





"How brave", women often say to me when I turn up at meetings with my cycling gear. I don't feel particularly brave but I do recognise that my experience of cycling in cities and

towns has taught me that to be safe I need to be visible, to be focused and to take my space. I've also learned that roads are rarely designed for cycling but where they are, it is possible to get where you want to be much guicker and with much less hassle.

Like the women of Copenhagen, referenced in this report, I have learned that cycling is best when it's just designed into travel and simply becomes the quickest and easiest form of transport.

This report recognises that most women would like to cycle and are keen to improve their own health, reduce traffic and levels of pollution. We know it is better for the environment and it is better for our communities. It is a great, cheap way to get to work or volunteering activities, to do the school run, to arrive at our friends' homes, for getting out and about.

Cycling is also a fantastic means of empowering women to take their space and be visible, to

build confidence and to become active in their communities. The work with refugee girls and women, cited in this report, who have gained the confidence to cycle, is inspiring.

And yet most women don't feel safe and are hesitant to start, or restart cycling. Women report that they can feel intimidated on the roads, that it is hard to take their place.

We can do something about this. We know women want it to be different. This research shows that 74% of women would like to see more investment in cycling and that 79% of women favour more protected cycle routes even if that means less space for other road users. For women to feel safer, others in our crowded environment may have to accept some restrictions.

Increasing bike use and making it easier to move around towns and cities would produce real benefits for all residents. But these benefits can only come from asking people what would work for them, and listening hard to what everyone, and specifically women have to say.

We need to act on what we know women want. This report takes a big step in that direction.

Lynne Berry **Chair of Trustees, Sustrans** 

#### What is Bike Life?

Bike Life is the UK's biggest assessment of cycling delivered by Sustrans in collaboration with seven cities.



### **Inclusive** city cycling

A city that is designed for cycling

is successful when its bike riding population reflects the wider population of residents living in that city. People from all genders, ages, backgrounds, social classes and disabilities can use a bicycle to get about.

This report focusing on women presents new data from Bike Life collected in 2017¹ that explores different factors relating to how cycling can make our cities more liveable.

Unless specified, data presented in this report is from Bike Life. The categories 'women' and 'men' from the Bike Life survey include all people who identified as female or male over the age of 16.

Whilst this study focuses on gender and cycling it should be acknowledged that women and men are not homogenous groups. Many intersecting characteristics will influence how women experience mobility and make choices about cycling.

#### Gender inequality exists in the UK

- When demographic groups like women are excluded from participating in an activity it can reduce their rights and freedoms
- In the UK fewer women than men meet recommended physical activity levels contributing to ill-health and early death
- A Impeding mobility can exacerbate existing inequalities in society

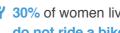
#### Women cycle less than men in the seven Bike Life cities



Men are twice as likely to use a bicycle for travel on a regular basis than women in all seven cities

- **♦ Only 12% of women cycle once a week** and 73% of women living in Bike Life cities never ride a bicycle
- **Q**♂ Differences between genders may be more pronounced in cities with lower overall participation in cycling

#### Safety and inadequate infrastructure are barriers to more women cycling



30% of women living in Bike Life cities do not ride a bike but would like to



Less than half of women think cycling infrastructure is good in their city

#### Cities need to better meet the needs of women

- (£) 74% of women living in Bike Life cities would like to see more investment spent on cycling
- 76% of women who cycle or would like to start, would find cycle routes along the road (but physically separated from traffic) very **useful** to begin cycling or cycle more
- 79% of women support building more protected cycle lanes even if this means less space for other road traffic

1: Survey conducted May-July 2017. Bike Life: Inclusive city cycling - Women



# Why is it important to design cities for women?



Many aspects of cities, including transport use, can differ by gender

A city that doesn't enable everyone to participate in an activity like cycling can reduce peoples' rights. Mobility plays a vital role in ensuring that opportunities, services and community are accessible to everyone. As such, factors that impede mobility can further exacerbate existing inequalities, for example not being able to access employment or incorporate physical activity into hectic daily lifestyles.

51% of the UK population is female. Taking steps that specifically improve the design of cities for women should be commonplace.

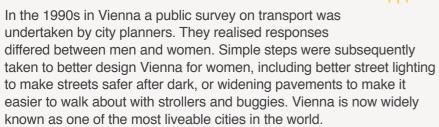
Women and men often have different travel patterns, barriers and needs. Therefore, if a city is serious about addressing inequalities in transport, they will need to take action to understand and address the needs of all genders.

