
Figure 31: Bike parking in central London
Figure 32: Vehicle access is restricted in central Bordeaux and there is a high demand for bike parking

Demand for bike parking in Cambridge is high and like Bordeaux, there is limited space and restrictions on infrastructure. In response, a local solution has been the development of the ‘Rankin rack’, named after Cambridge Council Cycling Officer, Clare Rankin, who developed the concept. A Rankin rack is a bike parking rack which has a high and low parking position, with a bar to provide a locking point and support. As much cycling is Cambridge is utility cycling, many bikes have large baskets and it is difficult to park bikes with baskets in traditional bike racks. There is also limited space for bike parking in the historical city centre of Cambridge. The Rankin rack allows for bikes with baskets to be parked adjacent to each other without leaving excessive space between the racks. The University of Cambridge Estate Management team commented that many of the University’s buildings are heritage listed buildings and providing bike parking is difficult. Lack of bike parking is holding back plans for staff bike pool schemes and several colleges have underground bike parking.
Figure 33: The high/low ‘Rankin Rack’ with supporting bar in Cambridge

Figure 34: In several major multi-story car parks in the city centre of Cambridge, car parking spaces at the ground level have been reserved for bike parking, including parking for cargo bikes. At some locations, bike mechanic services are also available.
At Cambridge station, there is commuting in both directions to and from the main railway station and a Dutch style, multi-story bike park has 2800 spaces over three levels and is already at capacity.

Figure 35: The multi-storey bike park at Cambridge station is already at capacity.

In Bristol, an innovative local design has been developed for high density areas such as apartments and terrace housing where residential bike parking is an issue. A number of ‘cycle hangers’ have been provided across the city, which provide secure bike parking and fit in one car parking space. Residents pay 35 pounds a year to use the hangers and they have been highly successful.

To encourage cycling for the journey to work, high quality and convenient workplace bike parking is essential. Many of the cities I visited have prescriptive bike parking requirements embedded in their planning schemes for new buildings to ensure that bike parking is included at the time of construction.

Some Australian jurisdictions already have detailed requirements included in their planning approval processes for bike parking and end of trip facilities and there is Austroads guidance available. However, strengthening bike parking conditions in development approvals across Australia could improve the availability and quality of workplace bike parking and encourage cycling for the journey to work. Requiring the addition of high quality bike parking and end of trip facilities at the time of building lease renewals is also an opportunity for major employers to improve facilities for employees.
Figure 36: secure on-street bike parking in Bristol for high density areas without access to off-street parking
Figure 37: Underground bike parking at Bristol City Council in the UK
Many major employers are providing high quality bike parking facilities in order to attract staff. In Malmo, Sweden, the City Council is working with private companies as businesses see the value of cycling and approach council for assistance. For example, the Massive gaming company is moving to new offices in Malmo and doesn’t want to provide any vehicle parking. The Company contacted the Council with a request to provide better cycling infrastructure to the new offices and bike parking has been integrated into the building design. Council also provided advice to the local University and IKEA when they relocated to reduce vehicle parking and improve cycle access and parking.

In Copenhagen and the Netherlands, workplace bike parking is essential as many employees arrive at work by bike.
Figure 39: Office bike parking at Aarhus, Denmark

Figure 40: Bike parking at Malmo’s central railway station is in high demand
Figure 41: In response to demand, Malmo Council has recently constructed an impressive underground bike parking facility at Malmo’s station which includes a range of bike services.

Figure 42: Malmo Council focuses on integrating bike and public transport journeys. At Triangeln station, parking, mechanic services and air are provided immediately adjacent to the station access.
Figure 43: Bike parking is provided at tram stops in Aarhus, Denmark

In Copenhagen, there is extensive above ground parking provided at stations, however demand exceeds supply and bike parking uses large areas of valuable CBD space.

Figure 44: Bike parking at Norrebro Station, Copenhagen
Bike parking is also integrated with bus travel, with the provision of informal parking at bus stops. I am often asked about the potential for bike racks on buses in the Northern Territory, however, investigations have indicated that bike racks on buses have limited potential to significantly increase levels of cycling. Bike racks on buses are a popular approach in car orientated cities in North America where there are low levels of cycling. However, I saw no evidence of bike racks on buses in any of the cities I visited in the UK and Europe. In the Northern Territory, a program to install bike racks at bus stops has been implemented and use of the racks is growing. Folding bikes can also be taken onto buses.

Figure 45: Bike parking at bus stops is provided in Manchester
Figure 46: Bike parking is provided at bus stops in Odense, Denmark
As with other areas of cycling infrastructure, the Netherlands has taken bike parking to the next level. Mass bike parking has been efficiently designed into most stations. Utrecht is the busiest station in the Netherlands and a massive new bike parking facility has recently been completed with 22 000 bike parking spaces are now available at the station.

Figure 47: Some of the 22 000 bike parking at Utrecht Station
There are varying approaches to allowing bikes to be carried on public transport. In London, folding bikes are allowed on trains and full-size bikes are allowed off peak, however, this not always practical.

New EU legislation has recently been introduced which will require all trains in Europe to allow for the carriage of bikes:

“Passengers shall be entitled to take bicycles on board the train, including on high speed, long distance, cross-border and local services. All new or refurbished passenger rolling stock shall, at the latest two years after the entry into force of this regulation, include a well indicated designated space for the carriage of assembled bicycles with a minimum of 8 spaces. Railway undertakings, ticket vendors, tour operators and, where appropriate, station managers shall inform passengers at the latest when purchasing the ticket of the conditions for bicycle carriage on all services in accordance with Regulation.” (EU) No 454/2011.

In the Netherlands, bikes are allowed on trains outside peak hours in marked carriages and folding bikes are allowed at all times. Station platforms are designed to encourage bike access with ramps adjacent to stairs to allow bikes to be wheeled easily onto the platform.

Figure 48: Bike access to station platforms is provided in the Netherlands
A key observation for Australia is that bike parking is an essential element in increasing levels of cycling. Strong planning scheme requirements for bike parking in new buildings can gradually increase the quality and availability of bike parking and increasingly, major employers are looking for quality bike parking facilities to encourage staff. Short cycling trips to and from public transport can make a significant contribution to local transport systems, increase levels of cycling and reduce car use. There is potential to significantly improve integration of cycling and public transport in Australia, and well-designed, secure and convenient bike parking is essential.

**Technical guidance**

There are varying levels of technical guidance available in the cities I visited. Some cities are guided by national guidelines, while others have created their own local guidelines which are unique to their city and their requirements. In addition, technical guidance
from independent sources are also a valued resource, such as the recently published *Designing for Cycle Traffic: International principles and practice* by John Parkin, a Professor at Bristol University. Most technical guidelines are non-mandatory, which allows for local variation and innovation. The Dutch CROW Design Manual for Bicycle Traffic is widely regarded as the most comprehensive source of guidance on Dutch cycling infrastructure and has recently been made available in English.

In the UK, a new technical guidance document is being developed to update the existing Cycling Infrastructure Design Transport Note 2/08 which should be finalised by mid-2019. Also, a review of the Highway Code (recommended as an outcome of the cycling safety review) has commenced and includes issues such as cyclist priority at left turns, strict liability, and lower speed limits. The UK’s Cycling and Walking Alliance has provided input to the Highway Code review and the Department for Transport is currently considering how changes to the Code will be promoted.

In Oslo, the City Council found national cycling infrastructure guidelines restrictive and less relevant to city challenges such interactions with pedestrians and public transport, and so has developed an Oslo specific guideline, the Oslo Standard. The Standard is heavily inspired by best practice bicycle infrastructure from Denmark and the Netherlands.

The Danish cycling design guide, *Catalogue of Cycling Concepts* is currently being digitised and a website is being created. The updated guide will be launched at Velo-City in 2019.

A key message for Australia is that there is already a wide range of cycling design guidance already available from some of the Europe’s top cycling cities. Although local conditions will always require local solutions, international cycling design guidance will also have relevance in Australia.

