



SHARING THE SPACE:

A study of four shared-use paths in London

March 2016

We are Living Streets, the UK charity for everyday walking. We want to create a walking nation where people of all generations enjoy the benefits that this simple act brings, on streets fit for walking.



PREFACE

The Mayor of London's ambition is to increase cycling levels in London by 400 per cent by 2026 (from 2001). This has necessitated the introduction and rapid expansion of segregated cycle superhighways, quietways and shared spaces, particularly in Central London where space is at a premium.

The City of London is keen to understand the impact this may have on pedestrians, particularly where people on foot and bicycles are required to share the same spaces.

Living Streets is the national charity for everyday walking and we work with partners in the public and private sector to help make this happen. Living Streets has a Service Level Agreement with the City of London Corporation to help the authority to promote an excellent quality public realm and to encourage more people to choose walking as their preferred mode of transport.

The result was a collaboration between Living Streets, the City of London and Westminster University's Travel Planning and Management Masters programme. Living Streets devised a research question for a student to undertake for their Masters thesis. We would like to thank Dr Rachel Aldred the course leader and Chris Hambridge for undertaking the research reported here. The City of London and the Borough of Southwark helped to identify the case study locations.

This report has been prepared by Living Streets to present the research findings to a public audience. The discussion and recommendations necessarily reflect this organisation's understanding and prioritisation of pedestrian issues and reflect the viewpoint of Living Streets. We hope that it will inform thinking about making space for pedestrians and cycling, not only in London but in other busy urban centres.



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EXECUTIVE SUMMARY

This report explores pedestrian's and cyclist's experience of sharing spaces. With London's population set to soar to 11 million by 2050, increasing the proportion of people walking and cycling could be the answer to many of the city's transport problems. An increase in active travel could help reduce congestion on London's road and rail networks, improve the city's air quality and benefit people's health. However, persuading more people to travel actively requires creating inviting places for people to walk and cycle.


Both pedestrians and cyclists are highly vulnerable to, and restricted by, motor traffic. Shared use pedestrian-cyclist pathways reduce the risk of collisions between cyclists and motor vehicles. However, the potential for pedestrian-cycle conflict naturally increases. The impact of this type of mixing on the experiences of people walking and cycling there needs to be better understood.

For this research, four shared use sites were observed: St Bride Street and Queen Street in the City of London, and; St Mary's Churchyard and Burgess Park in the London Borough of Southwark. In each case, the objective was to find out:

- How common and how severe were pedestrian-cyclist interactions?
- What is the quality of the user experience? Are there particular reservations or concerns? And,
- What could be done to improve the situation?

Direct observations at peak commuter times were used to assess the direction of flow and to quantify the degree of interaction (from mild to severe) between the two modes. Snapshot counts recorded the volume of users during a ten minute period. In addition, survey cards were distributed to people walking and cycling inviting them to take part in an online survey to describe their user experience. Focus groups with pedestrian access and campaign groups were a later addition when it was realised that disabled and older pedestrians were not represented among survey respondents.

Comparison of the four sites provides some interesting insights. Where pedestrians and cyclists are mixed in the same space, interactions are common. The majority observed in this study were very mild – consisting of natural adjustments and considerate behaviour as cyclists and pedestrians accommodate to each other's relative speed and direction of travel. Nevertheless, the survey results suggest that these interactions do have a negative impact on the quality of the user experience.



It is clear that shared use pathways cause anxiety and frustration for both people walking and cycling there. However, the degree to which this dissatisfaction occurs depends on a number of factors.

The most important factor is one of route capacity – based on the space available and the volume of people walking and cycling there. This has a direct impact on comfort levels and where comfort levels are low, user satisfaction is unsurprisingly poor. For example, the high volume of people walking and cycling on Queen Street is resulting in high levels of discomfort for both people walking and cycling there. In comparison, St Bride Street shows that where there is sufficient capacity and visibility, comfort levels increase and user satisfaction improves.

This report has shown that:

- Mixing people walking and cycling together increases the likelihood of interaction. These interactions were frequent across the four sites studied and, although generally mild, appear to have a negative impact on the experience for people walking and cycling there.
- The space and volume of pedestrians and cyclists impacts on comfort levels and user satisfaction.
- The ratio of cyclists to pedestrians is also important in determining how comfortable a place feels for those using it.
- There is likely to be a disproportionate impact on disabled people, who as a result may prefer to avoid an area completely.
- Cycle speeds impact pedestrian comfort levels. Where the physical environment allows or encourages faster cycling speeds, the pedestrian experience is likely to be diminished. Therefore shared use pathways need to be designed in a way that encourages slower cycling speeds.
- Where sharing is unavoidable, good design and appropriate signage may help improve the experience for people walking or cycling there.
- However, where route capacity is stretched, alternative solutions should be sought (for example providing parallel routes or on-carriageway segregated cycle tracks).

Comfort and the quality of experience are essential to encouraging and supporting growth in walking and cycling. Where feasible, it is usually better and more popular, to reallocate or make safe carriageway space for cycling rather than mixing people walking and cycling together.

INTRODUCTION

Increasing walking and cycling can help answer many of London's transport problems: an overcrowded road network, public transport systems at capacity and the forecast growth in population (expected to reach 11 million by 2050)¹.

The attractions are obvious, such as: the health benefits of being physically active, reduced congestion, improved air quality. Walking in particular is free and easy to fit into everyday lives. Nearly a quarter (24%) of all journeys, in London, are made on foot (70% of those under a kilometre)².

- Motorised road traffic is a key source of air pollution, contributing 60 per cent of PM₁₀* and 47 per cent of nitrogen oxide (NO_x) emissions in London
- Exposure to particles in the long term (years) causes deaths from cardiovascular and respiratory diseases
- In 2008 there were over 4,000 'deaths brought forward' attributable to long-term exposure to small particles

Source: Transport for London (2014). 'Improving the health of Londoners: transport action plan'
*small particles below 10 micrometres in diameter

The Mayor of London's ambition is to increase cycling in the city by 400 per cent by 2026³ and to increase the proportion of people walking from 24 to 25 per cent by 2031 (an additional 1 million walking journeys per day)⁴. If these targets are to be met - and the benefits realised - London's streets, footways, parks and cycle routes need to feel safe and attractive places for people to walk and cycle.

Segregated or unsegregated shared use paths are relatively common in the UK, for example: in parks, along canal towpaths and in a variety of city and town street locations. It has been suggested that unsegregated shared use paths lead to more considerate behaviour⁵. On the other hand, there is very little difference in likelihood of a collision on unsegregated versus segregated

¹ BBC (2015). 'London's population high: Top metropolis facts', <http://www.bbc.co.uk/news/uk-england-london-31056626> [Accessed 15/06/2015]

² GLA (2010) and TFL (2010) *ibid*.

³ TfL (Transport for London) (2010). 'Cycle Safety Action Plan', <https://tfl.gov.uk/cdn/static/cms/documents/cycle-safety-action-plan.pdf> [Accessed 19/06/2015]

⁴ GLA (Greater London Authority) (2010). 'Walk This Way: Making walking easier and safer in London, Transport Committee', <http://www.london.gov.uk/sites/default/files/Walking%20Report.pdf> [Accessed 24/06/2015]

⁵ Atkins (2012). 'Shared Use Operational Review', https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/9181/atkins-shared-use-operational-review.pdf [Accessed 10/06/2015]

routes; the key determinant is route capacity⁶. Pedestrian and cyclists flows, journey purpose (utility or leisure), visibility, and cyclist speed are all important considerations⁷. As is the fact that all people move differently, whether it is older people, children, disabled people, parents with push chairs, people walking dogs or running or skating⁸.

Pedestrians are much less likely to be killed or injured by a cyclist than by a motor vehicle⁹. A forensic reconstruction of three fatal collisions drew the conclusion that the cyclist usually causes the collision, but the pedestrian suffers the more severe injuries¹⁰. The same research noted that the majority of fatalities involve older and frail pedestrians¹¹.

Interactions between pedestrians and cyclists on shared use routes are inevitable although studies suggest that actual conflicts and collisions on shared use paths are rare¹². However, even if there are no observable conflicts occurring, pedestrians and cyclists may still experience unwanted frustrations resulting from sharing a path with one another¹³.

The perceived conflict between pedestrians and cyclists in London is still an emerging area of research. This report adds to our understanding of pedestrian and cyclist interactions by looking at four shared space locations in London and asking:

- How common and how severe are pedestrian-cyclist interactions?
- What is the quality of the user experience? Are there particular reservations or concerns? And,
- What could be done to improve the situation?

⁶ Atkins (2012) *ibid*.

⁷ Sustrans (2011). 'The Merits of Segregated and Non-Segregated Traffic-Free Paths: A literature based review', <http://www.sustrans.org.uk/sites/default/files/images/files/migrated-pdfs/Phil%20Jones%20Associates%20report%20-%20September%202011.pdf> [Accessed, 28/06/2015]

⁸ Grzebieta, R., McIntosh, A., and Chong, S. (2011), 'Pedestrian-Cyclist Collisions: Issues and Risk', Australasian College of Road Safety Conference

⁹ DfT (Department for Transport) (2013b). 'STATS 19 – personal injury road traffic accidents', <https://www.gov.uk/government/uploads/.../dft-statement-stats-19.pdf> [Accessed 12/08/2015]

¹⁰ Graw, M. and Konig, H. (2002). 'Fatal Pedestrian-Bicycle Collisions', *Forensic Science International*, Vol. 126, pp. 241-247

¹¹ Graw and Konig (2002) *ibid*.

¹² Atkins (2012) *ibid*.

¹³ Delaney, H. (2014). 'Walking and cycling interactions on shared-use paths', RGS-IBG Annual Conference 2014, Session: Current and Emerging Research in Transport

METHODOLOGY

Site selection

A total of four sites were selected based on advice from transport officers or reported complaints from users. These were: Queen Street and St Bride in the City of London, and; St Mary's Churchyard and Burgess Park in the London Borough of Southwark. Each site has different characteristics – from busy pedestrian through routes in the City to the residential location of St Mary's Churchyard and recreational space of Burgess Park. However, each location has something in common as a platform to explore the shared experiences of pedestrians and cyclists.

Research methods

The limited research available on pedestrian-cyclist conflicts dictated the need to collect primary data. A combination of direct site observations, pedestrian and cyclist counts, as well as online user surveys were used to establish the direction and number of pedestrian-cyclist movements, the level of interaction between pedestrians and cyclists, and their perceptions of the user experience. Additional focus groups with key stakeholders provided an opportunity to take into account wider issues (e.g. related to age or disability).

The approach adopted is based on the sites selected and the resource available.

1) Site observations

- Direct visual observations took place on a Tuesday, Wednesday or Thursday, either in the morning (07:30hrs-09:30hrs) or the afternoon (16:30hrs-18:30hrs). Lunchtimes were avoided. The observations took place during the school summer holidays which may be a limitation.
- Observation points were chosen where there were the largest number of pedestrians and cyclists passing each other, together with frequent opposing or perpendicular movements. The observer had to have an unobstructed view, but not interfere with path user's usual behaviour.
- Interactions were counted and ranked according to severity – ranging from 'A' the mildest (e.g. an early change of direction) to 'H' the most severe (a physical collision between users). See Table 1.