In reality however, understanding and designing cities for women, including cycling, is often poorly understood or not fully considered.

If we do not begin to better design urban environments for both women and men to cycle we cannot solve some of the biggest challenges facing cities in the UK. For example, keeping cities moving in the face of rising population growth, improving health outcomes and reducing greenhouse gas emissions and air pollution.

We also miss the opportunity to make cities more liveable and attractive for residents, businesses and visitors. Overcoming these challenges does not just improve the lives of women, or those that cycle, it benefits the city as a whole.

#### Taking steps to design Vienna for women



Sew/ev/ohotoiB

## 11,800,000 women

don't do enough physical activity to safeguard their health<sup>1</sup>

Physical activity is crucial in maintaining health and wellbeing, including lower death rates, lower risk of heart problems and depression. It benefits people of all ages, ranging from helping children maintain a healthy weight to reducing conditions, such as hip fractures in older people.

Regular physical activity can reduce the risk of coronary heart disease by up to 35% and early death by up to 30%<sup>1</sup>.

Physical inactivity is one of the leading causes of mortality in developed countries. Despite the proven benefits from physical activity many western societies have gradually adopted more physically inactive lifestyles.

By 2030 35-43% of women in the UK could be obese if trends continue<sup>2</sup>.

# Number of physically inactive men and women in the UK<sup>1</sup>



The UK guidelines for physical activity to stay healthy for adults (aged 19 to 64 years) are as follows:

"Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more".

Physical inactivity also has a significant economic impact.

# Proportion of adults who meet recommended physical activity levels Scotland Women: 59% Men: 69% Wales Women: 51%

In all parts of the UK fewer women meet recommended physical activity levels for a healthy lifestyle in comparison to men. In Wales and Northern Ireland almost 50% of women do not meet recommended levels for physical activity.

**England** 

Vomen: **58%** 

Men: 66%

NHS Digital Health Survey for England, 2016 Scottish Health Survey 2016 National Survey for Wales 2016-17 Health Survey (NI) 2016/17

Physical inactivity costs UK healthcare £1.2 billion each year and the wider economy a further £1.5 billion each year<sup>1</sup>.

We need to enable more people, including women, to increase their levels of physical activity.

For many people, especially those living in cities, the easiest and most accessible forms of physical activity are those that can be incorporated into our everyday lives, for example walking or cycling to work, education or other everyday journeys.





#### Cycling participation across the UK

People who ride bikes in the UK are usually male.

In England between 2014 and 2016, on average men made three times as many cycle trips each year as women<sup>1</sup>.

In countries where cycling participation is low, cycling is not evenly distributed across genders. Australia, the UK, the USA, and Canada all have women's participation at **30%** or less, whilst women's participation in cycling is **45%** or higher in Germany, Denmark and the Netherlands<sup>4</sup>.

In Scotland twice as many men as women cycle once or twice a week for transport<sup>2</sup>

In Northern Ireland, men are more likely to have cycled in the past 4 weeks (36%) than women (22%)<sup>3</sup>

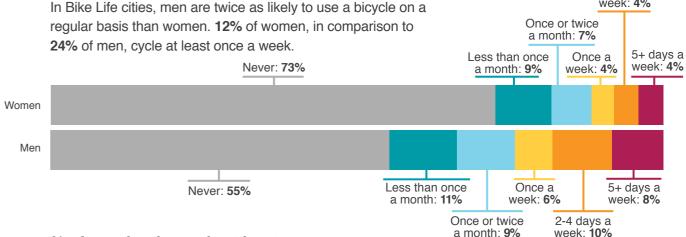
#### Travel behaviours in England, National Travel Survey 2016

- In 2014-16, males aged 5 or over made three times as many cycle trips as females. Men also cycled over four times as many miles.
- Women make on average 981 trips each year. Women travel more often than men, but men travel further in distance.
- Women are less likely to drive a car than men. 67% of women are license holders in comparison to 80% of men. Distance travelled by car as a driver was lower for women, but women did more mileage as car passengers than men.
- Women make more walking trips than men they make 262 trips each year by foot in comparison to 223 for men.
- Women use buses more than men for all ages (60 trips each year on average in comparison to 44 trips for men).



#### 42

#### Cycling participation in Bike Life cities



# % of people who cycle at least once a week in each Bike Life city



In every Bike Life city our survey data suggests men cycle more often than women.

