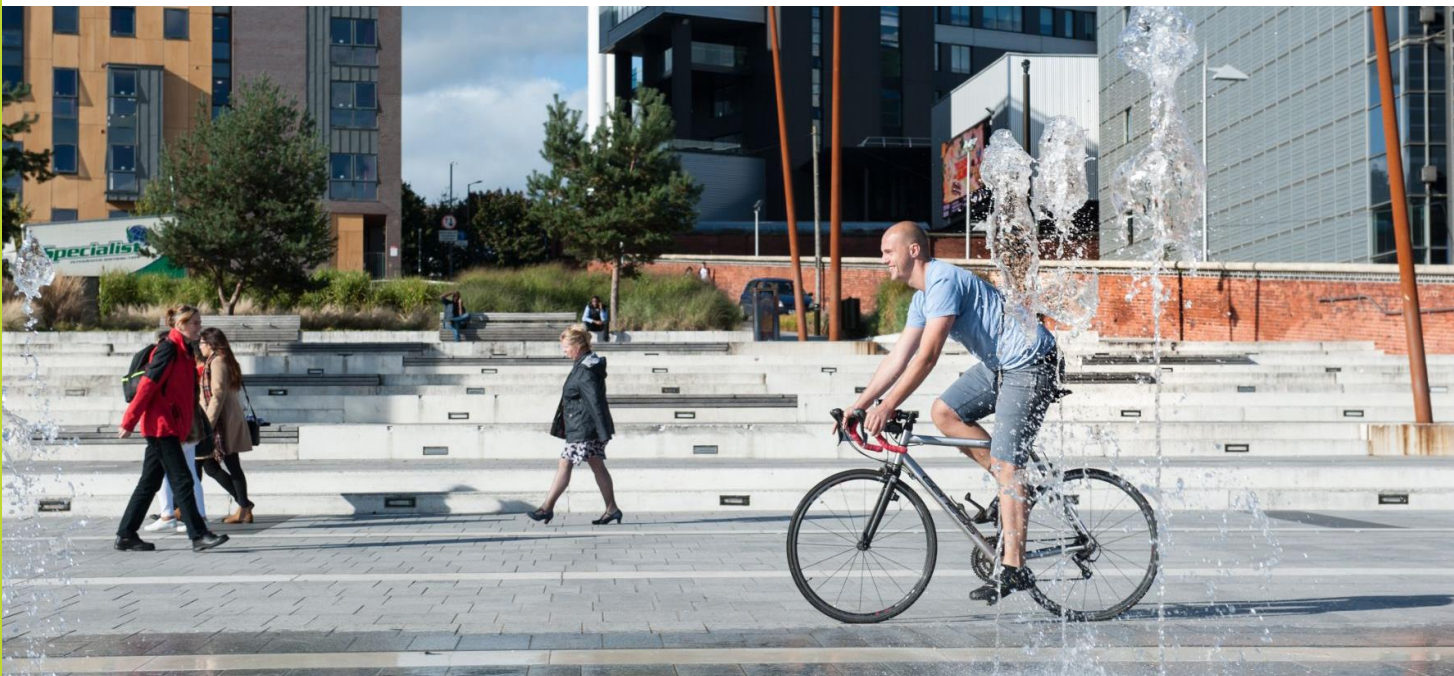


Bike Life 2019

Data sources and methodologies



04 March 2020

To find out more, please contact:
Dunja.Reed@sustrans.org.uk

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Author(s): Kate Fearnough, Holly Musgrove, Rosie Holding, Dene Stevens

Reviewed by: Dene Stevens, Dunja Reed

Signed off by: Dunja Reed

Contact: Dunja.Reed@sustrans.org.uk

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Data sources

Where does the data in the 2019 Bike Life reports come from?

The 14 Bike Life reports for 2019 were produced by Sustrans with the support and co-operation of the authorities named on the front cover of each report. The cities, metropolitan areas and boroughs in the UK and Ireland for 2019 are: Belfast, Bristol, Cardiff, Dublin Metropolitan Area, Dundee, Edinburgh, Greater Cambridge, Greater Manchester, Inverness, Liverpool City Region, Southampton City Region, Tower Hamlets, Tyneside, and West Midlands Metropolitan Area¹. The term 'city' is used as shorthand for all of the types of place.

Data was collated in 2019. Most data applies to 2019. In a minority of cases data is drawn from previous years, where 2019 figures were not available. The UK reports were published in March 2020, and Dublin Metropolitan Area in April 2020.

The data contained in the reports is drawn from a set of common data reviewed and agreed by Sustrans and partner authorities and collected for each of the different cities. There are four categories of data:

Settings data: these are supply-side measures of what is available to help someone riding a cycle in the city, and the inputs being made. This includes cycle route lengths, 20mph limits (or 30kmph limits in Dublin Metropolitan Area) and cycle parking. Much of this data is supplied by the partner authorities.

Behaviour data: these are demand-side measures of residents' travel behaviours, the types of people owning and riding cycles, how often, how far and to which types of destination. This data is collected in the independent representative survey in each city.

Perception data: attitudes and perceptions of the public towards cycling and transport more generally. This includes reasons for not cycling or not cycling more often; types of interventions/facilities/equipment that would encourage respondents to cycle more; perceptions of existing cycle routes and how to improve them; views on safety and on levels of government spending on different transport modes; and views on financial interventions to fund public transport, cycling and walking. Perceptions, whether accurate or not, substantially determine whether people may ride a cycle. For this reason the perceptions of those who

¹ Seven of these cities also participated in Bike Life in 2015 and 2017: Belfast, Bristol, Cardiff, Edinburgh, Greater Manchester, Tyneside (formerly as Newcastle only) and West Midlands (formerly as Birmingham only).

don't ride are as important as those that do. This data is collected in the independent representative survey in each city.

Impacts data: health, economic and environmental benefits from cycle use, including modelled economic benefits, premature deaths prevented, impacts for the NHS (HSE in Dublin Metropolitan Area) and reductions in pollutants where cycles are used instead of cars. This data is calculated by Sustrans' Research and Monitoring Unit from a combination of the behavioural data and the best available evidence.

The table below shows the data sources and methodologies behind each data point in each city report. It is ordered by page number. There is supporting information in the Appendix, including further details on the representative survey delivered in each city and the questionnaire, which can be used to see the exact question wording for data in the reports.

