BRIEFING NOTE FOR PLANNERS, ENGINEERS AND DESIGNERS

cycle BOOM
DESIGN FOR LIFELONG HEALTH & WELLBEING

Planning for Age Friendly Cycling

Cycling for an Ageing Population

The population across Europe is ageing as people are living longer and the birth rate is falling. Policy makers are looking at systematic approaches to support and encourage people to stay active for longer in an effort to reduce end of life morbidity and the wider impact on national health and care services. Promoting and prolonging cycling among an ageing population is one way of achieving this. This briefing note reports on key findings from the cycle BOOM study and provides recommendations on how planners and designers could respond.

The cycle BOOM Project

cycle BOOM was a three-year project (2013-2016) to develop a better understanding of how the design of the built environment and technology shapes engagement with, and experience of cycling as people get older, and how this affects their independent mobility, health and wellbeing. The research involved nearly 240 people aged 50 and over living in Oxford, Reading, Bristol and Cardiff. Three main methods were used:

Cycling Biographies that involved conducting semi-structured interviews with a variety of participants to provide understanding of how engagement with cycling changes over the life-course and the reasons behind cycling cessation, continuity and re-engagement.

(Velo) Mobile Observations that involved accompanying and videoing older cyclists as they cycled and asking them questions about their ride in a follow-up Video Elicitation Interview. This produced insights into their practices and experiences of cycling. Galvanic Skin Response (GSR) sensors were also fitted to some participants to identify aspects of the built environment that add to or detract from moment-by-moment wellbeing while riding.

A Cycling and Wellbeing Trial that involved people who had either not cycled, or seriously reduced their cycling in the past five years, in an experiment to see how cycling affects their cognition and wellbeing. After a cycling assessment and advice programme with an accredited trainer participants pledged to cycle outdoors for at least 30 minutes three times a week over an 8-week period using a pedal cycle or an e-bike loaned to them through the project.

As well as pre- and post-trial cognitive tests and measures of wellbeing, they kept a diary of their experience of cycling during the 8-weeks. They were also asked to complete an online survey several months after the trial to identify the impact on their personal wellbeing and whether they had continued cycling.

Key Issues in Planning for Current and Prospective Older Riders

The physical environment in the UK for cycling assumes a 'standard' user easily capable of a range of manoeuvres such as mounting/dismounting, turning the head and maintaining a 'vehicular' speed. Whilst many participants in the study reported being in good health and largely able to do these things, many were increasingly experiencing health issues affecting joints, eyesight and hearing, balance and flexibility. Due to a reduction in physical capabilities many older cyclists were finding it harder to perform the accepted range of movements assumed by infrastructure and bicycle designers.

The accounts and observations of older cyclists (and particularly less confident cyclists) that took part in the cycle BOOM study revealed that cycling alongside motorised traffic is perceived to be a dangerous and unpleasant activity. The threat posed by drivers of cars was often discussed but there was particular concern about riding among buses and heavy goods vehicles in inner-urban areas. Both experienced and less experienced participants across all four sites were dissatisfied with the quality of cycle infrastructure provision on the public highway. They either avoided busy roads or had learned to cope with the dominance of the car and the paucity of cycle infrastructure by performing unconventional manoeuvres such as dismounting at junctions or riding (carefully) along pavements in order to negotiate what they regarded as risky places.

Specific Issues that Detracted from a Positive Cycling Experience

Sharing Space: As older cyclists tended to use opportunities to cycle away from motorised traffic, a prominent issue was experience of using shared-use paths with pedestrians and other cyclists. Participants were generally more relaxed and positive about sharing space with pedestrians, something they attributed to being traffic-free and green environments. However, many riders still related a level of uncertainty and anxiety in such places due to sharing the space with what they perceived as 'less predictable' forms of pedestrian activity, particularly young children and dog walkers.