2) Pedestrian and cyclist counts

- Snapshot counts of pedestrians and cyclists (recorded in a tally format) were carried out over 10 minutes at the mid point of each morning or afternoon observation period.
- The observers noted the direction of travel and movements of users in order to identify the main desire lines.

3) Online survey

- 1000 survey cards were distributed to pedestrians and cyclists at the four sites inviting them to complete an online user survey. 203 responses were received for both surveys (101 from pedestrians and 102 from cyclists) as a result. A further 40 responses were received in relation to Burgess Park following an article about this research in the Friends of Burgess Park newsletter. There were two questionnaires, one for pedestrians and one for cyclists. The same questions were adapted to each user group.
- Survey results are reported in each case study as percentages for ease of comparison. However, sample sizes for each site are quite small so the numbers should be treated with some caution. Full results are given in the appendices. Another limitation is that respondents did not always answer every question.
- The survey questions covered 5 topics – users' experiences of pedestrian-cyclist conflict, their opinions on the suitability of the path for shared use, their particular concerns about shared use, the quality of the user experience, and finally, any suggestions for change or improvements to the route. Some basic demographic data was also collected.

4) Focus groups

The potential for pedestrian-cycle conflicts and user experience at the selected sites were discussed with:

- The City Access Group
- Age UK London
- Southwark Living Streets
- Friends of Burgess Park

Some of their feedback is included in the Queen Street and Burgess Park case studies.

The data collected for each site are listed in the appendices.

Table 1: Categories of interaction used for the site observations

Interaction Type	Description
A- Early change of direction or slowing down	A cyclist or pedestrian noticing the presence of another user on the path and adjusting their position accordingly or slowing down in a controlled manner
B- Negotiation or inconvenience	Hesitation, waiting for the other user to proceed or mild irritation as identified verbally, with body language or gestures
C- Warning	A vocal warning or alert, such as bell ringing, given to another path user to announce one's presence. (This could also occur out of courtesy as well as in frustration)
D- Late swerve/change of direction	An uncontrolled, sudden or uncomfortable last minute movement. The user had clearly not anticipated the need to change course early enough

E- Sudden stop	Coming to a halt at a late stage or sudden braking/stopping that is largely uncontrolled
F- Verbal (or physical) exchange	An argument, shouting or swearing or a physical assault (likely to be a rare occurrence)
G- Near miss	A near collision where two or more users are alarmed by the incident and may take emergency action to ensure an impact is avoided
H- Collision	A physical collision between users

Pedestrian and Cyclist profiles

Overall, female and male survey respondents are equally distributed (see table 2). In the City (St Bride Street and Queen Street), there were more male respondents which could be representative of a higher proportion of males walking and cycling at this location. In St Mary's Churchyard and Burgess Park, the situation is reversed with more female pedestrians. There were also more female cyclists at St Mary's Churchyard. .

Table 2: Gender breakdown for pedestrians and cyclists by location

Site	Pedestrians			Cyclists		
	Female	Male	Prefer not to answer	Female	Male	Prefer not to answer
St Bride Street	46%	54%	0%	45%	55%	0%
Queen Street	43%	57%	0%	40%	60%	0%
St Mary's Churchyard	58%	38%	4%	53.5%	43%	3.5%
Burgess Park	53%	43%	4%	41%	53%	6%
Overall	51%	48%	1%	45%	53%	2%

Figures 1 and 2 show how respondent's ages range across the four case study locations. As might be expected from site observations and distribution of survey cards at peak times (with the exception of extra responses for Burgess Park), the majority of pedestrians and cyclists are of working age. There are relatively few young people (0-17 years old) and older people (over 60 years old). No one responding to the survey said that they had a disability; two people preferred not to say.

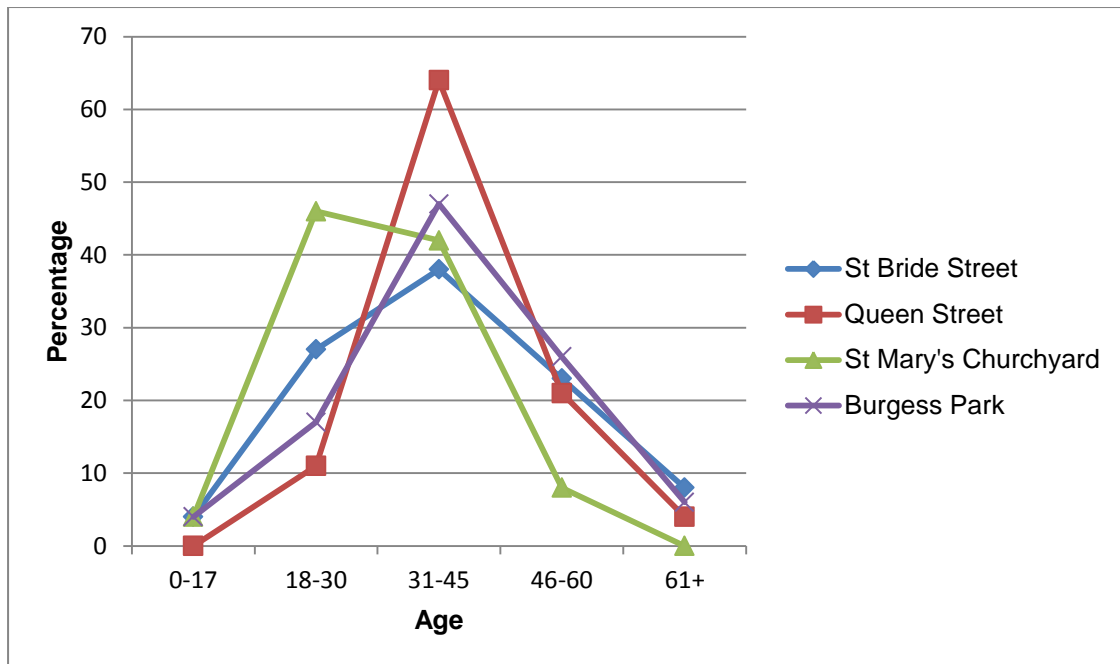


Figure 1: Pedestrian age range by location

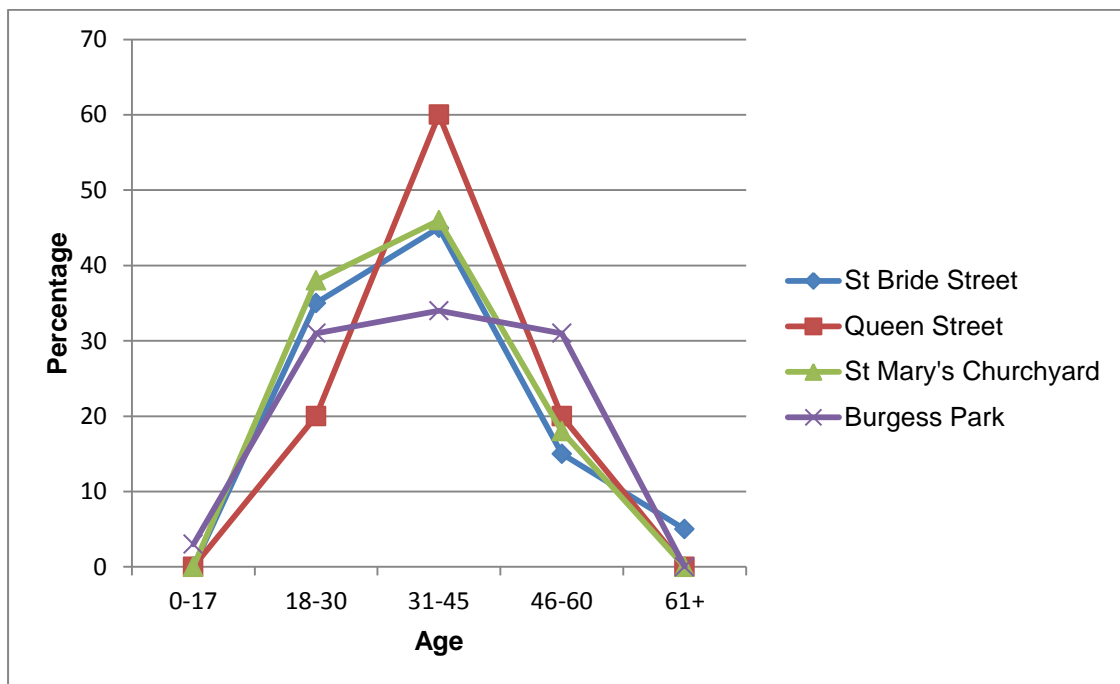


Figure 2: Cyclist age-range by location

CASE STUDY 1:

