

# Independent Evaluation of Local Growth Interventions: Greater Cambridge Partnership

Impact evaluation evidence paper: Cycling  
interventions

November 2019

**steer**

**SQW**

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# 1. Introduction

- 1.1 This evidence paper sets out the method and findings of the impact evaluation of three of the cross-city cycling scheme improvements in Cambridge supported by the Investment Fund. This evidence paper focuses specifically on the evidence of the impact of the improvements at this stage. Progress evaluation issues, including delivery against expenditure, delivery and output milestones are summarised in this paper, but considered in more detail in the Progress Evaluation Evidence paper.

## Introduction to GCP-funded cycling schemes

- 1.2 Greater Cambridge has been a highly successful economy in recent decades, and as a result has expanded rapidly in terms of jobs and residents, putting increasing strain on the city's transport infrastructure. This growth is expected to continue in the future, with forecasts that the city's population will increase by 30% by 2031. It is expected that this will lead to traffic during the morning peak to increase by over 30% in the City and almost 40% in South Cambridgeshire, with time spent in congestion more than doubling as a result.
- 1.3 The fund was therefore intended to provide residents and workers with improved means to travel into and around Greater Cambridge, by public transport or cycling, to prevent these 'growing pains' from limiting Greater Cambridge's growth potential. The fund is part of a wider suite of developments to support the ongoing growth of Greater Cambridge, with other initiatives including the development of new settlements, such as Northstowe, Cambourne West and Waterbeach, alleviating the growth pressure on the city itself and spreading growth beyond the immediate area of Cambridge. The cycling schemes were intended to reduce the reliance on cars by making alternative forms of transport safer, more reliable and faster. This focus on modal shift is the early stage of a longer-term strategy, which will also include the introduction of better transport infrastructure and other measures to curb private vehicle use in and around the city centre.
- 1.4 The links between enhanced transport connectivity, including through cycling provision, and growth (the ultimate purpose of the City Deal and Investment Fund) are neither immediate nor direct. In the longer term faster movement for some sectors can enhance business productivity by reducing time wasted in transit by both people and goods. In the case of knowledge-based industries, maintaining a healthy and attractive environment, and ensuring appropriate accessibility to jobs and other services are important factors in attracting and retaining knowledge workers, and are thereby critical to supporting growth. The evaluation has noted the strategic rationale that links the different transport improvements (including cycling provision) in and around Cambridge with overarching objectives relating to growth, but it has not sought to assess the nature of these relationships nor their impact at this early stage. Rather, the impact evaluation of cycling provision has focused on the direct outcomes associated with the take up of cycling, modal shift (especially from car to cycling) and safety.
- 1.5 Within the scope of the evaluation, the Investment Fund has been used to support twelve sustainable transport improvement schemes. The schemes in scope of impact evaluation were three of the five cross-city cycling routes (Cambridge & NCN11/Ditton Lane, Arbury Road corridor and Links to Cambridge North Station & Science Park). Initially the Chisholm Trail

Phase 1 scheme was in scope but delays in delivery (in particular associated with site access) have precluded this from impact evaluation.

- 1.6 Other funded cycle schemes for which impact evaluation has not been undertaken are two of the cross-city cycling routes (Fulbourn/Cherry Hinton Eastern Access and Hills Road/Addenbrooke's corridor), the A10 Shepreth-Meldreth cycle link and Chisholm Trail Phase 2. The location of the cycle schemes, along with other interventions within scope of the evaluation, are shown in Figure 1-2 – along with the locations of some of the major employment sites in and around Cambridge.
- 1.7 The cycling improvement interventions themselves have taken a range of different approaches depending on the nature of the route and its use:
  - Where the road allows, space for vehicles has been reduced with dedicated on-road cycle lanes, resident parking and landscaping introduced to slow vehicles down and make space for faster and safer cycling routes.
  - Existing cycle paths following off road locations have been widened from single cycle width to provide safer routes for combined cycle and pedestrian use.
  - Existing paths have been extended with different coloured surfacing to clearly delineate road usage (e.g. see Figure 1-2).
- 1.8 The key features of each of the routes subject to impact evaluation are set out in Table 1-1.

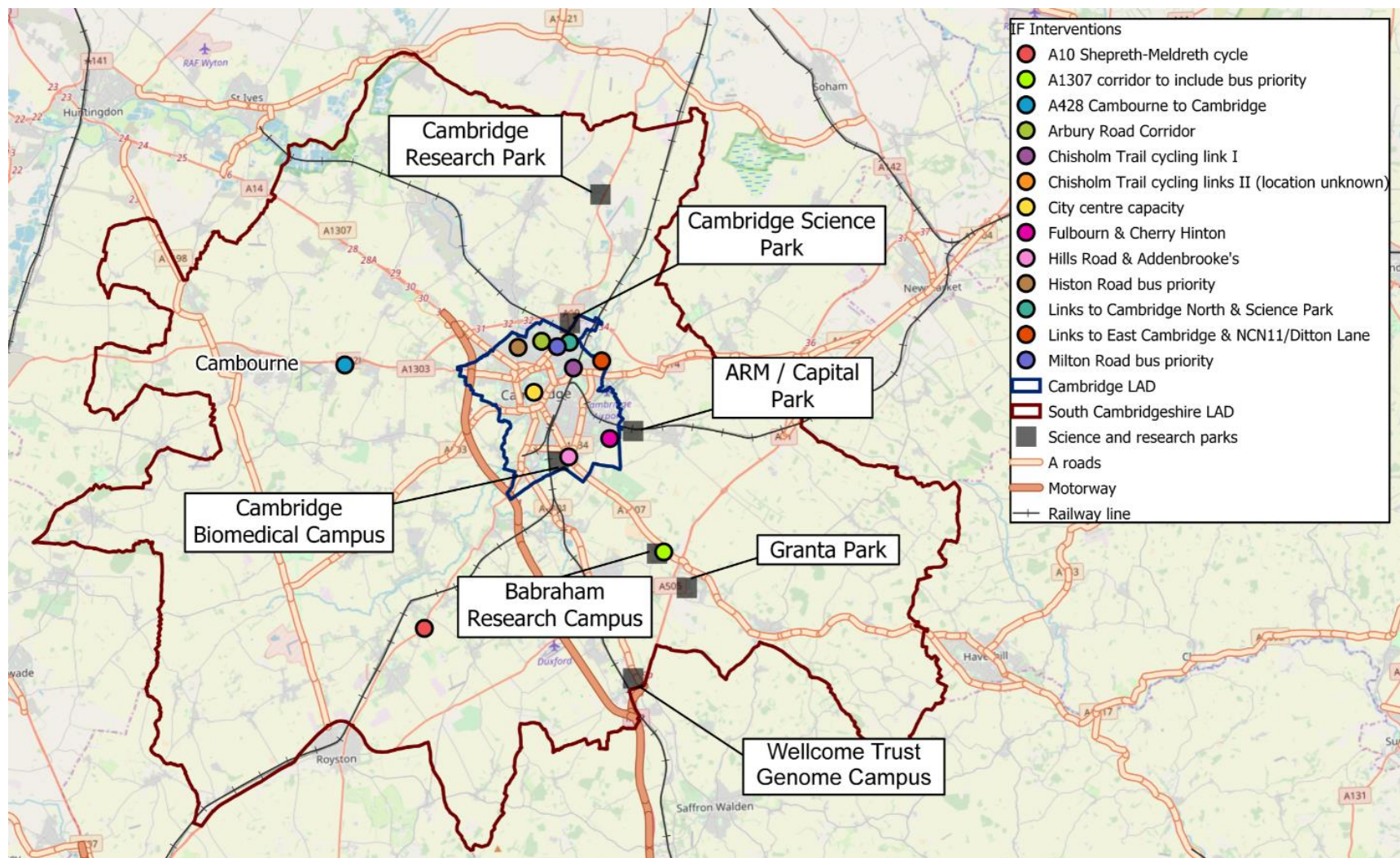
**Figure 1-1: New cycle lanes on Arbury Road**



Source: <https://www.greatercambridge.org.uk/arbury-road/>



Figure 1-2: Map to show location of the Investment Fund interventions



Source: Produced by SQW 2019. Licence 100030994. Contains OS data © Crown copyright [and database right] [2019]

**Table 1-1: Main features of route improvements subject to impact evaluation**

Route	Main features
Arbury Road corridor	<ul style="list-style-type: none"> <li>• Traffic lanes narrowed to 2.6m with removed centre line and kerb lines moved to accommodate new 1.9m wide raised cycleway in red asphalt</li> <li>• Resurfacing of the carriageway and footway</li> <li>• Three new zebra crossings</li> <li>• Removal of set of traffic signals at Mansel Way/Arbury Road junction to improve traffic flow and bus journey times</li> <li>• Removal of right turn lane from Arbury Road into Campkin Road to improve cycle safety</li> </ul>
Links to Cambridge North and the Science Park	<ul style="list-style-type: none"> <li>• Phase 1 involved 1.5m-1.7m wide advisory cycle lanes built on both sides of the road in red asphalt</li> <li>• Phase 2 involved construction of new 2m wide red asphalt cycle lanes, segregated from the footway with a small kerb and from the carriageway by parking and landscaped verges</li> <li>• New 'floating bus stops' to enable cycle lanes to continue behind the bus islands</li> <li>• The white line in the centre of the road removed</li> <li>• Resurfacing of the carriageway and footway</li> <li>• Parking restrictions to keep the new cycle lanes clear of parked cars</li> <li>• One new zebra crossing</li> </ul>
Links to east Cambridge and NCN11 / Ditton Lane	<ul style="list-style-type: none"> <li>• A 2.3m to 2.5m shared-use foot and cycleway was created between Fison Road and High Ditch Road on the east side of Ditton Lane</li> <li>• Other works widened the current shared-use foot and cycleway on both sides of Horningsea Road and just north of Fen Ditton Primary School</li> <li>• A new toucan crossing north of the school, an upgrade of the puffin crossing near the High Street to a toucan crossing and widening the approaches to the toucan crossing near Fison Road</li> <li>• Shared use path between Ditton Lane and Ditton Meadows resurfaced and widened to 3m</li> <li>• Introduction of parking restrictions on High Street</li> <li>• Resurfacing on Horningsea Road and realignment of road to remove little used bus layby to provide space for widening shared use path on west side</li> <li>• Introduction of diamond rail timber fence to enhance pedestrian safety</li> </ul>

Source: GCP

## Delivery progress

1.9 A detailed assessment of the progress of all the cycling schemes is set out in the accompanying Progress Evaluation Evidence Paper. For context, the following key points are highlighted with respect to all of the cycling interventions, including the three cross-city schemes subject to impact evaluation:

- All five of the cross-city cycling schemes have been completed. The five schemes were completed with an overspend of just over £1m (actual expenditure was £9.96m vs planned expenditure of £8.94m). The schemes also ran behind the original delivery schedules. Both spend and timing over-runs were largely the result of additional consultation work with communities across all schemes, and re-design to take account of resident views. On some routes, some of the additional costs were recovered through close working with contractors.

- The A10 Shepreth-Meldreth cycle link was delivered on time and on budget, and with evidence of resident satisfaction with the route.
- All of the completed cycle schemes, namely the cross-city cycling routes and the A10 Shepreth-Meldreth cycle link, have delivered against the original plans – and in some cases delivered enhanced schemes. As such, output targets in terms of the physical improvements of cycling infrastructure and construction years of employment have been met or surpassed.
- Chisholm Trail Phases 1 and 2 have been brought together under a single scheme now, given the delays of Phase 1 (caused by land access issues) and the bringing forward of Phase 2. Overall, this scheme is on track to be delivered on time.

## Structure

1.10 The remainder of this evidence paper is structured as follows:

- Section 2: logic model and research method
- Section 3: contextual data on cycling in Cambridge
- Section 4: results of the 2019 intercept survey
- Section 5: evidence of impacts, drawing on the data from the 2018 and 2019 intercept survey (and accompanying cycle counts) and wider interviews
- Section 6: conclusions.

1.11 The following annex of additional information is also provided:

- Annex A: Cycle count analysis.
- Annex B: Additional data/charts from 2019 survey.

## 2. Logic model and research approach

### Logic model

- 2.1 In evaluating publicly-funded interventions, it is good practice to develop a 'logic model' which articulates explicitly the relationship between inputs, activities, outputs, and outcomes:
- inputs are the resources used by the intervention, including the Investment Fund resource
  - activities are those tasks undertaken by the intervention
  - outputs are the readily measurable results of those activities
  - outcomes are the benefits attributable to the intervention including 'intermediate outcomes' for the direct beneficiaries of the intervention, and 'final outcomes' for the wider economy/society.
- 2.2 Logic models are useful devices to inform impact evaluation, because they encourage thinking about the steps required for an intervention to have its desired effects, and the nature of effects that can be covered in an evaluation. Therefore, to be effective, a logic model should represent the causal theory about why and how an intervention might work over time, that is, the 'theory of change'.
- 2.3 The logic model for all of the cycling schemes is presented below in Table 2-1. This was developed by the SQW-led consortium working with the GCP in the Locality Evaluation Framework to inform the impact evaluation, and the research methods adopted. Within this logic model, half of the schemes were planned to be subject to impact evaluation. The schemes in scope of impact evaluation were the three cross-city cycling routes (Cambridge & NCN11/Ditton Lane, Arbury Road corridor and Links to Cambridge North Station & Science Park) and Chisholm Trail Phase 1. Delays in implementing Chisholm Trail improvements has moved this scheme out of the scope of the impact evaluation.



**Table 2-1: Intervention logic model developed for the Baseline Report**

Logic model title	Cycling schemes			
Logic model type	1A: Improved connectivity			
Interventions / projects covered by logic model	A10 Shepreth-Meldreth cycle link; Cross-city cycling improvements; Chisholm Trail cycling links			
<b>Theory of change</b> Cycling usage is already high in Greater Cambridge, with 29% of journeys to work regularly made by bicycle in the 2011 Census, including 43% for those commuting under 5km, and 22% for those commuting between 5 and 10km. The intended theory of change is that the cycling schemes funded will remove some of the remaining barriers, in particular through greater segregation of cycling from motorised traffic, and provide direct links to new housing and employment growth points, such that those cycling intermittently cycle more frequently and those not cycling at the moment will start to use cycling as a mode of transport for work and school. This further increase in cycling will represent a modal shift away from using cars, resulting in reduced congestion in/around Cambridge and so in CO2 emissions, and increase modal share for cycling. The segregated routes will make cycling safer, reducing the number of road traffic accidents involving cyclists. Key assumptions: there is scope to increase cycling usage further, i.e. there remains a group of people that are open to start taking up cycling or cycling more often; housing and employment growth sites would be less accessible (such that success is adversely affected) without cycling improvements; and modal shift from motor vehicle will not be outweighed by general growth in traffic or people switching to driving/driving more as they see reductions in congestion. Other factors: other interventions that are designed to lead to modal shift such as bus priority measures; cycling schemes themselves are part of wider improvements to national cycling network, which has funding through Cycle City Ambition Grant (incl. Cambridge-Royston cycle route); and provision of appropriate complementary infrastructure such as bike storage at employment sites. Note that there are likely to be adverse effects on outcomes over the period of developing the new routes (e.g. increased congestion due to road closures).				
Inputs		Activities	Outputs	Outcomes
<u>Investment Fund inputs</u> <ul style="list-style-type: none"><li>£550k (A10 Shepreth-Meldreth cycle link)</li><li>£8m (cross-city cycling improvements)</li><li>£8.4m (Chisholm Trail)</li></ul> Total: £16.95m  <u>Other inputs (including staffing and in-kind)</u>		A series of measures under cycle path development or improvement:  A10 Shepreth-Meldreth cycle link is part of a longer Cambridge-Royston cycle link. This portion plugs a gap for cycling provision in the area (and connects employment sites, educational establishments and rail stations that are not currently well connected)  Cross-city cycling improvements is a series of schemes, such as segregated cycle routes, to help to create a	Cycle routes become fully operational (e.g. length of route developed/improved, associated infrastructure improvements completed)  Construction years of employment (i.e. to build infrastructure)	<b>Theme-specific outcomes</b> Increased cycle usage <ul style="list-style-type: none"><li>including for work and school</li></ul> Increased walking <ul style="list-style-type: none"><li>including for work and school</li></ul> Reduction in road traffic accidents involving pedestrians and cyclists Improved public health Reduced traffic congestion (via fewer numbers of vehicle trips)

None	<p>scenario whereby cyclists can make more of their trips (in terms of numbers of trips and proportion of each trip) on routes away from motor traffic</p> <p>Chisholm trail is a strategic cycle route from Cambridge Station to the new Cambridge North Station, providing connections between the Science and Business Parks in the north, the commercial hub around Cambridge Station and the Biomedical Campus. Phase 1 connects Coldham's Lane to Cambridge North Station; Phase 2 connects Coldham's Lane to Cambridge Station</p>	<p>CO2 savings via modal shift</p> <p>Enhanced local environment through improved air quality</p> <p>Improved independence and wellbeing</p> <p><b>Broader outcomes</b></p> <p>Enhanced access to training and employment</p> <p>Enhanced access to green spaces</p> <p>Enhanced attractiveness and deliverability of employment growth sites, e.g. Cambridge Northern Fringe East, Cambridge North West / West Cambridge, ARM Capital Park, Cambridge Biomedical campus, and wider city centre</p> <p>Enhanced attractiveness and deliverability of new housing development sites, e.g. Cambridge East (1.7k homes expected by 2031)</p>
<b>Expected timescales for inputs / activities / delivery of outputs and outcomes</b>		
<p>Most inputs before the first Gateway Review (2020), with all inputs completed by summer 2021</p>	<p>Activities spread over the period of inputs. The separate schemes are expected to be open as follows:</p> <ul style="list-style-type: none"><li>• A10 cycle link in March 2017 (achieved)</li><li>• Cross-city improvements between September 2017 and spring 2019</li><li>• Chisholm Trail Phase 2 to complete in summer 2021.</li></ul>	<p>Principal outputs follow the opening times of the separate cycle schemes – see under activities.</p> <p>Construction employment realised during delivery of activities.</p> <p>Increased cycling usage, and directly associated effects (i.e. modal shift, CO2/air quality) expected to start to happen from opening of new schemes, i.e. <b>from March 2017 onwards</b>. Given staggered opening, and the different parts of the cycling network addressed, effects will not reach their maximum until <b>after summer 2021</b>. There is also potentially a virtuous cycle as increased cycling usage reduces traffic, encouraging more cyclists who may be reticent due to traffic.</p> <p>Public health benefits and broader outcomes then occur subsequently – relevant to each of the schemes.</p> <p>Site attractiveness relates to when the cycling schemes will be opened/ expected to be opened, as follows:</p> <ul style="list-style-type: none"><li>• Cambridge East housing (relevant cycling scheme open in 2017-2019 and then again from summer 2021)</li><li>• Cambridge Biomedical campus (March 2017)</li></ul>

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- Cambridge Northern Fringe East (2017-2019 and then again from summer 2021)
  - Cambridge North West / West Cambridge (2017-2019)
  - ARM Capital Park (2017-2019)
  - Wider city centre (March 2017 through to summer 2021).
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### ***Relationship to other interventions***

Other Investment Fund logic models:

- A428 corridor improvements; A1307 corridor improvements; Histon and Milton Road bus priority and road improvements; City centre capacity improvements – all designed to reduce and/or maintain levels of congestion and to bring about modal shift from private car to public transport and/or cycling and increase the modal share for non-private car modes of transport – e.g. all transport infrastructure improvements will include some form of cycling provision
- The period of construction of other schemes may adversely affect congestion in the short-term
- Other schemes will also facilitate developments in wider city centre

Other non-Investment Fund activities:

- Actions specific to bringing forward development sites themselves, i.e. Cambridge East, Cambridge Biomedical campus, Cambridge Northern Fringe East, Cambridge North West/West Cambridge, and ARM Capital Park
  - National Cycling Network developments and Cycle City Ambition Grant
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Source: SQW

## Research approach

- 2.4 The impact evaluation research approach was based around a pre- and post-intervention evaluation. Cyclist intercept surveys were conducted before and after construction works to capture changes in usage of the cycling routes (and changes to the profile of users), behavioural changes in terms of trip frequency and modal shift, and satisfaction with the routes. The first wave of cyclist intercept surveys was undertaken in June / July 2018. A follow-up survey took place in June / July 2019.
- 2.5 In addition, two further strands of evidence were collected to inform the evaluation:
- analysis of readily available data such as cycle count and travel survey data to provide the contextual backdrop of cycling habits in Cambridge and Cambridgeshire, including any notable changes between 2018 and 2019.
  - consultations with developers, agents, businesses and other organisations that were associated with the routes either because of staff travel routes, development plans or the nature of the organisation; these were conducted in August / September 2019.
- 2.6 Each of these methods are described in greater detail below. The approach followed broadly what was set out in the original evaluation plan with a few modifications: one new route could not be evaluated as it had not been completed in time (see below); the response numbers to the surveys and consultation process were slightly below what was anticipated, though sufficient evidence was available to draw the main evaluation conclusions; and the analysis of outcomes focussed on cycling uptake, modal shift and safety, but was unable to estimate effects on CO<sub>2</sub> emissions and health benefits<sup>1</sup>.

## Cyclist intercept surveys

### Pre- and post-intervention design

- 2.7 As previously stated, the evaluation focussed on three cross-city cycle routes where improvements were made by the Investment Fund in 2018:
- Arbury Road corridor
  - Links to Cambridge North and the Science Park
  - Links to east Cambridge and NCN11 / Ditton Lane.
- 2.8 A fourth route, the Chisholm Trail, which is a new route is also being built using Investment Fund monies. This route was also originally in scope for impact evaluation. However, because the route was still under construction during the study period, and was a completely new route, it was not possible to conduct either baseline or post-implementation surveys. As such, this route has not been covered in the impact evaluation.
- 2.9 Before and 'after' surveys were undertaken in summer 2018 and summer 2019. The before and 'after' surveys were carried out at the same time of year to allow a like-for-like comparison of

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<sup>1</sup> There were too many uncertainties in relation to quantifiable effects to enable such estimates to be made with any confidence.

results. The location of survey sites in both years were identical (with only one minor repositioning of the fieldwork team at the junction of Green End Road / Milton Road), which has allowed for data consistency. The suitability of sites was reviewed beforehand each year to ensure the distribution of survey postcards (see details below) could take place without posing a risk to the fieldwork team, people cycling or other members of the public.

- 2.10 The questions in the ‘after’ survey were consistent with the baseline to allow an assessment of the impact of the route improvements, with some additional questions added post-implementation, designed to explore whether the presence of route improvements had changed perceptions and attitudes towards cycling. The questions common to both surveys included:
- Journey purpose and frequency of making the journey.
  - When did you first start making the cycling part of your journey?
  - Did you make the cycling part of your journey using a different mode before you started to cycle? Which mode did you use before?
  - Why did you choose to start cycling for this part of your journey?
  - Satisfaction with the route (considering various elements such as signage, space for cycling and quality of surfacing).
- 2.11 The 2019 ‘after’ survey also included a number of questions designed to explore whether the presence of routes had changed perceptions and attitudes towards cycling. In addition, there were questions designed to understand the impact of routes in generating new trips by cycle, as well as the extent to which routes had encouraged shift of existing cycle trips away from other routes.
- 2.12 This evidence paper details the 2019 post-implementation (‘after’) survey findings – including use of the routes and wider cycling trends in Cambridge. It also provides a comparison between the 2019 survey and 2018 baseline (‘before’) survey. In this regard, the comparison between them is drawn upon to provide evidence or direction of travel of route improvement impacts. In addition, the evidence paper provides data on self-reported views as to how improvements have affected cycling behaviours and attitudes to cycling.
- 2.13 To be considered potentially significant, changes of around 10 percentage points usually need to be seen at the level of all routes. For example, for overall satisfaction with the route, the proportion of respondents across all routes stating they think the route is of high quality will need to increase from a baseline of 3% to 13% in the ‘after’ survey. This does not prove that the investment in the routes has caused the change, but suggests there may be potentially a statistically significant change in respondents’ views correlating with the investment in the route improvements.

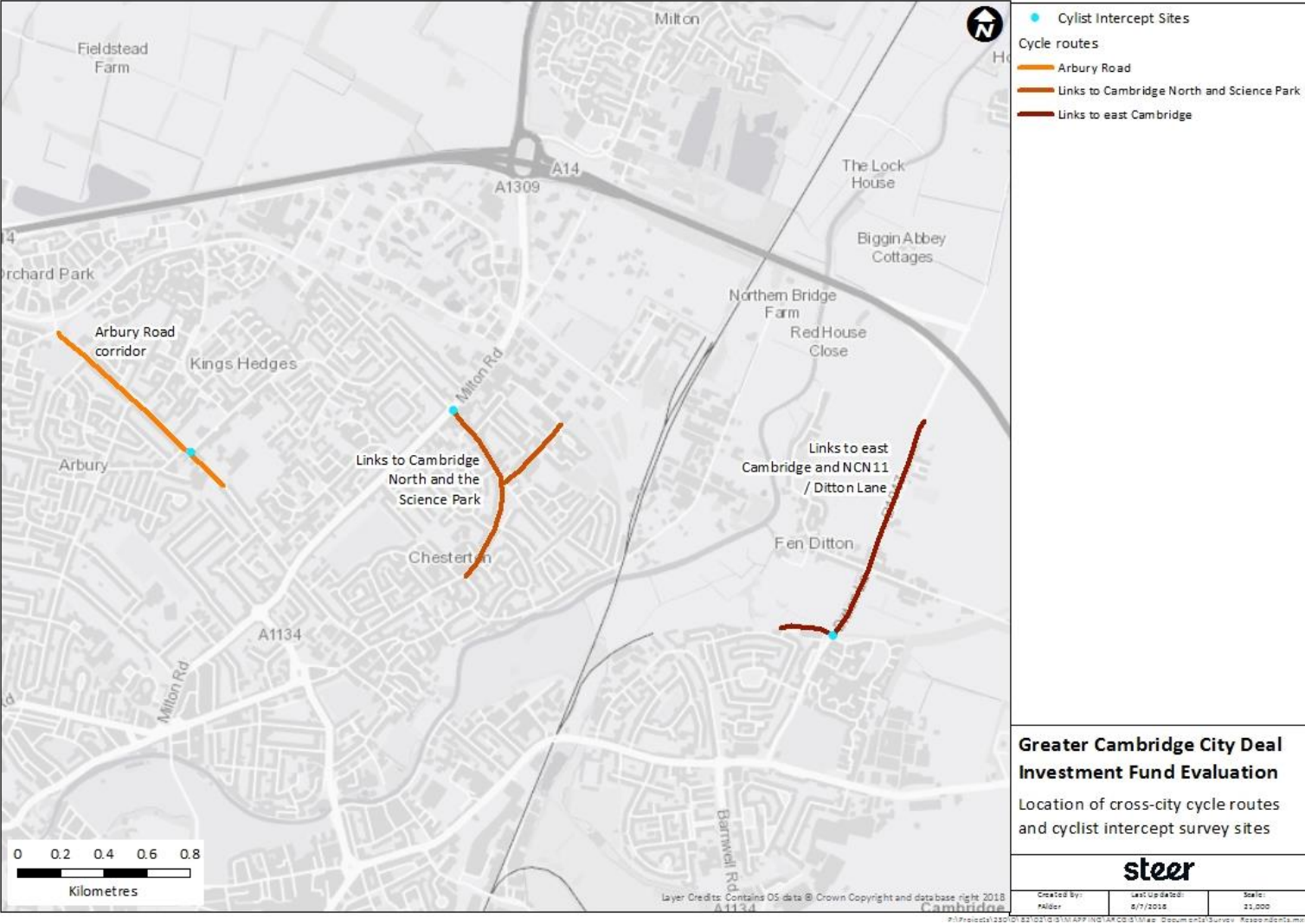
#### *Survey / fieldwork approach*

- 2.14 For both surveys, users of the cycle routes were intercepted at safe and natural stopping points along the routes as they were making their cycling journey, and given a postcard inviting them to complete an online questionnaire. The postcard contained a link to the survey page, together with an 8-digit access code. The first three digits of this code were used to identify the site at which the postcard was handed out, with the remaining five digits unique to each postcard.