2-4 days a week: 4%

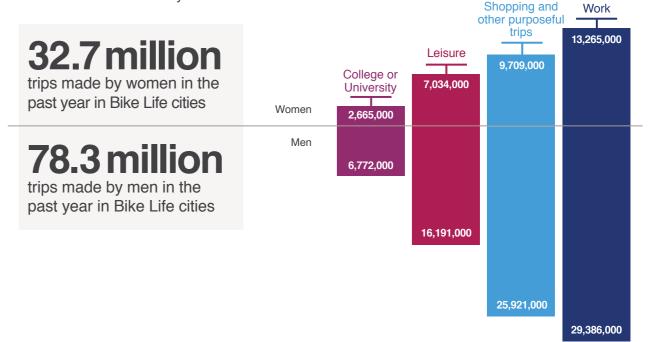
Differences in participation between men and women appear to be less pronounced in cities with higher overall cycling participation, like Bristol, Cardiff and Edinburgh, with the exception of Greater Manchester which is a city region.

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#### Where are people cycling?

Where men and women cycle in Bike Life cities.







#### Perceptions of cycling are positive

Most women interviewed for Bike Life in 2017 have a positive view about cycling in their city and think their city would be a better place to live and work if more people cycled.

72%

say things would be better if people in general cycled more say things would be better if friends and family cycled more

58%

say their city would be a better place to live and work if more people cycled 71%

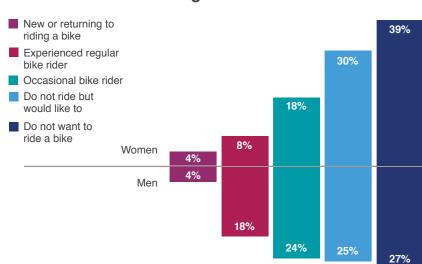
say they generally think positively about people riding bikes



#### Personal motivation

Bike Life in 2017 suggested a significant demand from women to cycle more.

# How do men and women see themselves when it comes to riding a bike?



30%

of women currently do not ride a bike but would like to (in comparison to **25%** of men)

50%

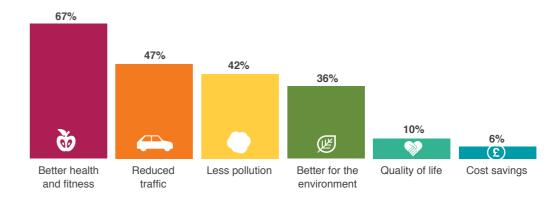
of women feel they should ride a bike more often (in comparison to **59%** of men).



#### Women's views on the benefits of more people cycling

**72%** of women say things would be better if people in general cycled more. The majority of those women recognise that cycling is good for their health (**67%**) and nearly half think more people cycling would have a positive impact on reducing traffic (**47%**).

#### Why do you feel things would be better if people cycled more?

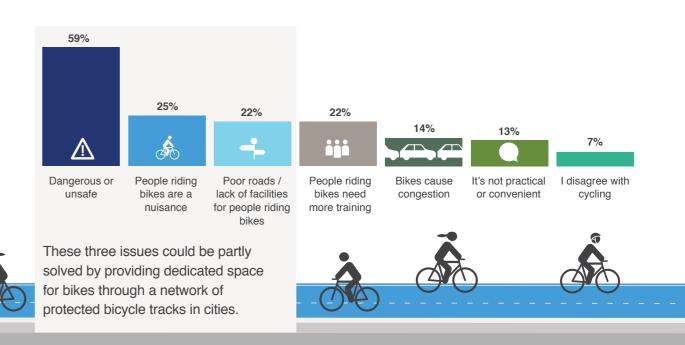




#### Women's views on the drawbacks of more people cycling

**10%** of women say things would be worse if people in general cycled more. These women also shared their views on why things would be worse.

#### Why do you feel things would be worse if people cycled more?



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**Zoe Banks Gross, Bristol** 

The area I live in is quite diverse so a lot of the women that haven't learned to cycle have come from communities where it wasn't acceptable for a girl to learn to cycle. It's amazing to watch them gain that empowerment.

**Cerys Furlong, Cardiff** 

I've always cycled with my children on my bike from the time that they were babies.

It's a practical thing for us, it's just a choice that makes our lives easier. It's much quicker to get to and from school, nursery and to work.

