Bristol and Cardiff PHIRST

Proposal for evaluating Oxfordshire Active Travel intervention

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Background

Oxfordshire County Council (OCC), funded through the Department for Transport Emergency Active Travel Fund (EATF) and Travel Demand Management (TDM) fund, have recently implemented a programme of interventions to improve cycling and walking in three geographical areas; the city of Oxford and the market towns of Bicester and Witney. These interventions include infrastructure improvements (such as changes to traffic flows, reduced traffic speeds and new infrastructure for walking and cycling), schools- and familyfocussed projects ('School Streets', 'Park and Stride/Wayfinding', and 'StreetTag'), and a range of community activation projects designed in partnership with local community groups to encourage modal shift to active travel amongst hard-to-engage groups. The overall aim of the programme is to reduce congestion, address environmental issues, and improve population health and wellbeing.

OCC have an existing evaluation framework in place that includes outcome measures such as percentage of the population achieving modal shift to active travel, road usage and vehicle monitoring, air quality measures, and user-satisfaction surveys. Children and families are the key focus of many of the evaluation measures. For example, Park and Stride, which uses Wayfinding signs and highway markings to encourage parents and carers who normally drive their children to and from school to choose an active mode of transport; or to park a short distance away and walk the last or first stage of their journey, will be evaluated using surveys with parents, staff and pupils to assess mode of travel to school and perceptions and use of the park and stride routes. In addition, vehicle and air quality monitoring will be used to assess impacts of the initiative on traffic volumes and air pollution. An interim evaluation report (September 2021) indicates that the School Streets intervention, which limits the motorised traffic outside schools at drop-off and pick-up times, showed a reduction in driving to school of 6.9 percentage points over the six-week closure period, 3.2 percentage point increase in cycling, 1.6 percentage point increase in scooting and skating to school as well as 1.5 percentage point increase in walking (from user survey responses). The Street Tag initiative encourages users to walk, run or cycle to virtual 'tags' are placed in popular walking routes and areas with green space to encourage participatory and physical activities. Participation is encouraged amongst schools and communities by organising competitions to collect the most tags. Data on physical activity in three categories: walking; cycling; and sport or other activity or dance was captured by a user survey through the Street Tag app. Overall, the users of the Street Tag app who completed the follow up surveys reported an increase in frequency and duration of both cycling and walking.

As the existing evaluation framework has a focus on schools, children and families, OCC would like the PHIRSTfunded study to focus on other intervention activities and population groups. These activities of interest will include the community activation projects beyond those targeting schools and families, and recent improvements to walking and cycling infrastructure.

Modal shift towards active travel is well-researched in cities (e.g. Sahlqvist et al 2015; Sustrans 2019) but less research has been undertaken into how modal shift can be encouraged in market towns where infrastructure and public transport may be less well developed and many working adults 'commute out' daily. The geographical focus of the current study will therefore be Bicester and Witney (and not the city of Oxford). As OCC are also keen to engage older adults in active travel, there are two target populations of interest; 1) commuters; and 2) older adults.

Intervention logic model

This protocol has been developed by the Task and Finish group set up in September 2021 which includes representatives from the Bristol and Cardiff PHIRST team, and OCC Public Health, Communities, and Transport teams as well as the manager of Active Oxfordshire (responsible for the community activation projects). The group have engaged in regular discussion to refine the aims of the study and the intervention activities of interest. A core output of that collaborative work has been the logic model (included in Appendix 1) which sets out the inputs and activities of interest; the intended immediate and long-term outcomes; and the mechanisms through which these outcomes may be reached (using the Behaviour Change Wheel as a

theoretical framework (Michie et al 2011)). This model has informed the aims, objectives, and methods of the current study.

The inputs include cycling and walking infrastructure improvements, and community activation interventions (services intended to encourage cycling and walking) in Bicester and Witney. Infrastructure improvements in Bicester are intended to capture flows from the rapidly expanding south and west of Bicester and provide connectivity into the town centre via a central corridor. The scheme is complimented by off-road, pedestrian and cycle facilities and reduced traffic speeds, intended to create a safe and attractive environment for those who might have previously driven or taken the bus into town. In Witney, infrastructure improvements have been made to existing walking and cycling measures in western Witney to provide a continuous East-West corridor across the whole town. This scheme is comprised of a series of complimentary measures to slow vehicle traffic and prioritise cyclists and pedestrians.