**Bikes fit for purpose**

A noticeable difference between bikes in Australia and Europe is the type of bikes being ridden. Particularly in the Netherlands and Denmark, most people are riding very practical ‘Dutch’ bikes. Traditionally sturdy and upright, these bikes are made for utility, for cycling at a relaxed pace and carrying families and shopping. The bikes can be ridden in everyday clothes and are easy to use by all ages and abilities. Most bikes come with a built-in back wheel lock and are not so precious that they cannot be locked and left in public spaces. As can be seen in the photos in this report, high cost, high tech sporting bikes are almost completely absent from Europe’s cycling cities.
E-bikes are increasingly popular in the UK and Europe and have significant potential to increase cycling in cities where the topography is challenging, such as Bristol and Oslo. Many local councils operate e-bike loan schemes to encourage the uptake of e-bikes and e-bikes could have a major impact in Australia where distances are longer in lower density cities.

Cargo bikes are hugely popular in Europe and are used for carrying and delivering almost anything. In Groningen in the Netherlands, students can hire bike trailers to assist in moving house!

Figure 51: In the Netherlands, cargo bikes are adapted for the school run
In Cambridge new cycling infrastructure is creating a change in the type of bike being used. Traditionally city bikes were most common, but now there are more cargo and family bikes. Businesses are increasingly using cargo bikes too for deliveries and an e-bike delivery company operating in Cambridge, Zedify, provides a delivery services which competes effectively with conventional delivery vehicles.

Figure 52: Bike delivery company Zedify in Cambridge

Most cities I visited had bike share schemes in some form. Docked schemes are still more common in Europe than dockless, although in some cities, both types of bike share operate successfully. Bike subscription services such as Swap which provide a bike and on-demand maintenance services for a monthly fee are increasingly popular with students.

The Santandar bike share scheme has been very popular and successful in London. The scheme operates at a loss and still requires an ongoing subsidy, however the scheme is stable at present. In contrast, the first wave of dockless bike share schemes have been very unsuccessful in London. They are currently un-regulated, however, Transport for London has recently introduced a code of conduct.
Figure 53: The popular ‘V3’ bike share scheme in Bordeaux has 174 stations and 1700 bicycles. A private dockless bike share scheme, Indigo Bikes was introduced in 2017 and has 2100 bikes.

Bike share in Australia has been limited in success, potentially as a result of mandatory helmet laws. Dockless bike share has been particularly unsuccessful, with high levels of vandalism and issues with parking management. Many dockless share schemes have now left Australia. The future of bike share in Australia, may be dependent on helmet rules, however, in many European cities, bike share is an integral part of the cycling ecosystem.

E-scooter share schemes which are rapidly increasing in the US, New Zealand and Australia are noticeably absent in Europe, possibly because cycling and bike share already responds to a similar demand in many cities.
Figure 54: Oslo is trialling a winter bike share scheme
The role of advocacy

Consistent and highly developed cycling advocacy has provided a very significant contribution in many of the cities I visited. Well-established and powerful advocacy groups have been instrumental in achieving many positive cycling outcomes.

In London, advocacy groups have been very successful in gaining media coverage of cycling issues, for example, highlighting cycle deaths in central London. London’s Mayor has been a figurehead for cycling and social media has been important in demonstrating community support. In London, taking local councillors for a ride through their municipalities has been a very effective way for advocacy groups to increase understanding of cycling issues at the local level and this approach could be beneficial in Australia.

Andy Summers from Transport for London noted the agency is operating within an environment of constraint, as for the first time, the agency is not funded by central government. Transport for London is the only transport agency in the world to operate in this way and this is also at a time of reducing trips within London. In this climate, funding for cycling is under pressure. However, the Mayor for London has prioritised funding for cycling. Part of the reason for this is intense lobbying from the London Cycling Campaign prior to the 2012 elections. This made a very significant difference and resulted in a strong commitment to cycling through the establishment of the Commissioner for Walking and Cycling role in London.

In Cambridge I met with Cambridge Cycling Campaign’s Executive Director Roxanne De Beaux and volunteer Robin Heydon. Cambridge Cycling Campaign (CCC) is a powerful local cycling advocacy group and the group’s 1300 members are highly educated and skilled. CCC was formed in the 1990s and grew out of other advocacy groups which were campaigning for the pedestrianisation of Cambridge. A proposed ban of cycling in the centre of Cambridge during the 1990s was the catalyst for the group’s formation. The group is funded through membership and there are now two employees. Funding for events and programs is through Council and there is some grant funding for other activities. CCC is seeking Corporate sponsorship and several large employers are now supporting the group. An annual festival of cycling has provided additional funding for the group and the event is growing each year.

In Exeter, I met with Mike and Biddy Walton from the Exeter Cycling Campaign. Exeter, located in the west of England has a population of 120,000. The Exeter Cycling Campaign (ECC) is at an early stage of development and is currently involves a small number of very dedicated volunteers. ECC was established 3 years ago and has developed a positive relationship with local and regional Councils. To date, the group’s key role has been commenting on development applications. Exeter is a University town and ECC is working with the University to encourage support for cycling. Student car parking is a significant issue in Exeter and on street parking is an issue for the County Council which impacts on provision of cycling infrastructure.
Priorities for ECC include responding to planning applications and Council consultations and influencing Councillors to encourage cycling. ECC is working with Council officers to change the focus from moving cars to moving people and also advocating for policies to avoid close passes (similar to Australia’s ‘1 metre rule’ introduced in most states and territories in Australia). ECC has developed a charter to support cycling through engagement with businesses and all major employers have now supported the charter. ECC does not focus on encouragement, as other groups are already focussing on this through, for example, Bikeability bike education programs and free bike lessons offered through Council. ECC’s focus is on enabling cycling through the provision of infrastructure and bike parking.

In Bordeaux, I met with Oriane Hommet, Coordinator Velo Cite, a bike advocacy organisation which represents the 28 towns which make up the City of Bordeaux. The organisation was established in the 1980s for the purposes of improving conditions for cyclists and developing bike infrastructure. Velo Cite is funded through membership, financial contributions from Bordeaux Metropole (the City’s transport agency) and local councils, through national funding and the sale of bikes. The organisation is well established and is highly respected, mainly because of the organisation’s long history and achievements. Velo Cite currently has around 850 members.

In Copenhagen I met with Marianne Weinreich, Chairperson of the Cycling Embassy of Denmark. The Embassy recently celebrated its 10th anniversary at Velo-city in Brussels and was formed in response to cycling becoming a priority on city agendas. People working to encourage cycling were coming to Denmark looking for knowledge and the Embassy was formed as a central place for visitors to come to for advice and information. The Embassy has a range of members including cities, NGOs and businesses. Aims include the continuing development of cycling in Denmark and promoting knowledge for other organisations, sharing experiences and best practice. There are currently 40 members and the organisation is funded through a membership fee but there is no external funding (in contrast to the Dutch Cycling Embassy). At the national level the Embassy aims to share knowledge and other cities are invited to participate, for example, the City of Chicago.

The Embassy also aims to reach people beyond Denmark through their comprehensive website. At present, the Embassy is working on digitising the Catalogue of Cycling Concepts, the Danish design guide and creating a website (the original version was created in 2012). The digital version will be launched a Velo-city in June 2019.

Member organisations donate time to Embassy projects and representation. For example, Marianne is based in Aarhus in the north of Denmark and represents the Ramboll consultancy in smart mobility and thought leadership.

In Utrecht I met with Wim Bot, the International Policy Advisor with the Fietsersbond or Cyclists’ Union. Wim has worked in cycling planning and policy for many years and provided some history on the development of cycling in the Netherlands and the role of the Cyclists’ Union.
The Dutch Cyclist Union was founded in 1975 when the cycling share in the Netherlands was at its lowest. Cyclists were being pushed out of streets and the ‘stop the child murder’ movement was formed in response to the high number of road deaths, particularly the number of child fatalities. In 1975, cities began employing their first bike officers, but there was limited knowledge about cycling in government. It was also a time of a lot of protests and Union members were very active. There were 150 local branches of the Union and they were very successful at lobbying at the local, regional and national level. However, there was a need for political ambition and stamina to maintain momentum. A key lesson is that consistency in policy will pay off.