> ***"The first thing is knowing where these pedestrians are going to wander, so that's a generic thing about knowing your place. On anything with shared use, even if it's got a line on it, you're not sure of your place, you don't know if they're suddenly going to take off this way or that way... so you have to take the line with a chunk [sic.] of salt."*** (Zachary, 60s, Reading)

Traversing Surfaces: A recurring theme was the poor and deteriorating state of surfacing and how this contributed to feeling distracted, uncomfortable and vulnerable. Not only was poor surfacing deemed to be dangerous, participants also discussed how it distracted them from dealing with the dangers posed by motorised traffic, and also diminished their enjoyment of their surroundings. Vertical deflections such as speed cushions and rumble strips targeted at reducing traffic speeds were also criticised for the unnecessary discomfort they caused.

> ***"Road resurfaced last year - terrible before, very, very bumpy – and now you just feel much more secure on your bike. You know you are not going to take a tumble unexpectedly or, one of the nightmares is, that you are going to go into a pothole and fall off your bike. Otherwise your attention is distracted by watching potholes and the smoother bits which you can go on, and trying to be aware of the traffic, so you can't deal with two quite serious potential hazards. If the path is not good it just adds to your vulnerability and your potential dangers."*** (Desiree, 70s, Oxford)

Navigation and Expected Manoeuvres: Participants often pointed out situations which left them feeling uncertain about what they were expected to do, leaving them to fend for themselves and employ their own logic of navigating spaces. This often produced feelings of anxiety, frustration and vulnerability.

"It's not like a drive, is it, when you know you've always got a lane? On the bike you've got loads of different things, haven't you? Sometimes you have got to cross a pavement, sometimes you've got a cycle lane, and sometimes you're among the traffic, sometimes you're in a dangerous spot in the middle of the road. It's nothing like being in the car, is it?" (Sibylle, 50s, Cardiff)

Storing and Parking (e-)bikes: Many participants highlighted the problems of storing bicycles at home and gaining easy access to the street outside their homes. This was particularly problematic for those living in denser, inner city areas where houses (particularly terraced) and apartments had confined spaces for storage that affected the ease of using bikes. In public places participants often struggled to find suitable cycle parking. Insufficient spacing of cycle racks created problems particularly for heavier e-bikes and tricycles.

[cycle BOOM Researcher's notebook] "Participant takes bike out of bike shed in back yard and carries it through kitchen to hallway, puts on helmet then carries bike out of house, down steps, leans against wall and returns to close front door."

[Participant remarks] "So getting the bike out of the shed and through the house is not a big deal BUT sometimes I choose to walk rather than do that... if I'm going to town or something it means it takes 5 minutes on the bike and 15 minutes walking but, it's silly really but I just don't want that hassle." (Edith, 60s, Bristol)

The 'hassle' of moving cycles between the home and the street (Photo: cycle BOOM)

Summary

Outdoor space needs to offer a safe, comfortable and enjoyable experience for cycling. It should stimulate positive impact on health and wellbeing through social interaction and engagement with place. Space can be made more cycle-friendly through well-designed and maintained cycling infrastructure and reducing vehicular speed. This should provide ease of movement through urban and rural areas along connected cycle routes that allow momentum to be maintained.

There is a need to recognise the full potential of cycling as a mobility aid for older people. Transport systems need to cater for all capabilities. However, cycling is more than about efficiency in getting from A to B and so opportunities should also be provided for people to dwell and interact with the outdoors. Seamless integration with other methods of travel including cars and public transport allows boundaries for cycling to be extended. The growing e-bike market also provides an opportunity to encourage and prolong cycling among the older population. Secure and convenient residential cycle storage and street access are important to ensure cycles are easy to retain and use. There is also the need to 'think beyond the building' to the immediate neighbourhood to gain access to services by bike.

Many of the issues highlighted are also relevant to children and young people. Interventions targeted at supporting older cycling would also support younger cycling and help to address issues of low levels of fitness and high levels of obesity.

Separated cycle tracks in Seville, Spain (Photo: cycle BOOM)

Scan to see cycle BOOM video highlighting how emerging cycling cities of Seville (ES) and Munich (DE) have managed to promote more diverse and older cycling or visit:
www.cycleboom.org/key-findings-videos

Key Recommendations

1. Provide dedicated cycling infrastructure separated from motor traffic and pedestrians on or close to all main roads and arterial routes into towns and cities and rural hinterlands and opportunities for side-by-side 'social cycling'.