The community activation projects in both towns are coordinated by Active Oxfordshire a third sector organisation, and are intended to engage the population of the towns with the new improved infrastructure and drive modal shift towards active travel. The projects include schools- and family-focussed initiatives but the activities of interest to the current study are those accessible to our target populations of commuters and older adults and include cycle training, guided rides and walks, maintenance sessions, wider promotion of walking and cycling, and the development of community groups in both towns to develop community capacity to understand the existing barriers to active travel.

The immediate outcomes outlined in the logic model include to increase the proportion, and frequency, of walking and cycling journeys, reduce private vehicle use and traffic congestion, improve air quality, and increase community capacity to address the barriers to active travel. In the longer term the interventions are intended to increase modal shift to active travel, improve population health and wellbeing (with a reduction in health inequalities), and support sustained community capacity to address barriers to walking and cycling.

PPIE input on proposal and changes made

A simplified version of this logic model, detailing the inputs and intended outcomes, was shared with community stakeholders during a consultation event in November 2021. The online event was attended by a range of people living and working in Bicester and Witney with knowledge of the local area and the Active Travel Initiative. This included staff from the district councils responsible for social prescribing, physical activity, and Health Walks; district and town councillors, the cycle champion and those working with community bike projects; and staff from OCC public health, active travel and transport teams. The event was organised in partnership with Active Oxfordshire. The logic model, research aims and objectives and proposed methodology for the study were discussed with participants and revised in response to their feedback.

Two key amendments were made as a result of that event. Firstly, the draft research aims and objectives were reframed to emphasise the identification of ways to support active travel (rather than simply identify barriers). Secondly, while the aim of this study is to support modal shift to active travel amongst commuters and older adults; feedback from our community stakeholder event indicated that the study should focus more widely than just those who *never* use active travel methods and also examine how to help those who sometimes use active travel means to increase their active travel. Specifically, participants discussed that there are residents who always walk or cycle and those who never do, and a spectrum in between. OCC and wider stakeholders seek to understand the perception of people at different points on that spectrum e.g. to encourage people to *start* cycling or walking, or to cycle or walk *more often*.

Existing literature on active travel; commuters and older adults

One of the key questions for the current study will be to what extent the intervention inputs and activities of interest address the target populations' *opportunity, capability and motivation* to engage in modal shift to active travel and hence contribute to reaching the outcomes outlined in the logic model.

Active travel is defined as incidental travel for transportation to reach a destination, and not for recreation or leisure. Active travel for transport is associated with an increase in total physical activity (e.g. and not a

decrease in recreational physical activity) (Sahlqvist et al 2013), and contributes to a quieter environment (less motorised traffic), reduced traffic congestion and cleaner air (Cerin et al 2017). Building new walking and cycling infrastructure can improve population health and reduce inequalities (Le Gouais et al 2021).

<u>Gender matters for active travel</u>. In the UK, women on average make 28% more walking trips than men, with women in their 40s making the highest number of trips (only in the 60+ years age group do men make more walking trips than women). Conversely, in 2020 UK men made twice as many cycle trips, and for twice the distance, compared to women. While there is a peak for men aged 17-20 years, 40-49 years was a popular age bracket for cycling for both men and women (Department for Transport 2021). A qualitative data synthesis found that women tend to combine commuting with other activities, such as the school drop-off or food shopping, and these multifunctional trips can constrain their travel mode because of both varied destinations, travelling with children or carrying a load. In contrast, men tend to commute in a much more linear way (home-work-home) (Haynes et al 2019). Interventions designed to encourage active travel amongst commuters have proved challenging in the UK, for example a randomised controlled trial of workplace 'walk to work' promoters found they were insufficient to change travel behaviour (Audrey et al 2019).

Age is important for active travel. Being physically active in older age is associated with positive health outcomes (WHO 2010), and older people may experience greater overall health benefits from modal shift to active travel than younger adults (Mueller et al 2015). Older adults are more likely to be influenced by the physical environment. Research has shown a positive association between objectively assessed neighbourhood walkability (residential density, street connectivity, access to destinations and land use mix) and older adults walking for transport (Cerin, 2017; Lee and Dean 2018). Pedestrian infrastructure is important too, for example well-maintained footpaths, availability of benches and easy access to residential building entrance, and the presence of street lights. Older cyclists are concerned about safety, and appreciate well delineated cycle paths, separated from traffic, wide and obstacle free with safe road crossings (Cauwenberg et al 2018; 2019). In the UK, an observational study found that older cyclists were more prevalent on cycling infrastructure that was separated from motorised traffic (Aldred and Dales 2017). They may also be more likely than other age groups to deviate from the shortest route to avoid low-utility sections of the route; hills and obstacles matter to older adults (Grudgings et al 2021). The most important neighbourhood feature is the availability, accessibility and appeal of destinations – shops, food outlets, recreation and leisure activities etc need to be an achievable distance for older adults to walk or cycle (Cerin 2017).