- 2.15 The online questionnaire asked respondents a series of questions, relating first to the journey they were making when handed the postcard, secondly about their awareness and views of the improvements implemented, and thirdly about their cycling habits, attitudes and behaviours more generally.
- 2.16 Cyclist intercept sites were chosen by Steer in cooperation with the Greater Cambridge Partnership according to three key criteria:
- a steady, ideally high, flow of cyclists
  - cyclists were likely to stop, due to traffic lights or give way lines, so cyclists could be safely and easily handed postcards
  - construction activity had not started or was minimal for the 'before' surveys, and completed for the 'after' surveys to minimise the effect of disruption in survey responses.
- 2.17 The cross-city cycle routes and cyclist intercept sites are shown in the map in Figure 2-1.
- 2.18 It should be noted that at the time of the 'before' survey, some of the route improvements were already underway or partly completed on sections of the Arbury Road corridor and Links to Cambridge North and the Science Park routes. The cyclist intercept sites selected were on 'pre-construction' sections of the routes and avoided construction activity as far as possible. Unavoidably, the Arbury Road site was close to construction works and, as a result, the disruption caused by the construction may have affected the survey results for this route. For this reason, care has been taken when comparing the before and 'after' survey results to assess the impact of the Arbury Road corridor route improvements.
- 2.19 All routes were open and complete at the time of the 'after' surveys. However, it should be noted that in most instances, the construction work near to the survey sites had only been completed within the last one to three months. To measure the impact of cycling investment, 'after' surveys are normally carried out at least six months after route completion, and ideally again at a later date, to allow time for changes in attitudes and behaviour to become embedded. The timetable of project delivery and the Gateway Review did not afford this time and therefore care has been taken to account for this when comparing data. Ideally, further surveys would be carried out in the future, say in spring or summer 2020 for further comparison.
- 2.20 In addition to the intercept surveys, counts were undertaken at each of the intercept locations to record the number of people cycling through the junction or passing the site. The cycle counts allow for appropriate weighting of the online survey data to be calculated to provide better representation across the data samples used for analysis.
- 2.21 The counts were undertaken on five of the intercept survey days at each site, over the same time period as the intercept surveys (7am to 7pm).

Figure 2-1: Location of cycle routes and cyclist intercept sites



## Data weighting

- 2.22 To ensure that the survey results and findings were representative of the people cycling using the cross-city routes, the data was weighted based on the time period in which the survey respondents were travelling. There were four time periods used in the weighting process:
- weekday AM peak (weekday 7am to 10am)
  - weekday off peak (weekday 10am to 4pm)
  - weekday PM peak (weekday 4pm to 7pm)
  - weekend.
- 2.23 Respondents were asked in the online survey about the day and time period in which they were handed a postcard. The distribution of these responses was compared to the distribution of people counted cycling during the survey period.
- 2.24 Each survey record was then assigned a weight according to the time period in which they were recorded and the route they were using. Different survey weights were calculated for the AM and PM peak, as well as the interpeak period for weekday survey records only. For the weekends, one constant weight was calculated. For survey records where respondents had indicated they were unsure whether their journey was on a weekday or weekend, or could not remember the time at which they were handed the postcard, a constant weight of 1 was applied.
- 2.25 Where the proportion of survey respondents was higher than the cycle counts their responses were given a weighting less than one. Where the proportion of survey respondents was lower than the cycle counts their responses were given a weighting greater than one. As an illustration, Table 2-2 shows the weights assigned to each time period for each route for the 2019 survey.

**Table 2-2: Survey weights by time period (2019 survey)**

Time period	Arbury Road	Links to Cambridge North & Science Park	Links to east Cambridge
AM Peak	0.715	0.716	0.721
Interpeak	1.718	1.248	0.958
PM Peak	1.317	2.063	1.224
Weekend	0.754	0.661	1.398

*Source: Intercept survey and cycle count data*

- 2.26 All survey results, tables and charts reported in this document are based on the weighted survey data.

## Comparison of 'before' and 'after' survey data

- 2.27 The survey samples achieved in both survey years were similar and sufficient to provide meaningful and insightful analysis. As a result of near-identical survey locations being available and appropriate to use, and the same survey questions asked each time (with only additional questions asked in the 'after' survey), the datasets were unproblematic and readily

comparable. One caveat to note is the increase in the proportion of responses overall from the Arbury Road route (from 26% of the total in the baseline to 35% in the follow-up survey). While weightings have been applied to the data on the individual routes, when considered in aggregate across all routes, the responses from Arbury Road will make up a greater share of the total responses in 2019 than they did in the 2018 survey. Variation in the number of respondents across routes and years is inevitable. This may have had a small but not substantial impact on the dataset.

**Table 2-3: Survey response numbers**

Route	2018 responses	2019 responses
Arbury Road corridor	124	112
Links to Cambridge North and the Science Park	175	107
Links to east Cambridge and NCN11 / Ditton Lane	177	103
<b>Aggregate</b>	<b>476</b>	<b>322</b>

*Source: Intercept survey and cycle count data*

2.28 As previously noted, the following factors need to be considered when comparing data and have been discussed in the proceeding analysis where appropriate:

- The survey results and cycle counts for the Arbury Road corridor at the baseline stage are likely to have been affected by nearby construction works, e.g. there may have been lower satisfaction ratings.
- All routes had only recently been completed in the 'after' survey, which means that behaviours and attitudes may not have had time to become embedded. For example, satisfaction indicators may either be higher than expected due to the novelty of the new provision, or lower than expected because the impacts of construction work have not yet been forgotten. Likewise, some people may not yet have begun cycling (or increased the amount of cycling), or re-rerouted their cycle journey to the one in question, as a result of the improvements. Caution has been exercised in the analysis to account for these unknowns.

## **Consultations with landowners, developers, agents and businesses**

### *Sources of evidence*

2.29 In conjunction with GCP, twelve consultees were selected and approached to participate in the evaluation. They were selected either because their location meant that a lot of staff or site visitors could potentially be affected by the intervention, or because of the nature of their business having links to property development or to cycling.

2.30 Consultation questions were designed to investigate any effects of the routes on the attractiveness and deliverability of, and access to, housing and employment sites near the routes. These included employment sites at Cambridge Northern Fringe East, Cambridge North West/West Cambridge, ARM Capital Park, Cambridge Biomedical campus, and housing sites at Cambridge East.

- 2.31 In total, seven consultees were interviewed between 13<sup>th</sup> August and 6<sup>th</sup> September 2019.

*Analysis and interpretation*

- 2.32 Each consultation was written up by the interviewer using a standard template. All interview notes were then uploaded to specialist qualitative data analysis software and analysed thematically for consistency of key messages or any differences across all interviewees. Where quotes are used in the report they are anonymised and are not attributed to any particular type of respondent in order to maintain confidentiality.



## 3. Cycling trends in Cambridge and Cambridgeshire

- 3.1 Before discussing the results of the cycle intercept survey and the stakeholder interviews in section 4 and 5, this section sets out contextual data on cycling trends in Cambridge and Cambridgeshire, drawing on fixed cycle counters and the Greater Cambridge Travel Survey.

### Key messages

There has been a long-term increasing trend in the number of cycling trips in Cambridge. This long-term trend indicates an increase across a central area by 64% between 2008 and 2018 (compared to an 11% decrease for all motor traffic), and an increase in cycling across a more peripheral catchment area of 66% (compared to an increase of 8% for motor traffic).

The fixed cycle counters indicate a mix of increases, decreases and consistency between 2018 and 2019 data on the numbers of cyclists passing counters. The long-term data aligns with the trends noted above. We note that there are some limitations to the cycle count data due to reliability issues with the counters.

The evaluation of impact has drawn on a long-term trend of a 5% p.a. growth rate in the numbers of cycling trips in Cambridge – this is used in section 5.

### Contextual trends from fixed cycle counters

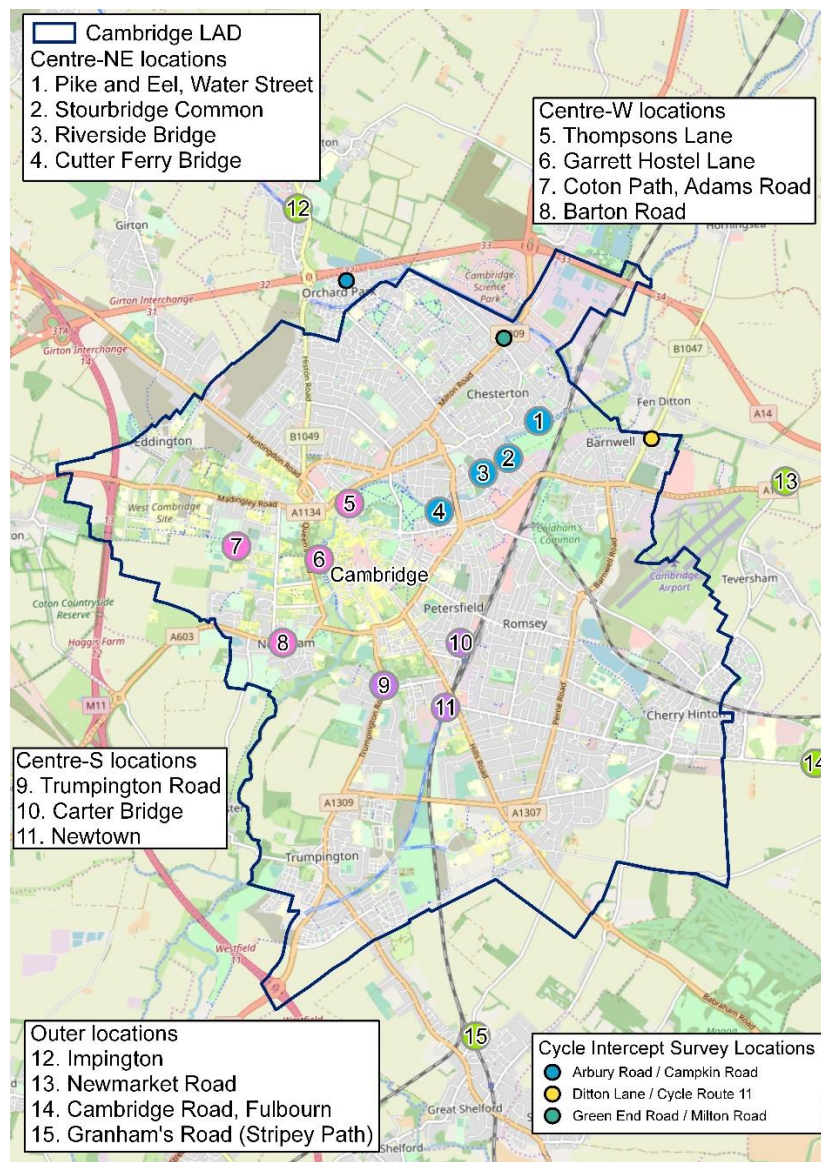
#### Approach

- 3.2 Cambridgeshire County Council provided access to a database of cycle count data gathered by fixed traffic monitoring systems that have been in various locations across Cambridge since 2010. Count data was analysed for the baseline report and this section provides an update drawing on the latest data.
- 3.3 For the baseline report, all 37 locations in the dataset were initially examined and all were found to have incomplete data for particular months due to faults and reliability issues with the fixed cycle counters. Consequently, of the 37 locations, 15 were selected for analysis on the basis of their geographical location in addition to the quality of the data available. Following the approach taken in the baseline report two points are noted:
- Geographical locations were deliberately selected to reflect counters that would provide contextual data for routes that may be similar to the cross-city cycle routes that are subject to impact evaluation, i.e. in close proximity or providing an access route to the city centre.
  - Locations were excluded from the analysis where they were largely incomplete (fewer than five data points), lacking recent data (no data points in the previous three

years) and/or were deemed unreliable (e.g. the machines worked intermittently for large proportions of the selected months).

- 3.4 For the final report, we sought to provide updated data for all 15 cycle counters analysed in the baseline report. However, only 10 of the 15 cycle count locations analysed in the baseline report have updated data for 2019 due to issues with the reliability of the data for the other five locations. Of these five, three locations (Barton Road; Granham's Road (Stripey Path); Newmarket Road) have no data for June or July 2019 and data for two locations (Cutter Ferry Bridge, and Impington) have been excluded due to patchy or missing data. Data is presented for all 15 locations in the report to facilitate consistency with the baseline report. Therefore, the below analysis covers all 15 cycle counters with 10 of these having updated data for 2019.
- 3.5 In keeping with the analysis and commentary in the baseline report, the 15 locations within Greater Cambridge have been combined into four broader geographic areas: three areas in close proximity to the City Centre (North East, South, and West) and a set of locations just outside the City Centre. Figure 3-1 provides a map of the selected locations.

**Figure 3-1: Location of fixed cycle counters analysed**



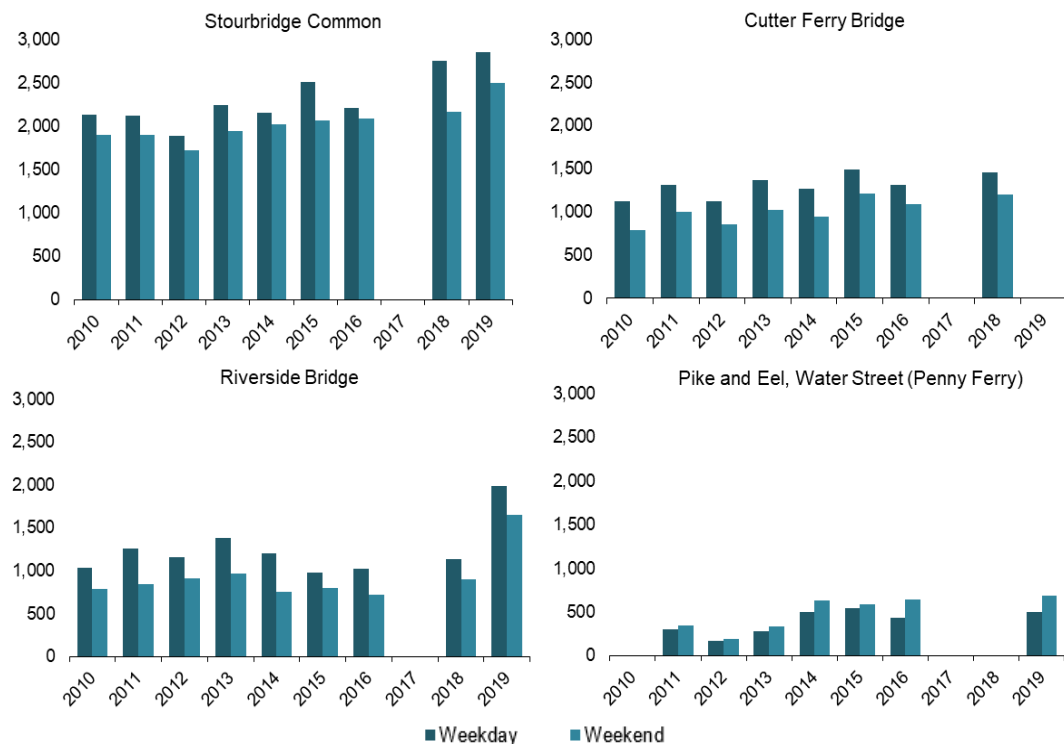
Source: Produced by SQW 2019. Licence 100030994. Contains OS data © Crown copyright [and database right] [2019]

- 3.6 For each location we analysed cycling trends in the months of June and July in order to match and complement the cycling survey data. The analysis focused on cycle flows between the hours of 7am and 7pm, again in line with the cycle count monitoring that was conducted alongside the cycling intercept surveys. The following analysis presents the overall findings with an overview of each of the four quadrants described in the map (see Figure 3-1).

### Analysis of cycling trends across Greater Cambridge from 2010 to 2019

- 3.7 Across the locations analysed, the data indicate that cycling flows across Greater Cambridge have either increased in 2019 or stayed broadly in line with the previous year of data, with the counter at Riverside Bridge seeing the highest increase in cycling flows. Overall, the general trend over the past nine years is an increase in cycling flows.
- 3.8 Figure 3-2 provides an indication of trends in cycling in relation to daily average cycle counts split by weekday and weekend for a set of four locations located northeast of Cambridge City Centre, along the river Cam. For the three locations with 2019 data (Stourbridge Common, Riverside Bridge, and Pike and Eel, Water Street), cycle flows have increased in 2019, compared the last year of data available. This is especially true of Riverside Bridge, which has seen a substantial increase. The balance between weekday and weekend flows in 2019 is broadly in line with data for previous years.

**Figure 3-2: Centre-Northeast cycle counts (June daily averages for weekdays and weekends)**

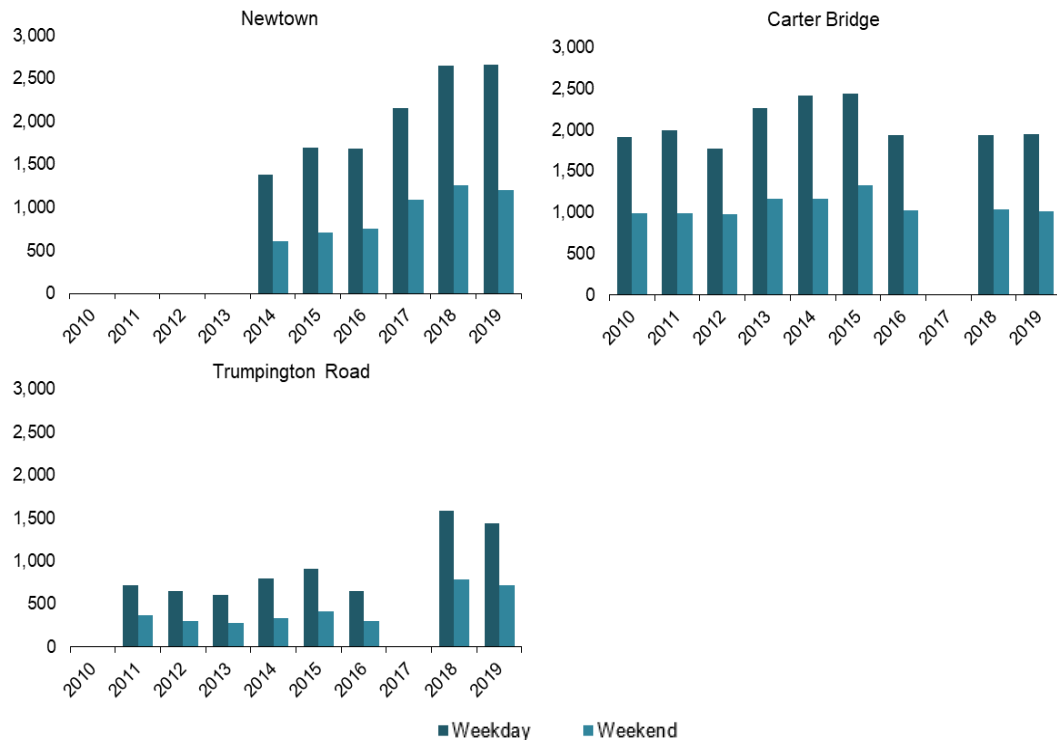


Source: SQW analysis of cycle count database

- 3.9 Figure 3-3 provides an indication of trends in cycling across three locations to the south of Cambridge city centre. The 2019 data for all three locations (Newtown, Carter Bridge and Trumpington Road) shows that cycle flows have remained broadly in line with the 2018 figures. Whilst Newtown and Carter Bridge saw a marginal increase in their weekday figures

in 2019, Trumpington Road has seen a slight decrease. Differences in the flow rates for weekends and weekdays are the same as data for previous years, suggesting that the locations are still predominantly commuter routes.

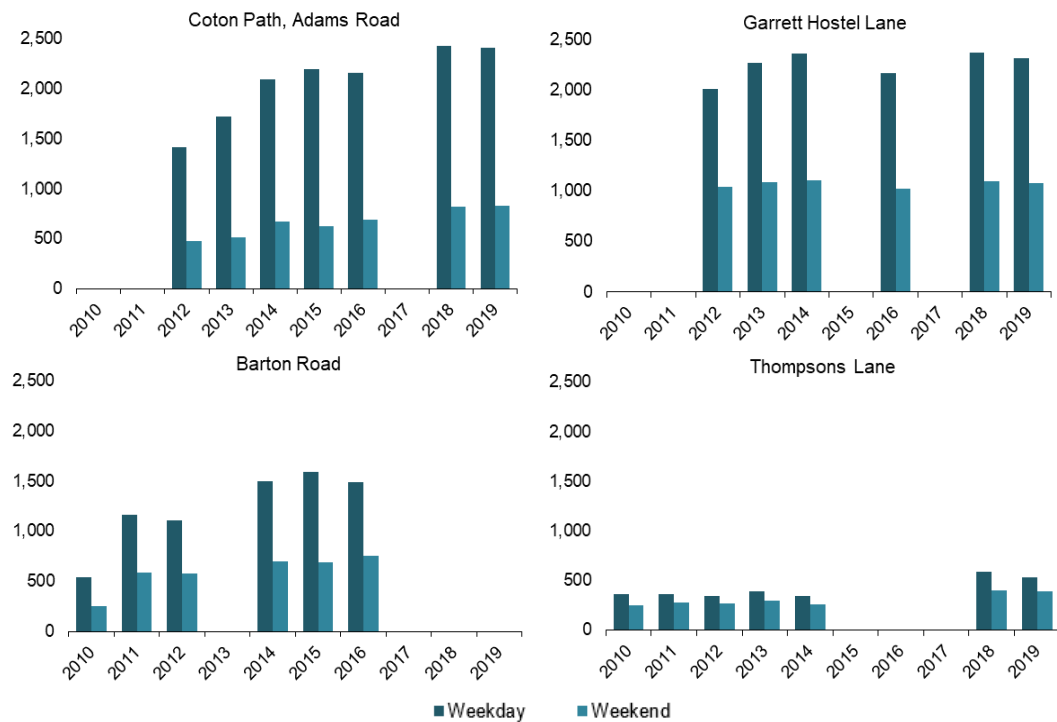
**Figure 3-3: Centre-South cycle counts (June daily averages for weekdays and weekends)**



Source: SQW analysis of cycle count database

- 3.10 Figure 3-4 presents data for cycle counters located between Cambridge city centre and the western fringe. For the three cycle routes with 2019 data (Coton Path, Garrett Hostel Lane and Thompsons Lane), cycle flows are broadly in line with the 2018 data with all but one of the figures for 2019 being slightly lower than the previous year of data. The exception is Coton Path which saw a marginal increase in weekend flows. In line with data for previous years, for three of the four routes (excluding Thompsons Lane, a low-traffic cycle route), weekday flows are more than double equivalent cycle flows at the weekend, highlighting their role as important commuter routes.

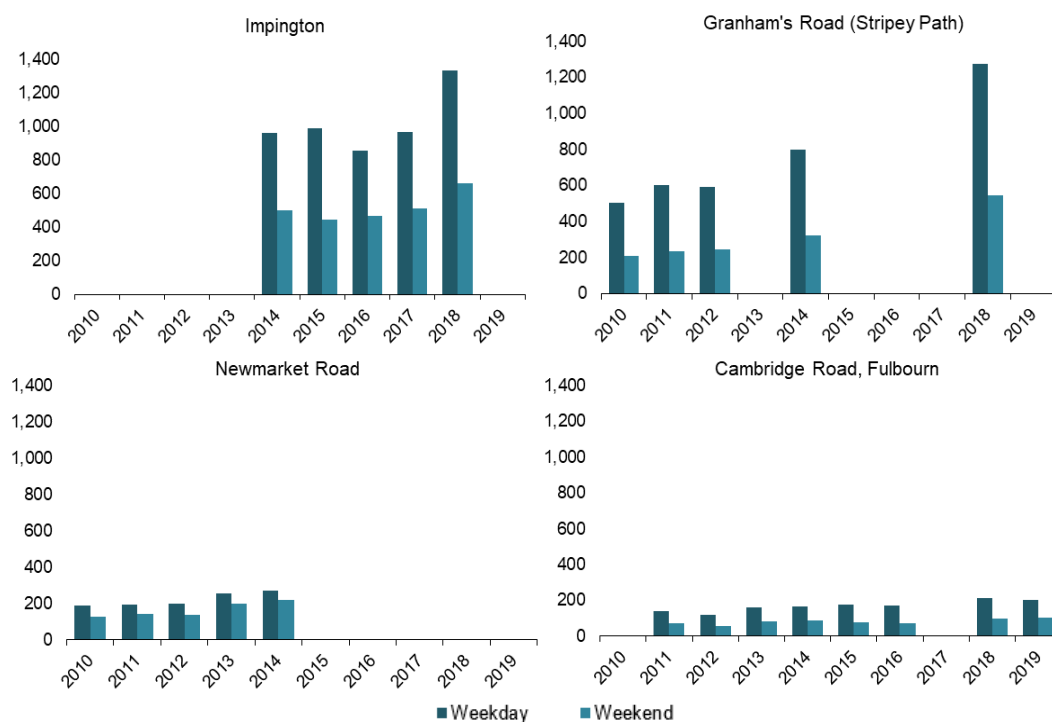
**Figure 3-4: Centre-West cycle counts (June daily averages for weekdays and weekends)**



Source: SQW analysis of cycle count database

3.11 Figure 3-5 provides data on four cycle counters located on the outskirts of Cambridge, however only one of these had additional 2019 data available. Cycle flows in 2019 in Cambridge Road, Fulbourn are broadly in line with data for previous years, with a marginal increase in the weekend flows.

**Figure 3-5: Outer Cambridge cycle counts (June daily averages for weekdays and weekends)**



Source: SQW analysis of cycle count database



- 3.12 As in the baseline report, the general increase in cycling flows in the past nine years seen in this data support the findings of the 2018 Cambridge City Traffic Monitoring Report<sup>2</sup>, which showed cycling to have increased across a central area by 64% between 2008 and 2018 (compared to an 11% decrease for all motor traffic), and an increase in cycling across a more peripheral catchment area of 66% (compared to an increase of 8% for motor traffic). This implies a long-term trend of around 5% p.a. growth in cycling trips.