Photo: Floating Harbour Films



#### Alina Goldberg, Newcastle

I like biking. It's great early in the morning when the sun is coming up and I enjoy the sensation of being on the bike and breathing in the fresh air. If I get my half hour of exercise I feel happier and in shape.



Frances Redmond, Belfast

The main benefit of cycling is it improves your mood. You feel more free on a bike than you do walking. I can go out at lunchtime and see swans on the river and really feel I'm away from my desk.



Marcia Bell, Birmingham

I ride one of the 4,000 bikes given away by Birmingham City Council. This spurred me on to start riding to work, helping form a community cycling club and to become a ride leader.

Marina Theodoridou, **Greater Manchester** 

I cycle because it's a practical way to travel and the boys really like it. Both the children are more aware and they have road sense. I think that cycling has boosted Alex's confidence as he knows how to get around by bicycle and where to cross the road.

Photo: Livia Lazar



**Caroline Bannister, Bristol** 

Through their loan scheme Bristol City Council provided us with five e-bikes. Every member of my team is now using the e-bikes for outpatient visits. Journey times are proving to be the same but we're putting fewer cars on the road and saving the hospital money. Photo: Neil Aldridge





Verity Leigh, Edinburgh

There should be investment in on-road dedicated cycle lanes, protected from motor traffic, that get people to where they want to go directly and efficiently. Cycling has to be the way forward for Edinburgh - it's a city which wasn't designed for cars.

Photo: Tony Marsh





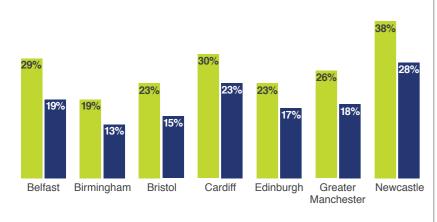
Many women do not feel safe cycling

27%

of women think cycling safety in their city is good compared to 33% of men 19%

of women think children's cycling safety in their city is good, 23% of men think the same

#### Women who think cycling safety is good in their city

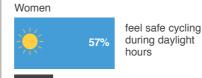


% of women who think cycling safety is good in their city

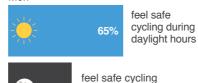
% of women who think children's cycling safety is good in their city

Perceptions of safety from women differ in different Bike Life cities. The highest proportion of women who think cycling safety is 'good' is in Newcastle (38%), whilst in Birmingham only 19% feel cycling safety is good. Perceptions of safety did not appear to correlate with women's participation in cycling, for example women's participation in cycling in Bristol is relatively high whilst only 23% of women feel cycling safety is good.

#### Perceptions of cycling safety during daylight and hours of darkness



feel safe cycling during hours of darkness



feel safe cycling

during hours of

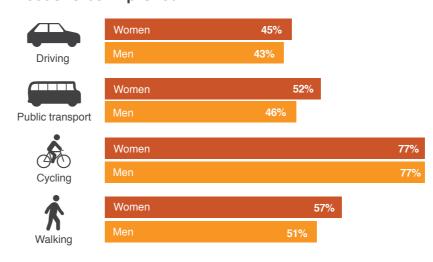
Perceptions of safety decline rapidly after dark, possibly due to concerns over traffic and personal safety. In hours of darkness, only 23% of women and 36% of men feel safe cycling around their city.

Safety is likely to be a significant barrier for many women wanting to cycle. This is especially the case during the winter months when many typical commuter journeys happen in hours of darkness.

#### Women think safety needs to be improved

In Bike Life cities, both women and men believe safety for cycling needs to be improved in comparison to other transport modes. Safety is likely to include both road safety and personal safety.

#### Percentage of men and women that feel safety needs to be improved



77%

of women and men think cycling safety in their city needs improving

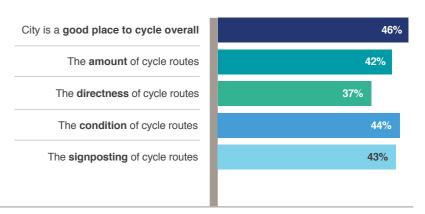
#### Other barriers

#### Views on current cycling infrastructure

Less than half of women (46%) think their city is a good place to cycle overall.

Less than half of women think cycling infrastructure is good in their city, including the amount, directness, condition and signposting.