Table of data sources

Table 1: Data sources for each section of the report

Page	Section	Data item	Source and notes
Page 2 Making tracks	Our vision for cycling in the city	Various data, depending on each individual city report	Section written by the partner authority. Figures come from data sourced throughout in the Bike Life report, or from data sourced from the partner authority themselves.
Page 3 Introduction	Introducing Bike Life	Number of residents surveyed	Number of residents who completed the independent survey of residents conducted by NatCen/DRG/B&A.
Page 4 Report Summary	Report Summary	Population	This is the whole population of the city (adults and children). <ul style="list-style-type: none"> • Belfast: NISRA mid-year 2018 population estimate. • Dublin Metropolitan Area: 2016 Census. • All other cities: NOMIS mid-year 2017 population estimate.
	Everyone benefits when more people cycle	Number of cars taken off the road daily	See page 6: return cycle trips that are made daily
		Number of long-term health conditions prevented	See page 7
		Tonnes of greenhouse gas emissions saved	See page 7
	Economic benefit created	See page 7	

		Percentage of residents who cycle at least once a week	See page 8
		Percentage of residents who don't cycle but would like to	See page 14
Safety concerns stop cycling being a genuine travel choice for many residents		Percentage of residents who cycle at least once a week, by gender and disability	See page 9
		Percentage of residents who think cycle safety needs improving, by gender and disability	The percentage of respondents of these gender (Q23) and disability (Q30) demographic groups, giving this answer to Q13b in the independent survey of residents.
To help residents to cycle more we need better cycling infrastructure		Percentage of residents that think more segregated cycle tracks along roads would be useful	See page 14
		Percentage of residents who support building more physically protected tracks along roads, even when this would mean less room for other road traffic	See page 14
		Miles (or km) of segregated cycle tracks along roads that currently exist	See page 14 (km for Dublin Metropolitan Area) <ul style="list-style-type: none"> Liverpool City Region: the breakdown of individual route types could not be calculated so different data is reported (see below)
		Liverpool City Region only: percentage of residents who think that more traffic-free cycle routes away from roads would be useful to help them cycle more	See page 14 <ul style="list-style-type: none"> Liverpool City Region: the breakdown of individual route types could not be calculated so this data is reported instead

Page 5 Report Summary	People from socio-economic groups D and E are most likely to suffer the impacts of higher traffic levels, yet are least likely to own a car	People from socio-economic groups D and E are most likely to suffer the impacts of higher traffic levels	Glasgow Centre for Population Health (2013) The built environment and health: an evidence review, <i>Briefing Paper 11</i> (Concepts Series) [Online] Available at: https://www.gcph.co.uk/assets/0000/4174/BP_11_-_Built_environment_and_health_-_updated.pdf .
		Percentage of residents in socio-economic groups AB and DE that have access to a car or van	The percentage of respondents of these socio-economic groups ² (derived from Q25a) giving this answer to Q1 in the independent survey of residents.
		Not having a car can increase the risk of social exclusion, debt and transport poverty	Sustrans (2012) Locked Out: Transport Poverty in England [Online] Available at: https://www.sustrans.org.uk/media/3706/transport-poverty-england-2012.pdf .
		Percentage of residents in socio-economic group DE who never cycle	The percentage of respondents of this socio-economic group (derived from Q25a) answering never to Q2d in the independent survey of residents.
		Percentage of residents in socio-economic group DE who do not cycle but would like to	See page 10
		Number of adults in socio-economic group DE who do not cycle but would like to	The percentage of residents in socio-economic group DE who do not cycle but would like to (above) is multiplied by the percentage of residents in socio-economic group DE and by the total adult population.

² Socio-economic group is a classification maintained by the Market Research Society and is based on occupation of the Chief Income Earner (CIE). Social grade split is provided by the 2011 Census for all cities except Dublin Metropolitan Area. The social grades are:

- AB: higher and intermediate managerial, administrative, professional occupations.
- C1: Supervisory, clerical, and junior managerial, administrative, professional occupations.
- C2: Skilled manual occupations
- DE: Semi-skilled and unskilled manual occupations, unemployed and lowest grade occupations.

Irish social grade classification is based on the Association of Irish Market Research Organisation's (AIMRO) occupational groupings. These are very similar to the UK groupings, with the exception of an extra category (F) for CIE whose main income comes from farming. Dublin Metropolitan Area uses data from AIMRO data for population split by social grade. Note that there are no respondents grouped into social grade F from either the AIMRO data or the independent survey data for Dublin Metropolitan Area.

			<p>Adult population (rather than whole population) is used for calculations that also use the percentage of respondents to the independent survey, as the survey is representative only of adults aged 16 and above.</p> <p>Adult population (aged 16+) source:</p> <ul style="list-style-type: none"> • Belfast: NISRA mid-year 2018 population estimate. • Dublin Metropolitan Area: 2016 Census. • All other cities: NOMIS mid-year 2017 population estimate.
	<p>City residents believe improving their streets for cycling and walking would make their area a better place to live, work or visit</p>	<p>Percentage of residents who think:</p> <ul style="list-style-type: none"> • more cycling would make their area a better place to live or work, • fewer motor vehicles would be useful to help them cycle, • space should be increased for people socialising, walking and cycling on their local high street, • streets outside local schools should be closed to cars during pick up and drop off times, • speed limits should be reduced on local roads 	<p>The percentage of respondents giving this response to Q9, Q10g, Q15f, Q15a, Q15d in the independent survey of residents.</p>
	<p>Residents would like to see more government spending on public transport, cycling and walking</p>	<p>Percentage of residents who would like to see more government spending on:</p> <ul style="list-style-type: none"> • public transport, • cycling, • walking, • driving 	<p>See page 16</p>

		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.
Page 6 Realising benefits	Number of times city residents cycle around the world every day	The amount of times per day city residents cycle the equivalent of around the world	Miles (km for Dublin Metropolitan Area) cycled per day (below) divided by the equatorial circumference of the Earth (24,901 miles / 40,075 km).
		Percentage of residents that think more cycling would make the city a better place to live and work	The percentage of respondents giving this response to Q19a in the independent survey of residents.
		Number of cycle trips in the city in the past year	This is the sum of the total number of trips cycled for all purposes. See below for how the number of trips by purpose is calculated.
		Miles (or km) cycled in the city in the past year, and per day	<p>Respondents to the independent survey of residents were asked to give an estimate of the typical one-way distance of each trip purpose (education, work or shopping/other purposeful/social trips, Q3b-6b) or the total round trip distance for leisure trips (Q7b). The median trip distance for each trip purpose was multiplied by the total number of trips cycled for that purpose, and the distances travelled across trip purposes were summed. See below for how the number of trips is calculated. Trips per year was divided by 365 to get miles (km for Dublin Metropolitan Area) per day.</p> <ul style="list-style-type: none"> For Edinburgh, the average cycling trip distance from the 2012-2017 Scottish Household Survey data was used for all trip types.
		Annual trips by purpose: Work (adult)	<p>For adult work trips:</p> <ul style="list-style-type: none"> For Greater Manchester, Transport for Greater Manchester (TfGM) provided trip estimates modelled from responses to their Travel Diary Survey (TRADS) for the calendar year 2018. This is comprised of the

			<p>estimated number of cycling trips done for the purpose of 'Commuting'.</p> <ul style="list-style-type: none"> • For all other cities the number of trips is estimated from the responses to Q3a in the independent survey of residents and scaled up for the population. • Workdays are based on the number of working days per year (http://www.work-day.co.uk/) for each nation in 2019, minus 28 days of annual leave, minus the average number of days lost through sickness absence per worker per year for that nation/region. For a seven-day workweek compensation rest days and national public holidays are also accounted for. • The calculations include a correction for seasonal variation: using Sustrans' database of average seasonal variation in cycling from a large number of automatic counters over many years, we are able to correct with confidence for the relatively high levels of cycling likely to be exhibited during the survey period of April to July. Local counter data was used for Dublin Metropolitan Area. • The seasonality-adjusted figure is divided by a trip-chaining factor from: Primerano, F et al. (2007) Defining and understanding trip chaining behaviour, <i>Transportation</i> 35, 55–72 [Online]
		Annual trips by purpose: School, college or university (adult)	<p>For adult trips to school, college or university (including accompanying a child or someone else):</p> <ul style="list-style-type: none"> • For Greater Manchester, Transport for Greater Manchester (TfGM) provided trip estimates modelled from responses to their Travel Diary Survey (TRADS) for the calendar year 2018. This is comprised of the estimated number of cycling trips done for the purpose of 'Education' by those aged 17 or older.