### Cycle survey evidence

- 3.13 Further evidence on wider trends is provided in the Greater Cambridge Travel Survey. The full results are available from the 2017 survey, and a subset of results from the 2018 survey. Travel for Cambridgeshire collected 7,635 survey responses from residents and commuters in Cambridge and South Cambridgeshire for the 2017 survey, providing evidence on the extent of commuting by cycle. It shows differences, as one would expect, depending on where people live and work, as follows:
- Of the 1,800 respondents that lived and worked in the city, 1,100 (62%) commuted to work by cycle in 2017.
  - Of the 2,400 respondents who lived outside the city and worked in the city, under 400 (16%) commuted by cycle in 2017.
  - There were 500 respondents who lived in the city but commuted out of the city for work and, of these, c. 90 (18%) commuted by cycle.
- 3.14 A separate report based on the data from respondents participating in the 2018 survey and who worked at Cambridge Science Park, Cambridge Business Park and St John's Innovation Centre (all close to the Links to Cambridge North & Science Park route) provides slightly more recent data<sup>3</sup>. It showed that 24% of trips (Monday to Friday) used cycle as the main mode, with this broadly in line with patterns over recent years.

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<sup>2</sup> Cambridgeshire County Council, Traffic Monitoring Report 2018: <https://ccc-live.storage.googleapis.com/upload/www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/Traffic%20Monitoring%20Report%202018.pdf?inline=true>

<sup>3</sup> Travel Plan Plus (2018) Travel Plan Plus Area Travel to Work Survey Report

## 4. Results of the 2019 intercept survey

- 4.1 This chapter details findings from the 2019 post-implementation ‘after’ survey and follows a similar structure as the 2018 baseline (reported in the Baseline Report, finalised in February 2019). The chapter is focussed on providing data and findings from the survey, the key messages of which are summarised in the box below. The next chapter focuses on evidence of impacts on changes in cycling behaviours and attitudes, including a comparison of the results of the before and ‘after’ surveys.

### Summary of key messages

The slight majority of respondents were making their trips for commuting purposes (54% across all routes), but there were also other reasons including: to get to/from leisure activities; for pleasure; shopping; and for personal business.

Most respondents had been cycling in Cambridge for a while, but some had only started cycling more recently. 20-22% of respondents had been using the particular route for the last three months. This coincides with the completion of route improvements, though does not necessarily imply causality (the potential impact of routes is considered in the next chapter).

Across the three routes, 55% of respondents reported that they cycle about the same amount as they had the previous year, while 34% have increased the amount they cycle, and 4% cycle less than a year ago. This points to a trend of increasing numbers of cycling trips – the trends on these three specific routes are considered in the next chapter.

The perception of safety at the survey point was high on all three routes, with half (50%) saying they felt very safe and another two fifths (43%) saying they felt quite safe. The route considered the safest was Links to east Cambridge (99% felt quite or very safe). The route considered least safe was Arbury Road (13% felt unsafe).

The views on the quality of routes varied, including across different aspects. Overall, across the three cross-city routes, ease of navigating junctions and volume of traffic were the elements of the routes that users rated highest (60% and 59% either very satisfied or satisfied, respectively), followed by space for cyclists (54% either very satisfied or satisfied). The quality of road surface was considered the poorest aspect of the routes with 36% very satisfied or satisfied with this. Highest ratings were found on Links to East Cambridge. Changes in quality are reported in the next chapter.

### Fieldwork summary

- 4.2 Cyclist intercept surveys took place June and July 2019. Surveys took place between 7am and 7pm, on weekdays and weekends. The number of survey shifts per route was chosen with the aim of achieving at least 100 responses per route, with the relative usage levels of the routes and the outcomes of the 2018 ‘before’ survey in mind. The survey shift allocations are detailed in Table 4-1.

**Table 4-1: Cyclist intercept survey shift allocations**

Route	Weekday	Weekend	Total
Arbury Road corridor	6	2	8
Links to Cambridge North and the Science Park	7	3	10
Links to east Cambridge and NCN11 / Ditton Lane	6	2	8

Source: Steer

- 4.3 The survey response rate was relatively high, with an average response rate of 14%. Table 4-2 outlines the number of cyclists intercepted and the response rates achieved by route.
- 4.4 The highest response rate was achieved on the links to east Cambridge and NCN11 / Ditton Lane route (17%) and the lowest response rate recorded on the links to Cambridge North & Science Park route (11%). It is difficult to know why there is variation between response rates across survey sites and this variation can be expected when carrying out this type of fieldwork. There were no known factors that could be attributed to the results (for example, there was no ongoing cycle route construction work near to any site).

**Table 4-2: Survey response rates**

Route	Intercept site	Postcards distributed	Total survey responses	Response rate
Arbury Road corridor	Arbury Road junction with Campkin Road	836	112	13%
Links to Cambridge North and the Science Park	Green End Road junction with Milton Road	967	107	11%
Links to east Cambridge and NCN11 / Ditton Lane	Ditton Lane junction with NCN 11	614	103	17%
<b>Total cross-city cycle routes</b>		<b>2,417</b>	<b>322</b>	<b>14%</b>

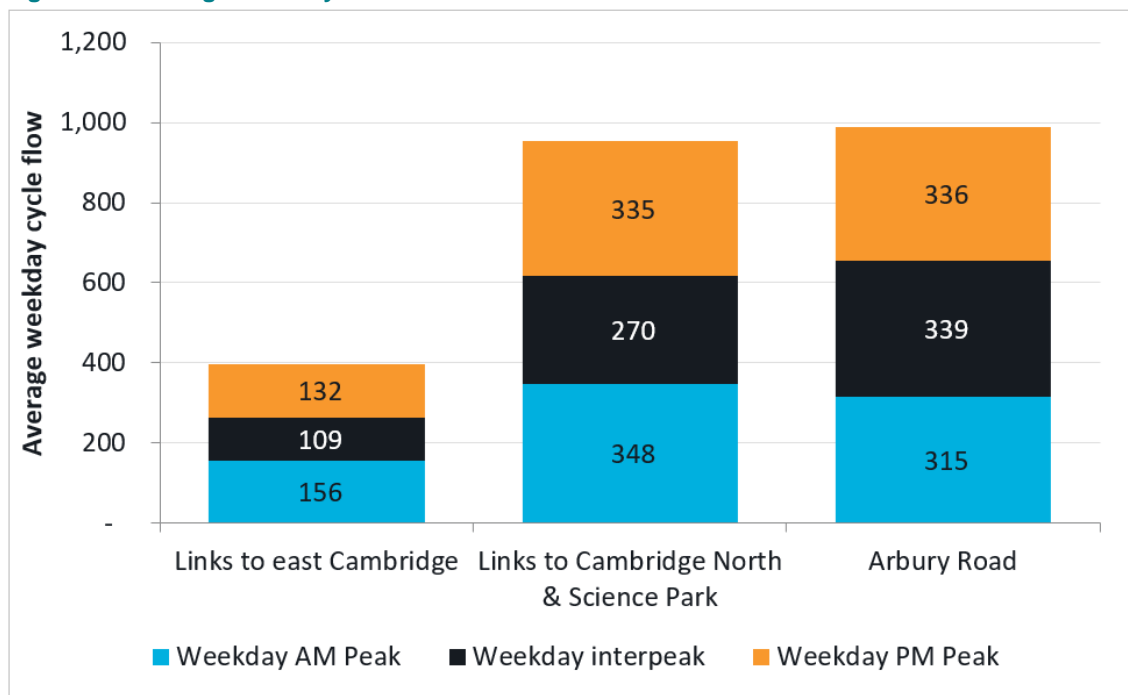
Source: Steer

- 4.5 The rest of this chapter sets out the main findings from the 2019 'after' survey, under the following headings:
- Users of the cycle routes, including geographic catchments and travel habits of respondents
  - Trips made on the cycle routes
  - Reasons for using the routes
  - Satisfaction with the routes.
- 4.6 Annex B provides further data on the demographic profile of respondents and more general attitudes towards cycling.

## Route users

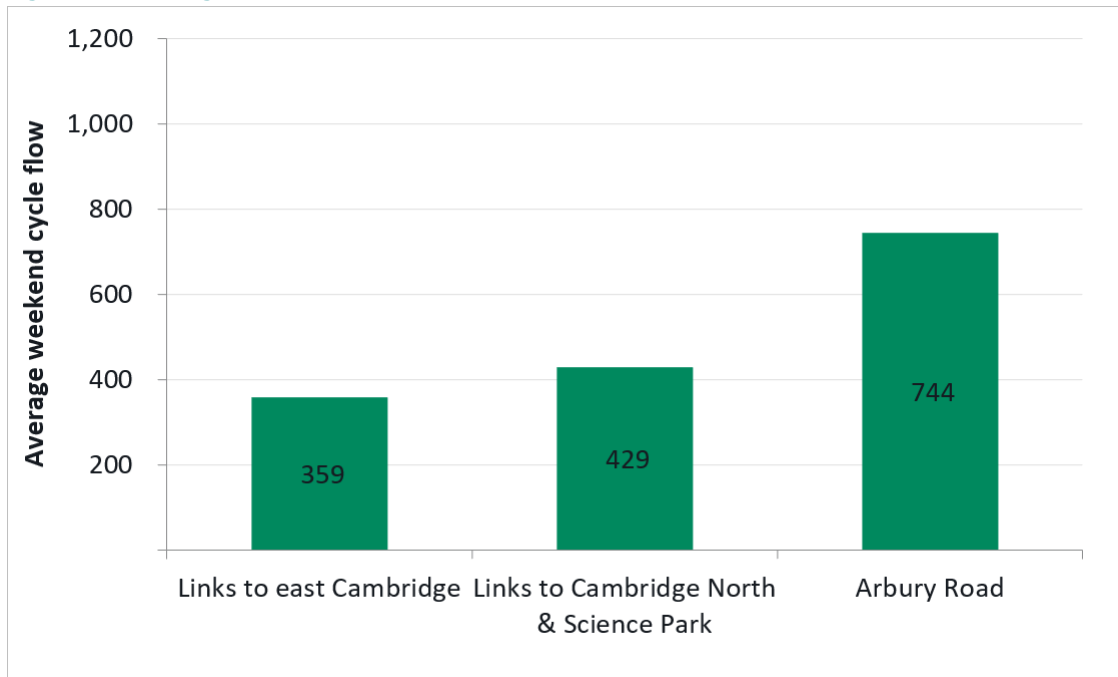
- 4.7 Cycle counts were recorded between 7am and 7pm on the cycle routes. The cycle count surveys took place at the same time as cyclist intercept surveys, and the data recorded has been used to calculate average daily flows on weekdays and weekends.
- 4.8 On an average weekday, the Arbury Road corridor was the busiest of the three cross-city routes, with a daily flow of just under 1,000 cyclists, followed by Links to Cambridge North and the Science Park just over 950 cyclists (see Figure 4-1). The Links to east Cambridge route was notably quieter, with under 400 cyclists per day on an average weekday.
- 4.9 Figure 4-2 shows cycle flows on the cross-city routes on an average weekend day. At weekends, the Arbury Road corridor was the busiest route, with just under 750 cyclists on average across the weekend days surveyed. Links to Cambridge North and the Science Park was much quieter on weekends than weekdays, with around 430 cyclists per day, indicating the route may be used more as a commuting route.
- 4.10 Links to east Cambridge was the quietest route at weekends, with around 360 cyclists on an average weekend day. The number of cyclists using the route on weekends was relatively comparable to weekdays, indicating the route may be used as much for leisure reasons as it is for commuting.

Figure 4-1: Average weekday flow



Source: Cycle counts undertaken for Intercept Survey

Figure 4-2: Average weekend flow



Source: Cycle counts undertaken for Intercept Survey

### Catchment area of routes

- 4.11 Figures 4-3, 4-4 and 4.5 show maps of respondents' home locations on Links to east Cambridge, Links to North Cambridge & Science Park and Arbury Road, respectively.
- 4.12 In the 2019 survey respondents were asked to provide their home postcode minus the final digit. This has allowed for analysis to show the geographical distribution of respondents, with key observations as follows.
- Links to east Cambridge: reflecting this survey point's north eastern location, most respondents were from inner-east and east Cambridge. More respondents came from the surrounding hinterland, e.g. towards Waterbeach and Fulbourn, than came from other central areas of the city. This survey point had the widest catchment, drawing a small number of respondents from as far as Soham and towards Mildenhall, which may reflect that the route links into the National Cycling Network routes 11 and 51.
  - Cambridge North and Science Park: most respondents lived in the north of the city although around 10% came from east Cambridge, indicating the role this link plays in connecting the north and east of the city together, potentially for commuter journeys between east Cambridge and the Science Park.
  - Arbury Road: this survey point had the smallest catchment, concentrated in north and north west Cambridge, perhaps reflecting the role this link plays in enabling orbital journeys.



Figure 4-3: Home locations of respondents interviewed on the Links to east Cambridge route

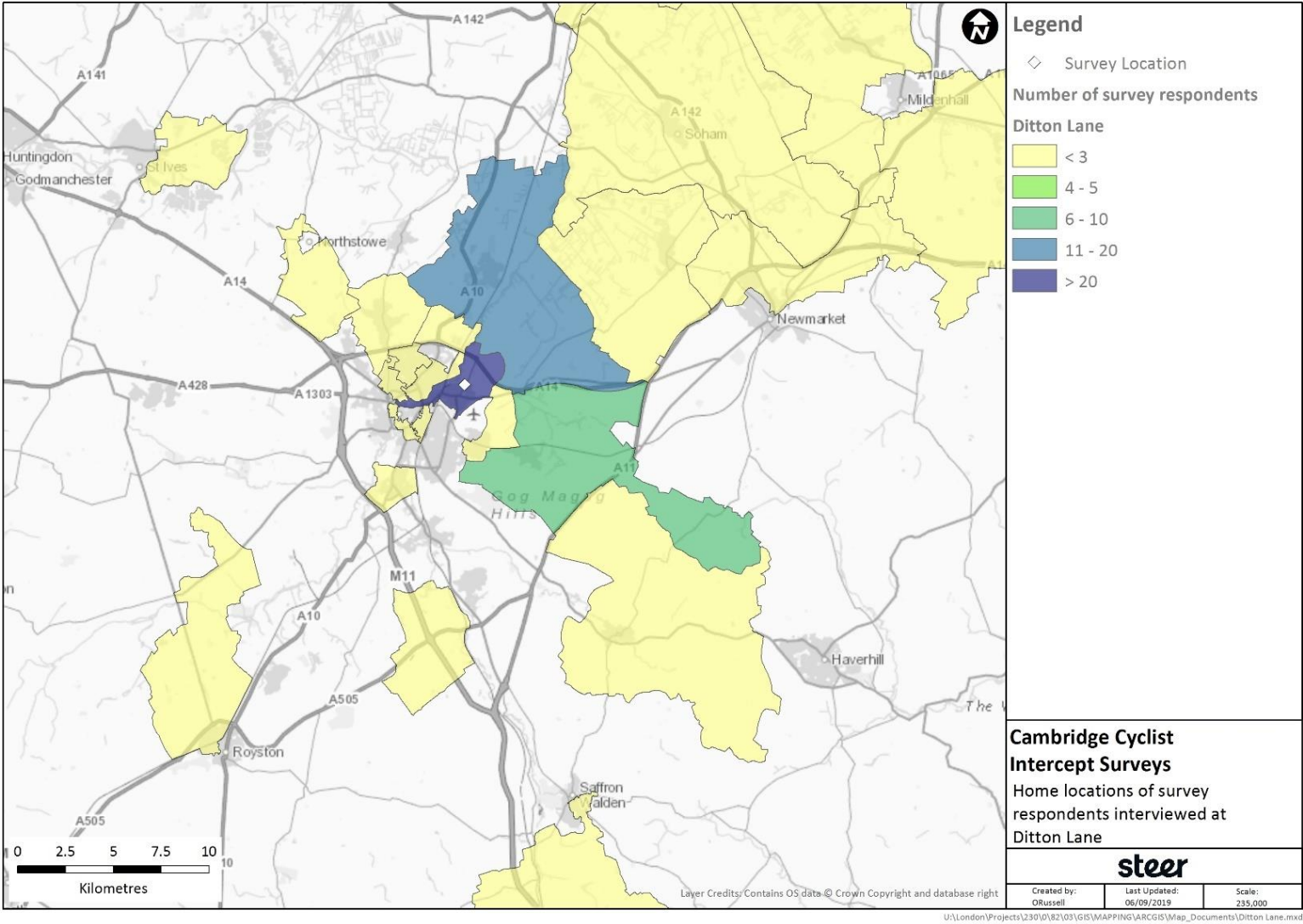


Figure 4-4: Home location of respondents interviewed on the Links Cambridge North & Science Park route

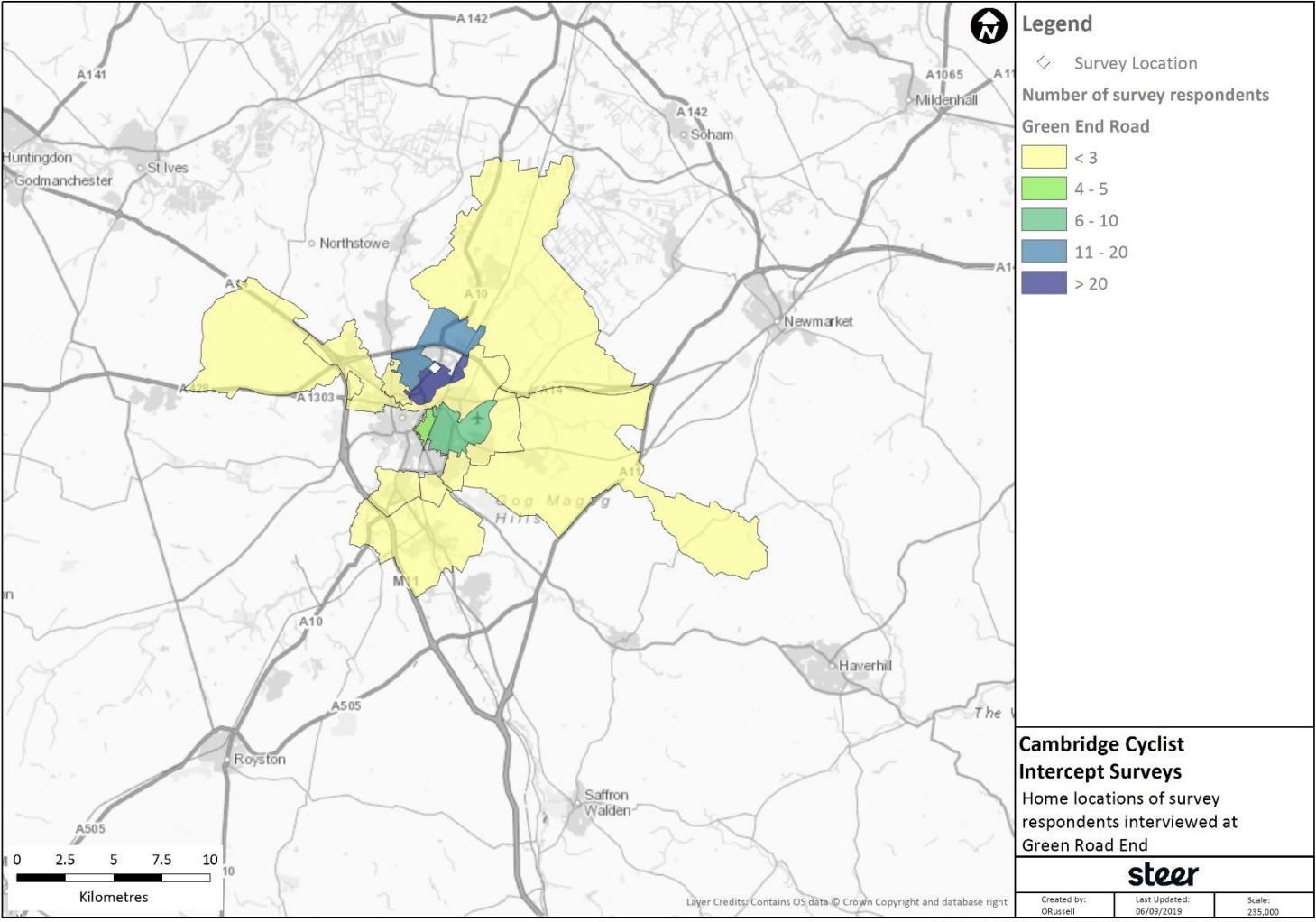
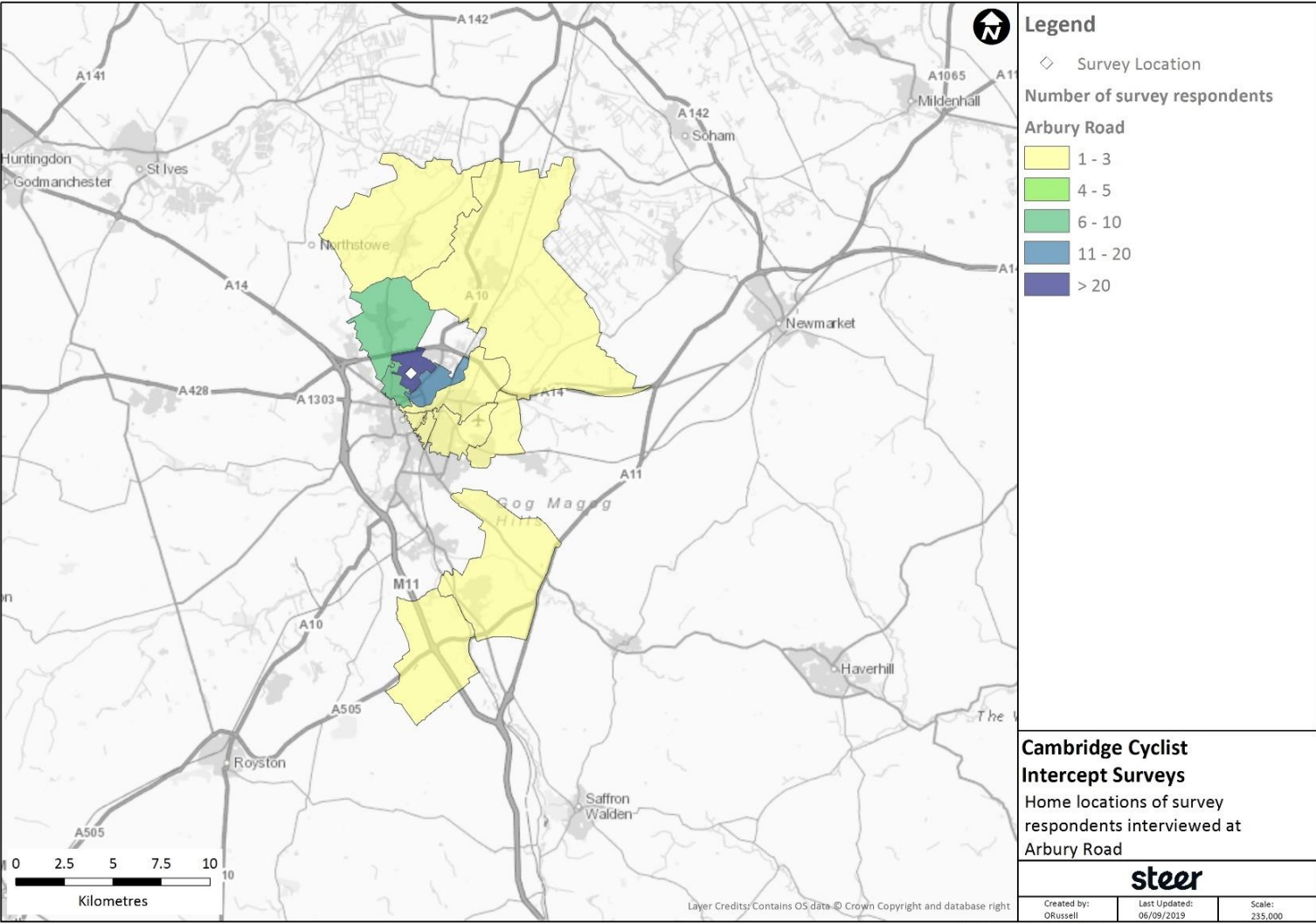


Figure 4-5: Home location of respondents interviewed on Arbury Road

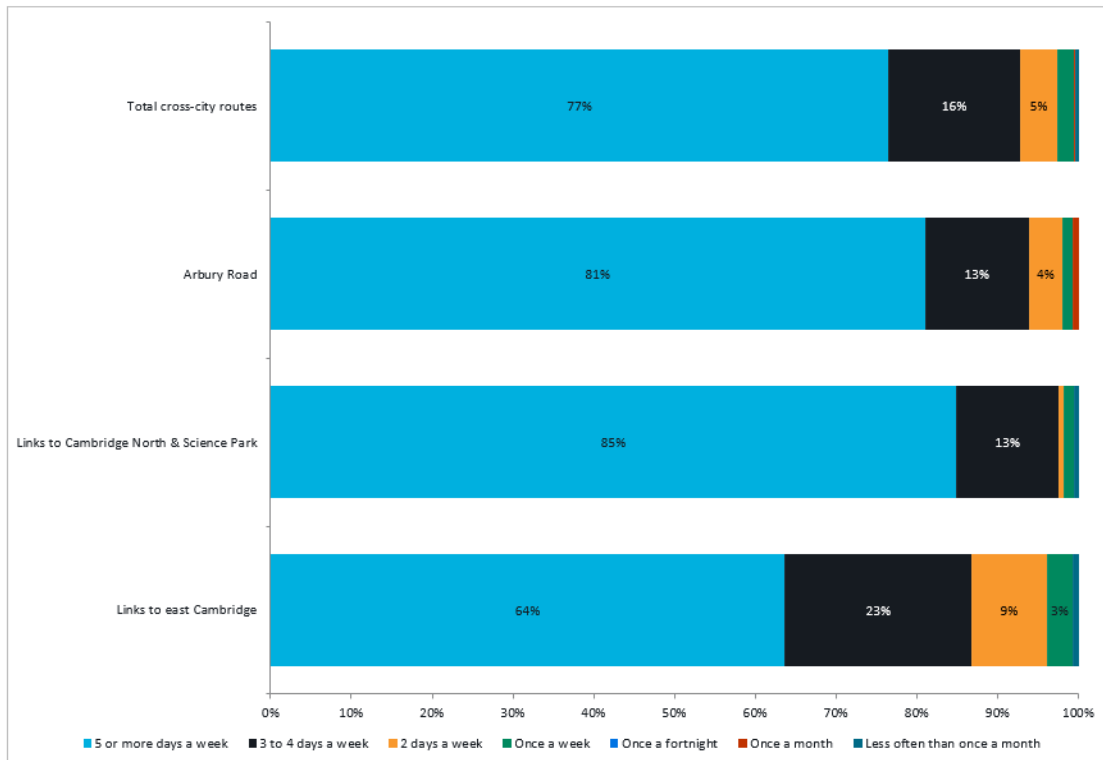


## Travel habits of users

### Cycling habits

- 4.13 Many respondents intercepted on the cross-city routes were frequent cyclists. Across the three routes, 93% of respondents cycled at least three times a week.
- 4.14 At route level, the Arbury Road corridor and Links to Cambridge North and the Science Park route had the highest proportion of respondents who cycle frequently. A higher proportion of infrequent cyclists were recorded on the Links to east Cambridge route (Figure 4-6)

Figure 4-6: How often cyclists use the routes (weighted)

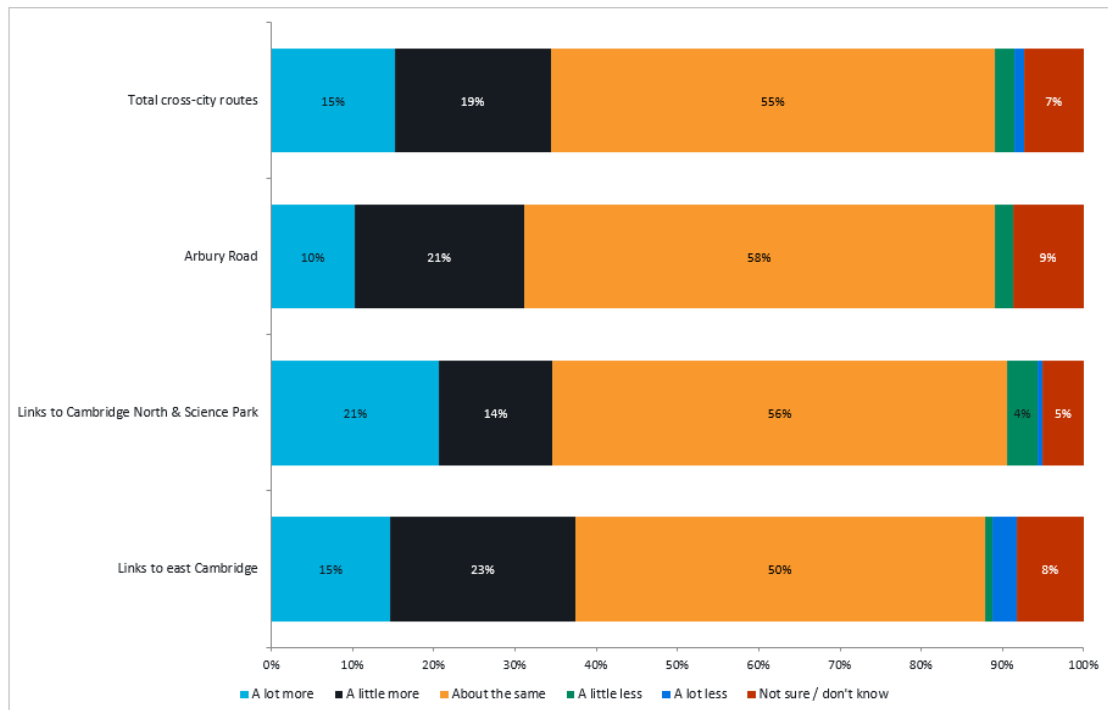


Source: Cycle Intercept Surveys (Q37 base: 322 respondents (unweighted))

### Change in amount of cycling

- 4.15 Across the three routes, 55% of respondents reported that they cycle about the same amount as they had the previous year, while 34% have increased the amount they cycle.
- 4.16 The largest increase was seen on Links to east Cambridge, which interestingly also saw the most respondents cycling less (and fewer cycling the same amount) (Figure 4-7).