Within the Union, four people support 150 local branches. Funding is 50% membership and 50% other sources including a subsidy from national government and project funding. There are 34 000 paying members, however an ageing membership is challenging. Many of the Union’s volunteers are ageing and this is an issue for most volunteer organisations, as the level of community volunteering is declining.

The Union has recently developed a new vision which plans for cycling in the Netherlands until 2040. The updated vision includes new areas for the Union including sustainability and different types of bikes such as cargo bikes. Wim commented that a new phase in cycling needs to be developed in the Netherlands and that there is still work to be done.

We discussed the difficulty of promoting cycling where there is no or limited local advocacy. Wim suggested that a social media group could be established, starting with a local group and building the dynamic. Rotterdam did this very successfully and this could be something which could be implemented in regional cities in Australia, such as Darwin, where advocacy is currently limited.

The Union coordinates a biennial Bicycle Cities competition in the Netherlands. The winning city was previously selected by experts, however, now cyclists provide comments and feedback which is used in the selection process. Previously the benchmark process was very sophisticated, using technology to measure how competitive bicycles were compared to the car, the roughness of cycle paths etc. This methodology was used twice, but was too labour intensive and a new methodology has now been developed. The competition is a useful tool to promote cycling and stimulates discussion. City assessments for the competition showed that cities with a population of around 100,000 are perfect for cycling. For larger cities with longer distances, public transport and cycling combine very well. Rotterdam is a good example of providing cycling infrastructure in a historically car dependant city. With a population of 600,000 Rotterdam has a mode share of around 25% for cycling.

A consistent theme in the cities I visited was a history of well-respected and highly organised cycling advocacy. These organisations play an essential role in demonstrating community support for cycling, providing cycling expertise and driving change. There are many different models for funding, but major advocacy groups often receive some level of government funding and this approach could be considered in Australia. Where
advocacy is absent or limited, there could be a role for government to stimulate a cohesive cycling community through social media. The role of advocacy in promoting cycling was the subject of a previous Churchill Fellowship in 2009 To investigate city-based bicycle advocacy organisations and the report investigates the role of cycling advocacy groups in detail.

**Travel Behaviour Change**

Travel behaviour change refers to a structured approach to encouraging a shift from travel by private vehicle to cycling, walking and public transport. Travel Behaviour Change programs are consistently applied in most of the cities I visited to support cycling infrastructure programs. At the All Party Parliamentary Cycling Group meeting, London’s Cycling and Walking Commissioner, Wil Norman indicated that experience in London has demonstrated that infrastructure is important, but infrastructure needs to be supported with behaviour change programs to reap the benefits from the infrastructure.

Bristol City Council (BCC) has a dedicated Transport Behaviour Change team which includes eight staff, centrally funded for a three-year program. The team supports the capital works program and focuses on business, schools, communities and employment opportunities:

- **Business** – grants for cycle parking are provided with 50/50 funding. An active travel champion is established in the workplace and this is the key to successful implementation. Council operates a pool bike loan scheme for businesses which is available for 3 months. A workplace travel awards program has been very successful, particularly in engaging younger staff. A commuter challenge is undertaken for two months in May and June with companies competing against each other. An annual travel to work survey is undertaken in participating companies for one week in March and a report is prepared for each company.

- **Communities** – loan bikes are available for two weeks and one-on-one cycle training is provided as well as assistance with route planning. e-bikes are also available for a four-week loan, with a deposit and trailer bikes and cargo bikes are also available. The project has been very successful with 150 people currently on the waiting list. For new infrastructure projects all local businesses are contacted through door knocking to promote the infrastructure and schools are contacted to offer Bikeability courses.

- **Schools** – transition between schools is a time to influence travel behaviour, such as starting school and transferring from primary to middle school. BCC provides Bikeability courses in the last year of primary school and takes students on the route to their new secondary school, demonstrating where to cross roads, where to park bikes etc. The program also targets teachers and treats schools as a business.

- **Hengrove Cycle park** – has three staff and provides an inclusive program teaching all ages and abilities to ride. GP referrals to the centre are provided for a preventative health approach. Bike maintenance and training is available and the centre is also supported by volunteers.
• Wheels to work program – for people seeking employment, BCC is working with job centres to provide bikes at a discounted rate of 50 pounds per bike. The aim of the program is to enable more people to attend interviews and hopefully secure work. Free cycle training is also provided and the program outcomes are monitored.
• Better by bike program - focusses on normalising cycling. Photos can be uploaded using social media for social norming with the aim of developing a community of cyclists.
• All new business and residential developments in Bristol are required to develop a travel plan. Council audits the travel plan to ensure that it has been implemented. Council also provides a service to develop and implement a travel plan for free.

Results across all behaviour change intervention programs in Bristol has demonstrated that those targeted through the program are cycling 2-3 times per week.

Bordeaux Metropole operates a bicycle loan scheme which has been very successful in encouraging residents to try cycling. The scheme has been in operation since 2001 and available to the whole metro area. The scheme provides a free bicycle for 10 months, or two months for an e-bike or cargo bike. 2000 bikes available and the scheme is very popular. The bikes are very obvious and are branded with Bordeaux Metropole’s brightly coloured logo. There is currently a waiting list for e-bikes available through the scheme. Bordeaux Metropole has also established a ‘Bike House’ in Bordeaux, a bike centre which provides information, coordinates the bike loan scheme and has mechanic services available. Further ‘bike houses’ will be developed in other locations through the implementation of Bordeaux’s Cycling Plan.

Communication and behaviour change are key elements of Malmo’s Cycle Program which includes social media campaigns and launches to raise awareness of new infrastructure. A particularly successful campaign focussed on reducing very short car trips using the slogan ‘In Malmo, it is ridiculously close to most things!’. It has been important to brand the city as a bicycle city. There are also staff members dedicated to school bike programs and bicycle safety.

Malmo Council has introduced a highly successful ‘Summer Streets’ project. Each year, one of Malmo’s busy city streets is closed to through traffic and parking is removed. Only residential and delivery traffic is allowed access and pedestrians and cyclists share the street. The project transforms the street and has been highly successful. An initial one-week trial has now extended to three months during summer and may eventually result in a permanent closure. Two additional ‘Summer Streets’ are planned this year.
In Oslo, the City Council has implemented a number of campaigns to encourage cycling such as providing bikes to nurseries, cargo bikes for businesses and bikes for the elderly. Bike repair projects based at libraries and youth clubs which target youth and refugees have been very successful. Oslo is also participating an EU project to promote the use of cargo bikes.

In Cambridge, new residential developments are required to develop and implement a travel plan. Eddington is a new Cambridge University development, providing lower cost housing for staff as well as commercial housing (700 residences for staff, 700 for sale). For new residents to Edington, there is a package of travel behaviour available which includes travel planning sessions, free cycle training, bike maintenance workshops and a loan bike for a month including e-bikes, cargo bikes and accessories. These benefits are available to the whole family, not just staff. To date, there has been limited uptake, but not all residents are in place and the program is most popular with those new to Cambridge. Including a travel package for new residential developments is part of Cambridge Council’s development requirements and this could be a requirement for consideration in Australian planning schemes.

Although Australia implemented a number of large-scale, world-leading travel behaviour programs from around the mid-1990s to 2005, there has been a limited focus on structured travel behaviour change since that time. Many of the Councils I interviewed highlighted the need for ongoing travel behaviour change to support infrastructure.
programs and ideally, all infrastructure projects should include budget for behaviour change.

**The role of universities**

Universities can be a catalyst for providing cycling infrastructure and increasing levels of transport cycling. Many of the cities I visited with high levels of cycling were also university cities. High quality cycling infrastructure targeted around CBD located universities provides a significant opportunity to increase levels of cycling and provide an alternative transport option for students. With a trend to relocate suburban universities to CBD locations as part of city revitalisation projects in Australia (such as in Newcastle, Launceston and proposed in Darwin), there is great potential to improve cycling infrastructure and influence student travel behaviour.