			<ul style="list-style-type: none"> • For all other cities the number of trips is estimated from the responses to Q5a in the independent survey of residents and scaled up for the population. • School days are based on the number of school days in a year minus the number of days lost through sickness absence per worker per year for that nation/region (a number of days lost through sickness absence per school/college/university student was not available). • The calculations include a correction for seasonal variation and trip chaining (as above: adult work trips).
		Annual trips by purpose: school (child)	<p>For child trips to school:</p> <ul style="list-style-type: none"> • School days are based on the number of school days in a year minus the number of days lost through sickness absence per worker per year for that nation/region (a number of days lost through sickness absence per school pupil was not available). • The calculations include the proportion of children that cycled to school (see below for source for each city), school roll, and the trip-chaining factor (as above: adult work trips). • Seasonal-adjustment (as above: adult work trips) was applied only for Dublin Metropolitan Area, Dundee, Edinburgh and Inverness, where the single month of data collection was known for the proportion of children that cycled to school. It was assumed that pupils who 'usually' or 'normally' cycle do so on every school day for an outward and a return journey. <p>Cycling to school mode share:</p> <ul style="list-style-type: none"> • Belfast: Continuous Household Survey 2017-18 • Bristol: Modeshift Stars and Living Streets Wow Travel Tracker data from 2018-19. Modeshift Stars is an online platform that creates, develops and supports travel

			<p>plans. It is delivered by Modeshift, a not for profit membership organisation that supports sustainable travel. Living Streets is the UK charity for everyday walking.</p> <ul style="list-style-type: none"> • Cardiff: Sustrans' Hands Up Survey, 2018 • Dundee, Edinburgh and Inverness: Sustrans' Hands Up Survey Scotland, 2018 • Dublin Metropolitan Area: 2016 Census • Greater Cambridge: Modeshift Stars data from 2018-19A • Greater Manchester: TRADS, 3 year rolling average 2016-2018 • Liverpool: Living Streets' Wow Travel Tracker 2018-19. Living Streets is the UK charity for everyday walking. • Southampton: Modeshift Stars data • Tower Hamlets: Sustrans' Hands Up Survey data, 2014-15, 2017-18, 2018-19 and 2019-20 • Tyneside: <ul style="list-style-type: none"> - Gateshead: Local Authority Census 2018/19 - Newcastle: Hands Up Survey 2015/16 - North Tyneside: 'how did you travel to school today' classroom survey question 2018 • West Midlands: 2011 Census
		<p>Annual trips by purpose: Shopping, personal business and social trips (adult)</p>	<p>For adult trips for shopping, personal business and social trips:</p> <ul style="list-style-type: none"> • For Greater Manchester, Transport for Greater Manchester (TfGM) provided trip estimates modelled from responses to their Travel Diary Survey (TRADS) for the calendar year 2018. This is comprised of the

			<p>estimated number of cycling trips done for the purposes of 'Business', 'Escort education', 'Escort other', 'Personal business', 'Shopping', 'Sport and entertainment' and 'Visiting friends' by those aged 17 or older.</p> <ul style="list-style-type: none"> • For all other cities the number of trips is estimated from the responses to Q6a in the independent survey of residents and scaled up for the population. • The total possible number of days that could be cycled for this purpose is based on the total number of days in a year (365) minus the number of days lost through sickness absence per worker per year for that nation/region (a general number of days lost through sickness per person was not available). • The calculations include a correction for seasonal variation and trip chaining (as above: adult work trips).
		Annual trips by purpose: Leisure (adult and child)	<p>For adult and child leisure trips:</p> <ul style="list-style-type: none"> • For Greater Manchester, Transport for Greater Manchester (TfGM) provided trip estimates modelled from responses to their Travel Diary Survey (TRADS) for the calendar year 2018. This is comprised of the estimated number of cycling trips done for the purpose of 'Holidays and round trips'. • For all other cities the number of trips by adults is estimated from the responses to Q7a in the independent survey of residents and scaled up for the population. • The total possible number of days that could be cycled for this purpose is based on the total number of days in a year (365) minus the number of days lost through sickness absence per worker per year for that

			<p>nation/region (a general number of days lost through sickness per person was not available).</p> <ul style="list-style-type: none"> • The calculations include a correction for seasonal variation and trip chaining (as above: adult work trips). • For all cities except Manchester, child leisure trips are estimated from the adult leisure trip estimate using census data (UK cities: 2011 Census, Dublin Metropolitan Area: 2016 Census) about the proportion of childless households in each city.
Cycling keeps the city moving	Cycling frees up road space in comparison to driving		<p>Litman, T (2019) Evaluating Transportation Land Use Impacts, <i>Victoria Transport Policy Institute</i> [Online] Available at: https://www.vtpi.org/landuse.pdf</p> <p>Based on: Bruun, E & Vuchic, V (1995) Time-area concept: Development, meaning and applications, <i>Transportation Research Record</i> 1499. 95-104 [Online] Available at: http://onlinepubs.trb.org/Onlinepubs/trr/1995/1499/1499-014.pdf</p>
	Amount of return cycle trips that are made daily by people that could have used a car		<p>The amount of trips (shown above) is multiplied by the proportion of cycle riders that own or have access to at least one car or van (from the independent survey of residents Q1 responses).</p> <p>For this survey cycle riders were defined from Q2d 'Thinking about the different ways in which you travel around, how often do you...Cycle?' with a response of '7 days a week', '5-6 days a week', '2-4 days a week', 'Once a week', 'Once a fortnight', 'Once a month', 'Less often'.</p>
	Length of the traffic jam that would result from these cars		<p>The number of trips that could have been made by car (above) multiplied by the average length of a parking space (4.8m) to represent one car in a traffic jam for every trip.</p>

Page 7 Realising benefits	Cycling unlocks health benefits for everyone	Amount of serious long-term health conditions averted per year by cycling (total, and by disease type in the chart)	<p>This is calculated using the Sport England MOVES tool which shows the return on investment for health from sport and physical activity.</p> <p>Physical activity protects against many illnesses. MOVES uses the latest research to estimate the number of eight specific conditions that are likely to be prevented:</p> <ul style="list-style-type: none"> • Type 2 Diabetes • Ischaemic Heart Disease • Cardiovascular Disease (Stroke) • Dementia • Depression • Breast Cancer • Colon Cancer • Hip Fracture <p>Note this is the reduction in incidence of these conditions i.e. the reduction in the number of new cases likely to arise in a year.</p> <ul style="list-style-type: none"> • As the MOVES tool is based on UK statistics of disease incidence, mortality rates and treatment costs, the tool was adapted to be used for Dublin Metropolitan Area by including the equivalent Irish data where possible. The only addition made was for life expectancy data, from Irish Life Tables (https://www.cso.ie/en/statistics/birthsdeathsandmarriages/irishlifetables/)
		Saving to the NHS in the city (HSE in Dublin Metropolitan Area)	This is also calculated using the MOVES tool and is the annual saving in health care costs arising from the number of conditions averted.