These factors (and others identified in the literature) are known to influence active travel amongst commuters and older adults, and will inform the research objectives and data collection materials developed for the current study.

Study aims and objectives

Study Aim: To understand how new cycling and walking infrastructure and community activation projects might support modal shift to active travel amongst commuters and older adults making within-town journeys in Witney and Bicester.

There are two target population groups of interest:

1. Older adults (65-75years) who live independently and never, or only occasionally, use active travel methods for transportation

2. Working adults who commute to work at least three days per week who never, or occasionally, use active travel methods to commute to work (irrespective of use of cycling and walking for recreation).

Research objectives

- 1. How do the target groups currently perceive their use of active travel?
- 2. Do the intervention activities encourage active travel amongst the target groups?

- 3. To what extent do the target groups prioritise the goals (motivation) described in the logic model? What other motivating factors might encourage active travel?
- 4. What key steps or additional activities might be taken to increase modal shift and address the perceived barriers (opportunity, capability) to active travel methods? (Are there gaps in the range of intervention functions?)

Methods

This will be a qualitative study using focus groups, 'go-along' interviews, in depth interviews and stakeholder consultation events as the main methods of data collection. Qualitative methods are ideal for this study as they are well-suited to explore in-depth, contextually-bound details for which quantitative approaches (e.g. population surveys) are insufficient, and can support the development and refinement of theories (from inductive and interpretive standpoints) that are grounded in the experience, knowledge and perceptions of those living in the contexts of interest (Carpiano 2009).

Figure 1 below details the timeline for each data collection method and the research objectives they are intended to address.



Figure 1: Overview of the study methods and timeline

PPI and Co-production work

We will work with Oxfordshire County Council and Active Oxfordshire to identify three members of the public from each of our target population groups (6 in total) to help develop our research tools. These individuals may be recent users of some of the community activation groups and/or members of the community stakeholder groups set up to inform the work and build community capacity for active travel in Witney and Bicester.

We will work with this group to help develop our recruitment strategy, data collection tools (topic guides; questionnaires, information sheets). We anticipate developing initial drafts of these materials to share with public stakeholders in advance of an online workshop (separate workshops for each target group) during which participants will have the opportunity to discuss, trial and feedback on the materials. This will help develop research tools that are relevant, inclusive, accessible and therefore more likely to elicit data that informs the research questions. Participants will be paid £25 per hour for participation in the workshop.

We will also continue to involve members of the Task and Finish Group (which will become the Study Management Group) in the co-production of these materials, and in the planning for stakeholder workshops

later in the study, and the development of the DIICE plan for the study outputs (discussed in a later section of this protocol). Two members of the PPIE group will be asked to sit on the study management group.

Study Management group

Role: co-production of research materials; outputs; operationalisation of the research plan

Membership: UoB research team; Oxfordshire County Council (Public Health, Transport, Communities); Active Oxfordshire: 2 Public stakeholders (drawn from PPIE group)

Meeting frequency: Monthly

PPIE group

Role: co-production of research materials; representation on study management group

Membership: Older adults(3); commuters (3) from Witney and Bicester

Meeting frequency: as required; will be very regular at the beginning of the study to inform design of materials;

Figure 2: Organisational chart for study management and PPIE

Focus groups

The first data collection opportunity will be two focus groups with each of the target groups (2 older adults, 2 commuters), in both Bicester and Witney. Focus groups play an important role in health research, generating data through group interaction to support shared and contextualised knowledge, perceptions and experiences. They support the voicing of a range of views, which may coalesce around a common set of opinions or conversely illustrate the polarity and diversity of opinion – both are possible in a well-moderated setting (Davidson et al 2013). Eight focus groups will be held in total.

To explore some of the gender-related differences in active travel use identified in the literature, our sample criteria for both older adults and commuters will include gender diversity. A second criteria will be degree of active travel and will include a mix of those who never use active travel methods, and those who sometimes use them. In discussion with the Task and Finish group, two specific localities of interest have been identified in Witney (Smiths Estate and Madley Park) where the infrastructure improvements have been made and community activation projects have been targeted. In Bicester, Bicester West has been the focus of infrastructure improvements and interventions, whilst Kingsmere estate is where commuting adults are likely to be found. The target sample for each of the eight focus groups is outlined in Table 1 below.