A key learning from my discussions with Transport for Greater Manchester was the relationship between a large CBD University and the high potential demand for cycling. Provision of high-quality separated cycleways through the centre of the Manchester University precinct has significantly increased levels of cycling and provided an alternative option for students. Combining bike and bus travel has been a very significant feature in Manchester and this approach could have potential in Australia’s cities and regional centres where other forms of public transport are not available.

Figure 56: Manchester’s Oxford Road separated cycleway
In Odense, Denmark a university town with high levels of cycling, all international students are given a bike when they arrive in the city and students take up cycling when they haven’t cycled previously.

While in Manchester I met with representatives from the University of Manchester’s Bicycle User Group (UMBUG). This passionate group of university staff members has formed a volunteer Bike User Group which aims to encourage new cyclists and lobby within the University for improved facilities. The University also consults with UMBUG on cycling issues. Examples of UMBUG projects include the Bike Shelter Management Scheme which enlisted volunteers to take responsibility for specific shelters, undertake counts, report maintenance issues and direct users from high to low use sites. 99% of bike thefts are from cable locks in Manchester, so the University has a bike lock subsidy scheme to subsidise the cost of buying D-locks, providing locks for 10 pounds rather than 40 pounds and bikes are also coded through the scheme. 12 % of university staff cycle to work and the university funds UMBUG to provide monthly breakfasts for staff who cycle. UMBUG also provides a buddy scheme for new cyclists and holds an annual cycling event for staff.

UMBUG demonstrates how a bike user group and universities can work together to support cycling behaviour change amongst employees. UMBUG could be a model for universities in Australia, particularly in locations where there is significant potential to increase levels of cycling, such as regional university cities.

In Cambridge, I met with the University of Cambridge Estate Management team representatives, Andrew Coleman and Sara Aziz. The team works with the University’s 11 500 staff (but not students) and offers a range of programs to encourage cycling. Currently an impressive 37% of staff cycle to work. A free two-hour cycle training session is offered to all new staff as well as ‘Doctor Bike’ sessions where there is a bike mechanic on-site and 30-minute time slots are available for staff to book in for basic bike repairs. The team also coordinates a two-hour cycle maintenance workshop for new staff and holds a cycle safety seminar. Pool bikes, including e-bikes, are available for staff attending meetings.

Universities are often major employers in smaller cities and regional centres and university support can assist in increasing levels of cycling amongst staff which can have an impact on the broader community. In Darwin, current proposals to relocate part of Charles Darwin University from a suburban campus to the city centre provides a significant opportunity to increase levels of cycling and provide an alternative transport option for students and staff.

**Driver training and awareness**

Focussing on cycling during initial driving training is an opportunity to improve awareness of appropriate driving behaviour for all new drivers. However, raising driver awareness is less of an issue in countries with high levels of cycling. In the Netherlands, almost all learner drivers have ridden a bicycle since a young age and are already aware of sharing roads with cyclists. In addition, separated cycling infrastructure and low
speed limits in residential streets reduce the potential for driver/cyclist conflict. As most people who drive cars, also ride bikes in the Netherlands, there is less need to raise awareness amongst drivers.

In the UK, with predominantly low levels of cycling, driver education and training is more relevant. A review of driver education is under consideration at present in the UK and one current initiative is providing bikeability sessions for driving instructors to raise awareness of cycling safety issues. This is something which could easily be implemented in Australia and would assist in delivering positive messages about cycling at a critical stage for learner drivers.

Transport for London has been developing and implementing a number of programs targeting heavy vehicle and bus drivers to raise awareness of cyclists. This has included training for drivers and an ‘exchanging places’ program which allows drivers and cyclists to be more aware of one another on London’s roads. Similar programs are being initiated in Australia, but broader implementation could be very effective.

**Is climate an issue?**

Weather is often raised as a potential barrier to cycling and walking in Australia, particularly in the climate extremes of northern Australian and colder climates in southern Australia. However, only 10% of Australian Cycling Participation survey respondents indicated that weather was a reason for not cycling to work in the Northern Territory. Figure 56 presents data from permanent counters on the cycle network in Darwin which shows only minor variations in the number of people cycling between the hot and humid wet season and the cooler dry season.

Figure 57: Seasonal variation in the average daily number of cyclists recorded at permanent counters in Darwin 2016
Although the European winter climate is obviously a different extreme to most Australian climates, my observation is that the impact of climate on levels of cycling is limited. Travel is a habit and most people will make adaptations to maintain their travel behaviour. In a European winter, this may mean additional clothing, while in a tropical summer, cyclists may choose to avoid the heat of the day and will need end of trip facilities to shower and change clothes. Marianne Weinreich, Chairperson of the Cycling Embassy of Denmark commented that cycling in winter is not a huge issue in Denmark. Snow is cleared first on the bike lanes and there are not that many days of snow. The new Finnish Cycling Embassy is developing a focus on winter cycling as an area of expertise.

Undoubtedly the winter climate in Oslo is a challenge for cycling, but levels of winter cycling have increased by 37%. There are 180 km of bike lanes which are kept free of snow in winter and Oslo City Council has implemented campaigns to provide bike lights and studded bike tyres, which are surprisingly effective for cycling in snow. A winter trial using bikes with studded tyres is being implemented in 2019. My visit to Utrecht coincided with the first day of snow in 2019, however, the weather appeared to have a very limited impact on the number of people cycling.

Figure 58: Cycling continues in Utrecht regardless of the weather
Figure 59: Bike parking at Oslo Station – the temperature is -9°C

Figure 60: Studded bike tyres make winter cycling easier
Obviously, the relevance of studded bike tyres and snow clearing is of limited relevance to Australia. However, the key learning is that climate has a limited impact where other key requirements for supporting cycling such as separated infrastructure are in place. Most climate impacts can be mitigated, for example in hot climates, shade, provision of water and end of trip facilities can all support cycling. As Marianne Weinreich noted, wherever there is a problem for cycling, there is usually a solution “if there are hills, there are e-bikes, where there is snow, it can be cleared, if it is hot, shade can be provided”.

**Should I even mention helmets?**

Australia is one of only a few countries in the world to have implemented mandatory helmet laws. The Northern Territory is the only jurisdiction in Australia which has not implemented full mandatory helmet laws, where cyclists over 17 may cycle without a helmet on cycle paths. The impacts of mandatory helmet legislation in Australia have been well documented, most recently in Australia in Bicycle Network’s report *Australia’s Mandatory Helmet Laws*.

The arguments for and against mandatory helmet legislation are detailed and complex and potentially in itself, a subject for a future Churchill Fellowship investigation? Therefore, I do not intend to delve into the impacts of mandatory helmets in this report and will restrict my comments to some brief observations. Firstly, I note that my bike helmet was probably the most useless item packed in my luggage. Although I tentatively wore my helmet on the first few infrastructure inspections I undertook in the UK, even there, where cycling infrastructure is less well developed, I quickly joined the local population and rode helmet free. Bike helmets are not mandatory in the UK and while helmets are less of an issue in places like Cambridge with high levels of cycling, there is more pressure to wear helmets in London. Bike advocacy groups are generally not supportive of mandatory helmet legislation and Andy Summers from Transport for London commented that helmets are unlikely to become mandatory in the UK, principally as there is evidence that legislation would probably add another barrier to cycling.

If my helmet felt out of place in the UK, it felt entirely superfluous in Europe. However, I should emphasise that in the European cities I was cycling in, I was cycling at low speed, on fully separated infrastructure, in almost car-free city centres and on 30 km/h local streets. I was also surrounded by thousands of other people pedalling their bikes as a daily form of local transport. As Melissa and Chris Bruntlett note in their book *Building the Cycling City* “When drifting along at a jogging pace, in an upright position, on a network of dedicated cycle tracks – as the Dutch have done for decades – the notion of head protection becomes altogether unnecessary. Helmet use remains remarkably low (0.5% of all cyclists) and yet, the nation boasts the lowest rate of bike-related head injuries in the world”.