Figure 4-7: Change in amount of cycling in Cambridge over the last year (weighted)

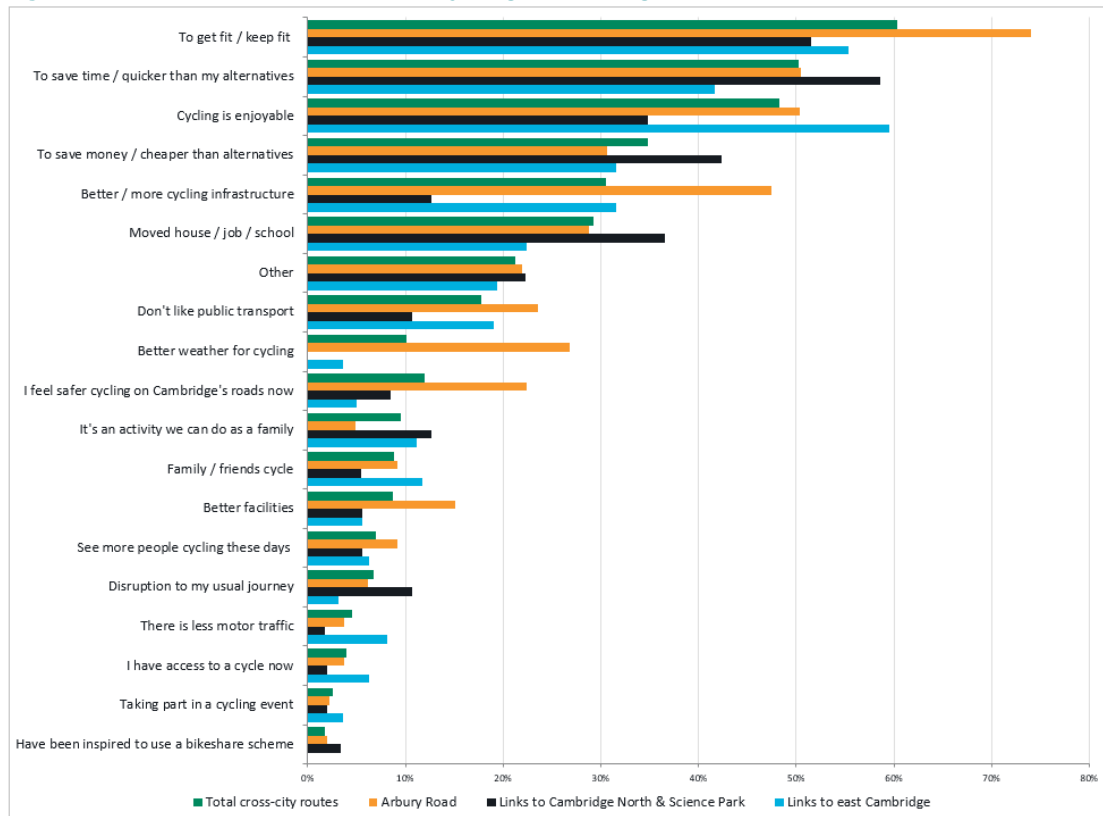


Source: Cycle Intercept Surveys (Q29a base: 322 respondents (unweighted))

### Reasons for cycling more

- 4.17 Those cycling more were asked for the reasons for the change, with 110 respondents to the question. Across the routes, the main reasons for cycling more were:
- to get fit / keep fit
  - to save time
  - cycling is enjoyable.
- 4.18 At route level, respondents on Links to east Cambridge were most likely to be cycling more because cycling is enjoyable and to get/keep fit (Figure 4-8). Respondents on Arbury Road cycled more to get/keep fit, to save time, because cycling is enjoyable, and due to better/more cycling infrastructure. This is interesting in the context of the infrastructure improvements – impacts of the infrastructure are covered in more detail in the next section. Respondents on Links to Cambridge North & Science Park cycled more to save time, get/keep fit and to save money.

Figure 4-8: Respondents' reasons for cycling more (weighted)



Source: Cycle Intercept Surveys (Q29b base: 110 respondents (unweighted))

#### Reasons for cycling less

- 4.19 Eleven respondents in total reported that they were cycling less than they did a year ago. The most common reason (mentioned by five people) was because of injury / illness. Only one person said that they felt less safe cycling on Cambridge's roads, and no one said that it is because there was more motor traffic. Other reasons for cycling less were because of poorer weather or that they had moved house / job / school (each mentioned by three people).

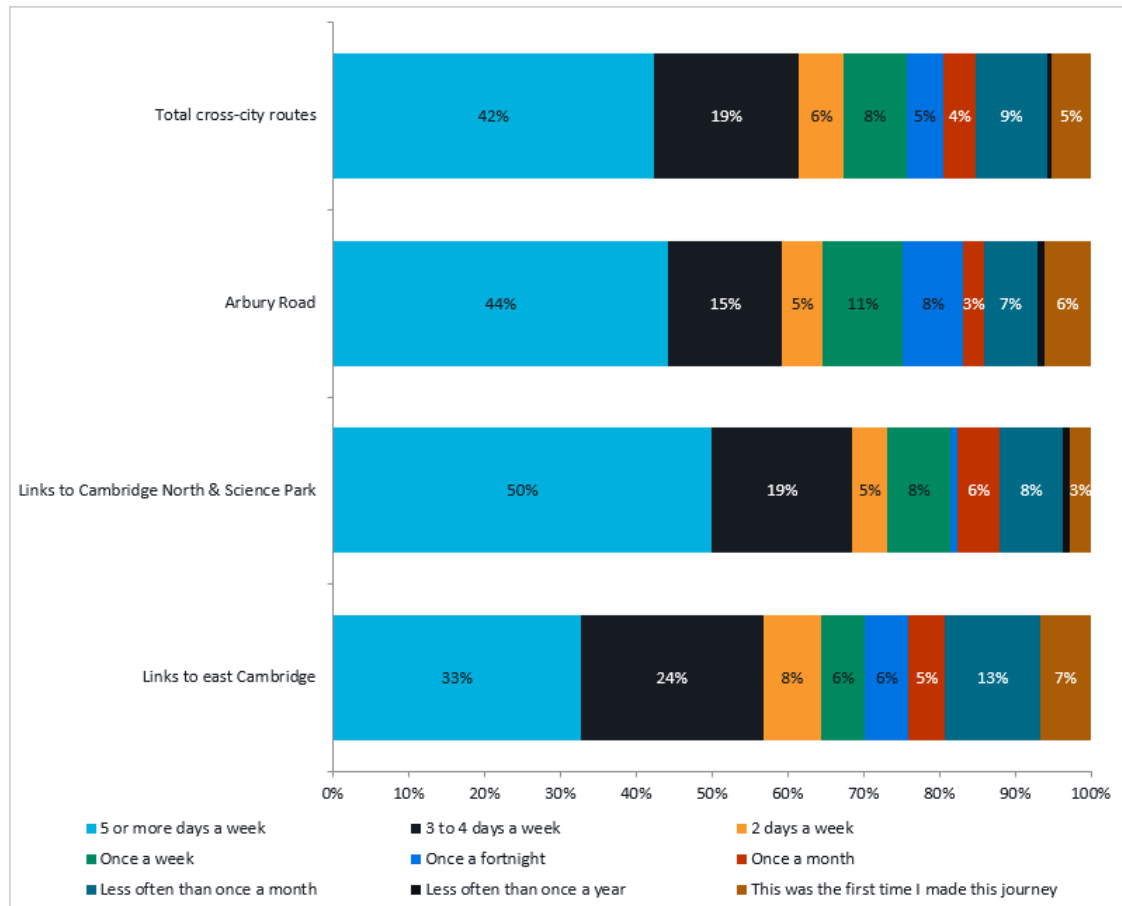


## Trips made on the cycle route

### Trip frequency and distribution

- 4.20 Users of the routes were asked how often they make the trip they were making at the time of the survey. Most respondents reported using the routes regularly, with 61% of respondents making their trip at least three days a week.
- 4.21 At route level, users of Links to Cambridge North & Science Park make their trip the most frequently, with 50% making their trip five or more days a week (Figure 4-9).

Figure 4-9: Frequency of cycling on the routes (weighted)

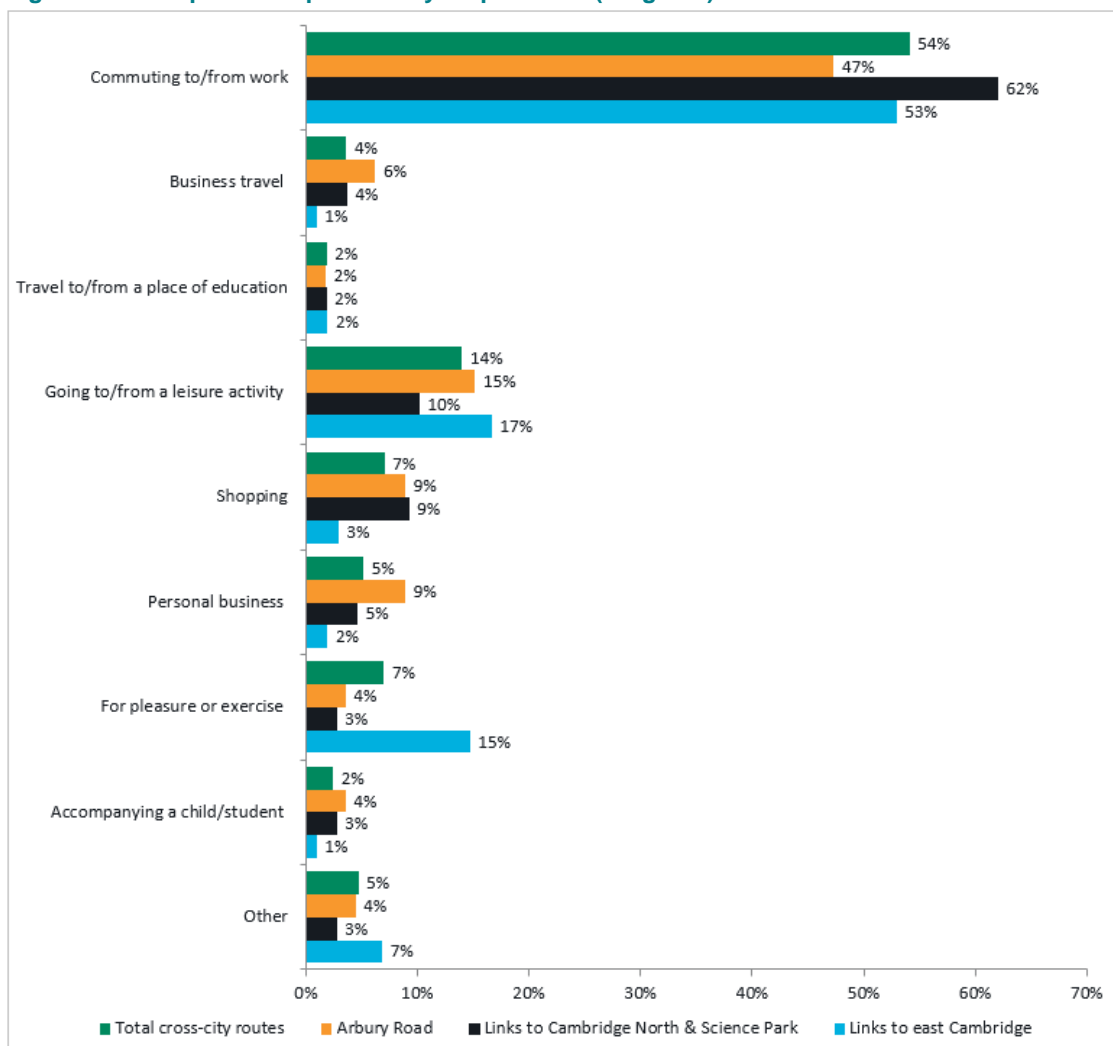


Source: Cycle Intercept Surveys (Q9 base: 322 respondents (unweighted))

### Trip purpose and reasons for cycling

- 4.22 Respondents were asked to state the purpose of the trip they were making at the time of the survey. More than half were commuting to/from work, with the next most common reason being going to/from a leisure activity.
- 4.23 At route level, the patterns were similar. It was noticeable, however, that there was a higher proportion of respondents on the Links to east Cambridge route that were cycling for pleasure (Figure 4-10). This aligns with the patterns of weekday and weekend cycling that were reported earlier in the chapter, and the nature of the route, which is part of a longer national cycling network route.

**Figure 4-10: Purpose of trips made by respondents (weighted)**

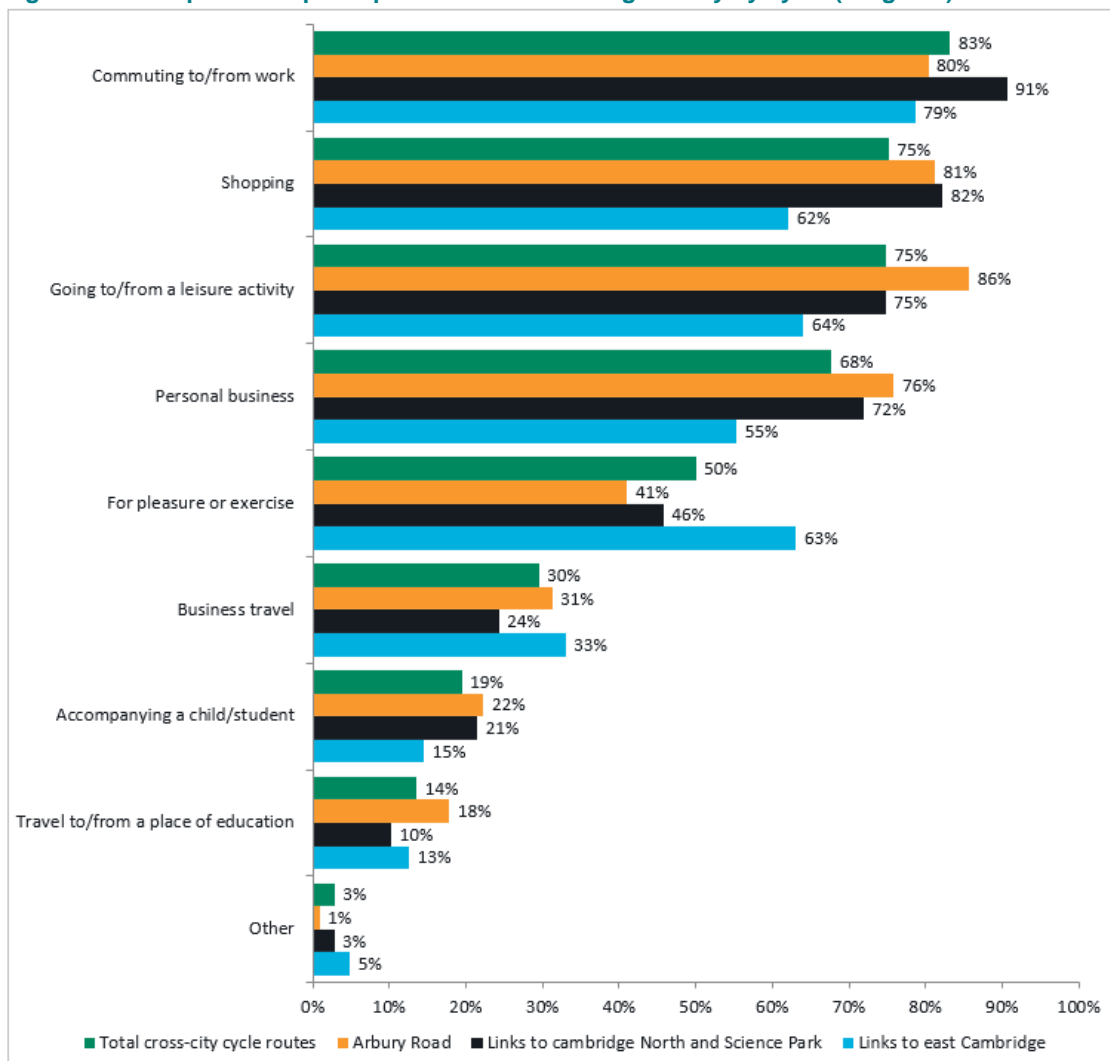


Source: Cycle Intercept Surveys (Q8 base: 322 respondents (unweighted))

### Usual trip types

- 4.24 Respondents were asked more generally about the type of journeys they make by cycle. The most common type of trip is commuting to/from work, followed by shopping and trips for leisure.
- 4.25 The type of trips made by users of the different routes were broadly similar across the three routes, however there are a number of notable trends, with relatively higher proportions of respondents that generally cycle for: commuting, on the Links to Cambridge North & Science Park route; going to/from a leisure activity, on the Arbury Road route; pleasure or exercise on the Links to east Cambridge route (Figure 4-11).

**Figure 4-11: Purpose of trips respondents make more generally by cycle (weighted)**

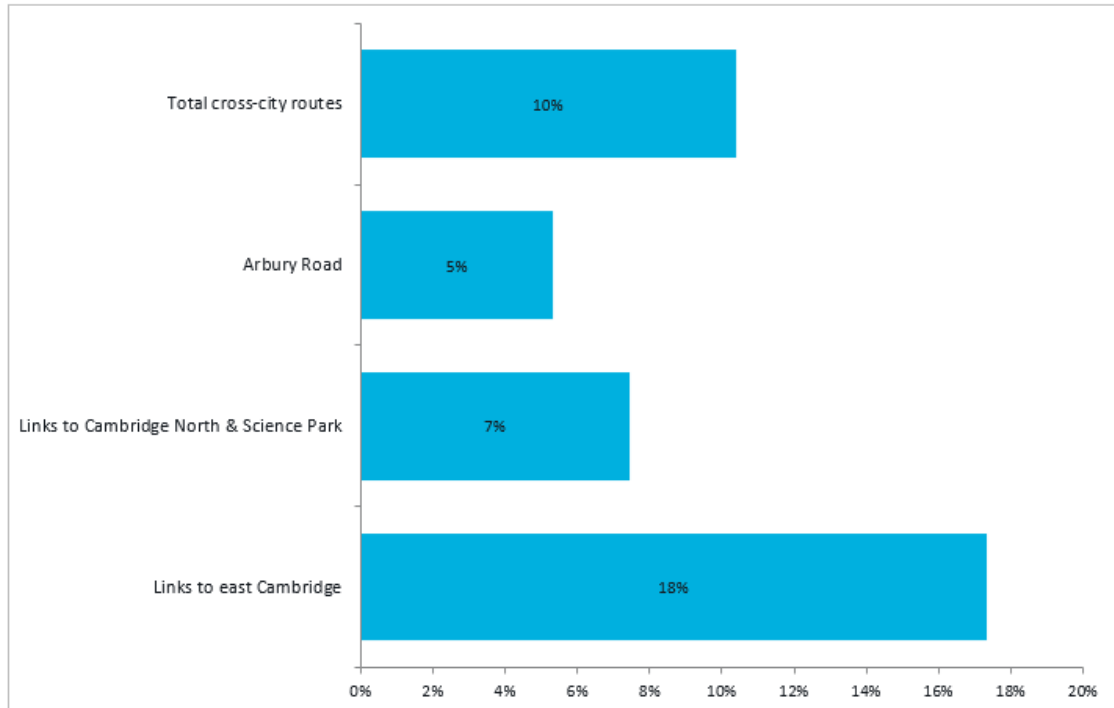


Source: Cycle Intercept Surveys (Q30 base: 322 respondents (unweighted))

### Other mode of transport used for trip

- 4.26 Figure 4-12 shows that most of the cross-city cycle respondents did not use another means of transport as part of their journey. Looking at the route level, it is most common for users of the Links to east Cambridge route to use another mode of transport as part of their journey.

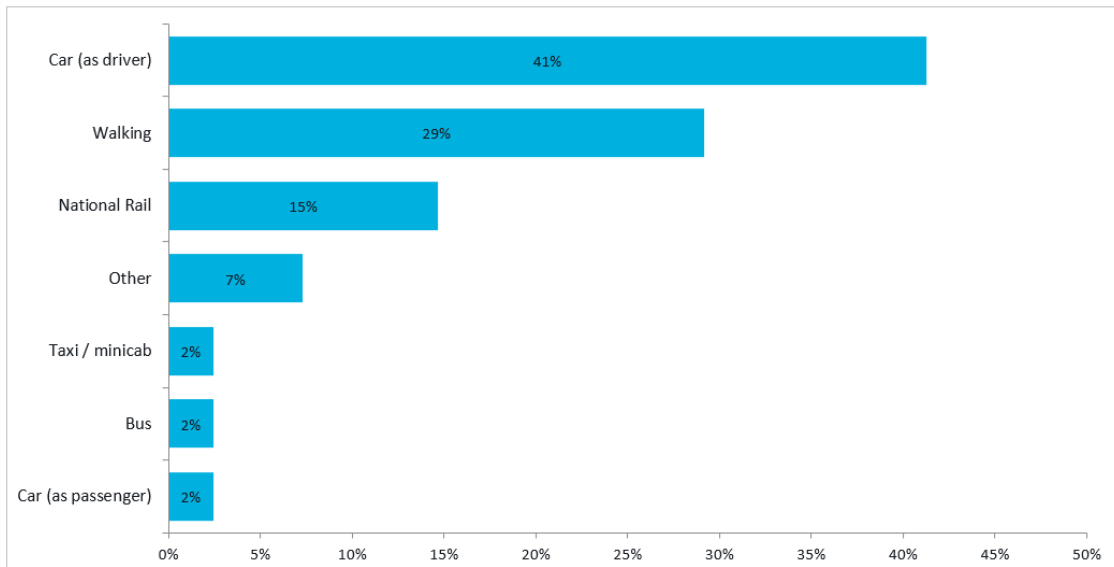
Figure 4-12: Respondents using other modes as part of their journey (weighted)



Source: Cycle Intercept Surveys (Q6 base: 322 respondents (unweighted))

- 4.27 Figure 4-13 shows that those respondents who used another means of transport as part of their journey were most likely to have driven, walked or used a National Rail service.