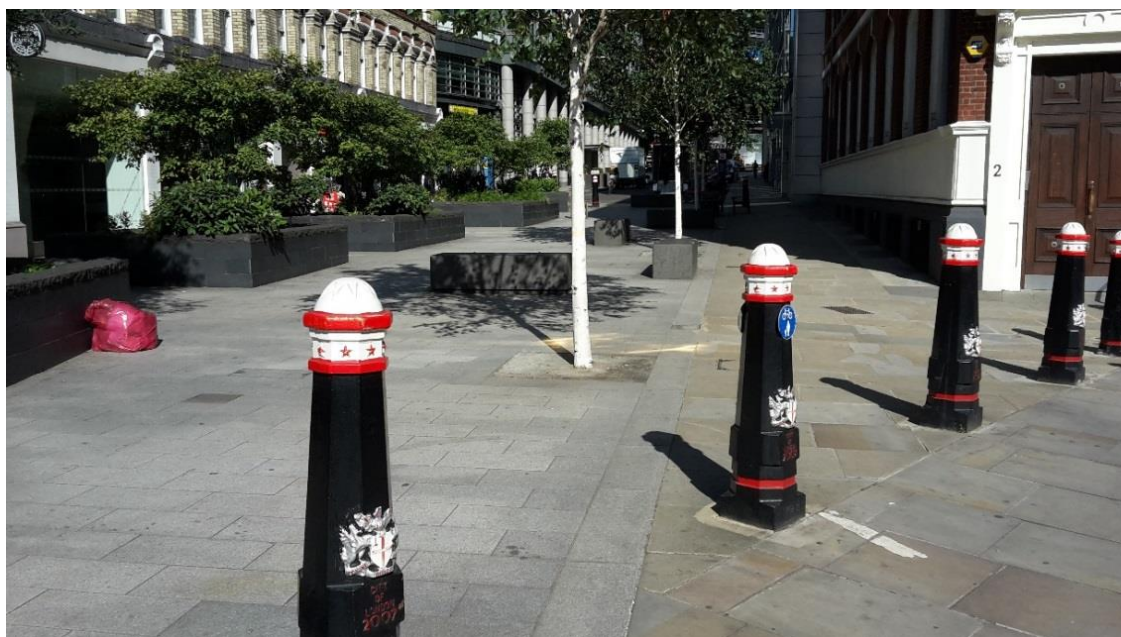
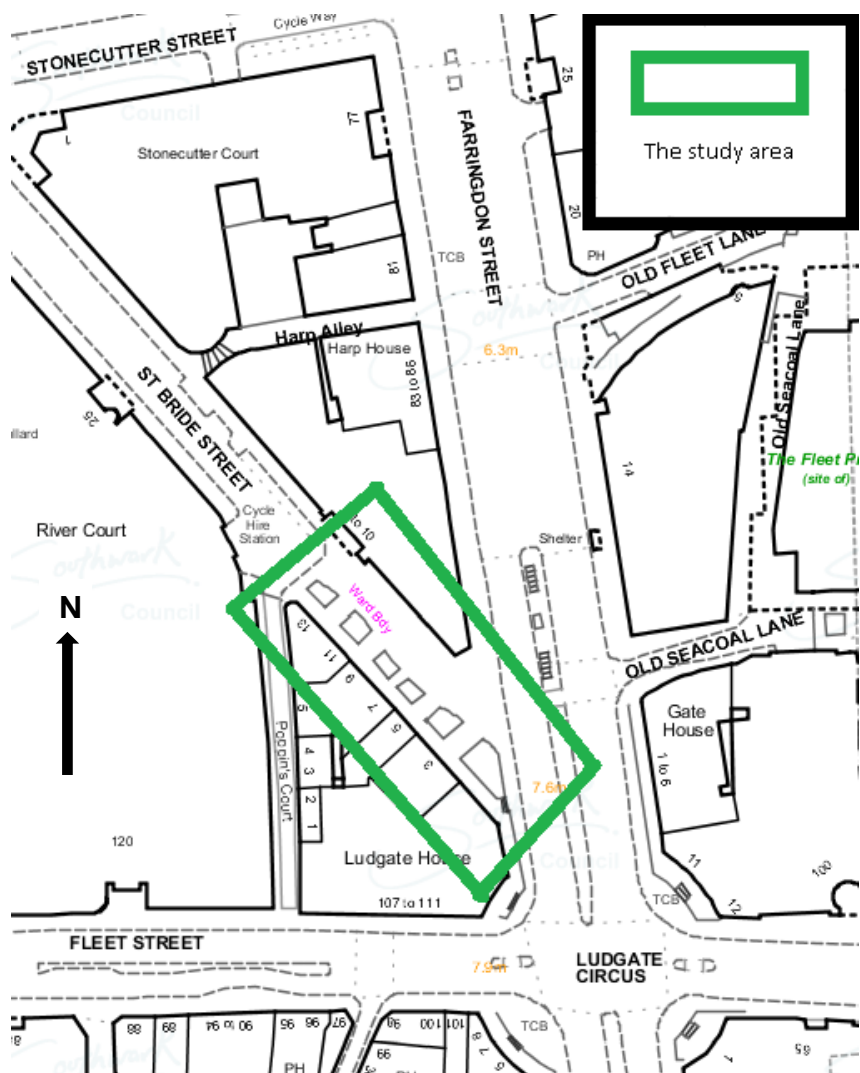
St Bride Street

St Bride Street is in the City of London. Linking Farringdon Street and Shoe Lane, it includes a shared use area for exclusive use by pedestrians and cyclists. The study area is illustrated below. At peak periods, the street is busy with pedestrians walking to and from work in nearby offices to the City Thameslink Station; numerous shops and cafes cater to a lunch crowd. Cyclists were observed largely travelling in the same direction as pedestrians (northwest bound in the morning, southeast bound in the afternoon), but volumes were not as high as at Queen Street. 62 per cent of pedestrians use this route everyday or at least once a week, compared to 85 per cent of cyclists. The completion of the North-South Cycle Superhighway in 2016 (along Farringdon Street) could have an impact on the volume of cyclists using St Bride Street.

Two thirds of the observed interactions (64 per cent; almost equal morning and afternoon) were experienced by cyclists, and many involved cyclists approaching pedestrians from behind. Cyclists usually occupied the north side of the street, whereas pedestrians used the entire width. Benches are located in the centre of the street encouraging people to linger there.

The majority of the observed interactions (category A plus category B; 92 per cent pedestrians; 96 per cent cyclists) were mild. In fact this is the only site where pedestrians reported fewer conflicts (11 per cent) compared to cyclists (25 per cent). Reported conflicts included: weaving, sudden stopping, verbal abuse, being startled, a near miss and swearing. Nevertheless, more cyclists reported feeling comfortable (65 per cent) with their journey experience than pedestrians (43 per cent; see figure 5). More pedestrians (53 per cent) also reported being at least occasionally frustrated at having to share the path than cyclists (40 per cent; see figure 4).

Of the four sites studied, survey responses felt St Bride Street to be the most suitable for shared use by cyclists (75 per cent) and pedestrians (46 per cent; see figure 6). When asked how pleasant they found the route, the majority of pedestrians (58 per cent) and cyclists (65 per cent) said it was equal to the rest of their journey.



View of St Bride Street from Farringdon Street

Figure 3: St Bride Street snapshot pedestrian and cyclist counts

	Pedestrian flows	Cyclist flows
Morning peak	95	27
Afternoon peak	81	20
Total	176	47

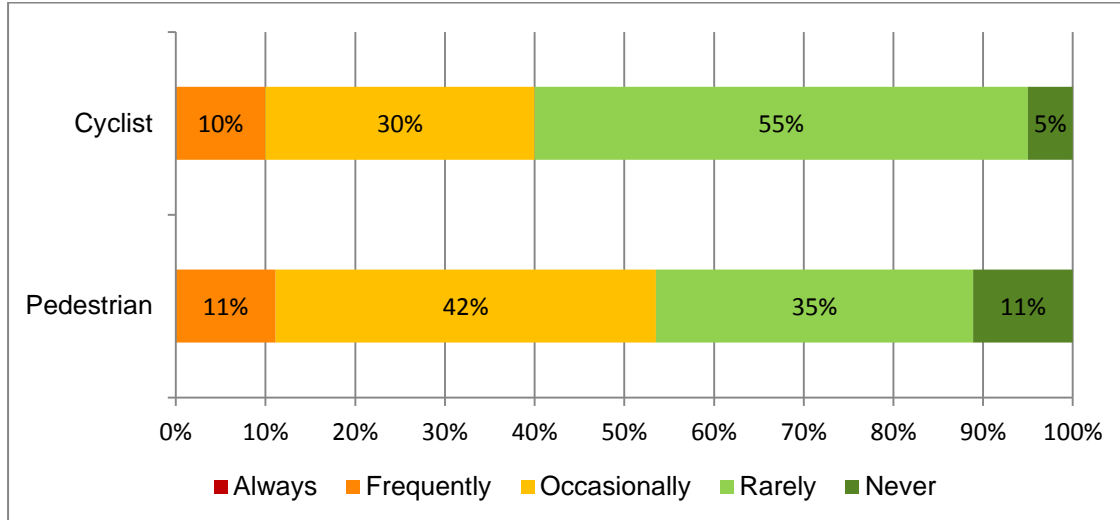


Figure 4: Frequency of frustration felt by surveyed users at sharing the path on St Bride Street

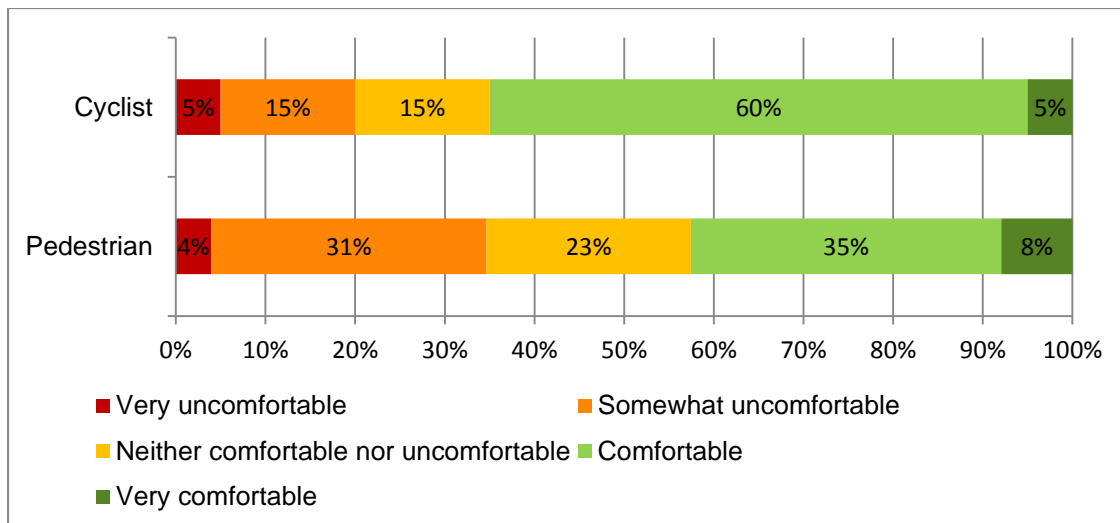


Figure 5: Level of comfort felt by surveyed users at sharing the path on St Bride Street

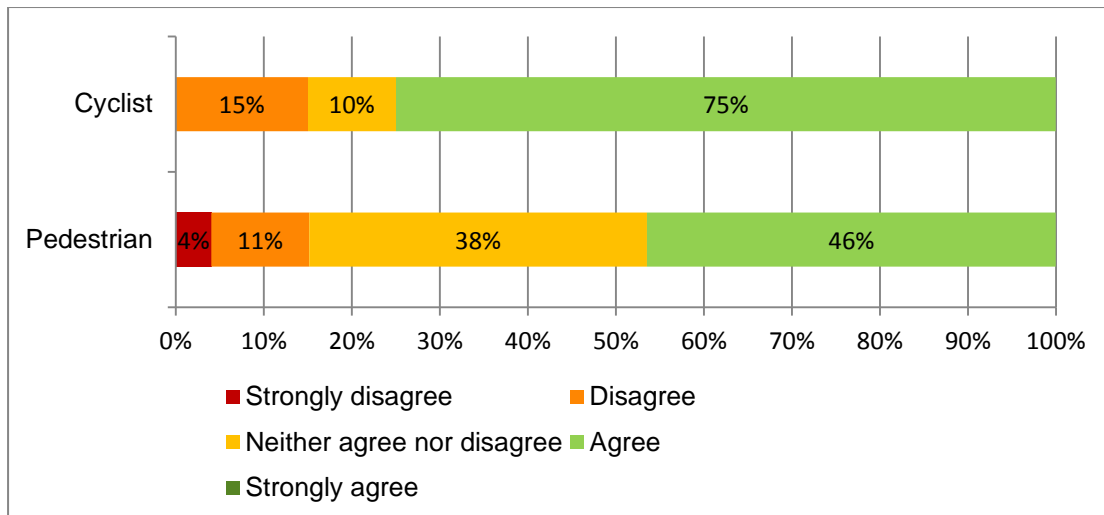


Figure 6: Whether surveyed users felt St Bride Street is suitable to be shared use

Site Recommendations

Despite some frustration between users, cycle flows at this location are lower than the three other sites surveyed and there appears to be a natural separation of people walking and cycling.

- It is recommended that the current high standard of street cleanliness and repair is maintained, including street furniture and paving.
- It is also suggested that the street is monitored in the longer term when Cycle Superhighway Route 6 is completed to ensure that any increase in pedestrian and cyclist flows does not lead to a higher incidence of conflict.