Bicycle helmets are a controversial issue in Australia and no specific recommendations are provided as a result of my investigations. However, in countries with extensive
protected cycling infrastructure and a mature cycling culture, it was observed that bike helmets were simply not an issue. In his book, Bike Nation, Peter Walker quotes Manchester’s Commissioner for Cycling and Walking, Chris Boardman: “I understand exactly why people feel so passionately about helmets or high-vis vests. I understand why people wish to use them. But these actions seek to deal with an effect. I want to focus the debate on the cause and campaign for things that will really make cycling safe. That is why I won’t promote high-vis and helmets – I won’t let the debate be drawn onto a topic that isn’t even in the top ten things that will really keep people who want to cycle safe”. That is probably a good place to leave the issue of helmets.

A cycling culture?

In Australia, I often hear comments that Europe’s levels of cycling, and particularly the cycling experience in the Netherlands is due to a ‘cycling culture’ and that the absence of this culture, is one of the reasons cycling will never reach similar levels in Australia.

Certainly, the Netherlands is unique, it has a population of around 17 million and almost 23 million bicycles!25. However, as the Dutch Cycling Embassy’s recently released Dutch Cycling Vision states “What happened in the Netherlands is special and it delivers. But it is not that special that it can’t be done anywhere else”25

While I was in Utrecht, I was fortunate to have the opportunity to meet with Mark Wagenbuur, author of the widely read ‘Bicycle Dutch’ blog33 and we discussed the history and role of cycling in the Netherlands. Mark has closely followed the planning and development of cycling infrastructure in the Netherlands from a young age. In 2009 he started publishing videos about cycling in the Netherlands on YouTube. These videos were picked up by a range of blogs and in 2011 Mark started to write his own posts which became the Bicycle Dutch site. Mark now publishes regularly on transport cycling in the Netherlands and other countries and his blog and videos are widely viewed around the world.

I asked Mark what is the difference about cycling in the Netherlands? Mark replied simply that cycling is normal, cycling is a tool. He also noted that space is an issue in the Netherlands and cars are space inefficient. So how did the Netherlands get to this point? Mark explained that the Netherlands has achieved the current levels of cycling with incremental steps and that society has to come on the journey. For example, Bike Streets in the Netherlands (where bikes have priority over cars) can only be successful when the community understands how they work, these streets have evolved as part of the development of cycling in the Netherlands. Steps can’t be skipped and there is a pathway to developing infrastructure. Infrastructure can’t be built when the community is not ready, for example, building Bike Streets without a widespread acceptance of cycling as a mode of transport first. In the Netherlands, off road paths were required before separated space could be allocated on road for cyclists.

Mark noted that there are two cyclists and four pedestrians to every car in the Netherlands and that a ‘1 m overtaking rule’ isn’t needed. Most drivers also cycle and nearly all drivers have ridden a bike before learning to drive, so understand how cyclist
and vehicles need to interact. There are no school buses in the Netherlands, so the majority of children learn to cycle from an early age and cycle to school. The current average distance cycled in the Netherlands is 7.5 km and Mark expects e-bikes to extend this distance. In the 1970s there was a decision to categorise all streets in the Netherlands and all local streets have a speed limit of 30 km/h, this is enormously significant to encouraging cycling. A key principle in the Netherlands is separating traffic of different speeds.

Mark is often asked where to start? A common approach is to start with children, however, if parents don’t perceive cycling to be safe it will be hard to convince them. Mark suggests starting with university students as cycling is an efficient option for students and there is so much potential.

Wim Bot from the Dutch Fietsersbond or Cyclists’ Union made similar comments and suggested that the success of Dutch cycling is due to short distances, directness, safety and comfort. 30 km/h neighbourhoods are also important as well as great separated networks on 50 km/h roads. Wim commented that if you provide for 8 year-olds and 80 year-olds, you provide for all.

There was similar advice from Copenhagen. Marianne Weinreich, of the Cycling Embassy of Denmark indicated that in general, cycling in Copenhagen is not a statement, just something that people do. Troels Anderson from Odense Council in central Denmark noted that although there is a tradition and culture of cycling in Odense, it is not essential. Students come to Odense and change their behaviour, taking up cycling when they haven’t cycled before. Copenhagenize Design Company’s Morten Kabell summed up the situation “I am not a cyclist, just a Copenhagenener, there is no difference, cycling is not an identity”.

Cycling city case studies

Several cities I visited exemplified many of the themes discussed in this report and stood out because of their high-level commitment and comprehensive approach to encouraging cycling. Consequently, they experience some of the highest mode shares for cycling in the world. Three case studies are presented here to illustrate the transformative impact of cycling and how bold cycling policy and programs can create vibrant, liveable towns and cities.

Odense, Denmark

Odense is the third-largest city in Denmark, has a population of 200 000 and is located 170 km west of Copenhagen. I was first introduced to Odense’s extraordinary cycling achievements by Peter Walker’s book, Bike Nation

Odense epitomises a relatively recent shift in the way people think about urban cycling. For a long time, bike advocates tended to be from the political left, from green movements or both. But in the last decade a new set of arguments has emerged that contend that building better bike infrastructure is as much about boosting the local economy. This is billed as a new model for competitive cities – that
they are these days judged less on busy roads than on people-friendly streets, lined with pavement cafes. It is however, about more than just ever-rising GDP figures. As with Odense, this philosophy aims to bring about a happier, healthier, more human-scale city. And at the heart of these changes is cycling."

Intrigued, I included Odense in my Fellowship itinerary and arranged to meet with Troels Andersen, Program Manager Cycling, Odense Municipality. Odense has implemented a Bike Strategy, however, it is not available in English as there is not an international focus in Odense at present. There is currently limited national funding available for cycling infrastructure in Denmark but an election is due in mid-2019 and this situation may change. However, Troels believes that cycling should be funded locally “cycling is a local issue, the benefits are local and funding should be local”.

Denmark has a simple governance structure, there are no county council, just local and national government. Council manages all roads and the national government manages motorways. Odense has developed a mobility plan which has a broad focus and includes cycling. However, cost benefit analysis shows that cycling projects are very beneficial and therefore, most of the funding for implementation of the mobility plan is for cycling projects. Other mobilities have been investigated such as electric vehicles, but the only actions which really make a difference to liveability and sustainability goals are cycling and walking.

National survey data indicates that in Odense only 54% of the community own a car and the current cycling mode share for all trips for the whole population is 26%, while 34% of commuting trips are by bike and 2% by public transport. 50% of all trips in the centre of the City are by bike and 81% of school children cycle to school. Troels noted that most participants at a workplace meeting will arrive on a bike, they may be wet and have jackets etc, but they “don’t have to apologise because cycling is normal”.

Odense is a historic city, and the third largest city in Denmark after Aarhus and Copenhagen. Odense has been building cycle paths since 1895 and originally there was a bike factory in Odense. There is now 550 km of cycle paths which is more than in Copenhagen. There is a University and other higher education institutions and a student population of 30,000. Odense is also a garden city, with many parks and open spaces and cycle trips are relatively short. The distance from one side of the City to the other is about 22 km. Odense’s sister city is Groningen in the Netherlands. The levels of cycling are higher in Groningen, most likely due to higher density. Odense is lower density and spread across a larger area.

Local initiatives have made the difference in terms of cycling, however, Troels believes there is nothing special about Odense “there are a range of factors which encourage cycling, but cities can make a choice to be a city a cycling city or not. There is not one action which enables cycling, but a recipe of actions”.

The Odense cycle program aims to encourage everyone to cycle from two year-old children biking to kindergarten to six year-olds cycling to school alone and seniors.
Troels highlighted that “Odense is a very good place for very young and very old people to cycle. This is what is special about Odense, this is the difference”.

In comparison with the nearby cities of a similar size, Aalborg and Aarhus, car use in Odense is decreasing, however car use is increasing in Aalborg an Aarhus. Troels believes that the difference is the programs Odense is implementing to encourage bikes.

Figure 61: Comparing car use and cycling trends in Odense, Aalborg and Aarhus

Odense is internationally recognised as a liveable city. A light rail system is currently being constructed which will be 14.5 km in length and have 26 stops, servicing the hospital and University to the south. Experience elsewhere in Europe has demonstrated that a population of around 200 000 is about the minimum for a tram to be effective. Bikes will be
allowed on the tram and there will be bike parking at tram stops. The tram may attract some people who currently commute by bike, but the main aim is to reduce car use. There are currently 3000 bike parking places at Odense’s main railway stations.