	Older adults (65-75 years, living independently; sampling criteria include gender diversity and never/sometimes active travel)	Commuters (within-town commuting journey at least 3 days/week; sampling criteria include gender diversity and never/sometimes active travel)
Bicester	2 groups from Bicester West	2 groups from Kingsmere Estate
Witney	2 groups from Smiths Estate/Madley park	2 groups from Smiths estate/Madley park

Table 1: Focus group sample

Recruitment to these groups is crucial to the success of this, and ongoing, elements of the study and the study team anticipate that it will require considerable effort to locate and recruit the sample. We have allowed an extended period of time for this (Feb to April) and our recruitment strategy will be one of the key points for

discussion during the co-production and PPI activity. Initial discussions with the Task and Finish Group have identified the following approaches, some or all of which will be applied in each of the localities:

- Placing recruitment notices on local social media boards; community newspapers/newsletters etc
- Recruitment notices in local public amenities such as libraries, community halls, leisure and recreation venues etc
- (For commuters) approaching local employers via business networks in both towns
- (For older adults) targeting organisations such as the University of the Third Age (U3A); religious groups; leisure, recreation and social groups/clubs aimed at older adults
- For all groups, snowball sampling following the successful recruitment of initial participants

Local notices will describe the study and the focus groups and invite potential participants to contact the lead researcher by email, letter or telephone for further information and/or to express interest in attending. A full participant information sheet (PIS) with details of the study aims and objectives, funding, study team, the focus group discussion topics, use of data and confidentiality, will be sent to potential participants.

Each focus group will be comprised of 6-10 participants and take place in a local public setting (community hall; hotel or similar). While online focus groups have been considered, face to face focus groups allow for better facilitation and interaction between participants and are likely to be more accessible to older adults in particular. (Please note that if the COVID regulations change and face to face meetings are not possible we will move the sessions online). The focus groups will last up to one hour, and a topic guide will be developed (with our PPI groups) that addresses research objectives 1-3: How do the participants currently perceive the use of active travel? Do the intervention activities encourage active travel? And to what extent do the participants prioritise the goals described in the logic model? What other motivating factors might encourage active travel? The groups will be facilitated by the lead researcher and digitally recorded (following verbal and written consent). Participants will be offered a £30 gift voucher as a thank you for their time and input.

Go-along journeys and follow-up interviews

The focus groups will facilitate the initial generation of shared and socially contextualised knowledge and perceptions of active travel. However, in order to explore in more depth, the perceptions of active travel, the utility of the intervention measures in encouraging it, and what other interventions may be necessary to increase modal shift and address the perceived barriers to active travel (research objectives 1, 2 and 4) we will undertake qualitative data collection with five individuals from each target population using the 'go along' technique (N=10) (Carpiano 2009).

These participants will be drawn from our focus group sample and they will be invited to volunteer to undertake one active travel journey, by bike or foot, accompanied by the researcher. Participants will determine whether they prefer to walk, or cycle, and the end destination (for commuters, this will likely be their place of work; for older adults it will be a regular trip usually undertaken by car e.g. shopping or leisure/recreation destination etc). The purpose of undertaking an accompanied active travel journey is to explore, with the researcher, their perceptions, understandings and experiences of the journey as it happens, or soon after.

'Go-along' interviews are an established method for exploring the implications of place for health and wellbeing (Carpiano 2009) and active travel methods in particular, including amongst older adults (e.g. Cauwenberg 2018). The term refers to a qualitative interview that is conducted during, or shortly after, an accompanied journey in the participants' neighbourhood by car (ride along), bicycle (bike-along) or foot (walk-along). The researcher asks about participants' experiences, interpretations, and practices whilst in the local environment and undertaking the same journey. This allows the combination of two standard qualitative data collection techniques; observation and interview, building on their strengths and reducing limitations. The researcher is able to observe and acclimatise themself with an environment and make observations that participants (locals) may miss; but also better understand participant perception and experiences through questions. Interviews 'in the moment' also support rapport building and reduce power dynamics as the participant is the 'guide' and have greater ecological validity as they help participants to recognise and discuss

elements of the local environment and their reactions to it that they may not recall afterwards (Carpiano 2009).