2. Improve junctions and crossings by implementing measures now permitted in the Statutory Instrument, Traffic Signs Regulations and General Directions (2016)[1] including low level cycle signals, early start for cyclists and parallel pedestrian and cyclist crossings.

3. Implement low speed zones in urban and rural areas to create conditions for safer, less harried, more civilised cycling for all.

4. Improve the quality of design so that it is clear where cyclists are 'meant to be'. This means ensuring routes are clearly signposted and consistent in surface texture and colour across the UK and that they provide a comfortable and positive sensorial experience.

5. Design outdoor space and cycle parking to support a range of cycle types including trikes and electric-bikes.

6. Develop a strategy to reduce motorised traffic levels, particularly heavy goods vehicles, in the centre of towns and cities to allow cycling (and walking) to flourish.

7. Ensure that public bike schemes provide cycles that are easy to use by older riders (e.g. unisex 'step-through' frame, electric bikes) and that they can be accessed with concessionary travel cards.

8. Provide designated secure cycle parking at public transport hubs with charging points for e-bikes, step-free access and adequate width and space for non-standard cycles.

9. Work with public transport operators and motor vehicle manufacturers to find solutions for in/on vehicle carriage of cycles and charging of e-bikes.

10. Site new housing development for older people in flatter areas to facilitate cycling and ensuring that, where there are gradients, these are gentle and provide sufficient width for lateral movement.

11. Implement recently revised Building Regulations[2] relating to accessible, adaptable dwellings based on Lifetime Homes[3] which could support cycle users as well as those using other mobility aids such as wheelchairs and mobility scooters, for example, by enabling convenient movement between the street and the dwelling.

12. Develop private and communal cycle storage options close to property entrances (with the ability to charge e-bikes) in order to provide safe and convenient access to cycles for everyday use - see HAPPI design criteria[4].

13. Provide safe and convenient access to local services by implementing slow zones/cycle streets in residential areas and linking cycle tracks to key local amenities and green space, blue corridors into the countryside.

14. Use participatory approaches to design public space for cycling that includes older and less experienced cyclists and people with different cycling mobility needs.

[1] Department for Transport (2016). *Traffic Signs Regulations and General Directions 2016 (Statutory Instrument No.362)*. Available at: https://www.gov.uk/government/publications/traffic-signs-regulations-and-general-directions-2016-an-overview [accessed September 2016].

[2] Department for Communities and Local Government (2015). *The Building Regulations 2010 Access to and use of buildings Vol 1 Dwellings M4(2) Category 2: Accessible and adaptable dwellings, NBS.* Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/540330/BR_PDF_AD_M1_2015_with_2016_amendments_V3.pdf [accessed: 16 September 2016].

[3] Lifetime Homes (2010). *Lifetime Homes Revised Criteria, Habinteg*. Available at http://www.lifetimehomes.org.uk/data/files/For_Professionals/accessible_revisedlthstandard_final.pdf [accessed: 16 September 2016].

[4] Best, R. et al. (2009). *HAPPI Housing our Ageing Population: Panel for Innovation report, Homes and Communities Agency*. Available at http://www.housinglin.org.uk/_library/Resources/Housing/Support_materials/Other_reports_and_guidance/Happi_Final_Report.pdf [accessed: 16 September 2016].

Further Briefing Notes, a Summary Report of Key Findings and Recommendations and a series of short videos from the cycle BOOM study is available at **www.cycleboom.org**

EPSRC Pioneering research and skills
Lifelong Health & Wellbeing Research for Healthy Ageing
Funded by the Lifelong Health and Wellbeing cross-Council programme. Grant No. EP/K037242/1

OXFORD BROOKES UNIVERSITY
CARDIFF UNIVERSITY PRIFYSGOL CAERDYDD
University of Reading
UWE BRISTOL University of the West of England