Odense’s Mobility and Traffic Plan was implemented in 2009 with strong political support. Odense was formerly an old industrial city, however, now cities are competing for investment and industry. Odense has focussed on modern technology with robots, drones and other new industries, particularly science-based industries.

In the 1970s, a new major arterial road was constructed through the centre of the City with six lanes which cut the historic city centre in half. However, in 2000s, the community agreed the road was not a good public street and the Municipality consulted the community regarding options. With community support, it was agreed to close the road and provide for the tram, cycling and pedestrians. The former road space was also used to construct a new museum. However, there were 29 additional infrastructure projects that had to be built to allow for the road closure.

Odense’s cycle network connects across major barriers such as the river, intersections and the railway. The network also provides for longer cycle trips with Cycle Super Highways. Cycling infrastructure in Odense includes temporary lanes with painted lines, separated cycle tracks, cycle streets (where cars follow cyclists, however these are only implemented where there are very high numbers of cyclists) and Cycle Super Highways. When a new pedestrian and cyclist bridge was to be constructed over the railway line, a missing link in the network, a competition was held and although the winning design was higher cost, it was built because it provides a piece of iconic infrastructure. Another missing link was at a ferry crossing of the river. A turning bridge for vehicles has been constructed which includes provision for cyclists.

There are several bike tunnels in Odense, for example a tunnel was constructed under the new IKEA building and the tunnel design includes allowing daylight into the tunnel. Where there is a four (or more) lane intersection, Odense Municipality has decided that it is better to take pedestrians and cyclists under the intersection. Where space is contested in the city centre, there is underground parking for 300 bikes.

Provision of a ‘free’ or unrestricted right turn is allowed for bikes at nearly all signalised intersections (this would translate to a left turn in Australia) and where this is not possible, rails and footrests are provided to improve waiting conditions. At all t-intersections, cyclists have continuous access as there is no need to stop cyclists. Detector loops at signalised intersections are marked to show cyclists where to wait. Currently, cyclists are detected by radar, loops or video at intersections, but soon mobile phones will also be used to allow signals to detect the presence of cyclists. Allowing a right turn at a red light has been implemented for cyclists at 50 intersections across the City. Speed limits across the City include 45 Km/h streets which have some speed humps, 30 Km/h streets with traffic calming and 15 Km/h ‘play-streets’. All one-way streets are bi-directional for cyclists.
Figure 62: A new cycling and pedestrian bridge over the railway line provides an essential connection in the centre of Odense.

In pedestrian zones with no cycling allowed, such as the busy pedestrian centre of the city, cycling is allowed from 9 pm to 9 am. Pedestrians have been surveyed and they support night-time cycling as the presence of bikes increases security and passive surveillance.

Figure 63: Odense’s free share bikes are unlocked using a mobile phone.
Odense Municipality has a full-time, three-person team which focusses on cycle marketing and behaviour change. Cost benefit analysis shows this is very beneficial and one team member focusses completely on cycle play for kindergartens. Council supports cycling in schools. In Denmark there is a tradition of ‘open school’ which includes lessons beyond the classroom and frequent trips. Many teachers will take a whole class to various destinations on bikes and Council provides extra bikes for students. A data collection and encouragement program has been developed by a local company in Odense and implemented in schools. A chip is attached to student’s bikes and every time they pass an electronic counter, a ticket is added to a lottery for students. There are 40 virtual points across Odense to encourage cycling.
The Municipality regularly runs community bike campaigns. Local university students are employed to talk to the community about cycling and reach around 10% of the population through the campaigns. Experience in Odense has indicated that people-to-people contact is highly effective. Troels noted that “social media is good, but people are better”. However, Council does use social media for some campaigns and to receive feedback about missing links, lighting, bike parking etc through their ‘City of Cyclists’ group which has 5000 members.

Council also runs a Workplace Program and promotes cycle friendly companies. Bike mechanic sessions with free bike repairs are provided. For the broader community, there is a free bike shopping basket scheme, where people can come to Council and a mechanic will fit a shopping basket to their bike. Bikes are allowed on buses except during rush hour and will be allowed all day on the new light rail. Drive and bike facilities are provided at four locations around the city with secure bike parking to encourage commuters to drive longer distances and then cycle into the city centre. Odense has a free bike share scheme which operates in the city centre, which only requires a mobile phone to unlock the bikes from a dock.

Figure 65: “Thank you for cycling” posters are placed at intersections across Odense
**Houten, the Netherlands**

Selecting towns and cities to visit in the Netherlands was difficult because levels of cycling are high across the country and most cities are cycling cities. However, even with this nationwide commitment to cycling, a few places stand out. One such place is Houten, a town of around 50,000, approximately 20 km from Utrecht. Houten was the Cycling City of the Netherlands 2018, a significant achievement in a country filled with cycling cities.

I arrived in Houten by train and before even leaving the station, it was apparent that Houten is different. The platform is situated directly above an extensive ground level bike park, which includes a bike shop and mechanic services. The station exit leads onto the town’s main square and there are no cars, just people and bikes.

![Houten train station – the train tracks are elevated to allow for secure bike parking immediately underneath with direct access to the platforms](image)

In Houten, I met with Andre Bottermans, International Cycling Ambassador, Houten Municipal Council. Andre’s introduction emphasised that the aim of the City is not necessarily to be a cycling city, but to be liveable and human friendly.
In the 1970s Houten was a small, historic village and there were around 4000 people in the town. The National Government set a growth task for Houten to expand, initially to 100,000 however, due to local objections there was a compromise to grow to 30,000. At that time, a decision was made to keep the town small-scale, village-like and child friendly. In the 1990s there was a second growth task with a requirement to increase the town’s population by a further 20,000. At the time of the first growth task in the 1970s, there was already a rail service through the area, but the rail line was remote from the town. There was a decision to base the new development around the railway. There was also a decision that the main route through the city centre should be car free and also that routes between neighbourhoods should be car free. There are some exceptions, but generally Houten’s cycle paths are not crossed by traffic. However, Houten is not a car free city. There is a system for deliveries into the city centre, there are some small electric golf carts allowed on the paths and also a trial electric taxi service. Electric vehicles are also being used to collect children from kindergarten.
Andre summarised the situation in Houten: “the town is not against cars, residents can get everywhere by car, but they must use the ring road surrounding the town for access. However, it is easier, quicker, shorter and more pleasant to cycle. All the benefits in terms of access are for bicycles. Residents can use their cars, but they have to take a detour. It is therefore logical to use the bicycle, there is a shared value if everyone cycles, everyone benefits from a better environment”.

In the 1970s there was a decision to plan Houten in this way. Historically in the Netherlands, after WW II there was lots of damage. There was a strong belief in progress and industrialisation, building cars and increasing mobility. Cars were embraced. The Netherlands grew very fast in the post-war years, with density spreading across several cities. Utrecht is the fourth biggest city in the Netherlands and Houten became part of the development of Utrecht. Houten was first identified for growth in 1966 and urban design at that time was car orientated. However, at the end of the 1960s, there was a movement against these developments. This movement gathered momentum in 1971 with the ‘Stop the child murder’ campaigns reacting to high levels of child fatalities in road crashes. In 1971 there were 3300 road deaths in the Netherlands, with more than 400 children killed and the community demanded change (by comparison in 2017 there were 617 road deaths). At this time, Houten was a small village and there was resistance to development. It was a safe place and children could play on the streets. In developing the city, there was a decision that mobility and traffic should be secondary to living in the city. The neighbourhoods were designed first, then the car network. In 1972, Robert Derks, an influential urban designer, was invited to Houten and he was involved throughout all stages of Houten’s development (and still lives in Houten, though is now retired). Robert Derk’s consistent vision has shaped Houten.

Early decisions were successful, the culture of Houten has been sustained and therefore, the concept has been easy to maintain. Some other cities have taken a different direction and this is very hard to change. Andre is confident that the traffic system in Houten will not change, despite a further 3000 residences planned over the next 10-20 years.