We will build on adapt the methodology used by Cauwenberg et al (2018) to explore the influence of the local environment on older adults cycling experience. The method will be adapted to suit the needs of older adults and working age commuters, and also, for either walking or cycling journeys. Detailed research tools will be developed following co-production and PPI activity, but the following steps will be followed:

- 1. Participants will complete a short questionnaire which will include questions on: demographics; preferred mode of transportation and why; experience of active travel methods; and an assessment of the neighbourhood walkability/cycle-ability (using an adapted version of the Neighbourhood Environment Walkability Scale (NEWS) (Saelens et al 2003)) to determine distance to routine destinations. The NEWS was developed in the US and is a popular measure of perception of neighbourhood environment. Several versions exist, including a shortened version (NEWS-A); and a version adapted for use with older adults (Cerin et al 2010; Almeida et al 2021). We will review the NEWS questionnaire with our PPIE stakeholders and adapt where necessary for UK commuters and older adults.
- 2. Agree with the researcher a date and time for the go-along journey. The journey destination, and mode of travel (cycle or walking) will also be agreed, led by the participants' preference. It is anticipated that journeys will be 45 minutes or less. The researcher will undertake a risk-assessment of the journey (considering traffic, light levels, distance, participant health, other road/path users) with the support of both the participant and local OCC and Active Oxfordshire staff. It is hoped that most of the go-along journeys will include sections of the new walking/cycling infrastructure. If necessary, arrangements will be made for the loan of a bicycle and protective equipment (helmet; fluorescent jacket; lights) with Active Oxfordshire.
- 3. During the journey itself, the participant will be invited to vocalise their thoughts and perceptions of things in the environment that make the trip more or less comfortable, enjoyable, safe and convenient. This will be prompted by questions from the facilitator where it is safe to do so. The journey will be audibly and visually recorded using a camera (GoPro) which will record the participant without the need to be next to, or facing the researcher. Clear safety instructions will be provided; participants will not be asked to provide a continuous narrative or undertake any other activity which may distract them from staying safe during travel (especially during ride-alongs).
- 4. The researcher will also make detailed field notes (voice-recorded or written) immediately after the journey.
- 5. Video images and voice recordings will be used to inform a follow-up interview shortly after the accompanied journey. This interview will be also informed by the participants' questionnaire responses. Participants will be asked to view some of the images and compliment their statements made during the journey to explore in more detail their perceptions of active travel.

A topic guide for the follow-up interview will be developed (with PPI and OCC input) that includes questions on preferred/usual travel mode, perceptions of active travel; the go-along journey (prompted by visual images and recorded commentary) and issues of comfort, enjoyment, safety and convenience (including immediately before and after the journey), and how any inconveniences experienced might be addressed to encourage modal shift. Participants will be offered a £50 gift voucher for taking part in this element of the study.

Online workshop

Early findings from the focus groups and go-along interviews will be shared with stakeholders in OCC and partners during an online workshop. The research team will present findings from RO1-3; How the target groups currently perceive active travel, the infrastructure and community activation projects, and go-along journey experiences. During the participative workshop, attendees will be asked to address RO4: *What key steps or additional activities might be taken to increase modal shift and address the perceived barriers (opportunity, capability) to active travel methods? (are there gaps in the range of intervention functions)*

This half-day event will be held with local stakeholders responsible for the active travel interventions and/or local community expertise. Participants will include OCC staff (from across public health, transport and infrastructure teams); Active Oxfordshire staff, and those community stakeholders involved in delivering community-based projects. Local community stakeholders in Bicester and Witney will also be invited (local elected members, cycling champions etc.) To increase generalisability we will also invite representatives from Active Travel interest groups beyond those directly involved with the OCC Active Travel initiative; the research team have good contacts with <u>Sport England</u>, <u>Sustrans</u>, <u>Active Gloucestershire</u>, and <u>WESPORT</u>. The group will be invited to reconsider the logic model (Appendix 1) and in particular, how well (or otherwise) the range of activities address the opportunity, capability and motivational barriers to walking and cycling. Ideas for improving current project activities and/or new ones, will be generated.

Follow-up participant feedback events

The final data collection opportunity will be to present the same set of findings (RO1-3) back to the target populations. Two focus groups will be held, one in each town with older adults and commuters together. We will draw from the original sample of older adults and commuters who participated in the first set of groups (though may not be limited to this if other members of the target population wish to attend).

Again these two events will take place in a local public setting (community hall; hotel or similar) and last up to 90 minutes. Following the presentation of early findings from the focus groups and go-along interviews, a participative topic guide will be developed (with our PPI groups) that encourages participants to addresses research objective 4. Participants will be invited to consider and provide feedback the suggested new project activities or improvements generated during the stakeholder event.

The groups will be facilitated by the lead researcher and digitally recorded (following verbal and written consent). Participants will be offered a £30 voucher as a thank you for their time and input.