		Amount of GP appointments this cost equates to	<p>The total healthcare cost savings are divided by the average cost of a GP appointment.</p> <ul style="list-style-type: none"> • UK: £30 (https://www.england.nhs.uk/2019/01/missed-gp-appointments-costing-nhs-millions/) • Dublin Metropolitan Area: €55 (https://www.independent.ie/business/personal-finance/revealed-how-much-we-spend-visiting-the-doctor-each-year-36699145.html)
		Number of early deaths prevented annually	<p>This is calculated using the widely recognised World Health Organisation (WHO) Europe's Health Economic Assessment Tool (HEAT). This estimates the number of premature deaths prevented by specified amounts of cycling.</p>
		Value of the early deaths prevented	<p>This is also calculated using the WHO HEAT tool, which subsequently estimates the value of the reduced mortality. This is based on contingent valuation studies that test the amounts people would be prepared to pay to increase their chances of survival.</p> <p>The HEAT tool was not modified for an Irish context as it is based on Europe-wide context and is therefore applicable to the UK and the Republic of Ireland.</p> <p>Note that the value for HEAT is sometimes greater than the value shown at the bottom of page 7 for the overall net benefit of cycling. This is because the HEAT figure is a gross value including this benefit only. The net value takes into account the wider range of benefits and costs associated with cycling.</p>
		Kg of NO _x and particulates saved annually	<p>These are calculated from the distance and number of trips cycled that could have been driven annually (see page 6). It is based on the emissions that an average car (diesel or petrol) would produce. The calculation takes into account the average per trip emissions from a cold-start, emissions per</p>

			km at optimum catalytic convertor temperature, and emissions per km arising from brake wear and road abrasion.
		Early adult deaths occurring where long-term exposure to air pollution has been a contributory factor	<p>Bristol data is from: Air Quality Consultants (2017) Health Impacts of Air Pollution in Bristol [Online] Available at: https://www.bristol.gov.uk/documents/20182/32675/Health+Impacts+of+Air+Pollution+in+Bristol+-+April+2014/4df2fce5-e2fc-4c22-b5c7-5e7a5ae56701</p> <p>Data for all other UK cities, is from: Public Health England (2014) Estimating Local Mortality Burdens associated with Particulate Air Pollution [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf Adults = 25 years+</p> <p>The figure is for the Bike Life city boundary for all cities except for:</p> <ul style="list-style-type: none"> • Inverness: the figure is for the whole of the Highland Council as there is no figure available for Inverness alone • Southampton City Region: the figure is for Southampton Unitary Authority. It excludes Eastleigh and the small portions of Test Valley and New Forest districts that are included in the survey area <p>Dublin Metropolitan Area data is for the whole of the Republic of Ireland and is from: European Environment Agency (2019) Air quality in Europe – 2019 report [Online] Available at: https://www.eea.europa.eu/publications/air-quality-in-europe-2019 Adults = 30+</p>
		Tonnes of greenhouse gas emissions saved annually	Greenhouse gas emissions saved are calculated by multiplying the distance of cycle trips that could have been driven (see page 6) by the quantity of CO ₂ , CH ₄ and N ₂ O that

Cycling helps reduce the impact of our climate crisis		would have been emitted by an average car per distance unit (expressed as CO ₂ equivalent).
	Equivalent number of flights to a worldwide destination	This equivalent is calculated by dividing the total greenhouse gas emissions (above) by the average emissions from a single flight from an airport close to the Bike Life city to the destination city (based on the online flight emissions calculator: https://www.carbonfootprint.com/calculator.aspx).
	Contextual data on transport emissions over time	<ul style="list-style-type: none"> • English cities: Department for Business, Energy and Industrial Strategy (2017) UK greenhouse gas emissions [Online] Available at: https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-2017 • Scottish cities: Scottish Government (2019) Scottish greenhouse gas emissions 2017 [Online] Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2019/06/scottish-greenhouse-gas-emissions-2017/documents/scottish-greenhouse-gas-emissions-2017/govscot%3Adocument/scottish-greenhouse-gas-emissions-2017.pdf • Cardiff: StatsWales, Emissions of Greenhouse Gases by Year [Online] Available at: https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Greenhouse-Gas/emissionsofgreenhousegases-by-year • Belfast: Department of Agriculture, Environment and Rural Affairs (2019) Northern Ireland greenhouse gas inventory 1990-2017 [Online] Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ghg-inventory-statistical-bulletin-2017.pdf

			<ul style="list-style-type: none"> Dublin Metropolitan Area: Environmental Protection Agency (2019) Ireland's Final Greenhouse Gas Emissions, 1990-2017 [Online] Available at: https://www.epa.ie/pubs/reports/air/airemissions/ghgemissions2017/Report_GHG%201990-2017%20April%202019_Website.pdf
Cycling benefits residents and the local economy in the city	Monetary net benefit to individuals and society for each mile (or km) cycled instead of driven	<p>This is the difference between the total cost per mile (or km for Dublin Metropolitan Area) of driving a car and the total cost per mile (or km) of riding a cycle.</p> <p>The costs of both include costs and benefits to the individual and to society as a whole. The calculation includes figures for the operating costs of cycle and car, travel time of both, traffic congestion and medical costs and work absenteeism (the main factors), and also infrastructure, local air quality, noise, greenhouse gases, and taxation (lesser factors).</p> <p>The figure for each factor is based on best available evidence in the UK and the Republic of Ireland, including data taken from the Government's standard Transport Analysis Guidance (WebTAG). For some cases evidence from across Europe has been used.</p> <p>This methodology is based upon that used for the Copenhagen Bicycle Account, which has been established for 20 years and was one of the main inspirations for Bike Life.</p> <p>All costs and benefits are expressed in 2019 prices.</p>	
	Total annual net monetary benefit to individuals and society from people with a car choosing to cycle for transport	This is calculated by multiplying the per mile (or km for Dublin Metropolitan Area) monetary benefit figure (above) by the estimated total pedalled distance that could have been driven across the year (see page 6).	
	Total annual net monetary benefit to individuals and society from all trips cycled	This is comprised of three parts:	

			<ul style="list-style-type: none"> the annual monetary benefit to the city from people with a car choosing to cycle for transport (above), plus the value of similarly purposeful trips but cycled by people without access to a car, plus the value of leisure cycle trips made by everyone <p>Note that where this figure amounts to less than the figure for the value of early deaths prevented (above) this is mainly because the figure for early deaths prevented does not take into account the costs of cycling.</p>
Page 8 Cycling Participation	Most people living in the city do not currently cycle	Percentage of residents of Greater Cambridge who cycle five or more days a week	The percentage of respondents answering 7 days a week or 5-6 days a week to Q2d in the independent survey of Greater Cambridge residents. Greater Cambridge report available at: https://www.sustrans.org.uk/bike-life/
		Percentage of residents that travelled by car/van, public transport, walking and cycling five days or more a week	The percentage of respondents answering 7 days a week or 5-6 days a week to Q2a/b, Q2e, Q2d, Q2d in the independent survey of residents. Car/van includes travelling as driver or passenger.
		Edinburgh only: percentage of commuters living in Edinburgh that cycle to and from work	At Edinburgh's request this is included, to give continuity with previous reports which also reported this figure. Note that this is the percentage of commuters who cycle to/from work, not the percentage of all residents. It is estimated by growing the 2011 Census figure for the % of journeys to work being made by bicycle to 2019 levels using cycle counter data. It is not derived from data from the independent survey of residents.
		Percentage of residents that walk at least once a week	The percentage of respondents answering 7 days a week, 5-6 days a week, 2-4 days a week and once a week, to Q2c in the independent survey of residents.