% of women who think the following is good:



#### Awareness of current cycling infrastructure

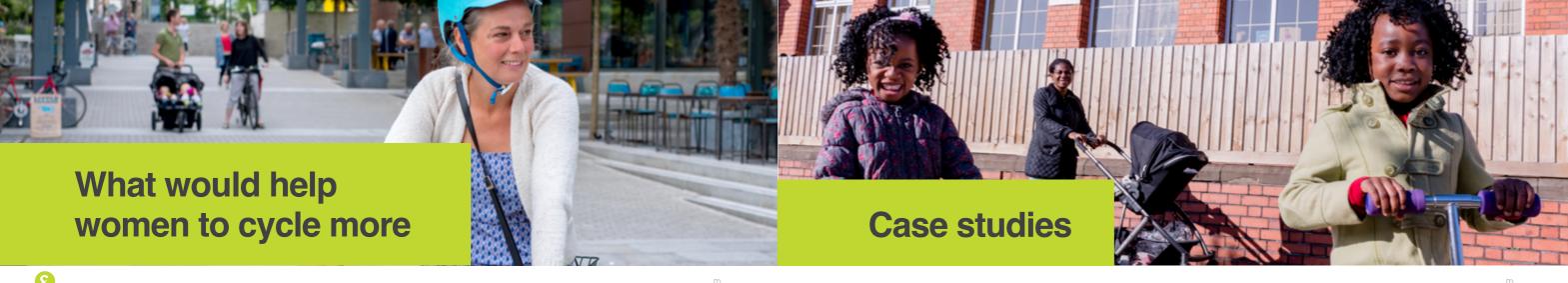
Gaps in awareness may present a barrier to more women cycling.

Less than two fifths of women are aware of current cycling infrastructure, facilities and initiatives.

% of women who are aware of:



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Women want more investment in their city for cycling

There is significant appetite from women to start cycling or cycle more often.

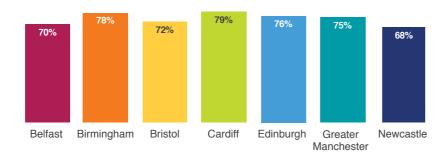
74%

of women would like more investment in cycling in their city.

79%

of women support building more protected cycle lanes even if this means less space for other road traffic.

# The proportion of women in each city that would like to see more investment in cycling



In every city more than two-thirds of women, whether they cycle or not, would like to see more investment in cycling. In Birmingham, where women's participation is currently low, 78% of women would like to see more funding for cycling.



#### Women would find dedicated space for cycling most useful

76% of women who already cycle, or would like to start cycling, would find cycle routes alongside the road that are physically separated from traffic and pedestrians very useful to them to start cycling more.

In addition, 69% of women would find more traffic-free routes away from roads very useful. However, the scope for these routes due to space constraints in cities may be more limited.

# What would be very useful to help you start cycling or cycle more?

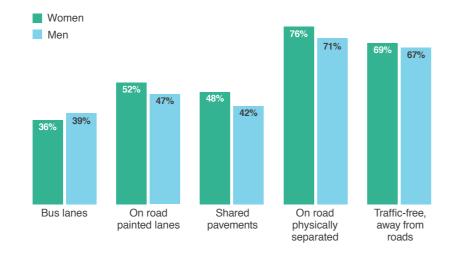




Photo: nickfalbo. Licensed under CC BY-SA 2.0. via Flickr.

#### Making cycling in the USA comfortable

Researchers in the United States¹ reviewed evidence from across the nation to develop recommendations for cities to encourage more women to cycle. Most importantly, making cycling comfortable, or in other words making biking safe and inviting. Count data from cities across the USA revealed that females account for a greater percentage of bike riders when better bicycle infrastructure is present. This suggests that bike lanes can increase participation in cycling by encouraging new bike riders who may not feel comfortable out in traffic.

For example, the presence of a bike lane on a street increases women's ridership, on average, by 276% in Philadelphia. In Minneapolis, four of the top five locations for total number of female bicyclists in a 2012 count were locations with bicycle facilities. A 2011 bike count in New York City showed that 15% of the cyclists on a street without a bike lane were women, compared to 32% on a nearby street with a bike lane.



Photo: Chandra Prasad

#### Queen Mary Women's Cycling Club

Queen Mary is a women's hostel in central London run by the housing association Riverside. They have been working with Westminster City Council and Sustrans to set up and run a cycling club for women.