Analysis

All focus groups, interviews and group events will be fully transcribed, and we will work from these transcriptions during our thematic analysis. We will adopt the Framework method of thematic analysis (Gale et al 2013; Ritchie et al 2013). Following a review of the transcripts, we will develop a draft conceptual framework that includes the key themes and sub-themes that emerge from the data for each target population (older adults and commuters). These thematic frameworks will be used to code the data, assigning both verbatim and summarised excerpts of the transcript to one or more theme or sub-theme. The draft frameworks will be tested by members of the research team with a small number of transcripts and amended as necessary until the team are assured that the frameworks 'fit' the data. The thematic framework will be driven by the data, but also informed by our research objectives.

Once the analytical frameworks are finalised, we will adopt a systematic approach to data management, coding the transcripts into the framework using NVivo software. We will develop a matrix framework, using the themes as column headings and data transcripts as rows. The matrix cells will be populated with verbatim and summarised data from the transcripts, as well as analytical notes made by the researchers ('charting'). Once all the transcripts have been charted, the team will have a detailed and accessible overview of the data populating each theme and sub-theme from every data collection event. This method makes possible the capacity to explore the dataset through themes and subthemes, and by respondent type. A summary of the data under each subtheme will be developed to inform the next stage of the analysis, moving up the analytical hierarchy to explore patterns and associations between themes in the data.

Data management

The University of Bristol will be the data controller for this study.

The project will generate qualitative datasets in the form of interview and transcripts and observation notes as well as video recordings from the go-along interviews. The team will use encrypted digital Dictaphones. Audio files from interviews and focus groups will be uploaded from an encrypted handheld digital recorder to an access restricted folder on the University of Bristol server, as soon as is reasonably possible following an interview. Once uploaded, they will be securely deleted from recorders. There will also be visual and audio recordings from the go-along interviews. These will not be encrypted but uploaded onto a password protected laptop (if away from the office) and uploaded onto a secure server as soon as practicable and deleted from the video recorder. After the follow-up interviews, non-identifiable still images from the videos and redacted transcripts will be retained; the videos themselves will be securely deleted.

Transcription will be undertaken by one of four external transcription companies which have been approved to process data subject to the Data Protection Act, for which the University is the data controller. They have entered into a formal "Personal Data Processing Agreement" drawn up by the Secretary's Office. The rest of the project team, including those who may become part of the team in the future, will also have access to the study's data and will be able to comment on data at the analysis stage. Access to data will be restricted to these individuals. To enable anonymity, transcripts will have a unique identifier embedded in the filename. This information will be replicated on a transcript cover sheet which will also include interview location and anonymised interviewe details.

Hard copies of transcripts, along with other project data, will not be left unattended at any time unless they are securely stored.

All data analysis will take place password protected computers and on password protected laptops of the research team if they are working away from the University. No data will be stored on laptops but accessed via the University secure remote desktop.

In accordance with Research Councils UK guidance, all consent forms will be stored securely in electronic form or as locked paper copies for a period of 10 years. After 10 years, electronic documentation, and data will be destroyed via deletion from devices / servers; hard copies of study documentation will be destroyed by shredding and confidential waste disposal.

Anonymised qualitative will not be destroyed following completion of the study but restricted access on reasonable request will be kept available for future research in 'data.bris' the University's publicly accessible Research Data Repository. Consent for this will be explicitly sought on participant consent forms.

Ethics

The study will be registered with the research governance team at the University of Bristol. The study will require institutional ethical approval which we will obtain from the University of Bristol's Faculty of Health Sciences Ethics Committee. This ethics approval will ensure that issues of confidentiality, consent, anonymity, safeguarding and data management are appropriately addressed across all aspects of the research process including recruitment, data collection, analysis and dissemination.

Active Travel is not a sensitive topic, and our target populations are not vulnerable groups. We anticipate the main areas of scrutiny will be the burden on research participants, in particular the go-along interviews. We have tried to mitigate this by keeping numbers low (5 per group); letting participants lead decisions around timings, destination and travel method, limiting the time for journeys, and asking for volunteers from those who have already expressed interest in the study. In addition to scrutiny from the ethics committee we have consciously incorporated the involvement of local stakeholders as co-producers of our research tools to increase their relevance and help minimise any negative consequences for participants.