		Percentage of residents that cycle at least once per week	The percentage of respondents answering 7 days a week, 5-6 days a week, 2-4 days a week and once a week, to Q2d in the independent survey of residents.
		Percentage of residents that cycle 5+ days a week, 2-4 days a week, once a week, once a fortnight, once a month, less often or never	The percentage of respondents giving each answer to Q2d in the independent survey of residents. The 5+ days a week category includes people who cycle 7 days a week and 5-6 days a week. For some cities the percentage for individual frequency categories are very low, so categories have been combined on both the cycling and walking chart.
		Percentage of residents that walk 5+ days a week, 2-4 days a week, once a week, once a fortnight, once a month, less often or never	The percentage of respondents giving each answer to Q2c in the independent survey of residents. The 5+ days a week category includes people who walk 7 days a week and 5-6 days a week. For some cities the percentage for individual frequency categories are very low, so categories have been combined on both the cycling and walking chart.
Page 9 Cycling Participation	How inclusive is cycling?	Percentage of residents that cycle at least once a week by gender, ethnicity, disability and age	The percentage of respondents of these gender, ethnicity, disability and age demographic groups (Q23, Q26, Q30, Q21/22) answering 7 days a week, 5-6 days a week, 2-4 days a week and once a week, to Q2d in the independent survey of residents.
		Evidence of more inclusive cycling from the Netherlands	Pucher and Buehler (2008) Making Cycling Irresistible, <i>Transport Reviews</i> , Vol. 28 [Online] Available at: http://www.cycle-helmets.com/irresistible.pdf
		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.

Page 10 Social inequality and mobility	People who do not have a car can find it challenging to reach everyday services in areas where travel alternatives are lacking	Percentage of residents in each socio-economic group who do not own or have access to a car or van	The percentage of respondents of these socio-economic groups (derived from Q25a) giving this answer to Q1 in the independent survey of residents.
		Many disadvantaged neighbourhoods have fewer local amenities and poorer public transport provision	Glasgow Centre for Population Health (2013) The built environment and health: an evidence review, <i>Briefing Paper 11</i> (Concepts Series) [Online] Available at: https://www.gcph.co.uk/assets/0000/4174/BP_11_-_Built_environment_and_health_-_updated.pdf .
		Percentage and number of the city population from socio-economic groups D and E	The percentage of the city population in socio-economic groups D and E is from: <ul style="list-style-type: none"> • UK cities: 2011 Census • Dublin Metropolitan Area: AIMRO The number of residents is calculated by multiplying the total population of the city by the proportion of residents in socio-economic groups D and E.
	Many residents from socio-economic groups D and E would like to start cycling	Percentage of residents from socio-economic groups D and E that would like to start cycling	The percentage of respondents of these socio-economic groups (derived from Q25a) giving this answer ('does not cycle but would like to') to Q8 in the independent survey of residents.
		Percentage of residents from socio-economic groups that cycle at least once a week <ul style="list-style-type: none"> • groups D and E • groups A and B 	The percentage of respondents of these socio-economic groups (derived from Q25a) answering 7 days a week, 5-6 days a week, 2-4 days a week or once a week, to Q2d in the independent survey of residents. <ul style="list-style-type: none"> • The percentage for groups A and B is not reported for Greater Manchester because it is the same value (14%) for both DE and AB, so was deemed to be of less value to report.
		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.

<p>Page 11</p> <p>Social inequality and mobility</p>	<p>However, many barriers prevent people from these groups cycling</p>	<p>Reasons why city residents from socio-economic groups D and E do not cycle or why they cycle less often</p> <ul style="list-style-type: none"> • they are concerned about safety, • lack of confidence cycling, • lack of facilities at home or work, • they live too far from their destination, • they have children, passengers or too much to carry, • the cost of a suitable cycle, • it's not for people like them. 	<p>The percentage of respondents selecting this response to Q9 in the independent survey of residents.</p> <p>The four responses selected by the largest proportions of residents are shown, so will differ between cities.</p> <p>The results presented are for categories about which authorities can take action, and are intended to help inform investment decisions.</p> <p>'Poor weather' and 'It's too hilly' were also options in the survey but are not presented here because there is less that authorities can do about these barriers, beyond advice about weatherproof clothing and use of gears.</p>
		<p>Percentage of residents who socio-economic groups who think cycling is not for them</p> <ul style="list-style-type: none"> • groups A and B • groups D and E 	<p>The percentage of respondents of these socio-economic groups (derived from Q25a) giving this answer ('cycling is not for people like me') to Q9 in the independent survey of residents.</p>
	<p>Cycling has potential to reduce social and economic exclusion</p>	<p>Number of people that cycling would enable to travel from their home to a destination in the city in under 25 minutes:</p> <ul style="list-style-type: none"> • total number of people • number of people from areas among the 20% most deprived in that nation 	<ul style="list-style-type: none"> • For UK cities population is derived from 2018 mid-year population estimate data and captured at the smallest possible area: <ul style="list-style-type: none"> - Belfast: SA (Small Area) - Dundee, Edinburgh, Inverness: data zone - All English and Welsh cities: LSOA (lower super output area) • For Dublin Metropolitan Area population is derived from the Deprivation Index for Ireland (2016) at ED (electoral division):