CASE STUDY 2:

Queen Street

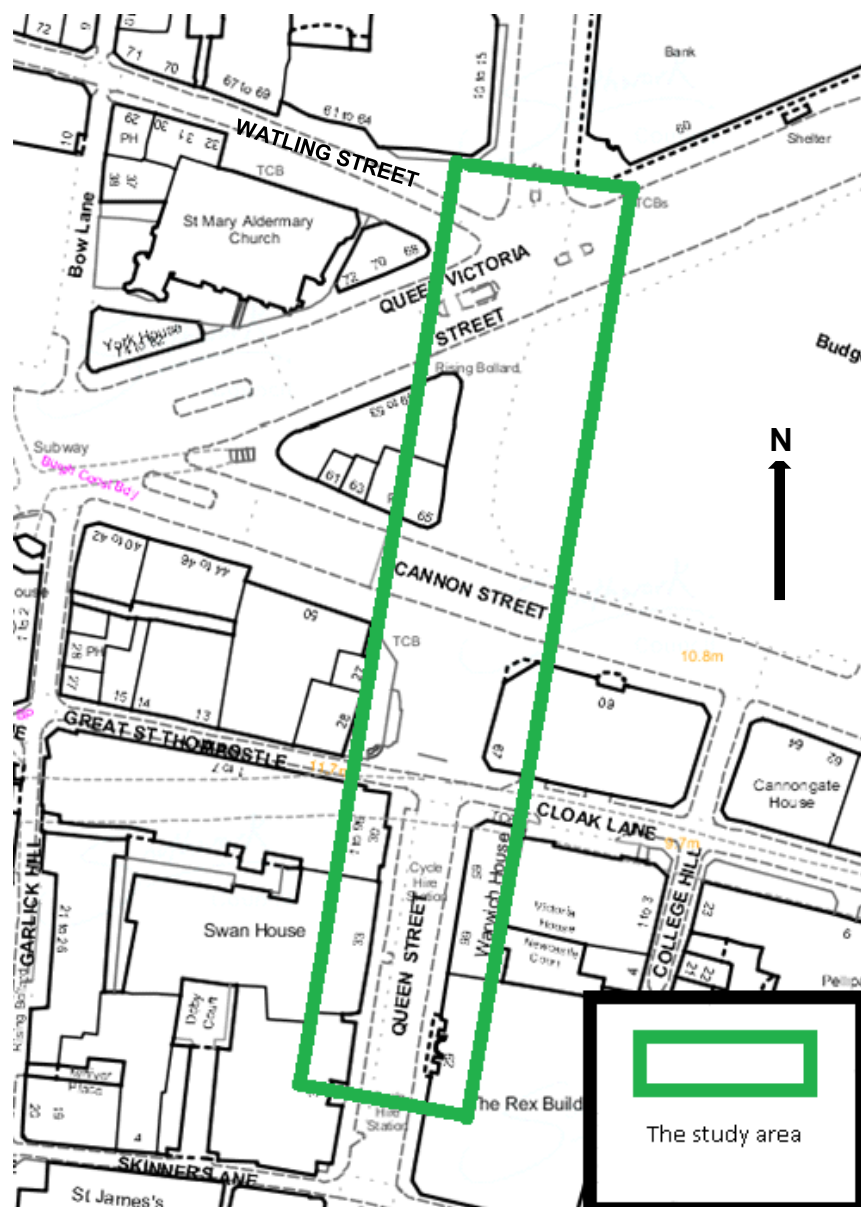
Queen Street is in the City of London where it links Cheapside and Upper Thames Street. An observation point was selected on the shared use section between Queen Victoria Street and Cloak Lane (see map below; the blank area on the right hand side is currently a building site). There is a toucan crossing over Cannon Street for pedestrians and cyclists; large plant pots feature on both sides of the road and provide an informal waiting space for cyclists. At the Queen Victoria Street junction pedestrians must cross the road in two stages to the west via Watling Street, whereas cyclists cross directly and re-join the carriageway on Queen Street as they head north.

At peak periods, the street is very busy with pedestrians walking to and from Cannon Street and Mansion House underground stations on their way to or home from work. A high volume of cyclists also use the street in peak periods. Most cyclists were observed travelling northbound in the morning towards the City. In the afternoon they were observed travelling southbound towards the river Thames and Cycle Superhighway Route 7 on Southwark Bridge. 89 per cent of the pedestrians and 90 per cent of the cyclists who responded to the survey use this route every day or at least once per week.



View of Queen Street, from Canon Street looking towards Queen Victoria Street

Pedestrians and cyclists were seen to occupy the full width of the shared space between the intersection at Cloak Lane and the toucan crossing on Canon Street. At Queen Victoria Street separate crossings for pedestrians and cyclists require users to negotiate their positions. The majority of interactions observed were mild in nature (category A plus category B; 90 per cent pedestrians; 89 per cent cyclists). However, this is the site where the highest numbers of conflicts were reported by both pedestrians (62 per cent) and cyclists (50 per cent). Conflicts reported included near misses, barging, shouting and a foot being run over by a cyclist. 78 per cent of pedestrians and 63 per cent of cyclists said that this portion of their journey was less pleasant than the rest.



More pedestrians felt uncomfortable with their journey experience (89 per cent) than cyclists (70 per cent) at Queen Street (see figure 9). A high proportion of pedestrians (92 per cent) and cyclists (81 per cent) also reported

becoming at least occasionally frustrated at having to share the street with the other user group (see figure 8). Queen Street is the site where the greatest proportion of both user groups felt uncomfortable and frustrated with their journey experience. Focus group respondents also reported finding the presence of cyclists 'stressful' and 'disconcerting' (see box out).

Focus group respondents:

"I'm registered blind and avoid Queen Street like the plague. I'd rather take my chances at Walbrook and Bucklersbury where there is no green man. I've been sworn at by cyclists even though I was using a white stick"

"I am a wheelchair user. Crossings streets is always stressful as I have to enter into an unsafe environment which temporarily becomes safer. I have to commit once I get to the top of the dropped kerb and there's no going back. I rely on the signals much more than non-disabled people and as a result have to focus on the lights and the countdown – which gives me less peripheral vision. I find cyclists cut in front or pass closely [which] is very unnerving and stressful – though I am sure 99 per cent of cyclists aren't aware of the impact they have on me"

More pedestrians (68 per cent) than cyclists (37 per cent) felt that Queen Street was not suitable to be a shared use path (see figure 10). In fact only 11 per cent of pedestrians surveyed felt that Queen Street was suitable to be shared use. Some of the key concerns raised were: user behaviour, the sheer volume of pedestrians and cyclists and the lack of clear signage to indicate the shared use nature of the street.



The toucan crossing on Canon Street, with a large plant pot in the foreground

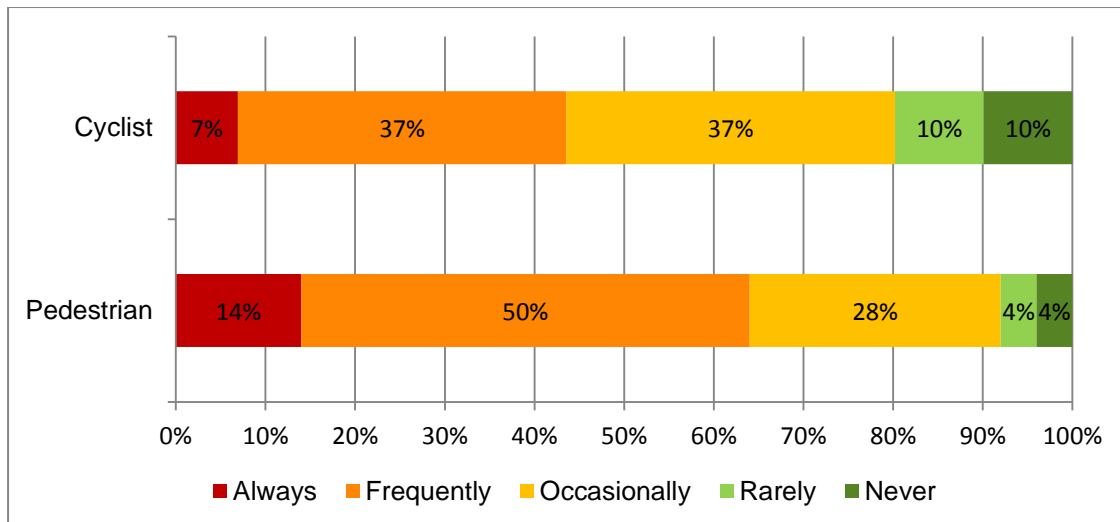


Figure 7: Frequency of frustration felt by surveyed users at sharing the path on Queen Street

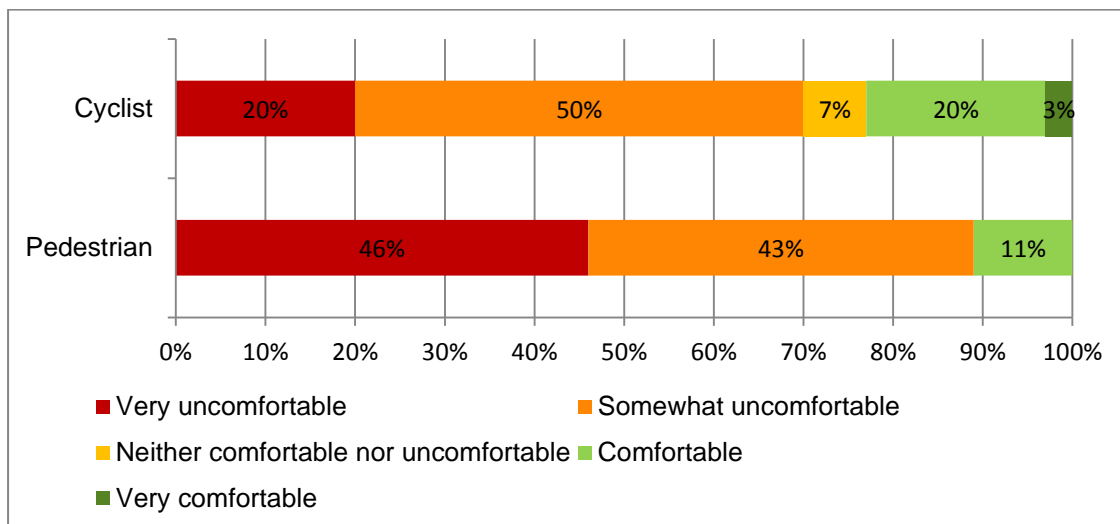


Figure 8: Level of comfort felt by surveyed users at sharing the path on Queen Street

Figure 9: Queen Street snapshot pedestrian and cyclist counts

	Pedestrian flows	Cyclist flows
Morning peak	480	83
Afternoon peak	449	78
Total	929	161