Timeline and Milestones

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Ethics preparation and submission to REC	х	х											
PPI and co-production of research tools	х	х	х										
Recruitment of target groups		х	х	х									
Focus groups (8) RO1-3				х	х	х							
Go-along journeys					х	х	х	х					
Online stakeholder consultation								х	х				
Interim report to local authority									х				
Analysis						х	x	x	х	х	х	х	
Participant feedback events										х	х		
Reporting										х	х	x	х

Outputs

Bristol and Cardiff PHIRST have developed a Dissemination, Impact, Involvement, Communication and Engagement (DIICE) template (Appendix 2), which will be completed for this study in partnership local stakeholders including from Oxfordshire County Council and Active Oxfordshire, and the two community networks set up to build active travel capacity in Witney and Bicester. This will ensure that study outputs are accessible and relevant to a range of audiences. We anticipate that outputs will include:

- PHIRST project report
- public-facing summaries of the findings (available online, including visual images from the go-along journeys; may be both print and webinar format)
- Peer-reviewed journal articles:
 - Study findings (Two separate papers; commuters and older adults)
 - o Methods (go-along interviews as a method for exploring active travel)
- Research briefing (in partnership with PolicyBristol)
- Academic conference presentation
- Presentation to OCC stakeholders

Ethical Approval

The study received approval from The Faculty of Health Science Research Ethics Committee (FREC) at the University of Bristol on 21.03.22 (ref 10144).

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Appendix 1 Logic Model OCC Active Travel study



Appendix 2: DIICE template

Bristol and Cardiff PHIRST

Dissemination, Impact, Involvement, Communication and Engagement (DIICE plan)

Purpose: Bristol and Cardiff PHIRST will develop a bespoke Dissemination, Impact, Involvement, Communication and Engagement (DIICE) plan for each PHIRST study we undertake. The DIICE plan will be co-produced with key stakeholders (including members of the Task and Finish group and if appropriate, other members drawn from the local authority, relevant third sector, participants, and wider groups). Our principles of co-production are shown in Appendix 1. The plan will consider how the findings of the research will be disseminated locally, where the work was conducted, as well as to wider regional and national audiences, and those with a special interest in the topic. Plans will be reviewed by the Bristol and Cardiff PHIRST Management Group and shared with our colleagues at NIHR who are responsible for managing the PHIRST teams. DIICE plans should also take into account the publication policy (Appendix 2).

We will pilot this plan with Project 1 and amend it in the light of this pilot. In addition, agreement has been reached on a joint PHIRST teams' website but at the time of formulating this DIICE plan template plans for this website are at a very early stage of development. We will therefore also review the plan following its piloting to take account of the structure of the new website and other PHIRST teams approaches to dissemination, impact, involvement, communication and engagement.

1. Study details	
Name of study:	
Study Lead:	
Other researcher(s)	
Local authority:	
Study start date:	
Study end date:	
Version number and date of	
DIICE plan:	

2. Engagement

Please detail how specific audiences will be engaged, and how. You may want to consider engagement with:

- <u>Policy makers</u>: e.g. working with <u>PolicyBristol</u>, or Wales <u>Centre for Public Policy</u> to produce and disseminate two-page Policy Briefings highlighting the key policy messages.
- <u>The research community</u>: e.g. presenting review findings at scientific meetings such as the annual Society for Social Medicine, the UK Society for Behavioural Medicine and Lancet Public Health conferences.
- <u>Public health practice</u>: e.g through: (i) research networks (e.g. DECIPHer and NIHR SPHR); (ii) joint academic and service senior lecturer posts in public health in UoB and placements and co-location with Public Health Wales; (iii) bi-annual meetings with Directors of Public Health in the region; and (iv) training activities (South West public health specialists; PHS' and DECIPHer short course programmes); and (v) teaching (e.g. MSc in Public Health); (vi)links with NIHR SPHR and Social Science Research Park research capacity development work.
- <u>Third sector organisations</u>: e.g. those concerned with the focus of the study.
- <u>Members of the public</u>: e.g. through local and regional science outreach events (e.g. British Science Association, Pint of Science, ESRC Festival of Science). The Elizabeth Blackwell and Cabot Institutes at the University of Bristol can support public engagement activities.

Target audience	Planned engagement activities		When?

3. Dissemination

Please give details of the planned outputs. Consider matching output type to the target audiences identified above in section 2. Please ensure that authorship takes account of the publication policy (Appendix 2). Outputs may include:

- a report for the NIHR Journals Library (required)
- peer-reviewed paper(s)
- blog
- briefing
- webinar
- slide set
- podcast
- conference presentation
- toolkits or other resources emerging from the study

Dissemination activity	Lead(s)	When?

4.	Communication	
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Please detail how you will alert audiences to study publications, events, or other outputs. This may include:

- Press releases: (UoB and CU Media team can help with these)
- Twitter accounts: e.g. UoB centre for Public Health; DECIPHer, NIHR; PHIRST, any study team, stakeholder or collaborator accounts
- Network newsletters
- Blogs

Communication type	Lead(s)	When?

5. Involvement

Please detail how members of the public and practice community have been involved in the study outputs. This may include coproduction activities during the study itself, as well as direct involvement in creating outputs and their dissemination. Please see Appendix 1 for PHIRST principles of co-production.