			<p>https://maps.pobal.ie/WebApps/DeprivationIndices/index.html</p> <ul style="list-style-type: none"> • For UK cities deprivation data is derived from the Index of Multiple Deprivation (IMD) for that region: <ul style="list-style-type: none"> - Belfast: Northern Ireland Multiple Deprivation Measure (2017) https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017 - Dundee, Edinburgh, Inverness: Scottish Index of Multiple Deprivation (2016) https://www2.gov.scot/Topics/Statistics/SIMD - Cardiff: Welsh Index of Multiple Deprivation (2019) https://statswales.gov.wales/Catalogue/Community-Safety-and-Social-Inclusion/Welsh-Index-of-Multiple-Deprivation - All English cities: English Indices of Multiple Deprivation (2019) https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019 • For Dublin Metropolitan Area deprivation data is also derived from the Deprivation Index for Ireland (2016) at ED (electoral division): https://maps.pobal.ie/WebApps/DeprivationIndices/index.html <p>Areas within each city were ranked by deprivation and assigned to quintiles. The lowest quintile represents the 20% most deprived areas within that nation (England, Wales, Northern Ireland, Scotland, Republic of Ireland).</p> <p>The total population, and population from areas among the 20% most deprived in that nation, were calculated using an</p>
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			<p>adapted version of the TravelTime platform travel time maps (isochrone shapes): https://qgis.traveltimeplatform.com/.</p> <p>This uses a baseline cycling speed of 10mph and takes into account type of cycle tracks and junctions but does not include gradient.</p>
		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.
Page 12 Barriers	What is stopping city residents cycling more?	Percentage of residents that think the city is a good place to cycle	The percentage of respondents giving this answer to Q12a in the independent survey of residents.
		<p>Percentage of residents who don't cycle at all or more often because:</p> <ul style="list-style-type: none"> • they are concerned about safety, • poor weather, • lack of confidence cycling, • lack of facilities at home or work, • it's too hilly, • they live too far from their destination, • they have children, passengers or too much to carry, • the cost of a suitable cycle, • it's not for people like them. 	<p>The percentage of respondents selecting this response to Q9 in the independent survey of residents. Survey respondents could pick multiple options.</p> <p>The responses are in ordered by the proportions of residents who selected that reason, so the order will differ between cities.</p> <p>(Spans page 13 too)</p>
	Safety is the single largest barrier to more people cycling	<p>Percentage of residents that think safety needs to be improved for</p> <ul style="list-style-type: none"> • walking, • driving, 	The percentage of respondents giving this answer to Q13a, Q13d, Q13c, Q13b in the independent survey of residents.

		<ul style="list-style-type: none"> • using public transport, • cycling. 	
		Percentage of residents that think cycle safety in the city is good	The percentage of respondents giving this answer to Q12b in the independent survey of residents.
		Percentage of residents that think children's cycling safety in the city is good	The percentage of respondents giving this answer to Q12c in the independent survey of residents.
		<p>Percentage of residents that think the following issues are important for improving safety:</p> <ul style="list-style-type: none"> • better road quality and fewer pot holes, • better lighting on cycle routes in poorly lit areas, • improving routes and facilities for safe cycling, • improving the behaviour of people driving cars, • improving the behaviour of other people cycling, • reducing anti-social behaviour or crime, • reducing traffic levels on the roads, • reducing the speed of traffic on the roads. 	<p>The percentage of respondents selecting this response to Q14g, Q14h, Q14f, Q14c, Q14d, Q14e, Q14a, Q14b in the independent survey of residents. Survey respondents could pick multiple options.</p> <p>The responses are in ordered by the proportions of residents who selected that issue, so the order will differ between cities.</p>
		Percentage of streets that are without 20mph speed limits	This is the percentage of the total street length to which a 20mph limit applies, not the percentage of named streets that are 20mph. Excludes motorways as these will never be appropriate for 20mph limits.

			<p>Data supplied by partner authorities for each city.</p> <ul style="list-style-type: none"> • Dublin Metropolitan Area reports on the percentage of all streets that typically have traffic travelling at speeds above 30kmph, as data is NAVTEQ NAVSTREETS Speed Category data, rather than actual records of legally posted 30kmph signs.
		<p>Percentage of households that are further than 125m away from routes that are considered good practice</p>	<p>Calculated by Sustrans based on data provided by partner authorities for each city.</p> <ul style="list-style-type: none"> • For Cardiff, Edinburgh, Inverness, Greater Manchester, Tower Hamlets and Tyneside this figure is based on the following routes: <ul style="list-style-type: none"> - cycle tracks within highway, physically separated from traffic and pedestrians - traffic free cycle routes away from the highway - signed cycle routes on low-trafficked and low speed roads [NB for Tyneside, quiet street routes in Gateshead not included in this calculation] • For Belfast, Bristol, Dublin Metropolitan Area, Dundee, Greater Cambridge, Southampton City Region and West Midlands the optional 'signed cycle routes on low-trafficked and low speed roads category' was not collected (or not included in Dublin Metropolitan Area's case) so this figure is based on the following routes: <ul style="list-style-type: none"> - cycle tracks within highway, physically separated from traffic and pedestrians - traffic free cycle routes away from the highway • For Liverpool City Region the breakdown of individual route types could not be calculated so this is based on all cycle routes in the region. <p>For each city, this was calculated using the route type above and postcode data (from February 2019), or MapIt postcode</p>

			<p>data for Belfast. This dataset contains household counts for each postcode.</p> <ul style="list-style-type: none"> Dublin Metropolitan Area: calculated by the National Transport Authority using the GeoDirectory Post Office Address database.
Page 13 Barriers	Secure cycle storage is important at home and when out and about	Number of reported cycle thefts in the past three years	Reported cycle theft figures were provided by partner authorities following Sustrans' guidance, and were usually obtained from local councils, police forces or the Police UK website. For Scottish cities, Sustrans obtained the data by submitting Freedom of Information requests. The data in the reports is shown by financial year.
		Number of people who own an adult cycle in the city, for every 1 reported cycle theft in the past year	The number of people who own an adult cycle is calculated by multiplying the total adult population of the city (see page 5) by the percentage of adults in the city who own one or more adult cycles (from Q20a, Q20b, Q20c in the independent survey of residents. This is then divided by the total number of reported cycle thefts in 2018/19 (see above).
		Amount of people who cycle per public parking space	<p>The percentage of residents who 'ever' cycle (respondents to Q2d of the independent survey of residents saying they cycle: 7 days a week, 5-6 days a week, 2-4 days a week, once a week, once a fortnight, once a month, less often) scaled up for the whole adult population of the city (see page 5) and then divided by the total number of cycle parking spaces in the city (data provided by the partner authority). This is cycle parking spaces, not stands; one Sheffield stand is two cycle parking spaces.</p> <p>Includes all public cycle parking available to the general public. Excludes parking at workplaces, educational establishments and railway stations that are for exclusive or preferential use by people at those establishments.</p>

		Percentage of residents who think the security of cycle parking is good	The percentage of respondents giving this answer to Q12h in the independent survey of residents.
	What is stopping city residents cycling more?	Percentage of residents who don't cycle at all or more often because: <ul style="list-style-type: none"> • they are concerned about safety, • poor weather, • lack of confidence cycling, • lack of facilities at home or work, • it's too hilly, • they live too far from their destination, • they have children, passengers or too much to carry, • the cost of a suitable cycle, • it's not for people like them. 	The percentage of respondents selecting this response to Q9 in the independent survey of residents. Survey respondents could pick multiple options. The responses are in ordered by the proportions of residents who selected that reason, so the order will differ between cities. (Spans page 12 too)
		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.
Page 14 Solutions	Many city residents want to cycle	Percentage of residents who feel they should cycle more	The percentage of respondents giving this answer to Q19f in the independent survey of residents.
		Percentage of residents who: <ul style="list-style-type: none"> • regularly cycle, • occasionally cycle, • are new or returning to cycling, • do not cycle but would like to, • do not cycle and do not want to. 	The percentage of respondents giving this answer to Q8 in the independent survey of residents.