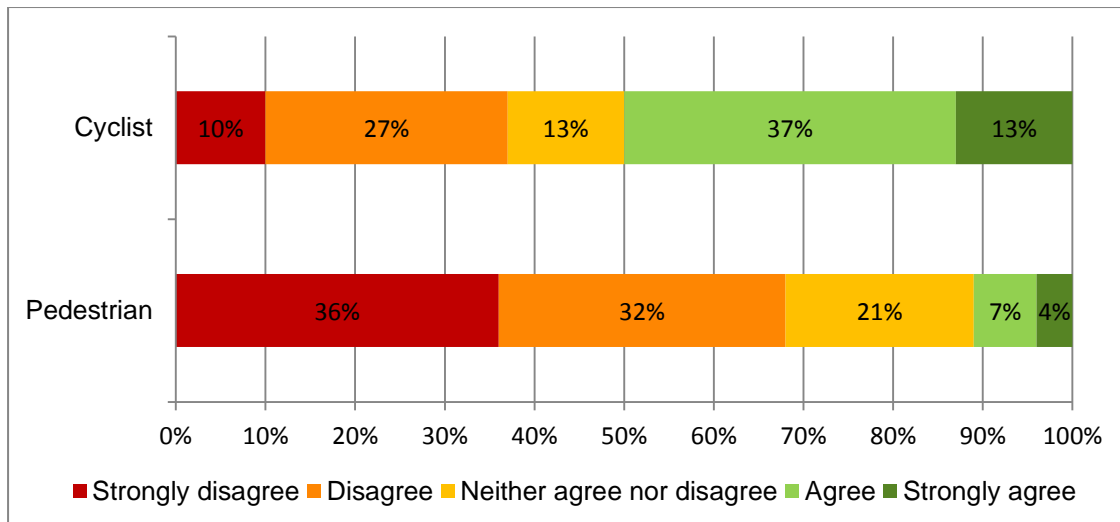


Figure 10: Whether surveyed users felt Queen Street is suitable to be shared use

Site Recommendations

The scale of discomfort experienced by users of Queen Street requires significant physical changes are to help reduce the likelihood of conflict and to improve the journey experience of all users here:

- Align the planters to the South of Cannon Street to encourage cyclists to wait back from the crossing and to keep a clear path for the east – west movement of pedestrians on Cannon Street. This could also be encouraged through the use of line markings on the footway.
- Discourage motor vehicles from queuing back over the toucan crossing on Cannon Street to ensure the full width of the crossing will be fully usable. This could be through enforcement or road markings.
- Use signage to indicate pedestrian priority and encourage slower cycling speeds.
- Explore options to encourage cyclists to stick to the eastern side of Queen Street to align with their crossing on Queen Victoria Street and preventing crossover on the narrow section north of Cannon Street.
- Improve on-carriageway provision for cyclists in the longer term and increasing permeability through the City.
- Improve surrounding streets for pedestrians to offer attractive and comfortable north-south routes, for example along Bow Lane and Walbrook (not on the map above).

It is anticipated that once the construction work on the corner of Queen Street/Cannon Street is complete, the path will return to full width. This may assist with reducing the likelihood of conflicts occurring on the section between Cannon Street and Queen Victoria Street.



Informal waiting point for cyclists by the planters

CASE STUDY 3:

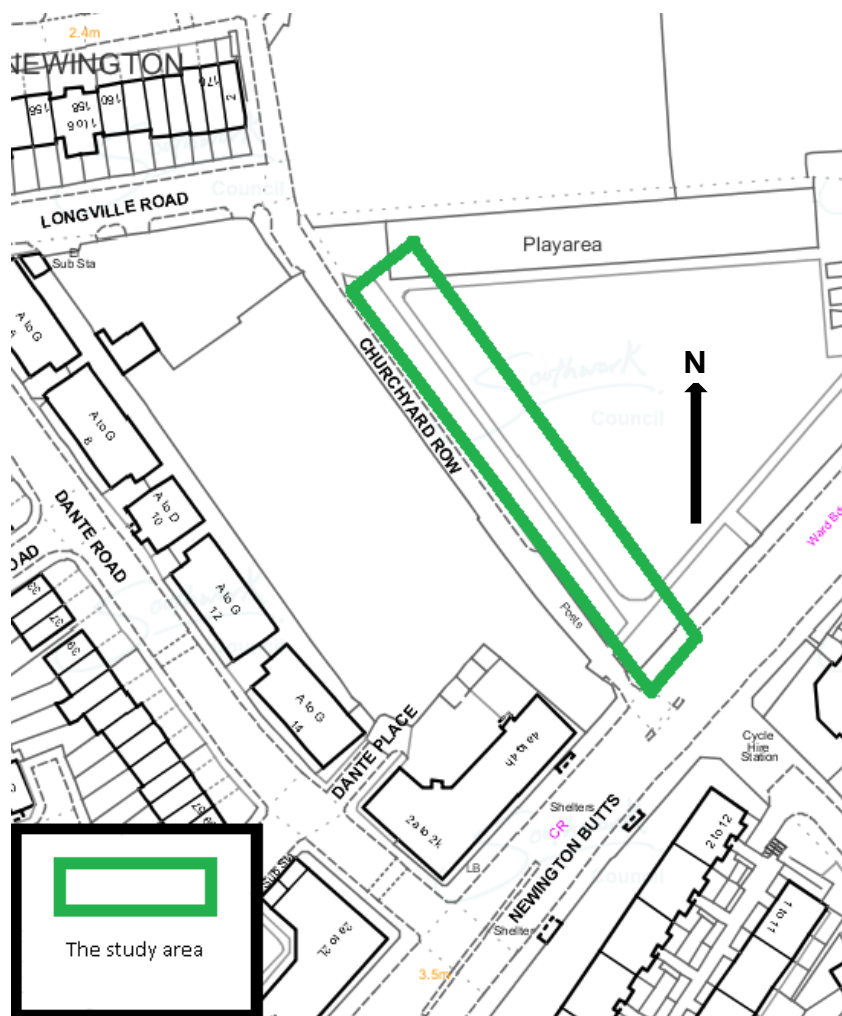
St Mary's Churchyard

St Mary's Churchyard is a small stretch of recreational space in a largely residential area in the London Borough of Southwark. There is a footpath running along the boundary which links the A3 Newington Butts with Longville Road. The footpath lies parallel to Churchyard Row which accommodates Cycle Superhighway Route 7.

Safety concerns over construction works on Churchyard Row have led to the temporary diversion of the Cycle Superhighway along the footpath, which now accommodates both pedestrians and cyclists. At peak periods the path is busy with cyclists who use the Cycle Superhighway in order to bypass the Elephant and Castle roundabout. In contrast, pedestrian flows are lower here than at the three other study sites. Cyclist flows are particularly tidal, with the majority travelling north bound towards the City in the morning and returning in the afternoon. Nearly all of the cyclists surveyed, 96 per cent, use the path at least once per week, compared to 71 per cent of pedestrians. Once construction work is complete it is envisaged that cyclists will return to using Churchyard Row.



View of the temporary shared use route running parallel to Churchyard Row, towards the A3



Interactions observed at this site generally occurred when cyclists approached pedestrians from behind. They were mild interactions (category A plus category B), such as cyclists changing direction or slowing down as they approached pedestrians. There were some instances of more severe interactions (e.g. braking hard) at the tight corners, when pedestrians and cyclists would need to be cautious and considerate. Inconsistencies in signage – indicating segregation and no segregation (see photos) – and lack of markings may have confused users. Reported conflicts (pedestrians 38 per cent; cyclist 14 per cent) included sudden braking and swerving.

Figure 11: St Mary's Churchyard snapshot pedestrian and cyclist counts

	Pedestrian flows	Cyclist flows
Morning peak	15	74
Afternoon peak	14	65
Total	29	139



St Mary's Churchyard had the smallest number of pedestrians and was the only site at which cyclists outnumbered pedestrians. During the observation periods cyclists often had an unobstructed journey through the churchyard.

Half of the cyclists (50 per cent) who responded to the survey reported feeling frustrated at least occasionally about sharing the path with pedestrians. This is compared to 84 per cent of pedestrians, of whom 13 per cent said they were always frustrated and 42 per cent frequently frustrated at sharing the path with cyclists (see figure 12). Just 4 per cent of the pedestrians who responded to the survey felt comfortable sharing the path with cyclists – the lowest proportion across all four sites. By comparison, almost half of the cyclists surveyed felt comfortable sharing the path (see figure 13). Similarly, 57 per cent of the cyclists reported that this portion of their journey was more pleasant than the rest, compared to only 8 per cent of pedestrians.

Over half of cyclists (57 per cent) felt that the path was suitable for shared use, compared to 17 per cent of pedestrians (see figure 14).

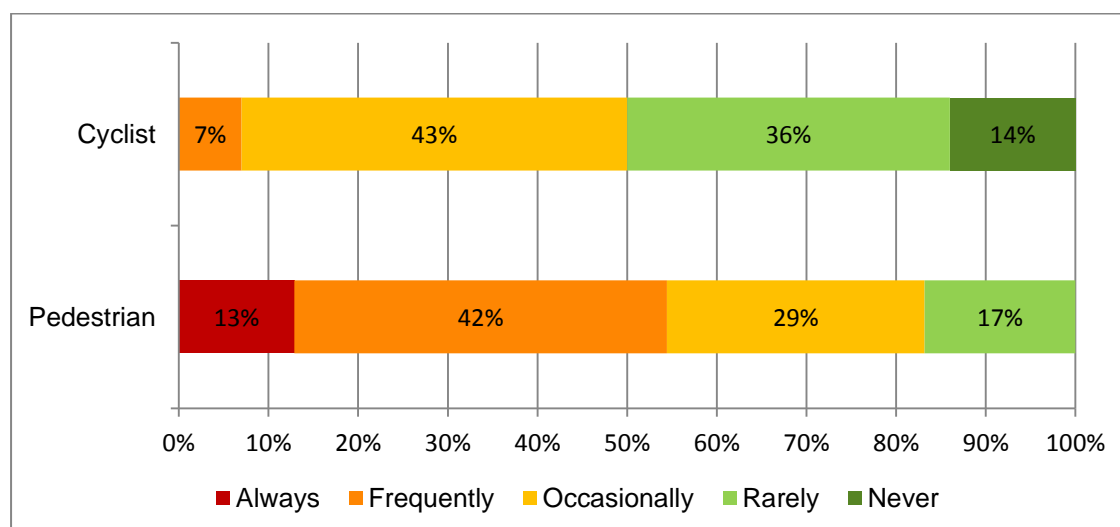


Figure 12: Frequency of frustration felt by surveyed users at sharing the path in St Mary's Churchyard