The hostel staff, who are experienced mental health practitioners, were keen to encourage cycling to boost residents' personal confidence and help give them access to college, community groups or paid employment. Studies have shown that physical activity, including walking and cycling, can be used to overcome and even prevent stress, depression and anxiety.

The expanding network of dedicated bike routes and schemes has increased cycling levels in London yet the "build it and they will come" approach ignores the fact that not all individuals start from the same point. Targeted social interventions are an important yet often forgotten part of the package to achieving equity of access to cycling.

After the success of the pilot project Queen Mary Women's Cycling Club has recently received funding of £10,000 from Transport for London's 'Cycling Grants London' scheme to continue the club for another three years.

1: The League of American Bicyclists, 2013. Women on a Roll Report.

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#### Copenhagen

In Denmark a study by the University of Copenhagen found no difference in cycling participation of men and women in the city1. 41% of all journeys to work or education in Copenhagen are made by bicycle<sup>2</sup> and

#### 62% of residents living in Copenhagen use a bicycle for iourneys within the city<sup>2</sup>.

This normalisation of the bicycle has been achieved through the development, mainly since the 1970s, of a dense network of protected cycle tracks across the city. Today, Copenhagen has over 230 kilometres of onstreet protected cycle tracks meaning most journeys within the city can be taken safely by bicycle from door to door.

#### Most women living in Copenhagen use a bicycle because it is the quickest and easiest mode of transport.

Copenhagen has also developed the brand of the bicycle and its relationship to the wider city. Marketing the bicycle and focusing on the normalisation of journeys for all groups of society has led to high proportions of children also cycling to and from school.

The protected lanes in Copenhagen have also been designed and built to accommodate cargo bikes so that parents and carers can transport their children too. Now 26% of all families in Copenhagen own a cargo bike<sup>2</sup>.

#### The importance of protected space for safety

Developing cycling is not just a matter of investment but also how you spend it.

A study<sup>3</sup> of different kinds of cycling facilities in Vancouver and Toronto found that the safest kind of facility, by far, was on-street bicycle lanes that are physically separated from motor vehicles by raised curbs, bollards, or concrete barriers. Compared with main streets with parked cars and no bicycle facilities, cycle lanes on roads without parked cars were 89% safer; unprotected bicycle lanes on major roads without parked cars were 53% safer; and lightly trafficked residential streets with no bicycle facilities were 56% safer.

This study suggests installing on road bicycle lanes, physically separated from cars and pedestrians, whilst simultaneously removing car parking is the safest option to improve cycling safety on major streets. Women we interviewed in Bike Life told us they would find on-street protected cycle lanes most useful to help them start cycling or cycle more. Cycle lanes painted on the road, with no physical protection, are much more common across the UK but appear to have far less impact in encouraging women to start cycling or cycle more.



#### Cambridge

Research by the Centre for Diet and Activity Research (CEDAR) based on census data found the city of Cambridge, which has the UK's highest cycling levels, to have almost equal proportions of men and women cycling to work1.

The city of Cambridge is served by numerous direct off-road cycling routes, an extensive network of green, open spaces and riverside routes and is beginning to develop protected cycle infrastructure on its main arterial roads. Cambridge has an extensive 20 mph limit for almost all residential streets. The city also sought to overcome key barriers through numerous bridges that allow pedestrians and cyclists to cross the river and railway line. There are five road bridges over the River Cam and 14 bridges that people on bikes can cross.

The unusually high participation in cycling suggests something else is also encouraging people to use bicycles in such high numbers.

#### Cambridge's success can at least partially be attributed to a well-designed central traffic restraint scheme.

Car parking in the city centre is very costly and Cambridge has good park and ride facilities alongside an extensive bus network, including the longest Guided Bus Network in the UK. Importantly, it is virtually impossible to cross the inner-city using a private motor vehicle. Filtered permeability is used extensively across the city centre to ensure people on foot, bike or public transport can still cross whilst cars are forced to exit and encircle the city via an inner ring road.

Making it difficult to drive and expensive to park, means that cycling is the quickest, most reliable and attractive option for both men and women, as well as being more pleasant and healthy.

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#### Does more cycling mean more diversity in cycling?

Research by the Centre for Diet and Activity Research<sup>1</sup> based on the 2001 and 2011 census showed that places in the UK where cycling levels are higher tended to have higher proportions of female and older cyclists. However, for places where cycling increased between 2001 and 2011 they found that although more women are cycling in those areas, the gender balance isn't becoming any more equal.