	Residents want improved cycling infrastructure	Percentage of residents who would find the following infrastructure improvements useful: <ul style="list-style-type: none"> • more traffic-free cycle routes away from roads, e.g. through parks or along waterways • more cycle tracks along roads which are physically separated from traffic and pedestrians, • more signposted local cycle routes along quieter streets where there is less traffic, • better links with public transport, e.g. secure cycle parking at train stations 	The percentage of respondents giving these answers to Q10b, Q10a, Q10c, Q10l in the independent survey of residents.
		Length of traffic-free cycle routes away from the road	Data supplied by partner authorities. <ul style="list-style-type: none"> • Liverpool City Region: the breakdown of individual route types could not be calculated so the total length of cycle routes is reported.
		Length of cycle routes physically protected from traffic and pedestrians	Data supplied by partner authorities. <ul style="list-style-type: none"> • Liverpool City Region: the breakdown of individual route types could not be calculated so the total length of cycle routes is reported.
		Length of signed cycle routes on quieter streets	Data supplied by partner authorities. This was an optional cycle routes category. <ul style="list-style-type: none"> • The following cities supplied data: Cardiff, Edinburgh, Inverness, Greater Manchester, Tower Hamlets and Tyneside (for North Tyneside and Newcastle only, not Gateshead)

			<ul style="list-style-type: none"> The following cities did not supply data: Belfast, Bristol, Dundee, Greater Cambridge, Liverpool City Region, Southampton City Region and West Midlands
		<p>Percentage of households within 125m of these routes</p>	<p>Calculated by Sustrans based on data provided by partner authorities for each city.</p> <ul style="list-style-type: none"> For Cardiff, Edinburgh, Inverness, Greater Manchester, Tower Hamlets and Tyneside this figure is based on the following routes: <ul style="list-style-type: none"> cycle tracks within highway, physically separated from traffic and pedestrians traffic free cycle routes away from the highway signed cycle routes on low-trafficked and low speed roads [NB for Tyneside, quiet street routes in Gateshead not included in this calculation] For Belfast, Bristol, Dublin Metropolitan Area, Dundee, Greater Cambridge, Southampton City Region and West Midlands the optional 'signed cycle routes on low-trafficked and low speed roads category' was not collected (or not included in Dublin Metropolitan Area's case) so this figure is based on the following routes: <ul style="list-style-type: none"> cycle tracks within highway, physically separated from traffic and pedestrians traffic free cycle routes away from the highway For Liverpool City Region the breakdown of individual route types could not be calculated so this is based on all cycle routes in the region. <p>For each city, this was calculated using the route type above and postcode data (from February 2019), or MapIt postcode data for Belfast. This dataset contains household counts for each postcode.</p>

			<ul style="list-style-type: none"> • Dublin Metropolitan Area: calculated by the National Transport Authority using the GeoDirectory Post Office Address database.
		Number of rail passengers per cycle parking space at rail stations per day	<p>Estimations of total station usage for 2017-18 for all stations in Great Britain were obtained from the Office of Rail and Road. Total entries to all stations in the Bike Life city boundary were divided by the number of cycle parking spaces at these stations (supplied from partner authorities and/or the National Rail website). This figure was then divided by 365 to get the number of passengers per parking space per day.</p> <ul style="list-style-type: none"> • Greater Manchester, Tyneside, Tower Hamlets and Liverpool also included parking and passengers at Metrolink stations, Metro stations, tube stations and ferry stations respectively. • In Belfast the same calculation was performed, with Merit electronic ticketing data on passenger journeys boarding at stations in the city boundary and cycle parking spaces provided by the partner authority in collaboration with Translink. • For Dublin Metropolitan Area rail passenger numbers came from the Irish Rail census 2018 (a one day count) and cycle parking at rail stations was supplied by the partner authority and Irish Rail. Annual LUAS passenger numbers from: https://www.nationaltransport.ie/news/massive-jump-in-passenger-journey-number-as-commuters-flock-to-public-transport/ and LUAS cycle parking from: https://luas.ie/bike-parking.html. Rail and LUAS were combined in the calculation to get a daily figure. • For the West Midlands Metropolitan Area, only the number of cycle parking spaces and railway stations is presented.

		<p>Percentage of residents who support building more protected on-road cycle tracks, even when this would mean less room for other road traffic</p>	<p>The percentage of respondents giving this answer to Q16 in the independent survey of residents.</p> <p>Please note the wording of this question has changed since the 2017 and 2018 (Scottish) Bike Life reports.</p> <p>2017 and 2018 wording: To what extent do you support or oppose the creation of more <u>roadside cycle lanes</u>? These are physically separated from traffic and pedestrians by kerbs or <u>something similar</u>, and <u>can mean</u> less room for other road traffic?</p> <p>2019 wording: To what extent do you support or oppose the creation of more <u>cycle tracks along roads</u>? These are physically separated from traffic and pedestrians by kerbs and <u>would mean</u> less room for other road traffic?</p>
		<p>Length of A and B roads (National and Regional in Dublin)</p>	<ul style="list-style-type: none"> • The length of A and B roads in Great Britain were calculated using OS Open Roads. • Belfast was calculated using OpenStreetMap. • The length of National and Regional roads in Dublin Metropolitan Area was calculated using the NAVTEQ dataset.
<p>Page 15 Solutions</p>	<p>Residents want more support to cycle</p>	<p>Percentage of residents that would find the following support useful to cycle more:</p> <ul style="list-style-type: none"> • improvements to the public cycle sharing scheme, • cycling training courses and social rides, • access to an electric cycle, • access to an adapted cycle (e.g. tricycle or recumbent cycle), • access to a cargo cycle. 	<p>The percentage of respondents giving these answers to Q10d, Q10f, Q10i, Q10j, Q10k in the independent survey of residents.</p> <p>'Improvements to the public cycle sharing scheme' was reported only for the following cities, because only these cities had operational schemes at both the time of the survey and the time of publication:</p> <ul style="list-style-type: none"> • Belfast • Cardiff • Dublin Metropolitan Area

			<ul style="list-style-type: none"> • Edinburgh • Greater Cambridge • Liverpool City Region • Tower Hamlets
		<p>Cycle scheme data:</p> <ul style="list-style-type: none"> • Annual trips • Cycle share stations • Cycles 	<p>Cycle scheme data is reported only for the following cities:</p> <ul style="list-style-type: none"> • Belfast: Belfast Bikes data provided via Nextbike Office System • Cardiff: data provided by Nextbike, data for July 2018- June 2019 • Dublin Metropolitan Area: Dublin Bikes and BleeperBikes data provided by the operators. BleeperBikes is a dockless scheme so does not have any cycle share stations. • Edinburgh: Edinburgh Cycle Hire data provided by Serco, annual trips is for January to November 2019 • Greater Cambridge: dockless MoBikes data provided by MoBike. Cycle share stations not reported as the scheme is dockless. • Liverpool City Region: City Bike operates in Liverpool only, and data was provided by Liverpool City Council • Tower Hamlets: data provided by the partner authority <p>Thanks also to CoMoUK for helping source data.</p>
		<p>Percentage of residents who think the public cycle scheme is:</p> <ul style="list-style-type: none"> • Good • Bad 	<p>The percentage of respondents giving this answer to Q12i in the independent survey of residents.</p> <p>Reported only for the following cities:</p> <ul style="list-style-type: none"> • Belfast • Cardiff