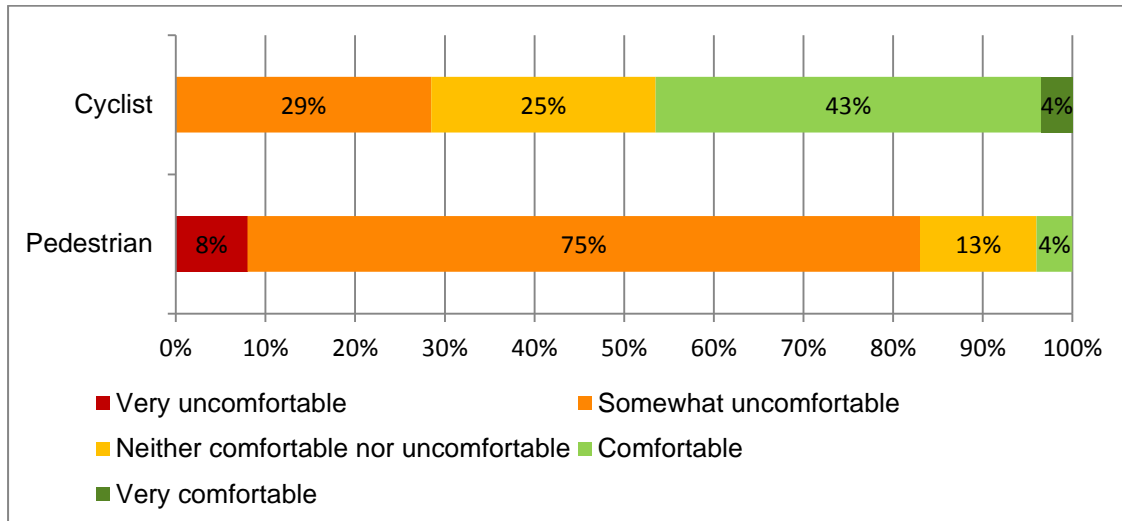


Figure 13: Level of comfort felt by surveyed users at sharing the path on St Mary's Churchyard

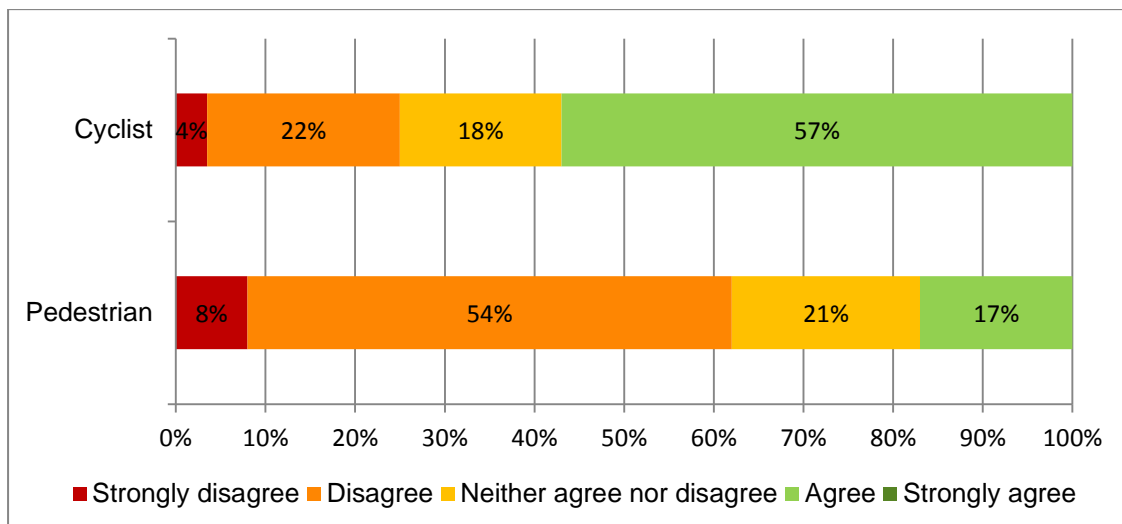


Figure 14: Whether surveyed users felt St Mary's Churchyard is suitable to be shared use

Site Recommendations

Once the construction work is complete on Churchyard Row, Cycle Superhighway 7 will return to its previous route and no longer pass through the Churchyard itself. Therefore, no significant changes are recommended. However, this case study highlights the disproportionate impact that the presence of cyclists can have when pedestrians are outnumbered and unaware of the presence of cyclists..

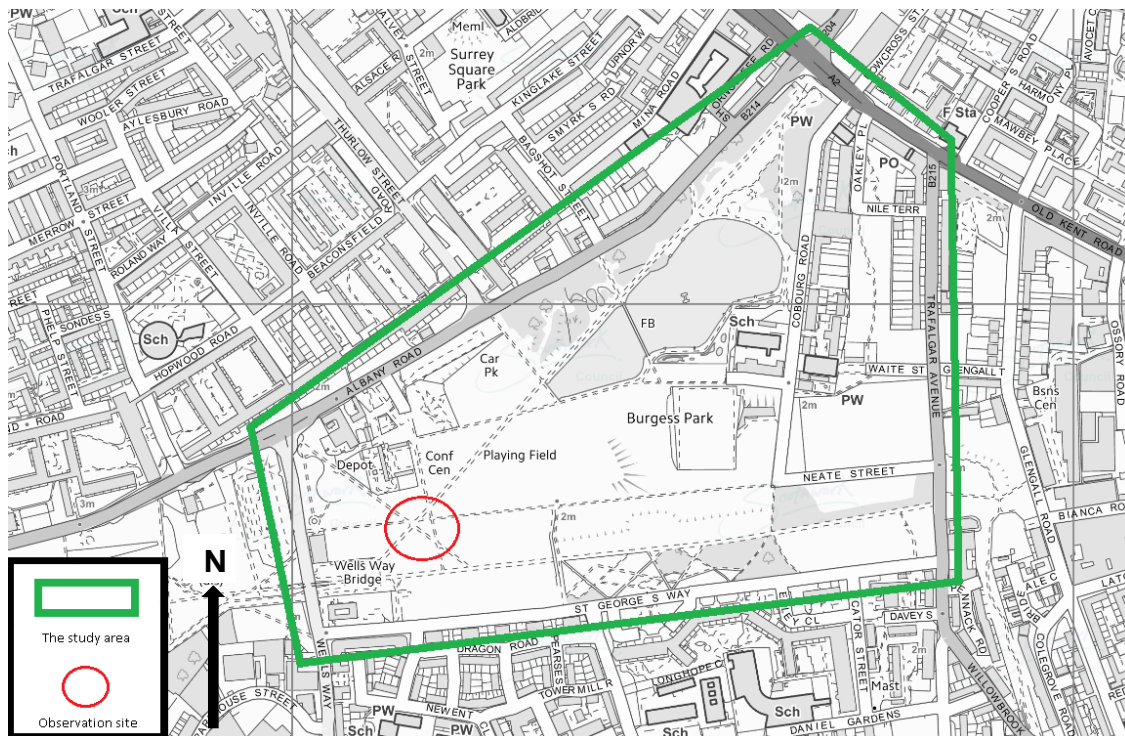
It is recommended that in locations where cyclists are being diverted onto footways, that mitigating measures are introduced. For example, this particular site could widen the footpath (e.g. with temporary surfacing), address the inconsistencies in signage and introduce 'slow/beware pedestrian' markings on the footpath.

CASE STUDY 4:

Burgess Park

Burgess Park is a large recreational area in the London Borough of Southwark. It extends from the Old Kent Road in the east to Camberwell New Road in the west and is served by a network of paths shared by pedestrians and cyclists. This case study focuses on the area to the east of Wells Way and observations were taken at a busy intersection – circled in red on the map. More than two thirds of the cyclists (69 per cent) who responded to the survey use routes through the park to commute to work or college¹⁴. 19 per cent of cyclists use the park for recreational purposes – for example, riding around the park or cycling to it to use its leisure facilities.

Most pedestrians who responded to the survey (62 per cent) use the park for leisure and recreation. A minority commute through the park (19 per cent) on their journeys to and from work or to nearby schools. From the results it appears that cyclists travel through the park a little more frequently than pedestrians (69 per cent of cyclists versus 60 per cent of pedestrians use the park at least once a week and most days).



¹⁴ As discussed in the methodology, the survey respondents for this case study were invited to take part either by being given a survey card or via the article in the Friends of Burgess Park newsletter.

Figure 15: Burgess Park snapshot pedestrian and cyclist counts

	Pedestrian flows	Cyclist flows
Morning peak	45	26
Afternoon peak	38	23
Total	83	49

With a network of shared paths available to pedestrians and cyclists, Burgess Park is very different to the other sites in this report. Observed movements were less concentrated and less tidal in nature. Pedestrian and cyclist behaviour was less predictable and consequently could have contributed an element of uncertainty to interactions at the intersection.

Nevertheless, the majority of observed interactions were mild (category A plus category B; 90 per cent pedestrians; 82 per cent cyclists). In common with the other sites (except St Bride Street) more pedestrians (43 per cent) reported conflicts with cyclists than cyclists with pedestrians (22 per cent). Respective conflicts included near misses with cyclists or with children and dogs. Cycling speeds along straight stretches of footpath were also an issue for pedestrians.

An increased number of responses were received from users of Burgess Park as a result of an article about this study in the Friends of Burgess Park newsletter. This led to a revision of the initial figures reported elsewhere¹⁵. However, the distribution remained shown in the charts below remained broadly the same. However, there was a significant difference in the degree of comfort felt by cyclists. Previously 27 per cent of cyclists felt very comfortable, whereas the revised figures report that 3 per cent felt very comfortable – with a proportionate increase in the percentage who felt uncomfortable (from 20 per cent to 41 per cent). This change is a reminder that small sample sizes can only provide a snapshot, and not lead to broad generalisations.

The majority of cyclists (72 per cent) agreed or strongly agreed that Burgess Park is suitable for shared use by pedestrians and cyclists; they overwhelmingly considered this the most pleasant portion of their journey (94 per cent). Almost half of the pedestrians considered the park suitable for shared use and the most pleasant part of their journey (47 per cent in both cases). Nevertheless, concerns were raised about the presence and speed of commuter cyclists, the need for wider footpaths and a lack of signage to warn pedestrians that cyclists are present.

¹⁵ In the MSc dissertation of Christopher Hambridge for the University of Westminster.



View of pedestrians and cyclists at the location in Burgess Park where observations were undertaken

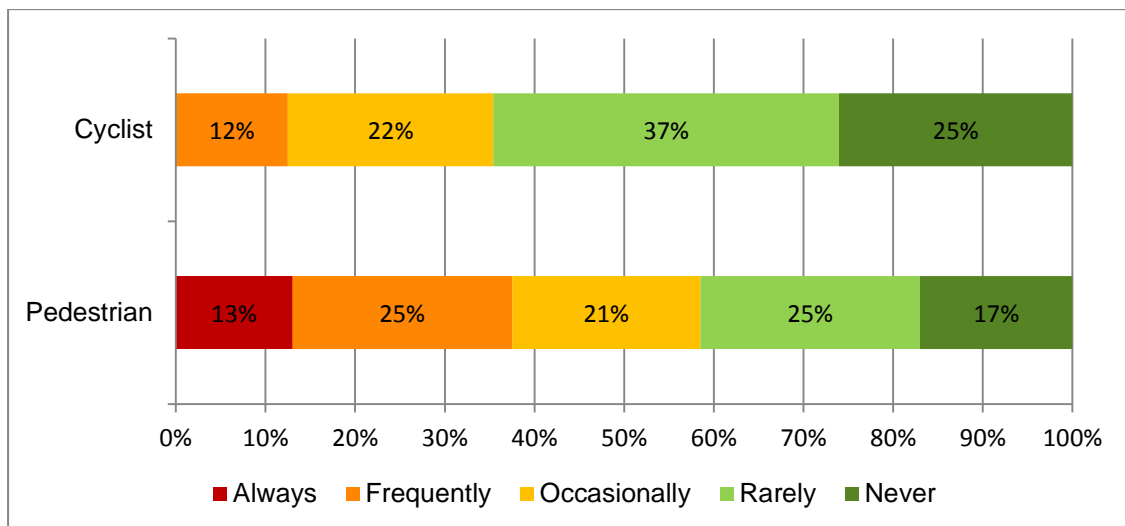


Figure 16: Frequency of frustration felt by surveyed users at sharing the paths in Burgess Park