Please detail the type of activity (e.g. co-production of research design; consultation on research output(s)); who was involved; and the impact of this involvement on study outputs, dissemination or impact.

Activity	Who was involved?	Impact

6. Impact

Please detail how the study may have impact (academic¹, economic or societal). This may include

- instrumental impact influencing the development of policy, practice or services, shaping legislation and changing behaviour
- conceptual impact contributing to the understanding of policy issues and reframing debates
- capacity building through technical and personal skill development²
- ¹The University of Bristol has useful guidance on <u>tracking academic impact</u>

²ESRC/defining impact.

Appendix 1: Co-Production Principles



Appendix 2: B&C PHIRST Publication Policy

Background

A primary aim of PHIRST is to ensure that the study findings are shared with our target audience(s) when available (e.g. the research community, public health practitioners, third sector organisations and the public, outlined in section 2. above). This document is designed to provide **guidance** on how the PHIRST publications will be managed. A similar approach will also be taken for presentations and other outputs.

A publication group for each individual PHIRST study will comprise

- the lead researcher named on the DIICE plan, and
- the lead applicants e.g. Professors Campbell, Murphy and Jago.

The publication group will, where required, make final decisions on authorship and be responsible for monitoring the quality of all study outputs.

Who can be an author?

We will follow the SPHR authorship policy which is modelled on the <u>ICJME guidance</u>. Specifically, authors should have made the following contribution:

- 1. Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of the data.
- 2. Sufficient participation in the work to take public responsibility for appropriate portions of the content.
- 3. Drafting of the output or revising or critically for important intellectual content.
- 4. Final approval of the version to be published.

The people who are eligible to be authors are PHIRST project staff from Bristol and Cardiff Universities who have worked on the individual PHIRST study named in this document for at least 3 months. Any other staff member, including those on the PHIRST Management Group, or individual study management group (or equivalent) who is engaged with the study for at least 3 months is also eligible to be an author. Local stakeholders, such as staff from the local authority or other organisations related to the individual study, or public stakeholders (including any involved in coproduction activities) may also be authors if they meet the criteria outlined in 1-4 above.

The author order will be based on the criteria below.

- The lead author be decided by the extent to which each author meets the criteria for author roles, but it is intended that the publication group will agree the initial key authors (first, second and last) and responsibilities for each paper before writing commences.
- Final authorship shall be confirmed at the point when a final or near final draft is established.
- Any member of the research team who does not feel that they have made a sufficient contribution to the publication to warrants being names among the authors may (and will normally be expected to) withdraw their name.
- The study publication group will, where required, make final decisions about authorship.

Approval

To maintain the highest possible standards all outputs (which should be listed in full in section 3 of the main document) must be approved by the publication group prior to publication (this includes submission to journals, abstract/poster submission to academic conferences, publication of any project resources, presentation slides, webinar scripts, or equivalent). The draft paper will also be sent to the local authority contact (if not a co-author) to provide any feedback prior to submission. Three weeks will be allowed for this. Please note that while we welcome local authority feedback the NIHR contract does not allow a local authority to block publication.

Author responsibilities

Lead author responsibility

The lead author is responsible for producing the first draft of any output. This may include performing the analysis or using analysis provided by others. The lead author will then circulate drafts for comment by co-authors. When the lead author feels that the publication is ready it will be shared with the publication group for approval. Once approval is obtained the lead author must submit the paper to the NIHR and DHSC for approval at the point of submission.

Co-authors roles

As outlined above all co-authors are expected to read and contribute to each output. This should be done in a timely manner. When approval to submit a paper is requested, co-authors (and any publication group member who is not a co-author) should respond with either approval or approval withheld. If approval is withheld the co-author needs to provide a rationale. All co-authors should respond to requests for approval within **two weeks**.

NIHR Open Access requirements

All papers must comply with the NIHR Open Access Policy. This means that all papers should be published in a journal that makes it available using the Creative Commons Attribution (CC BY) licence and allows immediate deposit of the final published version in other repositories author restriction on re-use.

Funding disclaimer

All publications need to add the funding disclaimer.

This study/project is funded by/ supported by the National Institute for Health Research (NIHR) Public Health Intervention Responsive Studies Team (PHIRST) (PHIRST/NIHR131567). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

NIHR requirements prior to publication

Please see https://www.nihr.ac.uk/documents/nihr-research-outputs-and-•

publications-guidance/12250

And updated open access policy
https://www.nihr.ac.uk/documents/nihr-open-access-policy/28999