Figure 4-13: Other modes used as part of the journey (weighted)



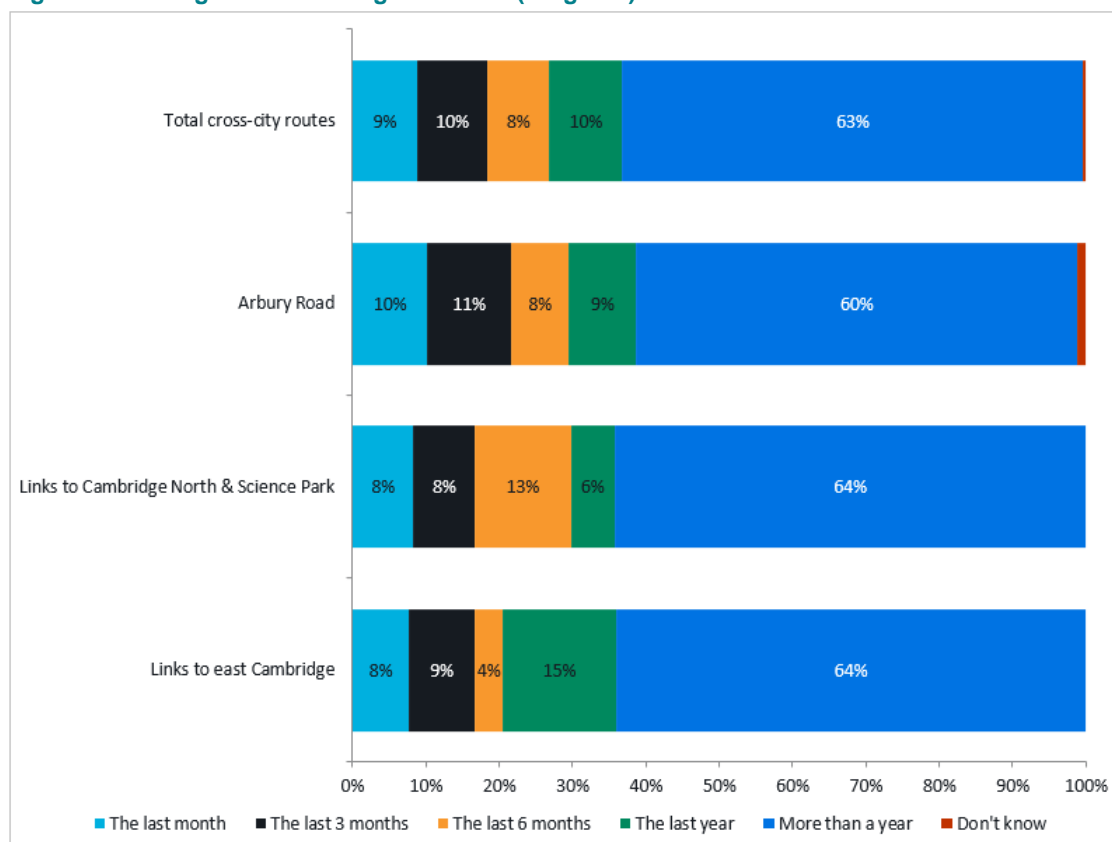
Source: Cycle Intercept Surveys (Q7 base: 63 respondents (unweighted))

## Reasons for choosing to cycle the routes

### Usual route

- 4.28 Users who were not making the journey for the first time were asked whether the route they used at the time of the survey was the route they would normally use. The majority (82%) were taking their normal route at the time of the survey. This level was consistent across respondents from the three routes.
- 4.29 Respondents who indicated they were on the route they would normally take were asked how long they have been using this route for. Figure 4-14 shows that 63% of respondents across the routes had been using that route for over a year. More than a third (37%) had started using their given route in the last year.
- 4.30 The results were similar across all routes, however, it is notable that 21% of people using Arbury Road had begun doing so in the last three months, whereas more users of Links to east Cambridge (79%) had been doing so for longer than six months. Whilst these data simply show overall patterns, it is notable that there were around 20% across all routes who had been using the routes for under three months (i.e. since route improvements had been completed) and a further 8% in the last six months. The extent to which routes may have impacted on cycling trips is discussed in more detail in the next chapter.

Figure 4-14: Length of time using the routes (weighted)



Source: Cycle Intercept Surveys (Q18c base: 250 respondents (unweighted))

#### *Not usual route*

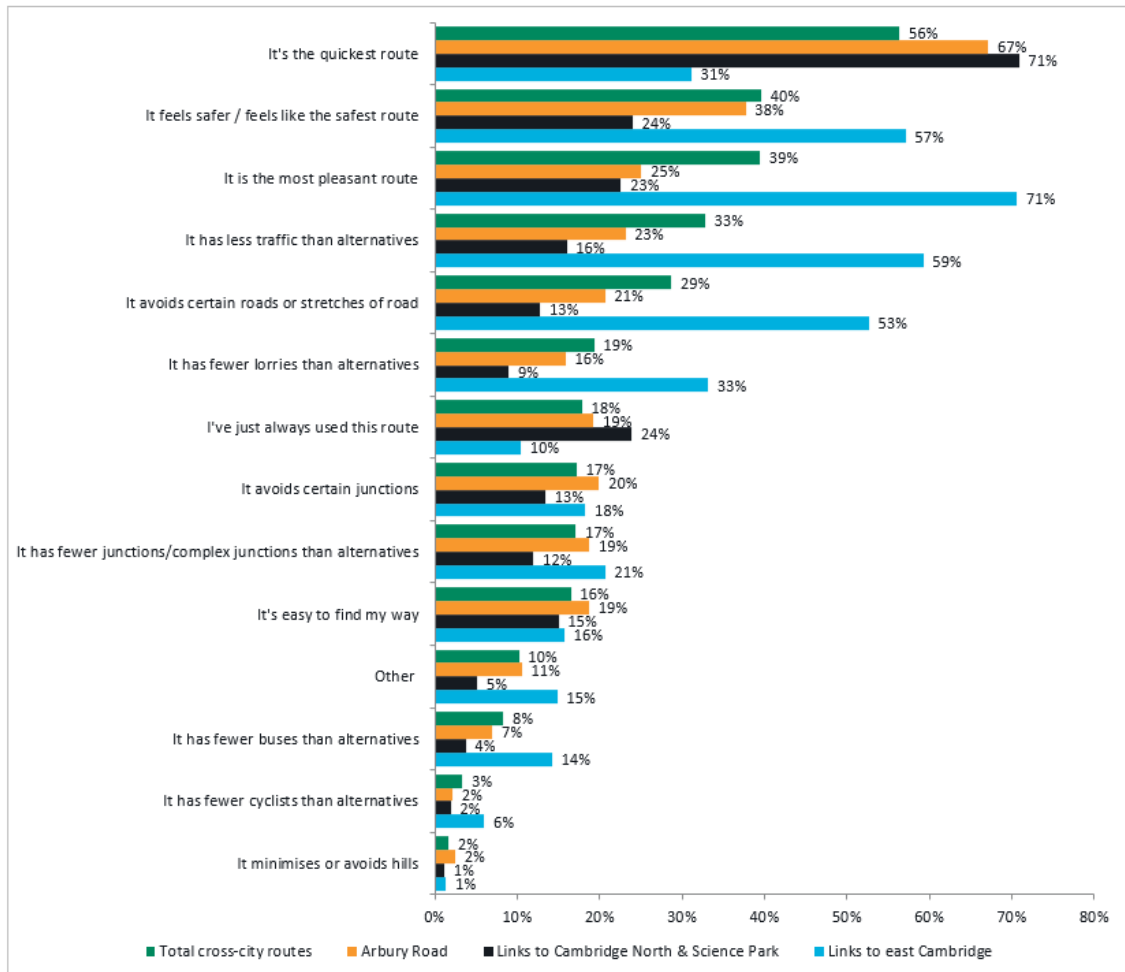
- 4.31 Respondents who indicated that they were not using their usual route at the time of the survey were asked why they had chosen to use the route where they were intercepted.
- 4.32 In their free text responses, a variety of reasons were provided, including:
- running errands
  - meeting friends / family
  - there were roadworks on the usual route (especially the A14)
  - re-routing due to the infrastructure improvements.

#### *Reason for choosing the route*

- 4.33 Respondents were asked why they decided to choose that particular route for the journey they were making when they were intercepted (they could select more than one reason).
- 4.34 Figure 4-15 shows that across the three routes, just over half (56%) of users reported that they chose their route because it was the quickest route available. 40% chose their route as it felt like the safest route, 39% because it was the most pleasant route, and 33% as it had less traffic than alternatives.
- 4.35 At route level, the majority of respondents of Links to east Cambridge chose that route as it felt safer, was the most pleasant, had less traffic and avoids certain stretches of route; differing from users of the other two routes. Fewer users stated that Links to Cambridge North & Science Park felt safe and had less traffic than the other routes.



Figure 4-15: Reasons for choosing the route (weighted)

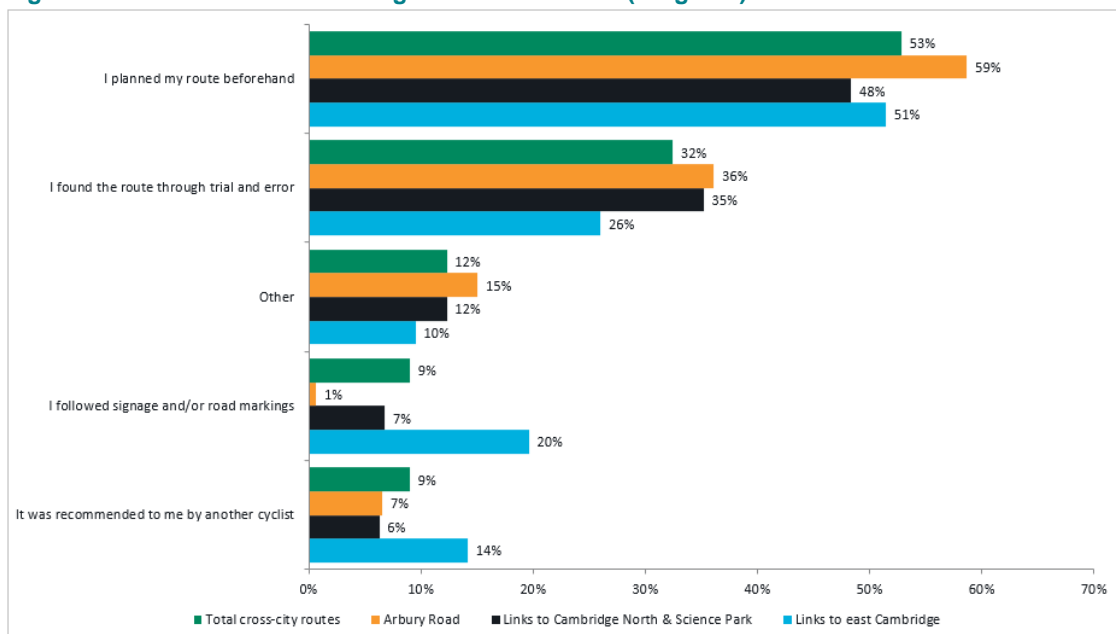


Source: Cycle Intercept Surveys (Q19 base: 322 respondents (unweighted))

### Awareness of route

- 4.36 Respondents were asked how they became aware of the route they were using at the time that they were intercepted.
- 4.37 Across, the three routes, over half the respondents (53%) reported that they had planned a route before they started their trip. The second most cited way that users became aware of their route was that they had cycled the route a few times and settled upon their current route through trial and error (32%) (Figure 4-16).
- 4.38 The proportion of respondents who found the route by following signs and markings, as well as from recommendation, was higher on Links to east Cambridge than the other two routes, which may be due to a section of the route being on the National Cycle Network. Only 1% of respondents reported following signage and/or road markings on Arbury Road.

**Figure 4-16: Reasons for becoming aware of the route (weighted)**



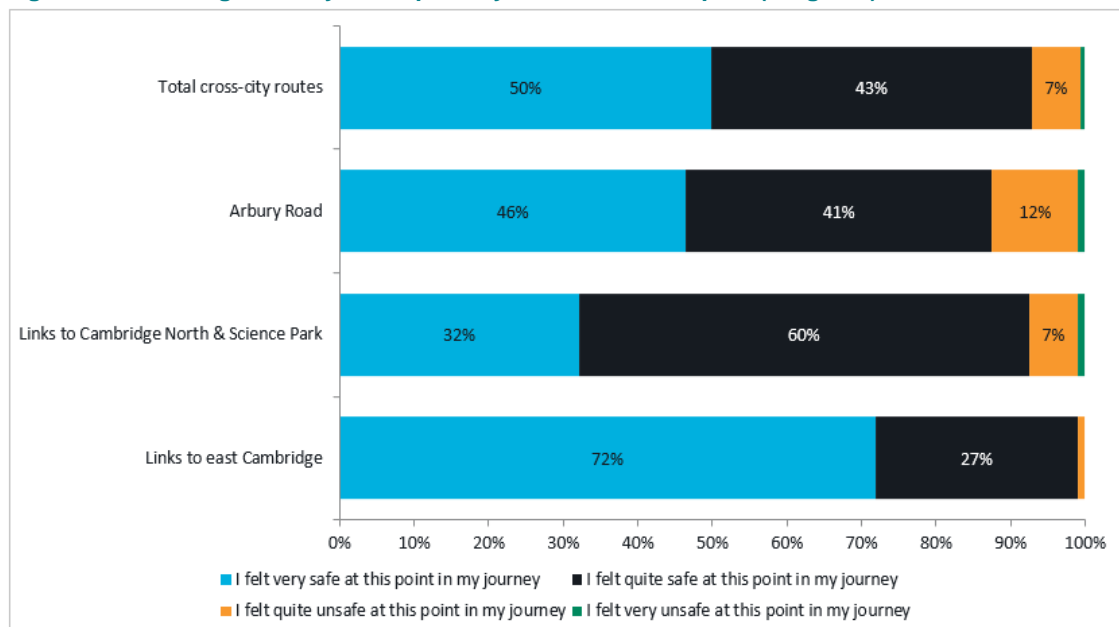
Source: Cycle Intercept Surveys (Q20 base: 322 respondents (unweighted))

## Satisfaction with the routes

### Feeling of safety

- 4.39 Users of the three cross-city cycle routes were asked about their perceptions of safety while cycling the routes, including safety at the site they were intercepted and during their journey more generally. The latter is likely to pick up perceptions of cycling on other roads, not just the extent of route surveyed, as respondents were likely to have cycled the route as part of a longer journey.
- 4.40 The perception of safety at the survey point was high on all three routes, with half (50%) saying they felt very safe and another two fifths (43%) saying they felt quite safe (Figure 4-17). The route considered the safest was Links to east Cambridge (99% felt quite or very safe). The route considered least safe was Arbury Road (13% felt unsafe).

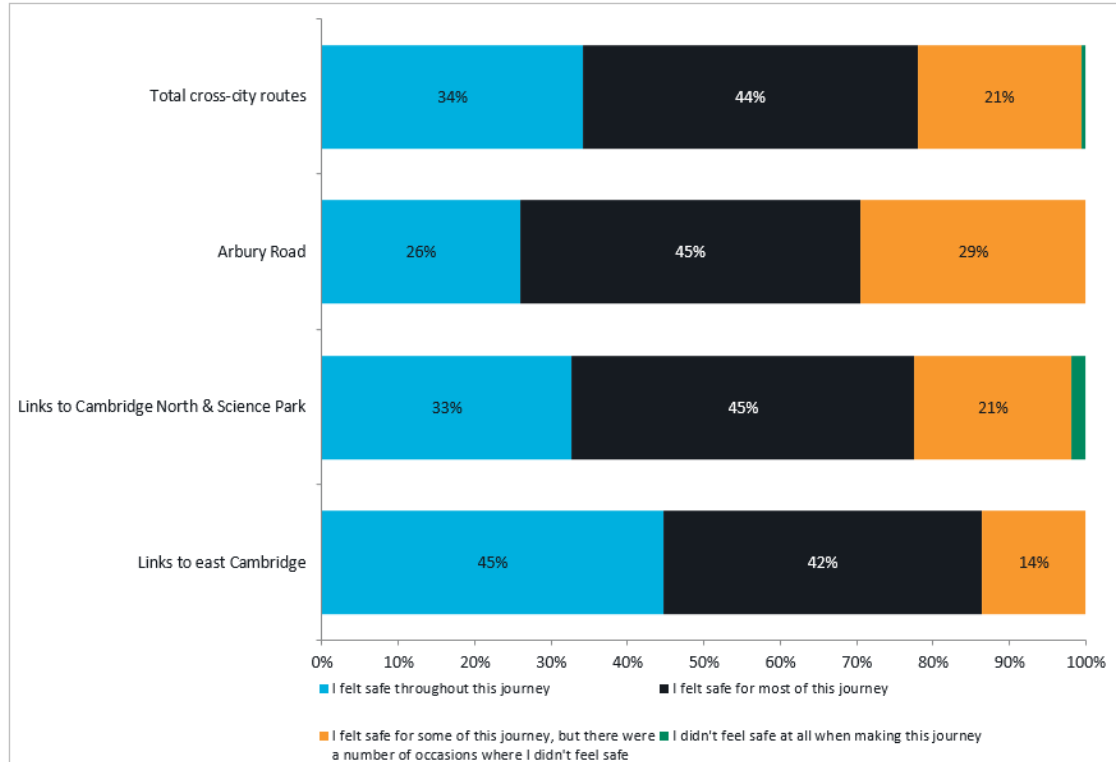
Figure 4-17: Feeling of safety at the point cyclist were intercepted (weighted)



Source: Cyclist Intercept Surveys (Q21a base: 322 respondents (unweighted))

- 4.41 The perception of safety throughout the respondents' journeys was also high, with around a third of cyclists (34%) saying they felt very safe during their journey and nearly half (44%) saying they felt quite safe. Again, the perception of safety throughout the journey was highest among users of the Links to east Cambridge route (87% felt very safe or mostly safe throughout the journey) (Figure 4-18).

**Figure 4-18: Feeling of safety throughout the journey (weighted)**

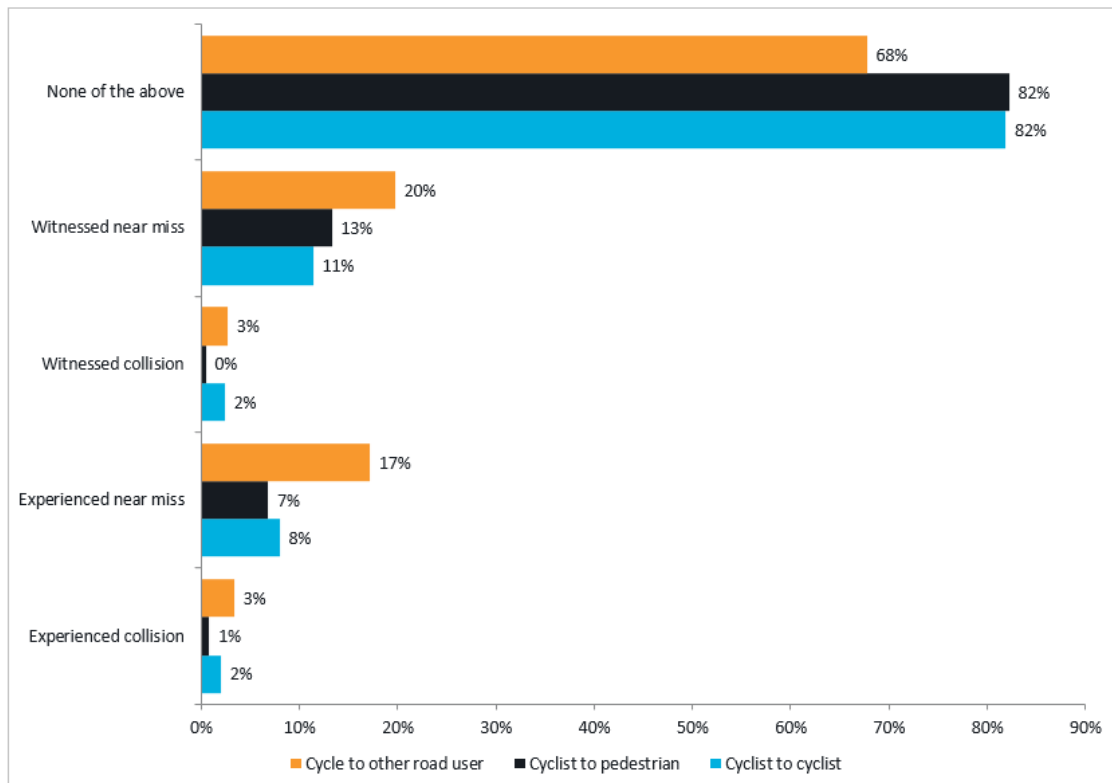


Source: Cyclist Intercept Surveys (Q21b base: 322 respondents (unweighted))

### Experience of collisions and near misses

- 4.42 Figure 4-19 shows the proportion of the three cross-city respondents who had witnessed or experienced a collision or near-miss between cyclists, or cyclists and pedestrians, or cyclists and other (motorised) road users within the last two weeks. These results were presented at the aggregate level (total cross-city routes). Respondents could select more than one type of incident for each modal conflict group (cyclist, pedestrian, other road users) so each result equates to more than 100%.

**Figure 4-19: Experience of collisions and near-misses between different road users during the journey or within the previous two weeks if the journey is made regularly (weighted)**



Source: Cyclist Intercept Surveys (Q22 base: 322 respondents (unweighted))

### Collisions between cyclists and motorised road users

- 4.43 68% of the cross-city respondents had not witnessed or experienced a collision or near miss between a cyclist and motorised mode of transport in the two weeks prior to the survey. 3% had experienced a collision with a motorised mode themselves, and 3% had witnessed a collision. 17% of respondents had experienced a near miss and 20% had witnessed a near miss when using the routes.
- 4.44 The prevalence of experiencing / witnessing collisions and near misses between cyclists and motorised modes is greatest on the Links to Cambridge North and Science Park and Arbury Road routes than the Links to east Cambridge route.

### Collisions between cyclists and pedestrians

- 4.45 Across the three routes, 82% of respondents had not experienced or witnessed a collision or near miss between cyclists and pedestrians. A small proportion of respondents had

experienced (1%) and nobody had witnessed a collision between cyclists and pedestrians. 7% of respondents had experienced a near miss and 13% had witnessed a near miss.

- 4.46 At the route level, near misses between cyclists and pedestrians were highest on the Links to Cambridge North & Science Park route than the other routes, and were lowest on Arbury Road.

#### *Collisions between cyclists*

- 4.47 Across the three routes, 82% of respondents had not experienced or witnessed a collision or near miss between cyclists in the two weeks prior to the survey. 2% had experienced a collision between cyclists and 2% had witnessed a collision. 8% of respondents had experienced a near miss and 11% had witnessed a near miss.

At the route level, collisions and near misses between cyclists were most prevalent on the Links to Cambridge North & Science Park route than the other routes. On the Links to east Cambridge route, 5 respondents had experienced collisions with other cyclists in the previous two weeks.

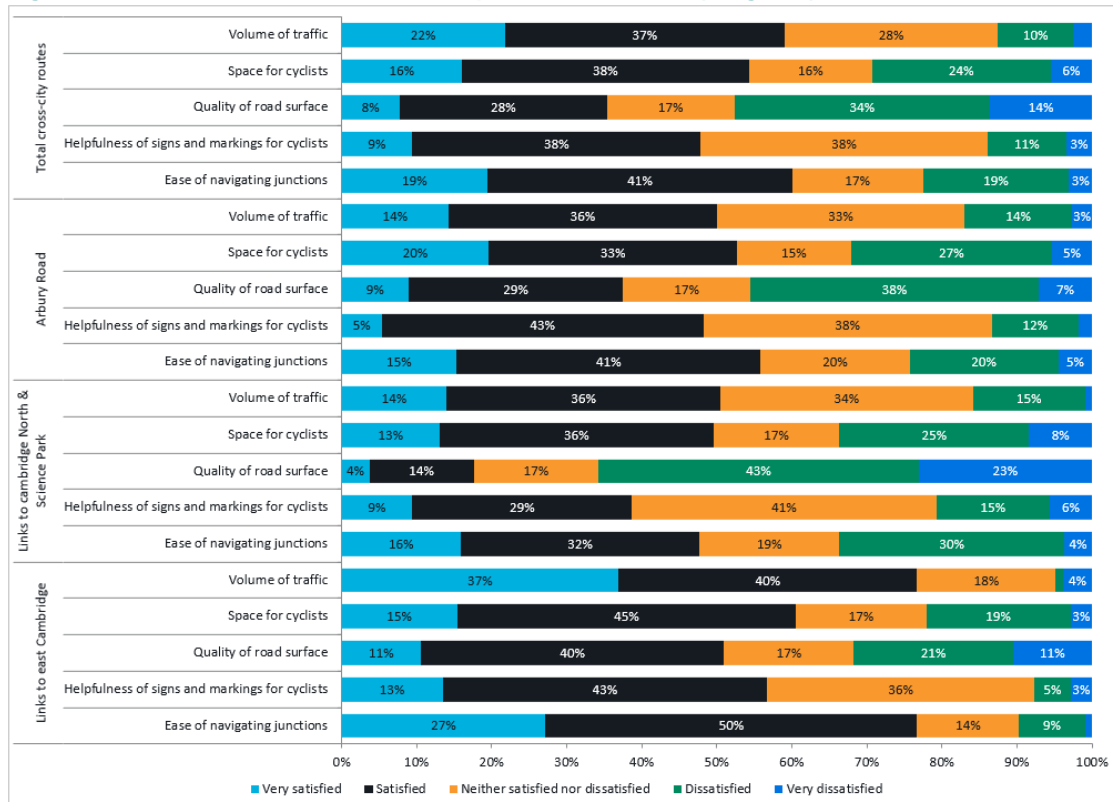
#### *Satisfaction ratings*

##### *Satisfaction with different aspects of the routes*

- 4.48 Users of the cross-city cycle routes were asked to rate their satisfaction with the following five aspects of the routes:
- Volume of traffic
  - Ease of navigating junctions
  - Quality of road surface
  - Space for cyclists
  - Helpfulness of signs and markings.
- 4.49 Figure 4-20 shows cyclists' satisfaction ratings overall across the cross-city cycle routes and at the route level. Overall, across the three cross-city routes, ease of navigating junctions and volume of traffic were the elements of the routes that users rated highest (60% and 59% either very satisfied or satisfied, respectively), followed by space for cyclists (54% either very satisfied or satisfied). The quality of road surface was considered the poorest aspect of the routes with 36% very satisfied or satisfied with this.
- 4.50 Looking at satisfaction at the route level, the users of the Links to east Cambridge route rated the various aspects of the route the highest. The satisfaction profiles of the Arbury Road corridor and Links to Cambridge North and Science Park routes were similar, with the exception of quality of road surface, with which only 18% of users of Links to Cambridge North & Science Park were either very satisfied or satisfied.