Focus group comments:

“Because of cyclists coming up behind me, I am always having to look over my shoulders”

“Burgess Park is essentially a giant cyclist interchange, and the [proposed] spine route will make it even busier”

“Are park users pedestrians in the classic sense? People strolling in parks wander around slowly, they turn, walk to the sides... There are also people walking with children and dogs and they are disproportionately affected by cyclists”

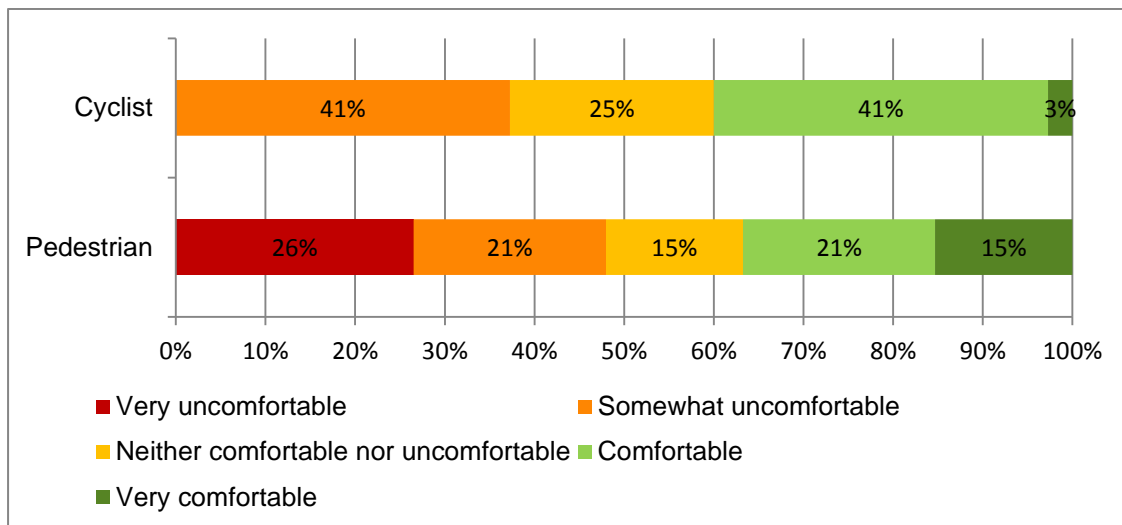


Figure 17: Level of comfort felt by surveyed users at sharing the paths in

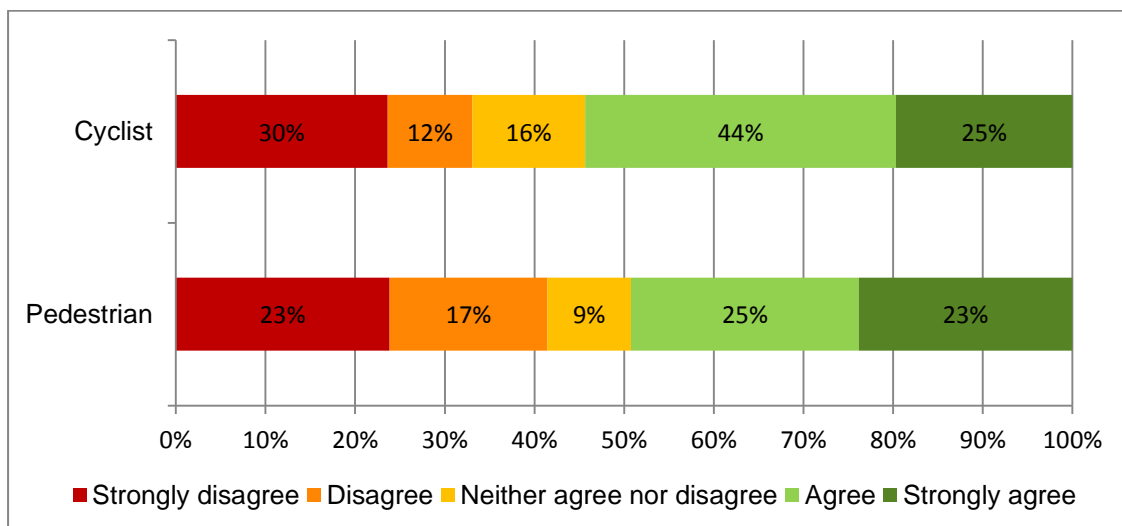


Figure 18: Whether surveyed users felt Burgess Park is suitable to be shared use

Site Recommendations

A number of mitigations are suggested to help reduce the likelihood of conflict occurring and to improve the journey experience of all users:

- Focus on designing an on-carriage facility for the Southwark Spine cycle route e.g. along Wells Way.
- Introduce a small amount of signage to notify park users to the presence of cyclists and encourage considerate cycle speeds.
- Consider other design features to encourage slower cycling speeds in the park.
- Consider widening main routes used by pedestrians and cyclists based on route capacity and comfort levels.
- Designate some paths away from the main routes within the park as 'pedestrian only'.
- In the longer term it is suggested to focus on providing improved facilities for cyclists on Old Kent Road, Walworth Road and surrounding roads to provide for commuting cyclists.

DISCUSSION

More than a thousand people were invited to take part in an online questionnaire about their experience walking or cycling at four shared use locations in the City of London and Southwark. Approximately 20 per cent responded. Despite the relatively small number of people, the survey responses (supported by visual observations) provide a useful insight into users' experiences, their unseen thoughts and feelings. The intention of this report is to better understand how people walking and cycling interact and the impact this has on the quality of their experience.

The case studies provided some understanding of the issues and possible mitigation measures at each particular site. This discussion asks what we can learn from looking across all four locations.

Shared use is a compromise.

Direct observations across four study sites suggest interactions between people walking and cycling are common in shared use schemes. Although generally mild, these interactions have a negative impact on user experience. It would appear that shared use is a cause of frustration for many people walking and cycling in these locations. It is impossible to be certain from this study how sharing the space actually deters people walking and cycling in such locations. However, findings from the focus groups suggest some disabled people will avoid shared use schemes altogether.


Shared use is unpopular with disabled people.

No one who took part in the online survey classified themselves as disabled. Survey cards were handed out across the four sites and it could be that this was indicative of disabled people avoiding these locations although clearly other factors may have played a part (the survey being online for example). Because of this it was important to invite wider views in the form of focus groups discussing the views of older and disabled people.

In Queen Street, where the volume of people walking and cycling was at its greatest and comfort levels at their lowest, the impact on disabled people is clear with one blind pedestrian saying they avoid Queen Street 'like the plague'.

Context is important.

Despite all being shared use, the characteristics of each study site is quite different. St Bride Street and Queen Street are both in the City of London and



are busy commuter routes for pedestrians and cyclists. St Mary's Churchyard is a small recreational space in a residential area where cyclists are temporarily sharing the footpath (often on their commute). In contrast Burgess Park is largely a place of recreation for pedestrians and a commuter route for cyclists. These differences in context clearly have an impact on how people walk and cycle there and what they expect from that space.

In a park for example, people are likely to walk more slowly, they may change direction or 'mill about', increasing the likelihood of them getting in the way of someone cycling. During the site visits few children were observed, but it can be imagined that children and dogs running or playing could also be a cause for concern for people cycling. Responses from focus group participants suggest that the park's recreation function is undermined by the presence of cyclists.

The ratio of users, speed of cyclists and volume of users has an impact on the experience of people walking.


On St Bride Street, pedestrians outnumbered cyclists four to one. As a result, they largely determined the pace of movement and, together with the trees and benches which furnish the street, acted to slow cyclists down. At this site the number of conflicts was low and survey responses suggest that cyclist's levels of comfort were highest at this location. Similar proportions of pedestrians and cyclists thought the shared space on St Bride Street were more pleasant (about a quarter) or at least equal (58 per cent and 65 per cent respectively) to the rest of their route.

Queen Street had the same ratio of pedestrians to cyclists. However, here the observed volume of pedestrians and cyclists was much greater; there were almost four times the numbers of pedestrians and cyclists as there were on St Bride Street in approximately the same amount of space. This makes a significant difference in the user experience for both modes. It is perhaps unsurprising that Queen Street is the location where pedestrians and cyclists felt the most frustration.

Commuter cyclists' speed was a particular issue on long stretches of footpath through Burgess Park. Proportionately twice as many cyclists (94 per cent) thought the park was suitable for shared space than pedestrians (47 per cent). However, the fact that many pedestrians still thought the park could accommodate both users may be due to good visibility and the width of the paths.

Most interactions are mild and therefore difficult to measure

In a study of this type it is impossible to see all the altercations happening between users. The subtlety of an eye roll or a muttered curse may easily pass unnoticed. It may be that a diary approach such as that used in the Near



Miss Project¹⁶ – which recruits individuals and asks them to record details of their journeys, details of incidents, other road user involvement, and how scary or annoying the incident was (0-3 scales) – may provide greater insights for future research.

¹⁶ See here <http://www.nearmiss.bike/wp-content/uploads/2014/12/Nearmissreport-final-web-2.pdf>


SUMMARY

Based on the experiences and observations reported in this study, pedestrian-cyclist interactions commonly occur in shared spaces. The majority are very mild – consisting of natural adjustments and considerate behaviour as cyclists and pedestrians accommodate to each other's relative speed and direction of travel. However, the survey results suggest that quality of the user experience is impacted more deeply. People feel more than they show.

This report has shown that:

- Mixing people walking and cycling together increases the likelihood of interaction. These interactions were frequent across the four sites studied and, although generally mild, appear to have a negative impact on the experience for people walking and cycling there.
- The space and volume of pedestrians and cyclists impacts on comfort levels and user satisfaction.
- The ratio of cyclists to pedestrians is also important in determining how comfortable a place feels for those using it.
- There is likely to be a disproportionate impact on disabled people, who as a result may prefer to avoid an area completely.
- Cycle speeds impact pedestrian comfort levels. Where the physical environment allows or encourages faster cycling speeds, the pedestrian experience is likely to be diminished. Therefore shared use pathways need to be designed in a way that encourages slower cycling speeds.
- Where sharing is unavoidable, good design and appropriate signage may help improve the experience for people walking or cycling there.
- However, where route capacity is stretched, alternative solutions should be sought (for example providing parallel routes or on-carriageway segregated cycle tracks).

The case studies in this report suggest that shared spaces work better for pedestrians where pedestrians outnumber cyclists, where there is sufficient space and visibility – and where there is more emphasis on a 'place' function rather than movement. St Bride Street with its benches and street trees seems to work well in this regard, whereas St Mary's Churchyard revealed how vulnerable pedestrians can feel when they are outnumbered by cyclists. Burgess Park shows the benefits of space and visibility, but highlights the need to segregate cyclists from pedestrians where commuting speed is a priority. Queen Street proved that when volumes of users become too high, the space becomes uncomfortable for both people walking and cycling. Comfort and the quality of experience are essential to encouraging and supporting growth in walking and cycling. Where feasible, it is usually better



and more popular, to reallocate or make safe carriageway space for cycling rather than mixing people walking and cycling together.