It is suggested that many of these increases, for example inner London, were a result of increasing demand from certain demographics to cycle rather than substantial changes to the infrastructure and conditions, therefore gender gaps in participation remain.

This study suggests we need to fully understand and consider the needs of women when we design cities for cycling if we want to close the cycling gender gap.



The Bike Life data presented in this report from seven UK cities supports other research and population level trends across the UK. Women's participation in cycling is still far below its potential and large gender gaps exist between men and women. This is ironic, considering that when cycling first became commonplace in late Victorian times, we know that it was an important liberating force for many women and it helped improve equality of opportunity for women and men.

Bike Life does not review all issues relating to women and cycling but evidence strongly suggests a number of opportunities and challenges when it comes to increasing the number of women cycling in cities.

Firstly, we know many women want to start cycling or cycle more in their city.

Nearly a third of women living in Bike Life cities do not currently cycle but would like to begin.

Secondly, we know significant barriers to cycling exist for many women, especially when it comes to safety.

Only 27% of women think cycling safety is good in their city, 77% think safety needs improving.

If any UK city wants to normalise everyday cycling we must improve our understanding to address the needs of women. Transforming our streets to ensure a dense network of safe and attractive routes that provide dedicated space for bicycles and gives many more people the confidence and inclination to use a bike would be a good place to begin.

In Bike Life cities where data is available, a total of only 19 miles of protected bike lanes on roads physically separated from traffic and pedestrians exist.

Other research supports this view. A systematic review of forty studies on gender and cycling found 23 of these studies (57.5%) suggested women expressed stronger preferences for segregation from motor vehicles than men<sup>1</sup>. The same study suggested these views are more likely to be expressed in countries where cycling participation is currently low, like the UK.

In addition, research shows where infrastructure has been installed that separates bicycles from motor vehicles the number of people riding bikes increases, especially amongst women<sup>2</sup>.

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#### Other barriers beyond safety

It's important to note the Bike Life survey does not seek to highlight all issues and challenges women are likely to face cycling in cities. The data presented is based upon the Bike Life 2017 survey which did not seek to specifically address the full range of barriers for women.

Recent research from Sustrans in Scotland¹ looked at the travel habits and choices of nearly 2,000 women in Glasgow and combined the findings with a literature review of research on women's travel patterns across Scotland, the UK and Europe. This report found:

#### Women and men make different types of journeys.

Women's journeys around cities are typically shorter than men's, use different modes of transport and are more likely to involve 'trip-chaining' (multi-stop journeys) which tend to be for a balance of child care, work and household responsibilities.

# Women are motivated to travel by bicycle but barriers often get in the way.

Concerns about personal safety, lack of time, convenience (particularly when taking multi-stop trips) and appearance are all barriers to preventing many women from cycling and walking.

# Women's views and needs may be omitted from transport planning.

There is a lack of evidence to show how women participate in creating transport policy and planning in the UK. Women account for only 22% of workers in the transport sector, UK-wide.



#### Sustrans' recommendations

Bringing together the findings in this report and the Scottish research presented above, Sustrans recommends city leaders and transport teams:

- Prioritise women's concerns about road safety and multi-stop journey patterns through the planning and delivery of protected cycling routes on main roads and orbital routes.
- Foster better representation of women in the transport and planning sector and engage with women and listen to their experiences and views throughout the whole decision-making process.
- Ensure that evidence on gender and intersecting areas of equality such as disability, age and ethnicity are integrated into Active Travel strategies and policies.

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#### Notes on terminology and methodology:

All data is from Bike Life 2017 unless otherwise indicated. The survey data upon which this publication is based was collected May to July 2017.

To produce the averages across the seven Bike Life cities each city is treated equally rather than averaging across the total population. Therefore cities are not weighted for different city populations.

Due to the rounding up or down of individual figures, the percentages on charts may not total 100% exactly.

Further details are available at <a href="https://www.sustrans.org.uk/bikelife">www.sustrans.org.uk/bikelife</a>

Sustrans is the charity making it easier for people to walk and cycle.

We connect people and places, create liveable neighbourhoods, transform the school run and deliver a happier, healthier commute. Join us on our journey. <a href="https://www.sustrans.org.uk">www.sustrans.org.uk</a>

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Bike Life is a collaboration between Sustrans and seven major UK cities. Bike Life is funded by The Freshfield Foundation and our city partners.