Figure 4-20: Satisfaction with different aspects of the routes (weighted)

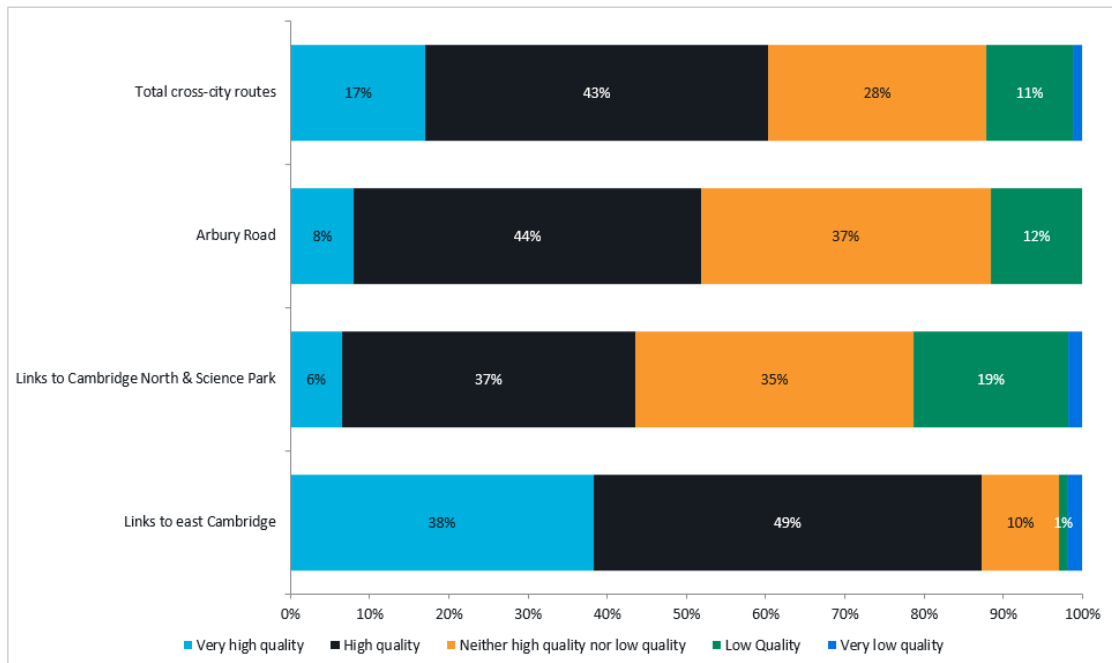


Source: Cyclist Intercept Survey (Q23a base: 322 respondents (unweighted))

### Overall satisfaction

- 4.51 Figure 4-21 shows respondents' perception of the quality of the route overall, based on the different aspects set out above. Across the three routes, almost two thirds of respondents (60%) rated the routes as very high quality or high quality, while only 12% rated them low or very low quality.
- 4.52 The Links to east Cambridge is rated highest in terms of overall quality, with 87% respondents rating it very high or high quality. Around half of the Arbury Road corridor and Links to Cambridge North and Science Park respondents consider these routes very high or high quality. Respondents identified the Links to Cambridge North & Science Park route as the lowest quality of the three routes, with 21% considering it low or very low quality.

**Figure 4-21: Overall satisfaction with the route, considering the all aspects of the route (weighted)**



Source: Cyclist Intercept Survey (Q23b base: 322 respondents (unweighted))

## 5. Evidence of impacts

- 5.1 This chapter sets out the evidence on the early outcomes and impacts associated with the cross-city cycling schemes. The evidence is mainly drawn from the cycling intercept surveys (and accompanying cycle counts), though has also used the wider contextual data on cycling trends in Cambridge and the findings from the stakeholder interviews.
- 5.2 On the following page, Table 5-1 sets out the headline metrics associated with the key outcomes of interest, and the box below summarises key messages on the assessment of impacts to date. The table shows the data from the fieldwork on the three cross-city cycling routes subject to evaluation for 2018 and 2019 so that inter-year changes can be seen. The data provided illustrates key changes for the following outcomes:
- cycling take-up on the routes
  - perceptions of quality of the routes
  - evidence of modal shift
  - perceptions of safety and confidence.

### Summary of key messages

The evidence from the cycle counts associated with the intercept survey indicated increases in numbers of cyclists by 12% between 2018 and 2019, with increases of over 20% on two routes and a 1% decline on the third. The increase represents around 1,500 more cycle trips per week for the period of the fieldwork.

These increases may have happened in any case. However, there is evidence to suggest that the cycling improvements are contributing to increases in cycling on the routes, and to modal shifts, thereby potentially contributing to reduced congestion and so helping to alleviate barriers to growth:

- Increases are above the past trends of a 5% p.a. increase in cycling each year over the last decade.
- There was high awareness of improvements – and of those noticing improvements, 12% reported cycling longer trips, 10% reported cycling more frequently, and 18% reported changing modes of transport as a result of improvements. It is difficult to calculate the number of car trips reduced, but based on certain assumptions we have estimated a reduction of around 200 car trips per week (for the period of the fieldwork) that may be associated in some way with improvements to the cycle paths.

The evidence from the survey also indicates that the perceptions of safety along the routes have improved, and the proportion reporting experiencing or witnessing a collision/near miss has decreased from 2018 to 2019. The perceived increase in safety was also found in the in-depth interviews conducted, and this was viewed as important in increasing cycling amongst those less confident and amongst school pupils.

**Table 5-1: Key evaluation data on outcomes**

Indicator	Arbury Road		Links to Cambridge North & Science Park		Links to east Cambridge		Aggregate	
	2018	2019	2018	2019	2018	2019	2018	2019
<b>Take-up and quality of three routes</b>								
Average weekly count (7am to 7pm for fieldwork period)	5,300	6,400	5,700	5,600	2,200	2,700	13,200	14,800
Average daily count (7am to 7pm for fieldwork period)	760	920	810	800	310	390	1,890	2,110
% using the routes 3 or more days a week	95%	94%	95%	98%	82%	87%	90%	93%
% rating the route as high quality or very high quality	18%	52%	19%	43%	48%	87%	30%	61%
<b>Modal shift</b>								
% cycling a little or a lot more than 12 months previously	37%	31%	26%	35%	37%	38%	33%	35%
% using a bike, walking, driving a car at least once a week as a mode of transportation	N/A	N/A	N/A	N/A	N/A	N/A	Bike: 96% Walking: 72% Car as driver: 39%	Bike: 98% Walking: 78% Car as driver: 39%
% who used to use another mode for the journey prior to cycling	19%	11%	17%	14%	34%	27%	23%	17%
Estimate of change in no. of cyclists on the route per week (7am-7pm)	N/A	1,120	N/A	-80	N/A	510	N/A	1,550
Estimate of no. of car journeys reduced by route users per week	N/A	180	N/A	-	N/A	60	N/A	230
<b>Safety and confidence</b>								
% feeling very or quite safe at the point of the survey (i.e. at the location of the intervention)	80%	88%	81%	92%	93%	99%	86%	93%
% feeling very or quite safe throughout the journey	80%	71%	71%	78%	83%	86%	78%	78%
% feeling safe cycling on <b>(a) all roads</b> , and <b>(b) most roads</b>	(a) 15%	(a) 13%	(a) 11%	(a) 14%	(a) 9%	(a) 7%	(a) 12%	(a) 11%
	(b) 61%	(b) 64%	(b) 65%	(b) 72%	(b) 61%	(b) 60%	(b) 62%	(b) 65%
Net change in confidence (% more confident cycling than last year minus % less confident)	9%	22%	5%	21%	18%	26%	11%	23%

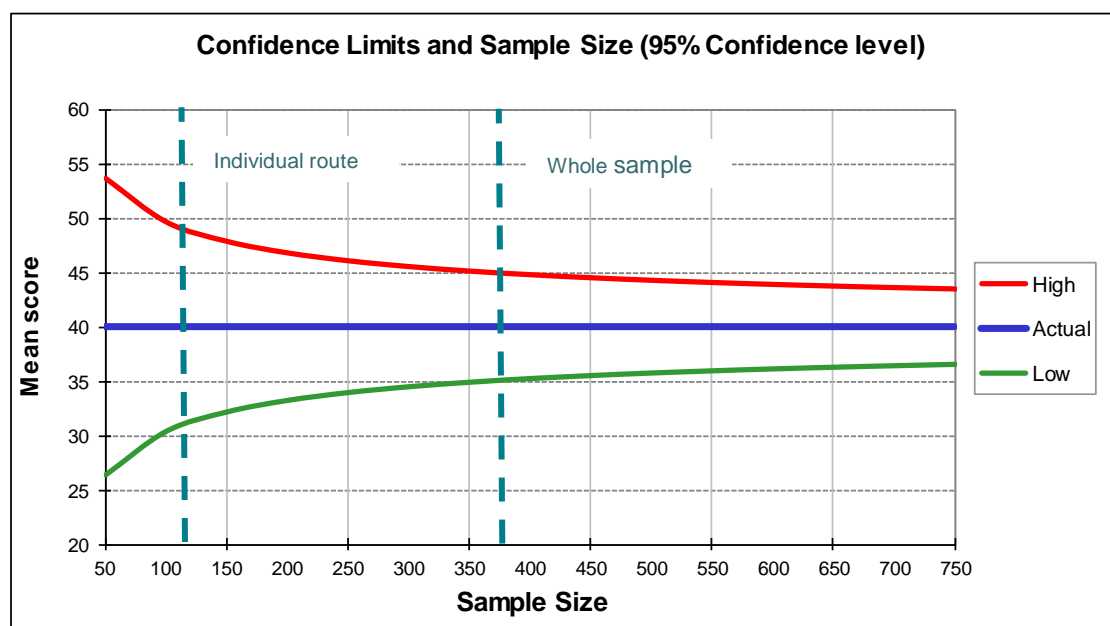
Source: Steer intercept survey and cycle counts

## Overview

- 5.3 The aim of this chapter is to summarise the key impacts of the infrastructure investment, focussing on the key outcomes identified in the logic model. Specifically, we present results concerning increased cycle usage and reductions in car trips which in turn would be expected to impact on other intended outcomes in the logic model, namely road congestion, CO<sub>2</sub> emissions and air quality.
- 5.4 In addition, we summarise the supporting evidence from the survey which indicates the extent to which impacts identified are due to the investment and not to other factors or underlying trends. This includes information on awareness, and levels of satisfaction. We also examine other intended outcomes relating to improved safety and reductions in accidents. Whilst the dataset is too small to comment robustly on collisions, we have drawn on changes in perceptions of safety to consider early effects on these outcomes.
- 5.5 Finally, we explore the impact of the investment on who cycles and the profile of cyclists.

### Statistical significance of survey findings

- 5.6 With any survey the results are subject to random error and therefore a degree of uncertainty. The extent of the uncertainty is illustrated in the chart below which shows how the confidence limits (the difference between the high and low values) varies with sample size. In the example shown (the exact confidence limits will depend on the individual survey question and its result), whilst the actual result of the question illustrated below is a mean score of 40, taking into account random variation the survey result based on the whole sample could be anywhere between 35 and 45 (i.e. the confidence limit is  $\pm 5$ ). Where we are comparing results between two surveys such as 2018 and 2019 waves (476 respondents vs 322 respondents), these limits need to be taken into account for both surveys with differences of up to  $\pm 7$  percentage points required for them to be significant.
- 5.7 For an individual route the range of uncertainty is much higher (around twice as much). For this reason, it is useful to have corroborating evidence from other sources, other survey questions, or from other routes.



## Impact on cycle trips

- 5.8 The counts undertaken alongside the survey of cyclists indicate that the improvements have coincided with an increase in the volume of cycle trips by 12%. Taking into account the background trend, which is estimated to be an increase in cycling of 5% per year (as reported in chapter 2 with reference to 2018 Cambridge City Traffic Monitoring Report<sup>4</sup>), and assuming that this would have been achieved on the routes anyway, we estimate an above trend increase of 7% in aggregate across the three routes. As shown in Table 5-2, there is variation between the three routes with above trend increases of over 15% on two of the routes, and a small decline on the third. It is possible that the decline on this third route was due to snagging work which was underway during the follow up survey: at times there were three-way traffic signals in place (Nuffield Road/Green End Rd) which may have meant cyclists were not fully utilising this route at this time.
- 5.9 These changes between 2018 and 2019 are equivalent to between 890 and 1,250 cycle trips per week for the fieldwork period (depending on whether the decrease on the Links to Cambridge North & Science Park are included or not).
- 5.10 It is likely that some of this increase may reflect displacement from other routes. Indeed, the survey asked respondents about the effects of infrastructure improvements on their cycling behaviours. The survey data indicated that just over 12% of all survey respondents were cycling the improved route rather than a previous route, which suggests some displacement from other routes. Of course, re-routing could be desirable if it is linked to improved safety (discussed in more detail later in this section), saving time or some other benefit to the cyclist. Taking account of displacement reduces the estimate of the number of extra cycling trips per week for the fieldwork period to between 780 and 1,090 (see Table 5-2).
- 5.11 The survey evidence also provides further evidence to corroborate the fact that improvements may have stimulated increased take up of cycling. Again, of the 84% of respondents that had noticed the route improvements, there were other reported effects on behaviours. Route improvements had encouraged longer distance cycle trips (12% of those noticing route improvements), increased frequency of cycling (10% of those noticing route improvements), and prompted cycling rather than using another mode of transport (18% of those noticing route improvements).

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<sup>4</sup> Cambridgeshire County Council, Traffic Monitoring Report 2018: <https://ccc-live.storage.googleapis.com/upload/www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/Traffic%20Monitoring%20Report%202018.pdf?inline=true>



**Table 5-2: Summary of change in cycle trips**

	Arbury Road	Links to Cambridge North & Science Park	Links to east Cambridge	Total
a) Increase in counts of cyclists 2019 v 2018 (average daily trips 7am – 7pm)	21%	-1%	23%	12%
b) Background trend (average annual increase)*	5%	5%	5%	5%
c) Above trend increase 2019 v 2018 (a – b)	16%	-6%	18%	7%
d) Number of cycle trips in 2018 (weekly trips 7am – 7pm)	5,322	5,701	2,193	13,216
e) Above trend increase in cycling trips per week from 2018 to 2019 (c x d)	850	-360	400	890-1,250
f) Displacement factor, i.e. % who have changed routes	12.1%	-	14.6%	12.6%
g) Weekly increase net of displacement (e * (1-f))	750	-	340	780 - 1,090

\* estimated using data from the Cambridgeshire County Council fixed cycle counters. The 'Total' column includes a range for some estimates: the lower bound is an aggregate estimate across the whole evidence base; the upper bound excludes the decline in cycling found on the Links to Cambridge North & Science Park.

## Impact on car driver trips

- 5.12 An important desired outcome of the investment is mode switching between car and cycle in order to reduce traffic congestion and improve air quality, and the survey of cyclists provides some evidence that this is starting to be achieved. The survey results indicated that, across all the routes, 18% of cyclists that had noticed the route improvements have switched modes to use the route. Of those that had switched modes, 68% had previously used the car (with others switching from bus, walking, car as a passenger or taxi).
- 5.13 The net result, shown in Table 5-3, is that an estimated 12% of trips on the cycle routes were previously made by car as a driver. To give an indication of the scale of car trips that could be affected, we have applied this percentage change to the estimated increase in cycle trips (Table 5-2). This indicates that the number of car trips saved per week during the fieldwork period on these three specific routes could be around 190-230.
- 5.14 The implication of this finding is that the route improvements may be helping to alleviate congestion, a factor that is a barrier to economic growth (and a founding rationale for the Investment Fund).

**Table 5-3: Summary of mode switching from car to bicycle**

	Arbury Road	Links to Cambridge North & Science Park	Links to east Cambridge	Total
a) Cycle rather than use another mode (Q24b)	22%	15%	15%	18%
b) Car as driver used previously (Q25f)	74%	55%	74%	68%
c) Switched from car to bicycle (a x b)	16%	8%	11%	12%
d) Weekly increase in cycling trips 2019 v 2018 (with trend rate included)	1,116	-78	510	1,548
e) Weekly reduction in car driver trips 2019 v 2018 (c x d)	180	-	60	190-230

*Source: Steer intercept survey data. The 'Total' column includes a range for some estimates: the lower bound is an aggregate estimate across the whole evidence base; the upper bound excludes the decline in cycling found on the Links to Cambridge North & Science Park.*

## Attitudes towards the infrastructure improvements

- 5.15 Attitudinal information is important because it can corroborate the quantitative findings and can help to explain why a change has happened, in this way demonstrating the role of the infrastructure investment.
- 5.16 In this context a positive finding is the high level of awareness of the improvements: 84% of all cyclists had noticed the changes. This helps to instil confidence that the improvements may be connected to the increase in cycling.
- 5.17 Further confidence in the link between the infrastructure investment and the volume of cycling is provided by the finding that perceptions of safety have been noticeably improved. This was also an intended outcome in itself. As shown in Table 5-4 the mean safety rating of the part of the route where cyclists were intercepted has improved by around a fifth across each of the routes. The survey also asked respondents whether they had experienced or witnessed a collision or a near miss in the previous two weeks. The data indicated an increase in the proportion that had not experienced or witnessed certain types of collision between 2018 to 2019 (see Table 5-5). The increase is significant for cyclist-to-cyclist and cyclist-to-pedestrian collisions. Whilst this could be due to other factors in addition or instead of the route improvements, the indicators on safety suggest that the intended outcomes are starting to be achieved.

**Table 5-4: Summary of changes in perceptions of safety**

	Arbury Road	Links to Cambridge North & Science Park	Links to East Cambridge	Total
Safety rating 2018	0.68	0.45	0.48	0.54
Safety rating 2019	0.85	0.57	0.61	0.67
Absolute change	0.18	0.12	0.13	0.13
% change	26%	27%	26%	24%

Source: Steer intercept survey data.

Notes: based on Q21a how safe did you feel at the point you were handed the postcard? Safety rating based on the following weights for response categories: I felt very safe at this point in my journey +1; I felt quite safe at this point in my journey +0.5; I felt quite unsafe at this point in my journey -0.5; I felt very unsafe at this point in my journey -1.

**Table 5-5: Experience or witnessing of collisions and near misses between cyclists, pedestrians and other road users – change from 2018 (unweighted)**

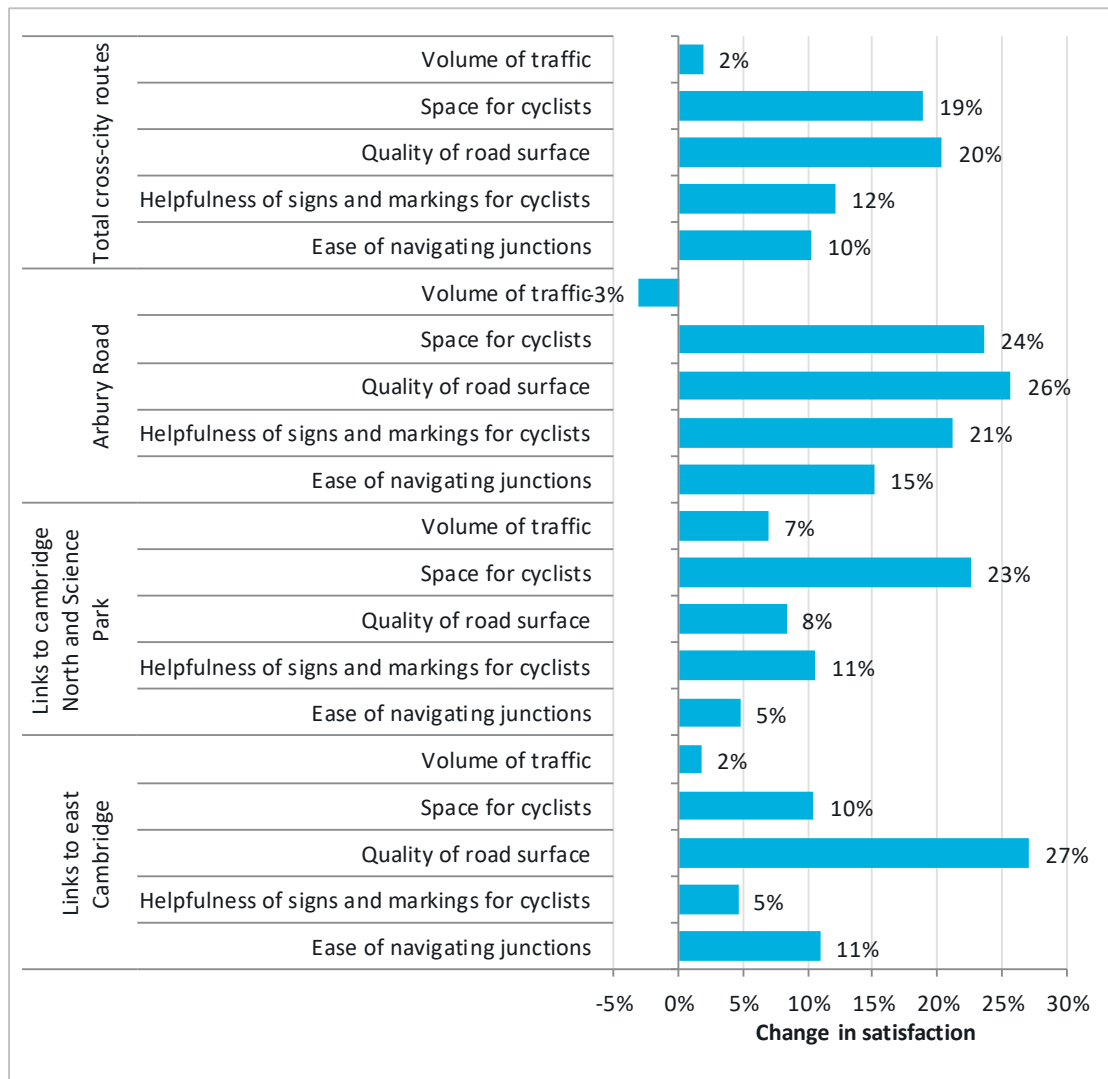
	Cyclist to other road user	Cyclist to pedestrian	Cyclist to cyclist	Notes
Experienced collision	+1.7%	No change	-0.7%	Negative = good
Experienced near miss	-3.4%	-5.5%	-3.4%	Negative = good
Witnessed collision	-1.1%	No change	-1.2%	Negative = good
Witnessed near miss	-1.6%	-1.2%	-0.8%	Negative = good
None of the above	+5.1%	+6.7%	+5.8%	Positive = good

Source: Cyclist Intercept Survey (2018 and 2019 (unweighted)); 476 respondents in 2018, 322 respondents in 2019

- 5.18 Consistent with the improved perceptions of safety is an increase in the confidence of cyclists with 28% saying they are more confident now compared with 5% less confident now<sup>55</sup>.
- 5.19 The survey also shows that across nearly all attributes tested and all routes there has been an increase in satisfaction levels amongst cyclists, the exception being satisfaction with the volume of traffic, which had barely changed overall (though with a modest increase in satisfaction on the Links to Cambridge North and Science Park). This is perhaps unsurprising given that this is a key barrier to growth that underpins one of the overall aims of the Investment Fund. The details are shown in Figure 5-1 with this chart illustrating the change in satisfaction between 2018 and 2019. This shows that the biggest improvements have been the space for cyclists and quality of road surface.

<sup>55</sup> Based on responses to Q32

Figure 5-1: Change in satisfaction with routes between 2018 and 2019

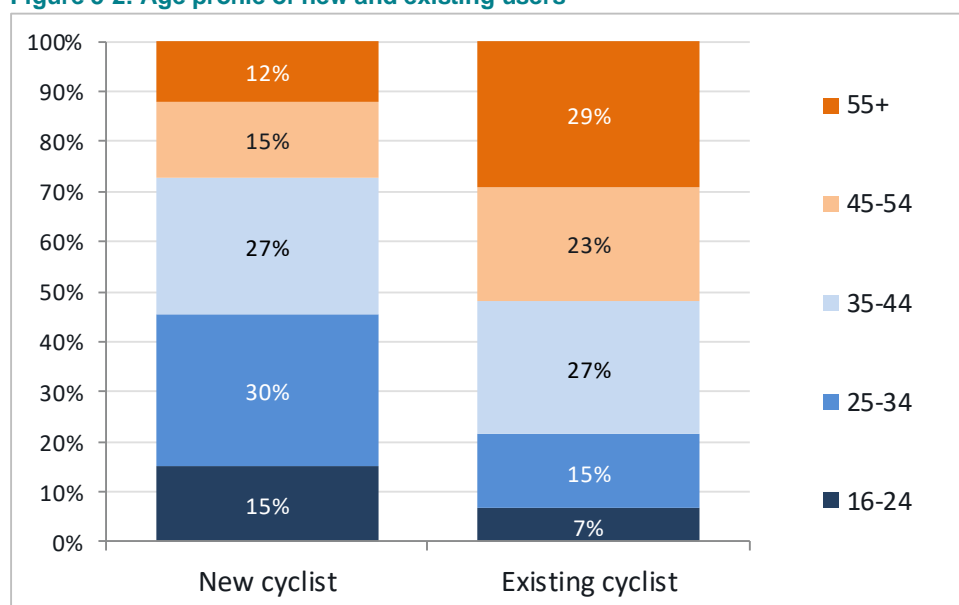


Source: Cycle Intercept Surveys

## Impact on who cycles

- 5.20 In order to explore whether the investment has had an effect on access, i.e. by attracting some different types of cyclist, we have compared the profile of cyclists who have just started using the route within the last year with those that have been cycling longer (Q38 of the survey). Note that the sample of 'new' cyclists starting within the last year is relatively small (90) so care should be taken when interpreting the results which should be treated as indicative only. Nevertheless, some differences between new and existing cyclists are revealed and could indicate that, over time, the profile of cyclists may change.
- 5.21 One notable difference between new and existing cyclists is the age profile, with new cyclists tending to be younger, as illustrated in Figure 5-2. This figure shows that whilst a fifth (22%) of existing cyclists are aged under 35, over two-fifths (45%) of new cyclists fall into this age category. This trend could reflect factors such as the profile of new residents to Greater Cambridge, or the catchment areas of these three particular routes.

Figure 5-2: Age profile of new and existing users



Source: Cycle Intercept Surveys

5.22 Other differences within the respondent profiles, for potential trending in the future, included:

- a higher proportion of new cyclists being female (37% v 30%)
- a higher proportion of new cyclists with incomes of £20-£40k, and correspondingly lower proportions of other income groups
- a lower proportion of new cyclists from a white ethnic background (83% v 91%)
- a higher proportion of new cyclists living outside of Cambridge and South Cambridgeshire.

## Evidence from stakeholder interviews

5.23 SQW undertook seven consultations with a mix of landowners, developers, agents and businesses to understand perceptions of the effects of schemes supported by the Investment Fund. This included early effects on travel behaviour and organisational performance and wider effects on the attractiveness and deliverability of new housing and employment sites<sup>6</sup>. The consultees were from organisations across the region and from a range of perspectives (e.g. business, schools, an NHS trust).

5.24 **Consultees motivation for participating in the consultation were varied**, they included: individual interests (e.g. effect of the routes on individual's commutes), business interests (e.g. how new routes could improve business performance, potential improvements to staff health) and safety of local cyclists (e.g. perceptions of safety on cycle routes used by school students). Overall, **consultees reported a good level of awareness of recently completed cycle schemes supported by the Infrastructure**. This awareness was limited to the works closest and most relevant to their location, although there were examples where consultees were

<sup>6</sup> These included those identified in the logic model at Cambridge Northern Fringe East, Cambridge North West, ARM Capital Park, Cambridge Biomedical campus, Cambridge Science Park and housing sites at Cambridge East.

very knowledgeable of the wider Investment Fund activity. The evidence provided by the consultations should be seen in this context: it was a limited set of interviews from a group of individuals that were identified by the GCP as being interested and involved and who were sufficiently motivated to participate in the research. Nevertheless, it has provided some qualitative insight to complement the findings from the much larger intercept survey.

5.25 There was consensus that the cycle schemes supported by the Investment Fund were needed, including those that were part of the larger transport corridor improvements. This view was informed by three key issues: congestion, safety and pollution.