APPENDIX 1:

St Bride Street

		Pedestrians	%	Cyclists	%
Gender	Male	14	54	11	55
	Female	12	46	9	45
	Other	0	0	0	0
	Prefer not to answer	0	0	0	0
Age Category	0-17	1	4	0	0
	18-30	7	27	7	35
	31-45	10	38	9	45
	46-59	6	23	3	15
	60+	2	8	1	5
	Prefer not to answer	0	0	0	0
Journey Purpose	Commute to place of work	14	54	15	75
	Leisure	4	15	2	10
	Business	7	27	3	15
	Other	1	4	0	0
Disability	Yes	0	0	0	0
	No	25	96	20	100
	Prefer not to answer	1	4	0	0

Cyclist interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	10	1	0	1	0	0	0	0	12
PM (16:30-18:30)	9	2	0	0	0	0	0	0	11
									23

Pedestrian interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	4	1	0	0	1	0	0	0	6
PM (16:30-18:30)	5	2	0	0	0	0	0	0	7
									13

Totals AM/PM peaks

Interaction Type	A	B	C	D	E	F	G	H	Total
Cyclist interactions	19	3	0	1	0	0	0	0	23
Pedestrian interactions	9	3	0	0	1	0	0	0	13
									36

		Pedestrians	%	Cyclists	%
How frequently do you travel through this location	First time	1	4	0	0
	Less than once a month	5	19	1	5
	More than once a month but less than every week	4	15	2	10
	At least once per week	9	35	8	40
	Most days/weekdays	7	27	9	45
How comfortable do you feel sharing this path with pedestrians/cyclists?	Very uncomfortable	1	4	1	5
	Somewhat uncomfortable	8	31	3	15
	Neither comfortable nor uncomfortable	6	23	3	15
	Comfortable	9	35	12	60
	Very comfortable	2	8	1	5
Have you experienced a conflict with a pedestrian/cyclist at this location?	Yes	3	11	5	25
	No	23	88	15	75
Do you consider this portion of your journey to be more or less pleasant than the rest in terms of the pedestrian/cyclist	More pleasant	7	27	5	25
	Less pleasant	1	4	2	10
	Equal to the rest	15	58	13	65

environment?	Unsure	3	11	0	0
Do you ever feel frustrated sharing this path with pedestrians/cyclists?	Never	3	11	1	5
	Rarely	9	35	11	55
	Occasionally	11	42	6	30
	Frequently	3	11	2	10
	Always	0	0	0	0
To what extent do you agree that this location is suitable to be a shared use pedestrian/cyclist path?	Strongly disagree	1	4	0	0
	Disagree	3	11	3	15
	Neither agree nor disagree	10	38	2	10
	Agree	12	46	15	75
	Strongly agree	0	0	0	0

APPENDIX 2:

Queen Street

		Pedestrians	%	Cyclists	%
Gender	Male	16	57	18	60
	Female	12	43	12	40
	Other	0	0	0	0
	Prefer not to answer	0	0	0	0
Age Category	0-17	0	0	0	0
	18-30	3	11	6	20
	31-45	18	64	18	60
	46-59	6	21	6	20
	60+	1	4	0	0
	Prefer not to answer	0	0	0	0
Journey Purpose	Commute to place of work	25	89	28	93
	Leisure	3	11	0	0
	Business	0	0	2	7
	Other	0	0	0	0
Disability	Yes	0	0	0	0
	No	28	100	30	100
	Prefer not to answer	0	0	0	0

Cyclist interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	98	62	5	7	5	0	0	0	177
PM (16:30-18:30)	73	53	3	6	6	1	2	0	144
									321

Pedestrian interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	59	40	2	3	4	1	0	0	109
PM (16:30-18:30)	56	32	0	5	4	0	2	0	99
									208

Totals AM/PM peaks

Interaction Type	A	B	C	D	E	F	G	H	Total
Cyclist interactions	171	115	8	13	11	1	2	0	321
Pedestrian interactions	115	72	2	8	8	1	2	0	208
									529

		Pedestrians	%	Cyclists	%
How frequently do you travel through this location	First time	0	0	0	0
	Less than once a month	2	7	2	7
	More than once a month but less than every week	1	4	1	3
	At least once per week	2	7	3	10
	Most days/weekdays	23	82	24	80
How comfortable do you feel sharing this path with pedestrians/cyclists?	Very uncomfortable	13	46	6	20
	Somewhat uncomfortable	12	43	15	50
	Neither comfortable nor uncomfortable	0	0	2	7
	Comfortable	3	11	6	20
	Very comfortable	0	0	1	3
Have you experienced a conflict with a pedestrian/cyclist at this location?	Yes	17	62	15	50
	No	10	36	15	50
Do you consider this portion of your journey to be more or less pleasant than the rest in terms of the pedestrian/cyclist environment?	More pleasant	0	0	5	17
	Less pleasant	22	78	19	63
	Equal to the rest	4	14	5	17
	Unsure	2	7	1	3

Do you ever feel frustrated sharing this path with pedestrians/cyclists?	Never	1	4	3	10
	Rarely	1	4	3	10
	Occasionally	8	28	11	37
	Frequently	14	50	11	37
	Always	4	14	2	7
To what extent do you agree that this location is suitable to be a shared use pedestrian/cyclist path?	Strongly disagree	10	36	3	10
	Disagree	9	32	8	27
	Neither agree nor disagree	6	21	4	13
	Agree	2	7	11	37
	Strongly agree	1	4	4	13

APPENDIX 3:

St Mary's Churchyard

		Pedestrians	%	Cyclists	%
Gender	Male	9	38	15	53.5
	Female	14	58	12	43
	Other	1	4	0	0
	Prefer not to answer	0	0	1	3.5
Age Category	0-17	1	4	0	0
	18-30	11	46	10	38
	31-45	10	42	13	46
	46-59	2	8	5	18
	60+	0	0	0	0
	Prefer not to answer	0	0	0	0
Journey Purpose	Commute to place of work	13	54	26	93
	Leisure	4	17	1	3.5
	Business	3	12	1	3.5
	Other	4	17	0	0
Disability	Yes	0	0	0	0
	No	24	100	28	100
	Prefer not to answer	0	0	0	0

Cyclist interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	14	6	1	3	1	0	0	0	25
PM (16:30-18:30)	13	5	2	2	1	0	1	0	24
									49

Pedestrian interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	4	5	0	1	1	0	0	0	11
PM (16:30-	3	7	0	0	0	0	1	0	11

18:30)									
									22

Totals AM/PM peaks

Interaction Type	A	B	C	D	E	F	G	H	Total
Cyclist interactions	27	11	3	5	2	0	1	0	49
Pedestrian interactions	7	12	0	1	1	0	1	0	22
									71

There are a number of no responses to the question about the experience of conflict

		Pedestrians	%	Cyclists	%
How frequently do you travel through this location	First time	1	4	0	0
	Less than once a month	2	8	0	0
	More than once a month but less than every week	4	17	1	3.5
	At least once per week	7	29	11	39
	Most days/weekdays	10	42	16	57
How comfortable do you feel sharing this path with pedestrians/cyclists?	Very uncomfortable	2	8	0	0
	Somewhat uncomfortable	18	75	8	28.5
	Neither comfortable nor uncomfortable	3	13	7	25
	Comfortable	1	4	12	43
	Very comfortable	0	0	1	3.5
Have you experienced a conflict with a pedestrian/cyclist at this location?	Yes	9	38	4	14
	No	6	25	23	82
Do you consider this portion of your journey to be more or less pleasant	More pleasant	2	8	16	57

than the rest in terms of the pedestrian/cyclist environment?	Less pleasant	10	42	6	21.5
	Equal to the rest	5	21	6	21.5
	Unsure	7	29	0	0
Do you ever feel frustrated sharing this path with pedestrians/cyclists?	Never	0	0	4	14
	Rarely	4	17	10	36
	Occasionally	7	29	12	43
	Frequently	10	42	2	7
	Always	3	13	0	0
To what extent do you agree that this location is suitable to be a shared use pedestrian/cyclist path?	Strongly disagree	2	8	1	3.5
	Disagree	13	54	6	21.5
	Neither agree nor disagree	5	21	5	18
	Agree	4	17	16	57
	Strongly agree	0	0	0	0

APPENDIX 4:

Burgess Park

		Pedestrians	%	Cyclists	%
Gender	Male	23	43	17	53
	Female	28	53	13	41
	Other	0	0	0	0
	Prefer not to answer	2	4	2	6
Age Category	0-17	2	4	1	3
	18-30	9	17	10	31
	31-45	25	47	11	34
	46-59	14	26	10	31
	60+	3	6	0	0
	Prefer not to answer	0	0	0	0
Journey Purpose	Commute to place of work	10	19	20	63
	Leisure	33	62	6	19
	Business	3	6	2	6
	Other	6	11	3	9
Disability	Yes	0	0	0	0
	No	52	98	31	97
	Prefer not to answer	1	2	1	3

Cyclist interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	25	11	4	2	0	0	0	0	42
PM (16:30-18:30)	27	10	5	3	1	1	0	0	47
									89

Pedestrian interaction type

Interaction Type	A	B	C	D	E	F	G	H	Total
AM (07:30-09:30)	8	7	0	1	0	0	0	0	16
PM (16:30-18:30)	9	6	0	1	0	1	0	0	17
									33

Totals AM/PM peaks

Interaction Type	A	B	C	D	E	F	G	H	Total
Cyclist interaction	52	21	9	5	1	1	0	0	89
Pedestrian interactions	17	13	0	2	0	1	0	0	33
									122

		Pedestrians	%	Cyclists	%
How frequently do you travel through this location	First time	2	4	2	6
	Less than once a month	2	4	2	6
	More than once a month but less than every week	17	32	6	19
	At least once per week	10	19	7	22
	Most days/weekdays	22	41	15	47
How comfortable do you feel sharing this path with pedestrians/cyclists?	Very uncomfortable	14	26	0	0
	Somewhat uncomfortable	11	21	13	41
	Neither comfortable nor uncomfortable	8	15	8	25
	Comfortable	11	21	13	41
	Very comfortable	8	15	1	3
Have you experienced a conflict with a pedestrian/cyclist at this location?	Yes	23	43	7	22
	No	30	57	25	78
Do you consider this portion of your journey to be more or less pleasant than the rest in terms of the pedestrian/cyclist environment?	More pleasant	25	47	30	94
	Less pleasant	16	30	1	3
	Equal to the rest	8	15	1	3
	Unsure	4	8	0	0

Do you ever feel frustrated sharing this path with pedestrians/cyclists?	Never	9	17	8	25
	Rarely	13	24.5	12	37
	Occasionally	11	21	7	22
	Frequently	13	24.5	4	12
	Always	7	13	0	0
To what extent do you agree that this location is suitable to be a shared use pedestrian/cyclist path?	Strongly disagree	12	23	0	0
	Disagree	9	17	4	12
	Neither agree nor disagree	5	9	5	16
	Agree	13	24.5	14	44
	Strongly agree	12	23	8	25