Cycling mode share is 40% in Houten (compared with 50% in central Utrecht and Amsterdam, however it is hard to compare Houten with these much larger cities) and walking is 23% mode share. The total distance across Houten is 16 square km. From the city centre to the edge is eight minutes by bike and the maximum distance is a 15 minute cycle. Houten’s success is high levels of cycling within the ring road. Up to 50% of the population will cycle 7.5 km which is the average cycle distance in the Netherlands. Schools are built in the centre of neighbourhoods along the cycle network. Urban planning is on the small scale, the distances are short and easy to cycle. Andre noted that the city is designed from the viewpoint of a child “If the city is good for children, it is good for everyone”. In Houten the road system is based on slow traffic, cars have to give way to bicycles. The climate does have some impact on cycling levels and more people cycle if the weather is good.
In the 1970s there was 54% social housing in Houten and there is now 45%. Houten was built with a lot of market housing which allowed people who could afford to live there to relocate Houten, mostly with a good education and good jobs. 67% of the population commute out of the city for work. Of these, 80% commute by car, 10% cycle and 10% use the train. Houten is still developing cycle routes to other towns in the region.

Travelling around Houten on a bike is an extraordinary experience and Houten was exceptional amongst the many cycling places I visited. As Andre proudly emphasised, Houten has created not just a cycling city, but a uniquely liveable place which is thriving, yet tranquil. As we pedalled around Houten’s car-free paths and quiet Bike Streets (where cars are guests), Andre appeared to know almost every resident by name and travelling at the typically relaxed Dutch cycling speed, there was an opportunity to chat and connect with the locals that we met.

Figure 68: Houses in Houten face the cycle and pedestrian paths. Vehicle access and parking is at the rear.
Groningen, the Netherlands

Whenever there is a discussion about cycling cities in the Netherlands, Groningen is always mentioned. The city is located in the far north and is relatively remote from other major cities in the Netherlands. Groningen has a population of around 200,000 and a cycling mode share of an impressive 60%.

Groningen’s Cycling Strategy proudly states “Groningen is a true Cycling City. For young and old, the bicycle is the most commonly used mode of transport in the city. In Groningen, cycling is part of our DNA. We are proud of that and we want to keep it that way”.

I took a train north to meet with Terry Albronda from Groningen City Council. Terry had arranged for me to meet several organisations involved in cycling in Groningen including representatives from the Hanze University of Applied Sciences, the University of Groningen, the Province of Groningen and a mobility organisation, Groningen Bereckbaar.

Groningen is the fifth largest city in the Netherlands and is happy with its bicycle ‘problem’. The main cycle routes are used by 25,000 cyclists per day. It is a very compact city which is important for cycling.

Figure 69: Bike parking at Groningen University

In the 1950s Groningen was car dominant, but the politicians dared to make changes. At the time, all traffic routes were through the city centre, however in the 1970s a traffic circulation plan was introduced which routed vehicles around the city centre. In the 1990s
there was a referendum regarding the closure of a major road which cut through the city park, Noorderplantsoen. 51% voted for a trial road closure and conversion to a green space for one year. 25 years later, the road is still closed and the park is a major green space in the city with routes for cycling and walking. No-one would now vote for the park to be returned to a road.

Figure 70: Noorderplantsoen was closed to vehicles in the 1990s and is now a major pedestrian and cycle route

There is free parking at the edge of the city, with high frequency public transport to the city centre. Park and cycling is also encouraged (where commuters drive the first stage of their journey, then park and cycle a short distance into the city) and the scheme has been more popular than expected. It is easy transfer, faster than travel by car and avoids high cost of city parking.
The city is fast growing, with increasing commuting from surrounding areas to the city. The key concept of the current bicycle strategy 2015 – 2025 is that the bicycle comes first. For example, cycle paths are cleared of snow before roads to encourage use in winter, and this makes a statement to drivers: bikes first.

Groningen has recently implemented a number of low-cost projects such as ‘Smart Routes’. Some high use bike routes were experiencing congestion during peak times, so signage and a behaviour change campaign was used to encourage cyclists to use alternative parallel routes using quiet streets. On the Smart Routes there are 11,000 cars/day and 12,000 bikes, so the Council asked why do cars have priority? The space for cyclists has now been widened to 4 m. A low-cost bike parking project has also been recently implemented in one of the city’s central squares. There was an issue with mass bike parking in the square, with bikes left randomly, so Council demonstrated the bike parking behaviour they were looking for. Tape was used to mark out parking areas and staff were on site to direct parking. Behaviour changed overnight and now bike parking is structured without any infrastructure costs.

Most cycling infrastructure is provided at the local level, however the regional Province of Groningen has developed a cycling strategy for 2016 – 2025 which includes an implementation program. There is a decline in people cycling from the rural area and e-bikes are a real opportunity as several villages are within 30 minutes of Groningen by bike.

A network of 4 m wide paths is planned and funding is available to construct the network. A bicycle highway is planned to connect nearby Assan and Groningen with a 25 km, bi-directional path which will have priority, where possible. There have been some negative associations with the term ‘Cycling Super Highway’, so the paths will be re-named ‘freedom to move’.

Groningen Bereikbaar is an alliance coordinating transport across the city. The organisation includes transport organisations, major employers and councils. Groningen is a major meeting point of highways between Amsterdam, Germany and the south of the Netherlands. The group was established to coordinate a number of infrastructure
developments which could be a barrier to north-south traffic movements. Groningen has a growing population, growing jobs and growing number of trips into and out of the city. Bereikbaar provides travel advice to businesses and the community regarding the infrastructure works. There 80 businesses working together to develop mobility plans, including the hospital and universities.

An incredible 60% of people commute by bike in Groningen, but there is still potential for this to increase. There may also be opportunities to work at home or stagger start times. Bike campaigns include e-bike schemes with loans to secondary schools. Bike share schemes were investigated for students, but many already use a bike. Bike Swap, is a ”bike as a service” company which provides a bike and maintenance for a monthly hire fee and is very popular with students.

Figure 72: A bike roundabout has recently been installed in Groningen where bikes have priority
Figure 73: Groningen allows for four-way bike movements at some major intersections

Figure 74: Bike paths allow for direct access to Groningen station and bike parking
Figure 75: Part of Groningen Council’s sizeable bike fleet
Conclusions and recommendations

After eight weeks of visiting and experiencing some of the best cycling cities in the world, meeting some of the most experienced cycling practitioners, immersing myself in city cycling culture and now documenting my findings in this report, I feel that I have achieved the aims of my Fellowship. I set out to investigate why so many Europeans see the bicycle as a natural transport choice and how some cities are making it easier for their communities to cycle.

Fundamentally, the simple answer is it is quicker, easier and more convenient to go by bike in many of the cycling cities I visited. Why this is and how this can be achieved varies from place to place, but all cycling cities benefit from the social, environmental and economic outcomes that arrive with higher levels of cycling. Reaching similar levels of cycling in Australia’s towns and cities will take a monumental shift in governance, planning, expertise and community perceptions. But one of the key learnings from my trip is that with brave political leadership, a sustained, consistent policy approach and passionate support from at least some in the community, change can happen.

Many of Europe’s cycling city stars were not always cycling places. Most followed the path of car orientated development in the 1960s and 1970s. However, consensus for change and bold political decisions were a turning point in many cities, with incremental improvements in cycling infrastructure over a period of 30 years or more resulting in today’s cycling havens.

As Troels Anderson from Odense Municipality, Denmark explained to me “there are a range of factors which encourage cycling, but cities can make a choice to be a cycling city or not. There is not one action which enables cycling, but a recipe of actions”.

In undertaking my Fellowship, I encountered some challenges in making initial contacts, especially in non-english speaking countries and the task of developing a detailed itinerary and arranging a schedule of meetings was initially daunting. Many organisations receive multiple requests for meetings and cannot respond to them all. Several organisations required a formal application process to arrange a meeting with relevant contacts. However, the international reputation of the Churchill Trust was of enormous assistance in securing appointments. My advice to other Fellows is to start planning detailed itineraries as early as possible and to be persistent. For example, I was finding it particularly difficult to make contacts in one European country, but by chance, I discovered that the city I is twinned with a City in the UK. I made contact with the Cities’ Twinning Association in the UK and through the Association, secured a number of excellent meetings with the organisations I was targeting.