- Cambridge has acute **congestion issues**, particularly around rush hours, which make commuting by car and bus unreliable. Consultees reported personal frustrations to this, impacts on their business (e.g. employees late to work, customers/clients struggling to get to sites) and wider issues for the Cambridge area. One consultee stated that the prosperity of Cambridge was dependent on resolving transport issues, including connectivity.
- Linked to congestion and low-quality cycling infrastructure (e.g. lack of designated cycle paths) **there was a perception that cycling in Cambridge was unsafe**. One consultee had already been knocked off their bike and said they experienced several 'near misses' every month. Existing cyclists in Cambridge were viewed as being more confident and experienced as a result. The cycle route improvements supported by the Investment Fund were noted as important in helping to encourage less experienced/new cyclists on to the roads.
- The high level of congestion in Cambridge has a **harmful effect on the environment**. It was reported by consultees that businesses, landowners and local stakeholders were becoming increasingly aware of pollution levels and were implementing strategies to reduce emissions. For example, one consultee reported that their organisation had implemented a two mile 'exclusion zone' whereby employees commuting less than two miles were not allocated a parking spot. The investment in the cycle schemes was seen to be supportive of this wider agenda.

### **Early effects**

5.26 Consultees were able to provide most evidence on achieved, or expected, effects of the cycle routes on travel behaviours e.g. of commuters and students. There was very limited evidence collected on effects on business performance or the deliverability of employment and housing development. This may reflect the more indirect links of the cycling schemes on these wider outcomes, and the role played by other factors.

### **Travel behaviour**

5.27 To gain insights into the early effects of the cycle routes, consultees were asked what proportion of their employees travelled to work from within Cambridge city, elsewhere in the Cambridge area (i.e. the geographical area covered by Cambridge City and South Cambridgeshire District Councils) and outside of Greater Cambridge. Five consultees were able to provide an estimate of employee commuting patterns. Overall, **consultee organisations tended to employ at least 50% of their employees from within Cambridge**

**city and the surrounding Cambridge area.** Only two of the consultees' organisations were reported to have employees who commute from outside of Greater Cambridge: in one case around 1 in 10 employees, and another estimated 45% of their site workforce.

- 5.28 **The most commonly cited effect on travel behaviour of the new cycle routes was increased perceptions of the safety of cycling (reported by 5 out of 7 consultees).** This change of perception was reported to have led to improved confidence amongst less experienced cyclists and, for one local school (close to one of the cycle improvement routes), had given parents confidence that cycling was a safe mode of transport for their children. One consultee reported, referring to the Hills Road scheme (a cross-city cycling scheme not covered by the cycling intercept surveys), that the intervention had *"definitely improved people's confidence and commitment to cycling in and out of Cambridge"*.
- 5.29 **Two consultees had seen evidence of an increase in the number of people choosing to cycle over other modes of transport.** One consultee from a local school had noticed an increase in the number of pupils travelling to school by bike and hoped to see changes in staff behaviour in the future. They considered that this was linked to improved perceptions of safety. An additional two consultees expected the interventions to reduce the seasonality of cycling: people tend to cycle less in winter because of bad weather (e.g. frost) and shorter daylight hours, so improved cycle lanes could make cyclists feel safer.
- 5.30 In the future, consultees expected faster journey times for commuters and for company logistics; better travel options for employees, leading to a more attractive recruitment offer; and improved air quality.

#### *Organisational performance*

- 5.31 Two consultees expected to see improvements to the health and well-being of their staff as a result of the route investments supported by the Investment Fund. One organisation had already started to see improvements in the responses to their annual staff satisfaction survey, with fewer people raising issues relating to their transport to work. They stated that *"staff are very complementary about improvements in cycling, bus lanes and Park and Rides"*.

#### *Other factors*

- 5.32 In relation to the interventions' reported effect on travel behaviour and organisational performance, consultees were asked to consider what other factors may have also contributed to these changes. This provides an insight into the additionality (i.e. the extent to which the effects would have happened in the absence of the interventions) of the activities. The other factors reported included the overall positive attitude towards cycling in Cambridge, good cycling support facilities (e.g. on-site bike repair shop), the local environment (e.g. attractiveness of cycle routes) and internal policies (e.g. the aforementioned two-mile exclusion zone). Consultees could not comment on the relative balance of influence between the interventions and these other factors.



## 6. Conclusions

- 6.1 This concluding section sets out the conclusions of the impact evaluation of the cycling schemes to inform the overall evaluation of the Investment Fund at the first Gateway Review stage. The conclusions are structured around three key issues, which is consistent across all impact evaluations undertaken by the National Evaluation Panel.

### ***Is there evidence of positive economic outcomes at this stage, that would not have occurred without the intervention?***

- 6.2 The main intended outcomes subject to evaluation were: the take-up of cycling along the three cross-city cycling routes being evaluated; evidence to support modal shift, in particular from cars to bikes; and evidence around safety and reduced accidents. In addition, outcomes around the perceptions of quality and satisfaction with the routes have also been assessed.
- 6.3 The evidence from the cycle counts associated with the intercept surveys indicated an overall increase in cycling numbers across the three cross-city routes subject to evaluation. This coincides with the implementation of the new routes. At an aggregate level, there was a 'gross' increase in weekly (between 7am and 7pm) cycling trips of over 1,500 (or 12%) between the fieldwork periods in 2018 and 2019. However, there was variation, with large increases on the Arbury Road and Links to east Cambridge routes (over 20% increase between 2018 and 2019), and a slight decline in cyclists (by 1%) on the Links to Cambridge north and Science Park route. It is possible that the decline on this route was due to snagging work which was underway during the follow up survey.
- 6.4 It is difficult to be definitive that some of these increases have been caused by the cycle scheme improvements. That said, the evidence indicated that the cycle route improvements have made a difference:
- The increases were above wider trends of cycling increases in Cambridge, where there has been an average 5% p.a. growth rate in cycling numbers over the last decade.
  - Satisfaction with the routes among users has increased since the 2018 survey, with notable increases in users' satisfaction with space for cycling and the quality of surface. The proportion of respondents reporting that the overall quality of the routes was high or very high increased from 30% in 2018 to 61% in 2019.
  - There was high awareness of improvements – and of those noticing improvements, 12% reported cycling longer trips, 10% reported cycling more frequently, and 18% reported changing modes of transport as a result of improvements.
- 6.5 There was evidence of displacement from other routes, as some respondents indicated that they had moved from other routes to the routes subject to evaluation. Of course, some displacement may be desirable if it means that cyclists are using safer and quicker routes.
- 6.6 The evidence also indicated that the increase in cycling is likely to be related to a mix of purposes for travel, which is in line with the intended effects. The intercept survey highlighted that the purpose of trips was predominantly for commuting, but with other reasons stated for

travel such as for leisure reasons. In addition, the wider consultations undertaken indicated a perception that cycling was being used more regularly for travel to school by pupils.

- 6.7 In relation to changing modes of transport, the 2019 survey provided evidence that cross-city route users have switched from driving to cycling for their journey: 18% of respondents had switched modes and, of these, 68% had switched from driving. However, the proportion of respondents that use a car at least once a week for transportation remained the same, at 39%.
- 6.8 **Overall, the evidence points to the fact that the route improvements have contributed to some increases in cycling, and in doing so have contributed to some modal shift from cars to bikes.** The implication of the findings is that the route improvements may be contributing to alleviating congestion, which is a barrier to economic growth and a founding rationale for the Investment Fund.
- 6.9 The evidence from the survey also indicated that feelings of safety have improved:
- The perceptions of safety along the routes have improved, with the calculated safety rating increasing from 0.54 to 0.67 from 2018 and 2019.
  - The data indicated an increase in the proportion that had not experienced or witnessed certain types of collision between 2018 to 2019. The increase was significant for cyclist-to-cyclist and cyclist-to-pedestrian collisions.
- 6.10 These perceptions of increased safety were also shared by those interviewed as part of the wider consultations, and this was important in facilitating increased cycling by those less confident and amongst school pupils. Whilst these improvements could be due to other factors in addition, or instead, of the route improvements, **the indicators on safety suggest that the intended outcomes are starting to be achieved.** This is consistent with the measures that have been put in place on the routes, including more segregated cycle lanes and wider cycle paths.

***Is it reasonable to expect that positive economic outcomes will be realised in the future, that would not have occurred without the intervention?***

- 6.11 Consistent with the findings from the monitoring of new cycling infrastructure in other UK locations, it is to be expected that the number of new route users will increase over time. This increase may be due to more people switching from other modes and more existing cyclists becoming aware of the new infrastructure and changing their end to end route to incorporate the new infrastructure. The 2019 survey was undertaken quite soon after the new infrastructure had been completed, and it is likely that the new infrastructure remained undiscovered by some potential future users.

***Is further evaluation evidence required in the future to provide a credible assessment of the overall contribution of the intervention to economic outcomes, and if so when should this be delivered?***

- 6.12 As noted above, the 2019 post-implementation surveys took place very soon after completion of capital works. To obtain a reasonable assessment of cycling uplift after implementation of new infrastructure, follow-up monitoring to measure the impacts would usually be done at least six months after completion and possibly later.

- 6.13 Evidence and experience from other studies suggests that numbers will continue to grow over time as more people ‘discover’ the infrastructure and take up cycling generally as a result of wider interventions. The two factors above suggest that further evaluation, e.g. in 2020, may add a useful contribution to the understanding of the impacts of the investment.

## Annex A: Cycle count analysis

- A.1 Cambridgeshire County Council provided access to a database of cycle count data gathered by fixed traffic monitoring systems that have been in various locations across Cambridge since 2010. Count data was analysed for the baseline report and this section provides a 2019 update. The following tables provide a set of summary cycle counts for the month of June and July with the additional 2019 data. For each location we provide cycle counts between 7am and 7pm in the form of daily averages for the whole month (7-day week), weekdays and weekends.
- A.2 From a total of 37 fixed cycle counter locations, 15 were selected for analysis. Selection was based on the geographic location of the counter, as well as the completeness and quality of data available across the time period. For a location to be selected, it was required to have at least five data points, at least one data point in the previous three years, and for the data available in the months selected to be reliable (i.e. no obvious signs that the counter was faulty or unreliable). This same analysis was undertaken on the 2019 data but with data from two counters (Cutter Ferry Bridge and Impington) disregarded as it was very patchy or missing and its inclusion would skew the results.
- A.3 The 15 fixed cycle counters were grouped into the following areas within Cambridge.

**Table A-1: Geographic groupings of cycle count locations**

Area	Description
Centre-North East	<ul style="list-style-type: none"><li>Four fixed cycle counters located northeast of the city centre following the River Cam.</li><li>Locations include: Cutter Ferry Bridge; Pike and Eel, Water Street (Penny Ferry); Riverside Bridge; Stourbridge Common.</li></ul>
Centre-South	<ul style="list-style-type: none"><li>Three fixed cycle counters located south of the city centre.</li><li>Locations include: Newtown; Trumpington Road; Barton Road.</li></ul>
Centre-West	<ul style="list-style-type: none"><li>Four fixed cycle counters located between Cambridge city centre and the western fringe of the Cambridge urban footprint.</li><li>Locations include: Coton Path, Adams Road; Garrett Hostel Lane; Thompsons Lane.</li></ul>
Outer Cambridge	<ul style="list-style-type: none"><li>Four fixed cycle counters located outside of Cambridge's urban footprint, but situated along key routes into the city centre.</li><li>Locations include: Cambridge Road, Fulbourn; Granham's Road (Stripey Path); Impington; Newmarket Road.</li></ul>

Source: SQW

## Cycling flows in June

### 7-day average cycling flows

**Table A-2: 7-day average cycling flows in June**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	1,026	1,224	1,045	1,269	1,177	1,410	1,248		1,386	
Pike and Eel, Water Street (Penny Ferry)		312	173	294	541	555	494			552
Riverside Bridge	959	1,135	1,088	1,263	1,071	927	938		1,070	1,890
Stourbridge Common	2,070	2,062	1,846	2,159	2,121	2,384	2,180		2,588	2,752
<b>Centre-South</b>										
Carter Bridge	1,653	1,708	1,549	1,952	2,061	2,119	1,676		1,681	1,684
Newtown					1,161	1,415	1,420	1,855	2,256	2,240
Trumpington Road		620	548	511	666	766	550		1,358	1,231
<b>Centre-West</b>										
Barton Road	457	998	956		1,269	1,330	1,279			
Coton Path, Adams Road		1,283	1,143	1,374	1,686	1,742	1,739		1,963	1,954
Garrett Hostel Lane			1,728	1,931	2,001		1,836		2,005	1,958
Thompsons Lane	326	340	319	364	322				532	489
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		119	100	139	144	146	144		180	171
Granham's Road (Stripey Path)	418	497	491		660				1,066	
Impington					829	834	746	834	1,137	
Newmarket Road	170	180	180	238	254					

Source: SQW analysis of cycle count database

## Weekday average cycling flows

**Table A-3: Weekday average cycling flows in June**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	1,119	1,313	1,122	1,369	1,269	1,487	1,313		1,458	
Pike and Eel, Water Street (Penny Ferry)		298	164	277	504	542	436			500
Riverside Bridge	1,029	1,254	1,158	1,383	1,199	980	1,026		1,139	1,984
Stourbridge Common	2,139	2,127	1,896	2,243	2,161	2,511	2,214		2,755	2,854
<b>Centre-South</b>										
Carter Bridge	1,917	1,993	1,775	2,265	2,417	2,436	1,934		1,939	1,951
Newtown					1,383	1,700	1,685	2,159	2,654	2,656
Trumpington Road		722	648	604	800	907	649		1,587	1,436
<b>Centre-West</b>										
Barton Road	538	1,162	1,107		1,498	1,588	1,490			
Coton Path, Adams Road		1,138	1,409	1,718	2,092	2,189	2,158		2,422	2,404
Garrett Hostel Lane			2,004	2,269	2,361		2,162		2,368	2,310
Thompsons Lane	358	364	339	392	347				584	529
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		139	117	162	167	174	172		213	200
Granham's Road (Stripey Path)	501	603	589		796				1,274	
Impington					961	989	857	963	1,328	
Newmarket Road	187	195	198	254	269					

Source: SQW analysis of cycle count database

## Weekend average cycling flows

**Table A-4: Weekend average cycling flows in June**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	794	1,002	853	1,019	947	1,218	1,086		1,206	
Pike and Eel, Water Street (Penny Ferry)		347	196	337	634	588	639			685
Riverside Bridge	784	838	913	963	751	795	718		898	1,654
Stourbridge Common	1,898	1,900	1,721	1,949	2,021	2,067	2,095		2,171	2,498
<b>Centre-South</b>										
Carter Bridge	993	996	984	1,170	1,171	1,327	1,031		1,036	1,018
Newtown					606	703	758	1,095	1,261	1,201
Trumpington Road		365	298	279	331	414	303		786	717
<b>Centre-West</b>										
Barton Road	255	588	579		697	685	752			
Coton Path, Adams Road		1,646	478	514	671	625	692		816	829
Garrett Hostel Lane			1,038	1,086	1,101		1,021		1,098	1,076
Thompsons Lane	246	280	269	294	260				402	389
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		69	58	82	87	76	74		98	101
Granham's Road (Stripey Path)	211	232	246		320				546	
Impington					499	447	469	512	660	
Newmarket Road	128	143	135	198	217					

Source: SQW analysis of cycle count database



## Cycling flows in July

### 7-day average cycling flows

**Table A-5: 7-day average cycling flows in July**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	1,054	1,142	874	918	898	1,264	1,136		1,299	
Pike and Eel, Water Street (Penny Ferry)		181		192	403	367	401			459
Riverside Bridge	1,001	1,108	1,030	934	921	924	755		1,481	1,976
Stourbridge Common	1,940	1,773		2,153	2,009	1,918	2,083		2,625	2,200
<b>Centre-South</b>										
Carter Bridge	1,753	1,730	1,502	1,646	1,778	1,941			1,459	2,125
Newtown					1,210	1,328	1,494	1,912		2,312
Trumpington Road		576	408	606	533	631	514		1,253	1,185
<b>Centre-West</b>										
Barton Road	460	1,051	915		1,278	1,256				
Coton Path, Adams Road		1,107	1,138	1,286	1,401	1,498	1,607		1,645	1,737
Garrett Hostel Lane		1,320	1,252	1,396	1,436		1,438		1,498	1,478
Thompsons Lane	315	339	307	340	299				496	488
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		123	112	132	141	124	150		160	172
Granham's Road (Stripey Path)	482	537	510		620				1,060	
Impington					851	756	783	795	1,092	
Newmarket Road	176	182	194	261	271				236	

Source: SQW analysis of cycle count database

## Weekday average cycling flows

**Table A-6: Weekday average cycling flows in July**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	1,185	1,278	939	990	991	1,377	1,227		1,417	
Pike and Eel, Water Street (Penny Ferry)		202		183	418	365	390			502
Riverside Bridge	1,126	1,252	1,103	1,045	1,022	1,037	853		1,571	2,131
Stourbridge Common	2,062	1,910		2,203	2,176	2,039	2,208		2,847	2,395
<b>Centre-South</b>										
Carter Bridge	2,083	2,034	1,714	1,921	2,060	2,257			1,701	2,373
Newtown					1,440	1,579	1,757	2,261		2,782
Trumpington Road		677	482	695	603	756	623		1,459	1,424
<b>Centre-West</b>										
Barton Road	542	1,181	1,044		1,470	1,434				
Coton Path, Adams Road		987	1,415	1,611	1,745	1,875	2,015		2,065	2,189
Garrett Hostel Lane		1,579	1,489	1,655	1,728		1,739		1,818	1,790
Thompsons Lane	347	368	324	369	329				556	536
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		142	128	146	164	145	173		187	205
Granham's Road (Stripey Path)	592	646	599		721				1,277	
Impington					995	873	893	914	1,291	
Newmarket Road	198	195	202	267	303				251	

Source: SQW analysis of cycle count database

## Weekend average cycling flows

**Table A-7: Weekend average cycling flows in July**

Location	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Centre-North East</b>										
Cutter Ferry Bridge	727	802	712	738	666	982	909		1,004	
Pike and Eel, Water Street (Penny Ferry)		129		215	366	372	429			352
Riverside Bridge	689	748	848	657	669	642	510		1,256	1,588
Stourbridge Common	1,635	1,431		2,028	1,592	1,616	1,771		2,070	1,714
<b>Centre-South</b>										
Carter Bridge	928	970	972	959	1,073	1,151			854	1,507
Newtown					635	701	837	1,040		1,137
Trumpington Road		324	223	384	358	319	242		738	587
<b>Centre-West</b>										
Barton Road	255	726	593		798	811				
Coton Path, Adams Road		1,407	446	474	541	556	587		595	609
Garrett Hostel Lane		673	660	749	706		686		698	699
Thompsons Lane	235	267	265	268	224				346	367
<b>Outer-Cambridge</b>										
Cambridge Road, Fulbourn		76	72	97	84	72	93		93	90
Granham's Road (Stripey Path)	207	265	288		368				518	
Impington					491	464	508	498	595	
Newmarket Road	121	150	174	246	191				199	

Source: SQW analysis of cycle count database

## Annex B: Additional data from the 2019 intercept survey

B.1 This Annex provides additional data from the 2019 intercept survey, complementing chapter 4 of this Evidence Paper.

### Demographic profile

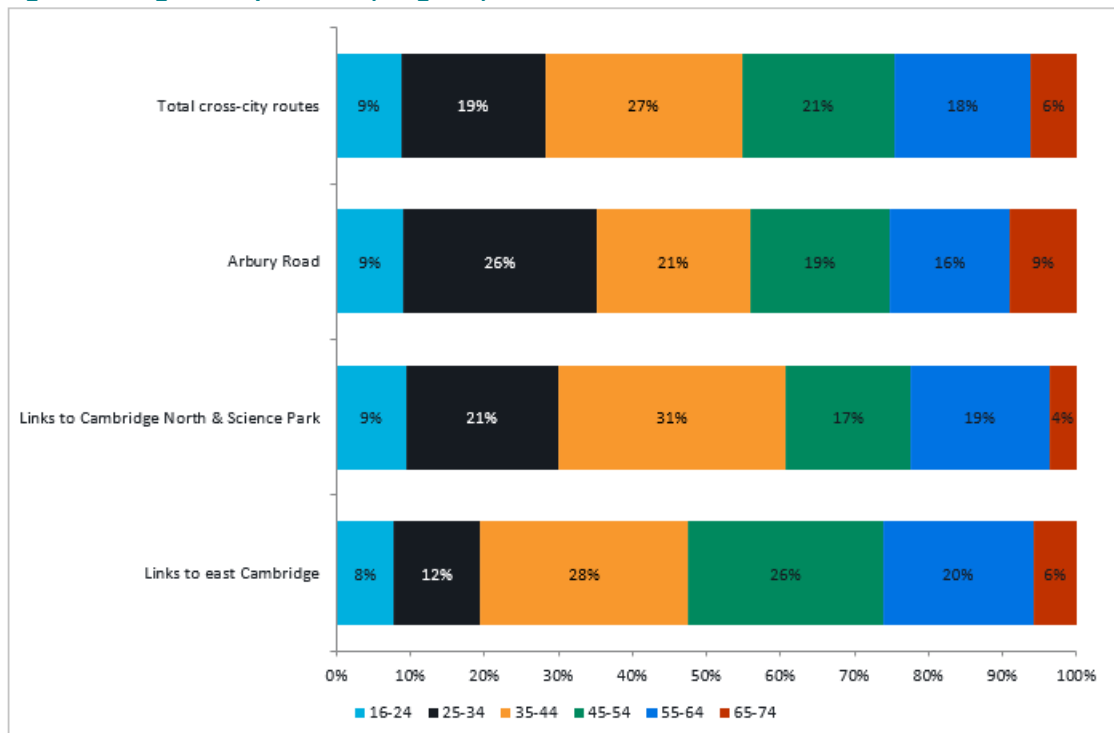
B.2 This section details the demographic profile of respondents to the 2019 survey.

#### Age

B.3 Across the three cross-city cycle routes, 85% of users were aged between 25 and 64, with people under 24 and over 65 representing a much smaller sample.

B.4 Considering respondents at the route level, those on Arbury Road and Links to Cambridge North and Science Park routes had a younger age profile than the other route, with 35% and 30% aged under 35 respectively (versus 20% on Links to East Cambridge) (Figure B-1).

Figure B-1: Age of respondents (weighted)

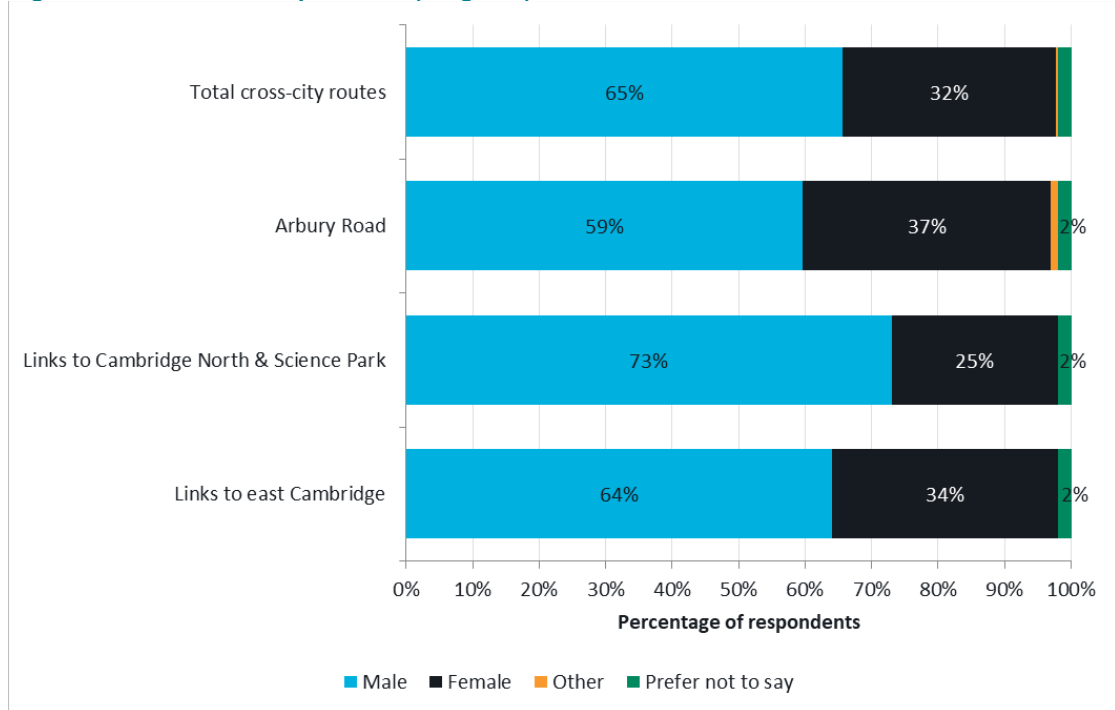


Source: Cycle Intercept Surveys (Q2 base: 322 respondents (unweighted))

## Gender

- B.5 Across the three routes overall, 65% of respondents identified as men and 32% of respondents identified as women (Figure B-2) and approximately 2% preferred not to say (numbers may not sum to 100 due to rounding).
- B.6 Looking at the routes individually, the Arbury Road and Links to east Cambridge routes had higher proportions of women respondents, while men accounted for 75% of respondents on Links to Cambridge North and the Science Park.

Figure B-2: Gender of respondents (weighted)

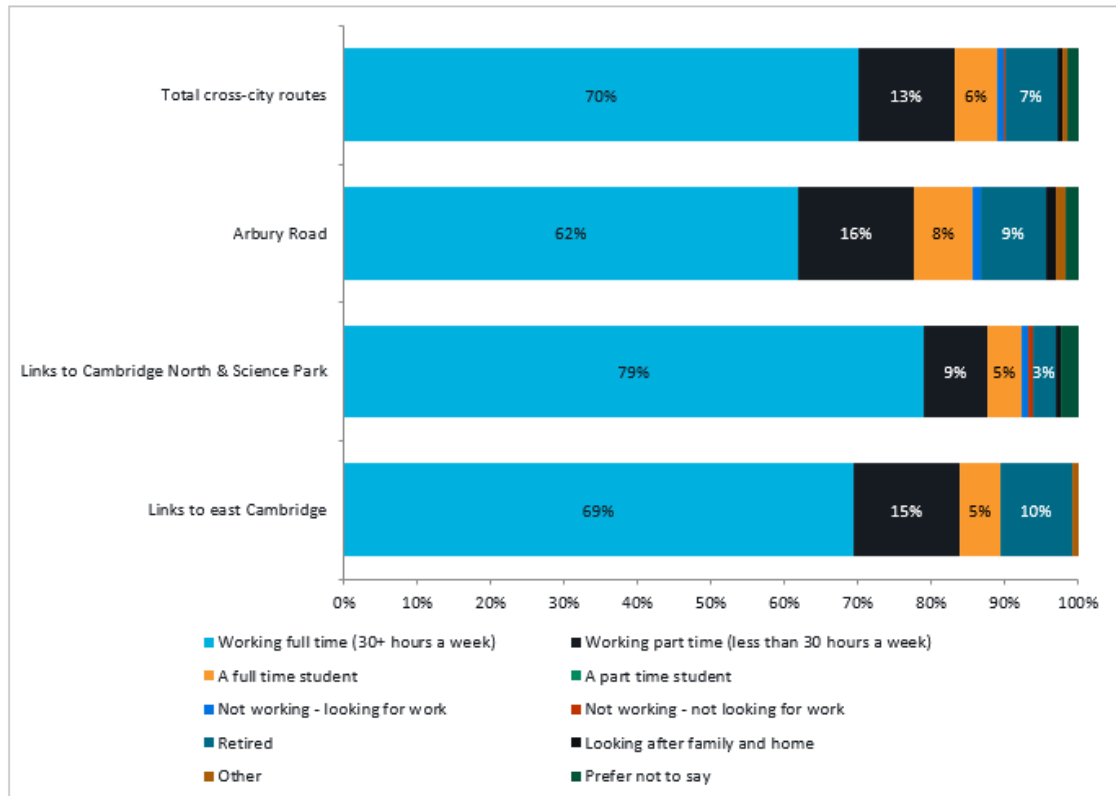


Source: Cycle Intercept Surveys (Q4 base: 322 respondents (unweighted))

### Employment status

- B.7 Across the three routes overall, 83% of the respondents were in full time or part time employment, 6% were students and 7% were retired (Figure B-3).
- B.8 The employment status profile of the Arbury Road corridor and Links to east Cambridge respondents is similar, while a higher proportion of Links to Cambridge North and the Science Park respondents were in employment.
- B.9 Arbury Road has the highest proportion of students of the three cross-city routes (8%).

Figure B-3: Employment status of respondents (weighted)

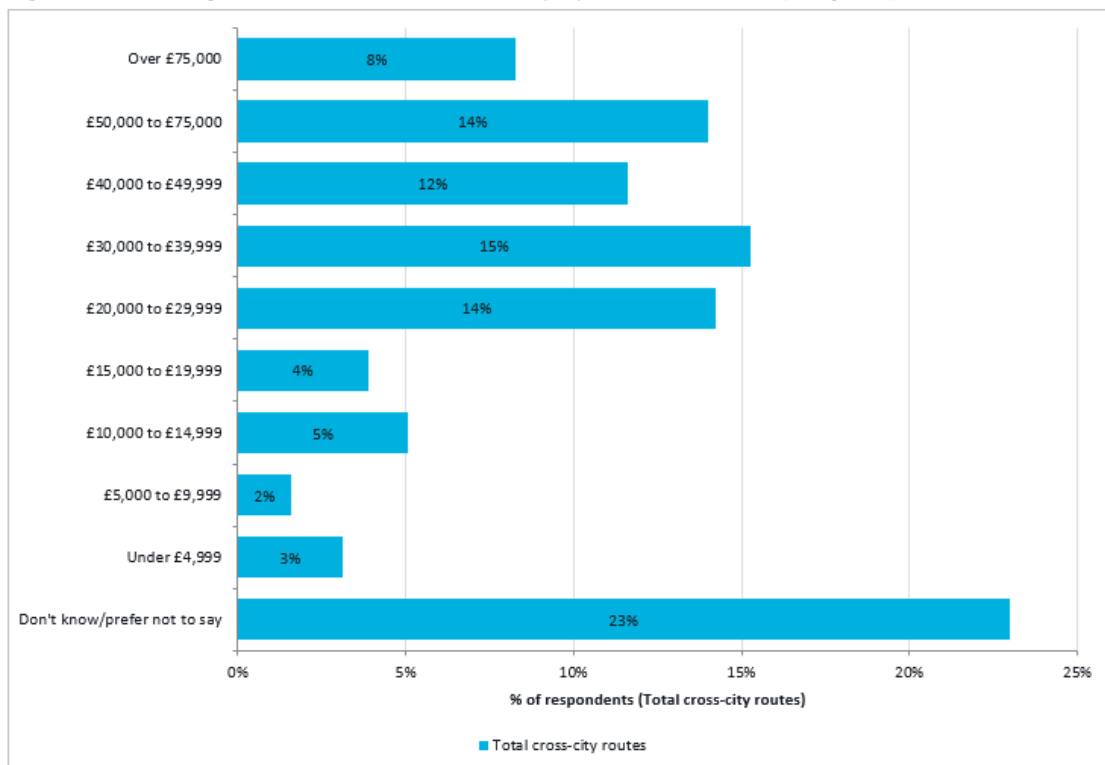


Source: Cycle Intercept Surveys (Q34 base: 322 respondents (unweighted))

## Income

- B.10 Almost a quarter of the cross-city respondents declined to disclose their annual income, the most common response.
- B.11 Of the respondents who did disclose their earnings, 29% had an annual income of between £20,000 and £40,000 and around a quarter earn over £50,000 (Figure B-4)
- B.12 At the route level, users of the Links to Cambridge North and the Science Park were slightly higher earners than the average of the three-routes, and users of the Arbury Road corridor earn slightly less than the average.

**Figure B-4: Average annual income of cross-city cycle respondents (weighted)**



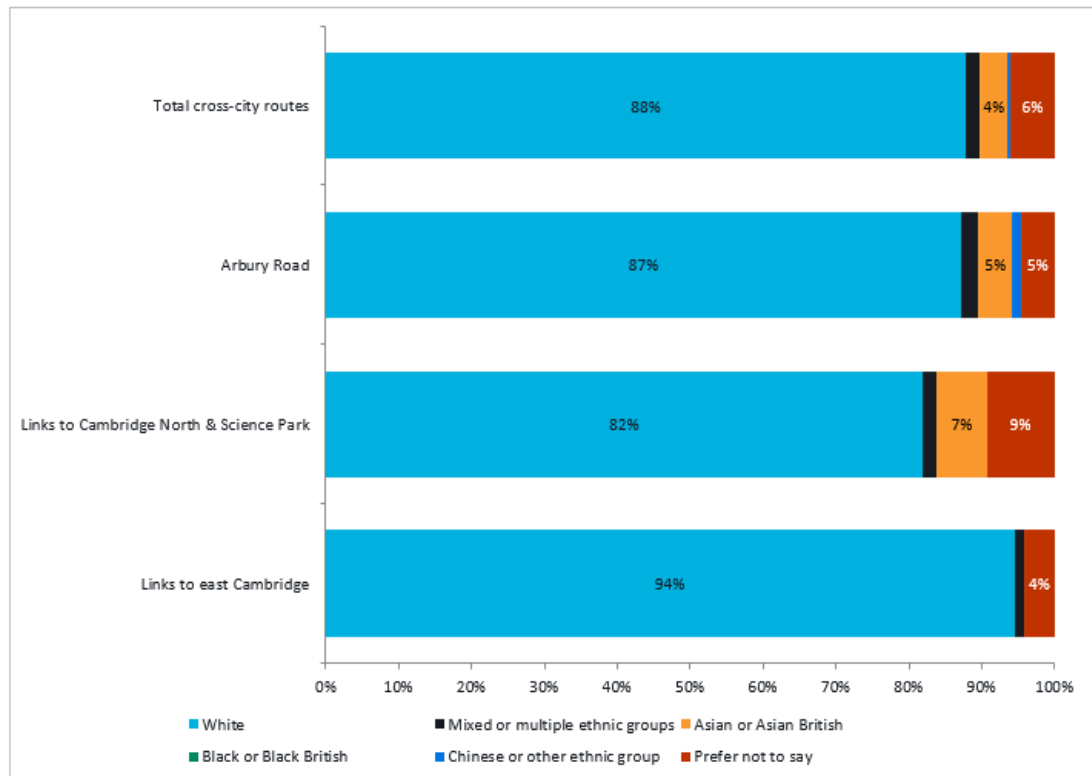
Source: Cycle Intercept Surveys (Q35 base: 322 respondents (unweighted))



## Ethnicity

- B.13 Across the three routes, 88% of respondents were white. 94% of respondents on the Links to east Cambridge route were white (Figure B-5)
- B.14 On average across the routes, 6% of respondents chose not to disclose their ethnicity. At route level, respondents on the Links to Cambridge North & Science Park were most likely to not disclose their ethnicity.

Figure B-5: Ethnicity of respondents (weighted)

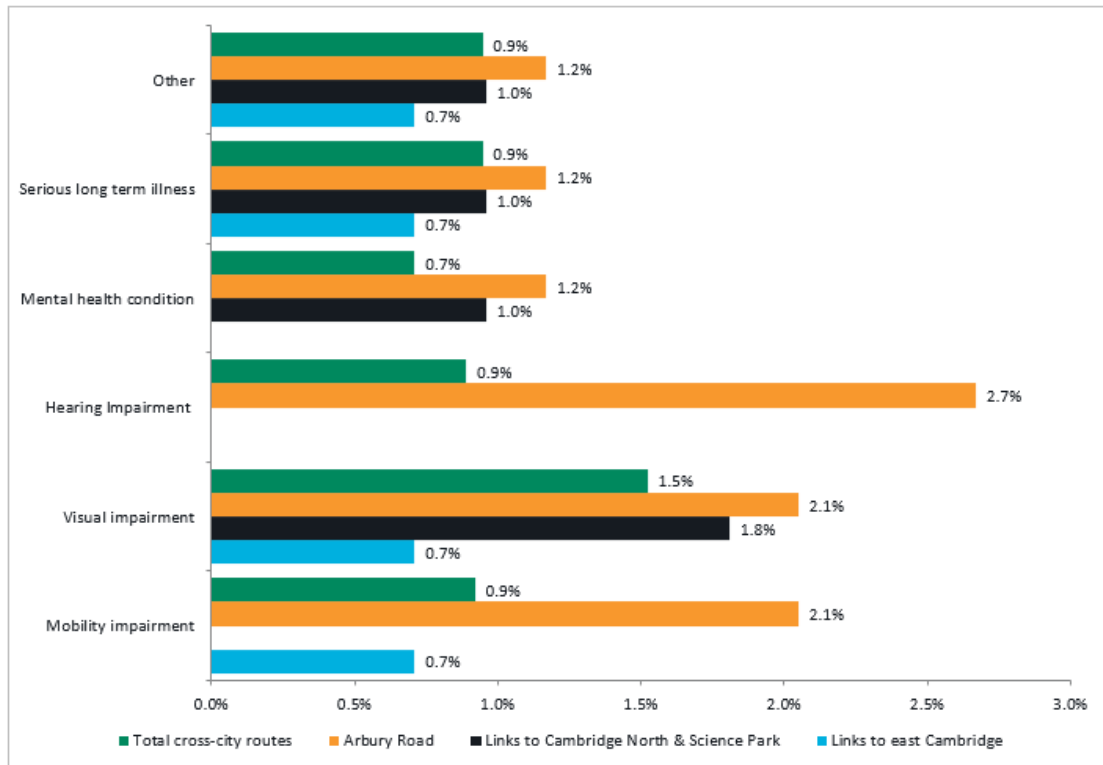


Source: Cycle Intercept Surveys (Q36 base: 236 respondents (unweighted))

## Disability

- B.15 Across the three cross-city routes, 95% of respondents did not have a long term physical or mental disability or health issue that impacts their travel habits.
- B.16 Figure B-6 shows the disabilities and health conditions recorded by respondents.

**Figure B-6: Disabilities and health conditions among respondents (weighted)**



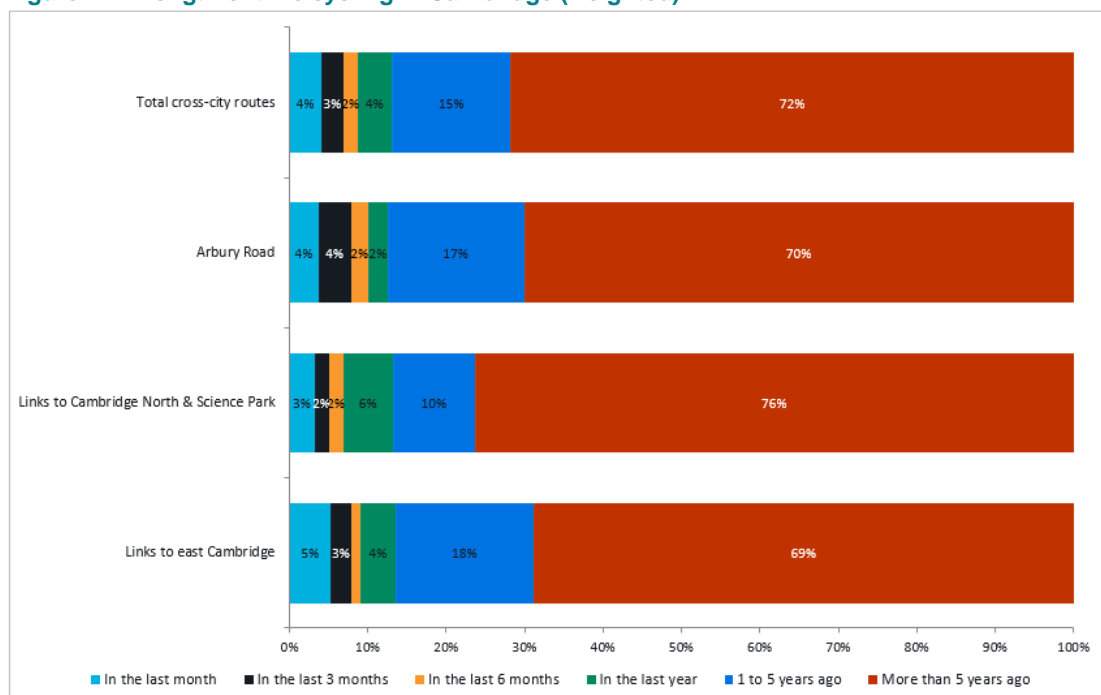
Source: Cycle Intercept Surveys (Q37 base: 236 respondents (unweighted))

## General attitudes towards cycling amongst intercept survey respondents

### Length of time cycling in Cambridge

- B.17 Across the cross-city routes, 72% of respondents had been cycling in Cambridge for more than five years, and 15% started cycling between one and five years ago. Only 13% of respondents had started cycling in the last year, with 7% having started cycling in the last three months when most construction was complete or nearing completion.
- B.18 At route level, respondents on Links to Cambridge North and the Science Park had been cycling the longest and Arbury Road and Links to east Cambridge had seen the biggest increases in the last three months (both at 8%) (Figure B-7).

Figure B-7: Length of time cycling in Cambridge (weighted)

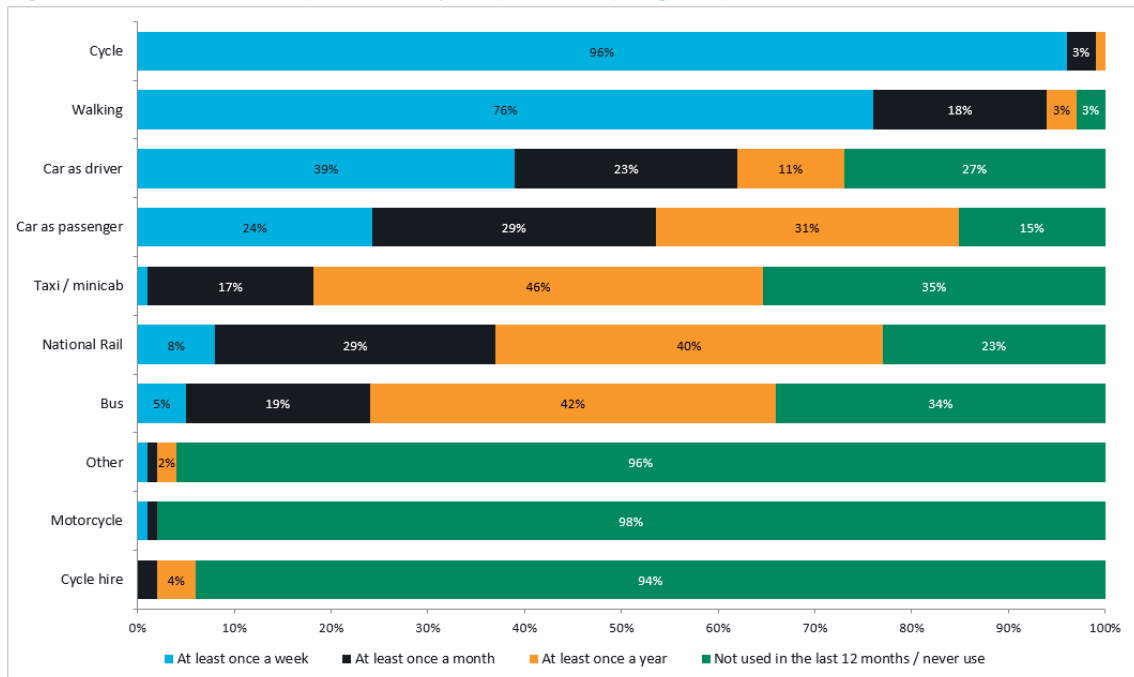


Source: Cycle Intercept Surveys (Q28 base: 322 respondents (unweighted))

### Modes of transport used by respondents

- B.19 The survey questions also established some broad travel habits of cyclists using the three routes, which are presented in this section.
- B.20 Figure B-8 shows that 96% of users across the three routes cycle for transport at least once a week. 76% walked for more than 5 minutes at least once a week (including walking as part of a multi-modal trip).
- B.21 39% of users drove a car at least once a week, with 24% travelling by car as a passenger at least once a week. 27% had not driven a car in the past year, or never use one.

**Figure B-8: Modes of transport used by respondents (weighted)**

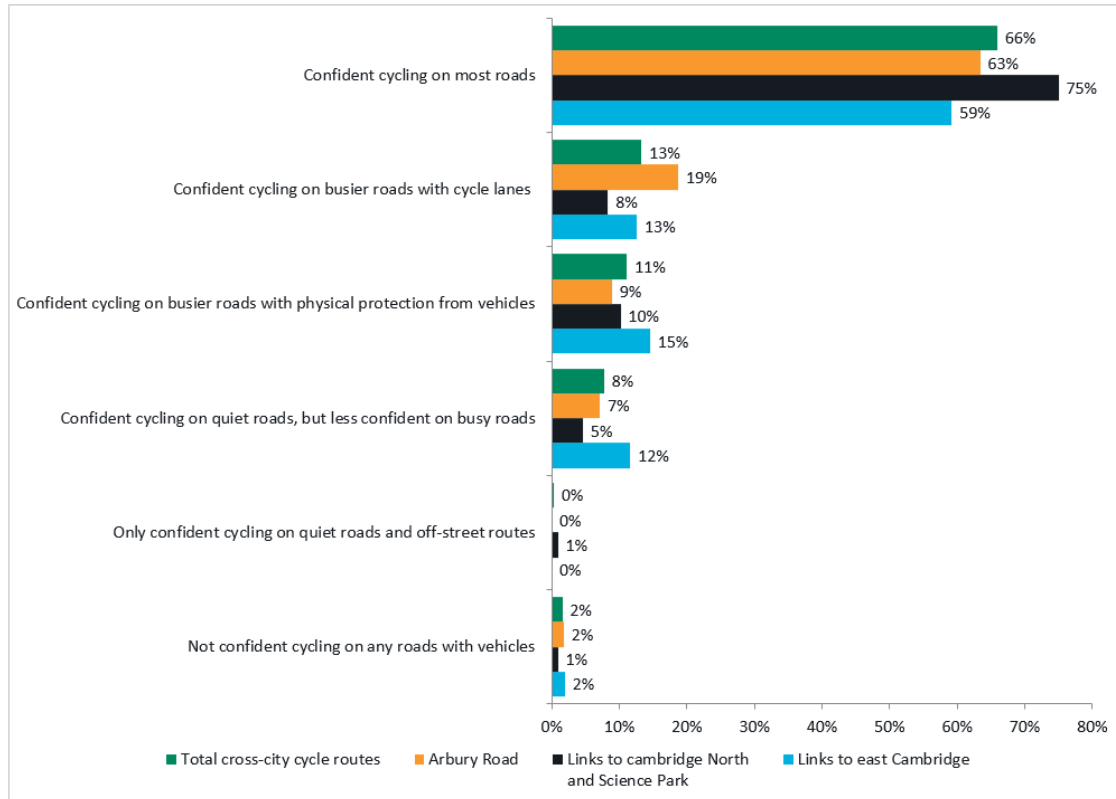


Source: Cycle Intercept Surveys (Q5 base: 322 respondents (unweighted))

## Cycling confidence and safety

- B.22 Across the cross-city routes, 66% of respondents reported being confident cycling on most roads, and 13% were confident cycling on busier roads if there was a cycle lane (i.e. painted on the road) or physical protection from vehicles. Only 2% were not confident cycling on any roads with vehicles (Figure B-9).

Figure B-9: Cycling confidence of respondents (weighted)

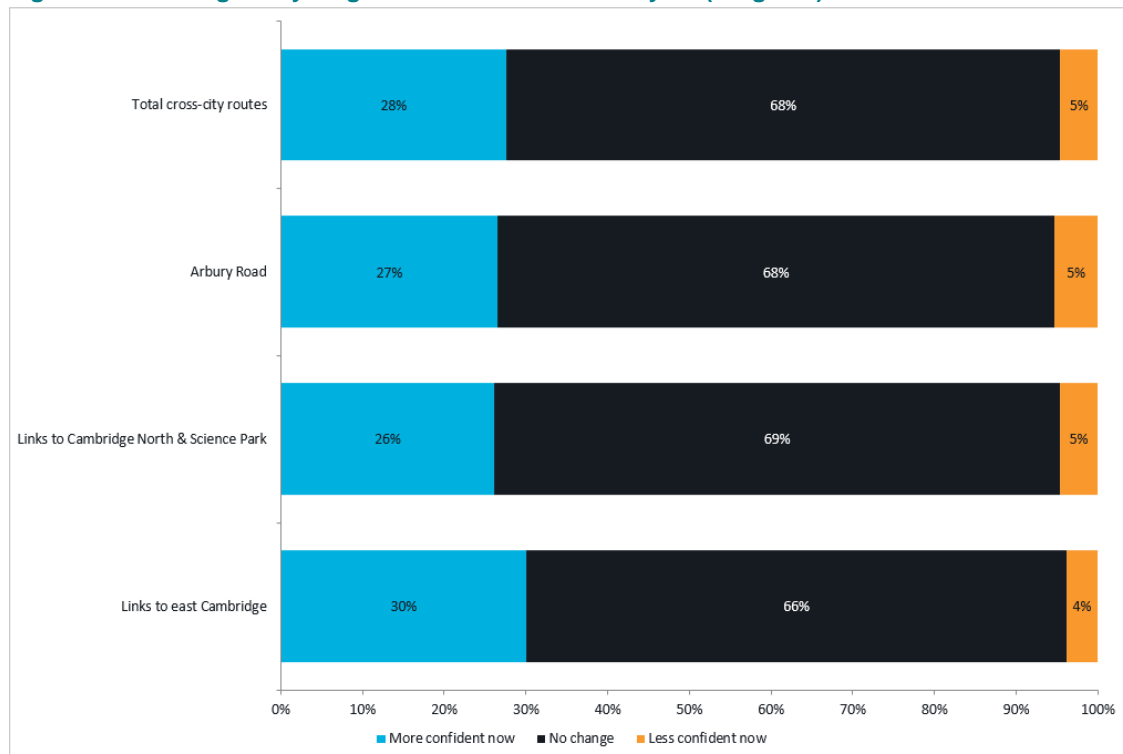


Source: Cycle Intercept Surveys (Q31 base: 322 respondents (unweighted))

### Change in cycling confidence

- B.23 68% of users across the three routes reported no change in their confidence levels as a cyclist over the last year. 28% reported feeling more confident, with no significant differences at route level. Only 5% were less confident (Figure B-10).

**Figure B-10: Change in cycling confidence over the last year (weighted)**

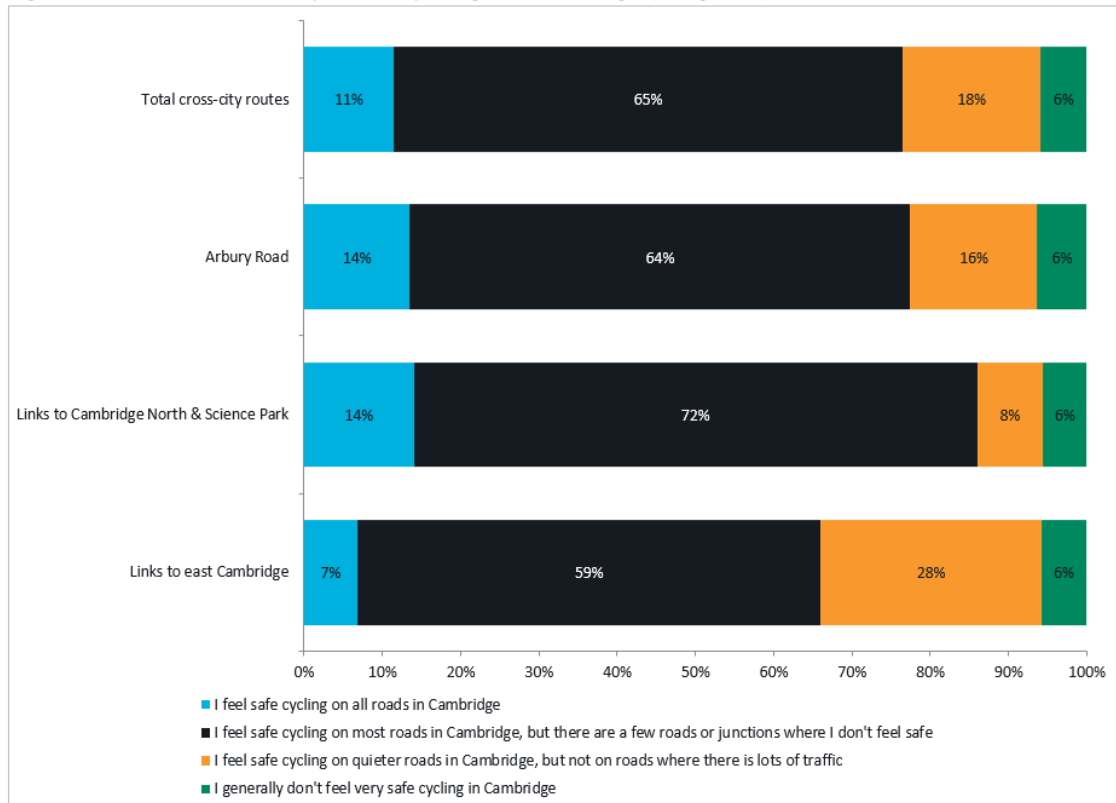


Source: Cycle Intercept Surveys (Q32 base: 322 respondents (unweighted))

### Safety perceptions

- B.24 65% of respondents across the cross-city routes feel safe cycling on most roads, but there were some roads or junctions where they do not feel safe (Figure B-11).
- B.25 On average, 18% of cross-city respondents feel safe cycling on quieter roads, but not on roads with lots of traffic. Only 6% generally do not feel very safe cycling in Cambridge.
- B.26 Looking at the individual routes, users of Links to east Cambridge tend to feel less safe and users of Links to Cambridge North & Science Park tend to feel most safe cycling in Cambridge.

**Figure B-11: Sense of safety when cycling in Cambridge (weighted)**



Source: Cycle Intercept Surveys (Q33 base: 322 respondents (unweighted))