My Churchill Fellowship was such an amazing experience in so many ways. I visited many of the top cycling cities in the world as well as smaller towns and cities which are just starting their journey towards becoming cycling cities. This was an incredible opportunity to meet a huge range of people who are actively engaged in promoting and encouraging cycling as well as experiencing world leading infrastructure and programs. Travelling as a Churchill Fellow really opened doors and provided access to people and
organisations which probably wouldn’t have been possible otherwise. I have learnt about many unique and innovative policies, programs and new approaches to designing cities for bicycles. I have also established a whole new network of international contacts and resources which is invaluable to my work back in Australia. I am already using my Fellowship experiences and learnings in my work and passing on some of my key findings to my colleagues and networks.

My recommendations are summarised below and are addressed to a broad Australian audience. Some recommendations are aimed specifically at decision makers within government at the local, state and national level. Other recommendations are addressed to professionals planning and shaping the future of Australia’s towns and cities including planners, traffic engineers, urban designers and policy makers. A number of recommendations are for myself and my colleagues to implement and some have already been actioned. Recommendations are also targeted at all those working to increase levels of cycling in Australia and for those who are looking to make our cities more liveable and vibrant. The potential role for universities in encouraging and supporting cycling was a common theme which was highlighted in many of the cities I visited and a number of my recommendations address the positive partnerships which can be achieved between governments and universities. Cycling advocacy groups and individuals may also find some of the recommendations interesting and of use in supporting their campaigns.

Some of my recommendations will require very small changes to existing practice to be realised, others may require additional funding to be implemented. However, potentially the hardest recommendations to implement will be those that require a seismic shift of thinking in Australia about the role of cycling as part of the transport system. This will require changing perceptions about private vehicle access and parking in city centres, allocation of public road space and car orientated thinking and doing. These changes will take time, will require inspirational leadership and will need to bring the community along on the journey.

As Morten Kabel of the Copenhagenize Design Company recommended when I asked for advice on what Australia should do to encourage cycling: “just get started”.

Recommendations

1. Elevate the status of cycling across all levels of government. Strong political support is essential. Appointing a high-profile spokesperson and advocate for cycling such as the Commissioners for cycling in London and Manchester has been very influential.
2. Organise rides for local councillors to highlight issues and increase understanding of cycling potential at the local level.
3. Collaborate at the national level between peak cycling, walking and health advisory groups.
4. Develop and implement cycling plans and strategies at all levels of government. Cycling policy commits to a vision and communicates targets and outcomes. A
high level, strategic investment plan for cycling and walking, embedded in legislation can provide for targeted programs of investment which extend beyond the electoral cycle. Comprehensive cycling and walking plans at the local level can respond to funding as it becomes available.

5. In order to measure mode shift and transport integration, undertake a national travel survey. A national household travel survey is essential to manage and monitor levels of cycling and compare with other modes. In several countries, a major university is commissioned to undertake this important survey.

6. Commission the development of a Cycling Propensity Index as a freely available planning tool.

7. Review how vehicles move across city centres and through residential streets. Restricting vehicle access through city centres and local streets, makes cycling a faster and more convenient choice for short journeys, encouraging cycling and discouraging driving. This is fundamental to increasing cycling and creating more liveable, connected communities.

8. During project development, where local businesses may be impacted by cycling infrastructure, engage with business early and undertake retail surveys to demonstrate how customers are arriving at their business. Follow up with surveys after project implementation to communicate success and to provide evidence for future projects.

9. Significant infrastructure changes take time and resources. Pop-up sites can provide information and answer community issues ahead of project implementation, however, this needs to be built into project delivery timeframes.

10. Focus on movement within neighbourhoods rather than completion of entire routes. A route is only as good as its weakest point. If the route is not continuous, this will impact on use.

11. Investigate alternative techniques for achieving separation for cycleways. The mountable ‘Cambridge kerb’ could be an option for arterial roads with multiple residential accesses.

12. Investigate the use of mobile phones to allow for detection of bikes at or approaching traffic signals.

13. Consider allowing one-way streets to be bidirectional for cyclists.

14. In high use pedestrian areas where cycling is not allowed, such as city pedestrian malls, consider allowing bike access between 9 pm and 9 am to increase connectivity for bikes and passive surveillance at night.

15. Consider lower speed limits in residential streets. Urban speed limits can have a significant impact on levels of cycling. In the Netherlands, all local streets have a 30 km/h speed limit.

16. Strengthen requirements for bike parking and end of trip facilities in development approval processes.

17. Implement on street secure bike parking for high density areas, potentially using Bristol City Council’s ‘bike hanger’ design.
18. Provide bike parking and if possible, bike mechanic services at multi-story car parks in city centres.

19. Consider an Australian Bicycle City award to recognise those cities and towns working towards increased levels of cycling. Experience in the Netherlands has shown that the biennial Cycling Cities competition increases awareness and stimulates debate.

20. Consider providing government support for advocacy groups in Australia. Advocacy groups are essential to building the case for cycling as well implementing innovative bike programs. Many bike advocacy groups in Europe are part funded by national or local governments.

21. Where strong advocacy is absent, or there is no natural focal point for cyclists and cycling issues, generate a cycling community through social media.

22. Implement travel behaviour change programs. Infrastructure is important, but behaviour change programs to support the provision of new infrastructure are equally important.

23. Implement bike loan schemes and supporting services. Bike loan schemes in many cities have been highly successful and in particular, e-bike and cargo bike loans. Support for the scheme through a dedicated bike information and servicing centre has also been successful (such as Bordeaux’s ‘Bike House’).

24. Include a requirement for travel plans in in development approvals for new residential and commercial developments. Travel packages might include travel planning, loan bike schemes including cargo and e-bikes, bike safety sessions and bike mechanic workshops.

25. Work with businesses and major employers to advocate for improved cycling infrastructure. Business can be very supportive of cycling and advocate for improved infrastructure and bike parking facilities in order to attract employees. Business groups in several cities I visited have come together to develop cycling charters to encourage cycling.

26. Implement trial street closures in urban areas. Projects such as Malmo’s successful ‘Summer Streets’ program can be very effective in demonstrating the positive benefits of increased cycling and walking.

27. Investigate the potential for bike subscription services which are particularly popular with students.

28. Focus on universities as a catalyst for providing cycling infrastructure and increasing levels of transport cycling. High quality cycling infrastructure targeted around CBD located universities provides a significant opportunity to increase levels of cycling and provide an alternative transport option for students. Implement a university travel plan, particularly when universities relocate to city centres.

29. At regional universities, consider providing all new international university students with a free bicycle as part of a broader travel behaviour change program.
30. Implement staff travel programs at universities such as Cambridge University’s comprehensive staff cycling program which includes pool bikes, bike safety workshops and bike mechanic sessions.
31. Implement programs to improve interactions between cyclists and heavy vehicles including underskirt protection, windows to cab floor and driver training.
32. Provide bike educations sessions for Driving Instructors to promote positive bike/driver interaction for learner drivers.
33. In hot climates, manage the impacts of climate by providing excellent end of trip facilities, shaded cycle routes and water. In cold and wet climates, end of trip facilities are also important, but northern Europe demonstrates that cold weather needn’t be a significant barrier to cycling.

Dissemination and implementation

In the months since I have returned from my Fellowship, I have already begun sharing my knowledge through newsletters and articles and I have made a number of presentations. I have held meetings with local community representatives and I have given presentations to various groups across the Northern Territory Government, to my local council and at the Churchill Fellowship information session in Darwin. A profile on my Fellowship has recently been added to the Churchill Trust website and this has been disseminated across national transport organisations.

I will be presenting a poster at an international cycling conference in Australia later this year and I have scheduled a presentation to a national cycling working group. I have plans to submit abstracts to other relevant conferences this year. I have already started implementing some of the initiatives I learned about during my Fellowship through my work and I will continue to seek out opportunities to share my learnings.
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