			<ul style="list-style-type: none"> • Dublin Metropolitan Area • Greater Cambridge • Tower Hamlets <p>Note that schemes were not named in the question, so respondents could interpret it to refer to one or more schemes operational in their area.</p>
		West Midlands Metropolitan Area only: helping people be more active in everyday life is a real priority	Additional section in West Midlands Metropolitan Area only, written by the partner authority.
		Percentage of residents that have access to an adult pedal cycle	<p>The percentage of respondents saying they owned at least one of the following types of adult cycles, in the independent survey of residents.</p> <ul style="list-style-type: none"> • Adult bicycles (Q20a) • Other adult cycles (including hand-cycles, tricycles, tandems, recumbents) (Q20b) • Cargo cycles (with space to carry children or shopping) (Q20c)
		Cycling story from a city resident	Case studies from local city residents were sourced from local contacts.
Page 16 Solutions	Residents think fewer motor vehicles would help increase cycling and make their area a better place	Number of miles (or km) cycled round the city for every reported cycle injury	<p>The number of miles (km for Dublin Metropolitan Area) cycled in the city (see page 6) was divided by the number of reported cycle casualties (fatal, serious and slight) from the STATS19 database (2017 cyclist collisions) for Great Britain. This only includes injuries that were reported to the police.</p> <ul style="list-style-type: none"> • Belfast data: Northern Ireland Police Recorded Injury Road Traffic Collision Data – 2018 cyclist casualties • Dublin Metropolitan Area data: Road Safety Authority 2016

		<p>Percentage of residents who would find it useful to have:</p> <ul style="list-style-type: none"> • 20mph (30kmph for Dublin Metropolitan Area) streets, • restricted car parking, • fewer motor vehicles. 	<p>The percentage of respondents giving these answers to Q10e, Q10h, Q10g in the independent survey of residents.</p> <ul style="list-style-type: none"> • Dublin Metropolitan Area asked about 30kmph streets.
		<p>Percentage of residents who think there are too many people driving in their neighbourhood.</p>	<p>The percentage of respondents giving this answer to Q19e in the independent survey of residents.</p>
		<p>Percentage of streets in the city that are 20mph.</p>	<p>Excludes motorways as these will never be appropriate for 20mph limits.</p> <p>Data supplied by partner authorities for each city.</p> <ul style="list-style-type: none"> • Dublin Metropolitan Area reports on the percentage of all streets that should have traffic travelling at speeds below 30kmph, as data is NAVTEQ NAVSTREETS Speed Category data, rather than actual records of legally posted 30kmph signs. • Cardiff also reported the increase in percentage since the 2017 Bike Life report: https://www.sustrans.org.uk/media/2949/bike-life-cardiff-2017.pdf
		<p>Percentage of residents who support:</p> <ul style="list-style-type: none"> • an increase in space for socialising, walking and cycling on high streets, • restricting through-traffic on residential streets, • closing streets outside schools at peak times, 	<p>The percentage of respondents giving these answers to Q15g, Q15b, Q15a, Q15d in the independent survey of residents.</p>

		<ul style="list-style-type: none"> reducing the speed limits on local roads. 	
	People want more investment in public transport, cycling and walking	<p>Percentage of residents that would like to see more government spending on:</p> <ul style="list-style-type: none"> driving, public transport, walking, cycling. 	The percentage of respondents giving these answers to Q17d, Q17c, Q17b, Q17d in the independent survey of residents.
		<p>Percentage of residents who support/oppose traffic management measures:</p> <ul style="list-style-type: none"> charging more polluting vehicles entering the city centre, charging employers who provide workplace car parking in cities. 	<p>The percentage of respondents giving this answer to Q18a, Q18b in the independent survey of residents.</p> <ul style="list-style-type: none"> West Midlands only reports on charging more polluting vehicles entering the city centre.
		<p>Investing in provision for cycling is good value for money.</p>	<ul style="list-style-type: none"> Dublin Metropolitan Area, Edinburgh and Tower Hamlets: Transport for London, Walking and cycling: the economic benefits, summary pack [Online] Available at: http://content.tfl.gov.uk/walking-cycling-economic-benefits-summary-pack.pdf All other cities: Department for Transport (2014) Value for Money Assessment for Cycling Grants [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/348943/vfm-assessment-of-cycling-grants.pdf
Page 17 and 18 Improving cycling	How has the city been developing cycling?	Information on cycle schemes and investments across the city.	Information provided by the partner authority.

Page 19 Bike to the future	Ambition and plans for to make it happen	Information on future plans for cycle schemes and investments across the city.	Information provided by the partner authority.
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Appendix

Appendix A: Independent surveys

An independent representative survey of residents was conducted in each city. For the majority of cities it was conducted by NatCen Social Research. In Tower Hamlets the survey was conducted by DRG, and in Dublin Metropolitan Area by Behaviour & Attitudes (B&A).

The survey by NatCen Social Research aimed to gather a representative sample of at least 1,100 respondents aged 16 and above in each of the 12 UK cities (the actual number of completed surveys is between 1,199 and 1,819 for all cities). The sample of respondents was stratified first by the Index of Multiple Deprivation quintiles³ and then by Output Area classifications⁴ to reflect the profile of each city. The NatCen survey was a 'push to online' survey, where letters including access codes and login credentials for the online survey were posted to specific addresses of a sample chosen by the stratification described above. There was also a paper format of the questionnaire that could be returned by prepaid postage. This process took place between 10th April and 1st July 2019.

In Tower Hamlets, NatCen's subcontractor, fieldwork agency DRG, conducted a face to face survey instead of push to online due to the large proportion of non-English speakers in the target population. In this instance, the sample was drawn from address lists based on Census Output Areas (OAs) to reach a representative sample of the Tower Hamlets population. Quotas were set by age, gender, working status and ethnicity to reflect each OA and then summed up to represent the borough as a whole. The fieldwork was carried out from 6th May to 14th July 2019, with interviews lasting for 17 minutes on average. Otherwise, the representative sample was the same size (at least 1,100 respondents). In addition, booster surveys were conducted where necessary to ensure a minimum of 250 interviews with people who cycle in the city (this is defined as someone who ever cycles⁵), to ensure a more statistically robust measure of cycle riders' behaviours for modelling. The results of booster interviews are not included in items of data covering the views or behaviours of the whole

³ The Index of Multiple Deprivation is an official statistic produced by the UK Government. More information can be found here: www.gov.uk/government/statistics/english-indices-of-deprivation-2019

⁴ Output Areas are the lowest geographical level at which census estimates are provided. More information can be found here: www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography#output-area-oa

⁵ For this survey cycle riders were defined from Q2d 'Thinking about the different ways in which you travel around, how often do you...Cycle?' with a response of '7 days a week', '5-6 days a week', '2-4 days a week', 'Once a week', 'Once a fortnight', 'Once a month', 'Less often'.

population. In other words, data on the views and behaviours of the whole population are representative; they do not include a disproportionate number of people who cycle.

Behaviour & Attitudes (B&A) conducted the survey in Dublin Metropolitan Area. The fieldwork was carried out from 24th June to 27th July 2019, with interviews lasting for 15 minutes on average. This was also a face to face survey, with a representative sample of minimum 1,100 respondents aged 16 and above. There was a sufficient number of people who cycle in the initial sample, so booster interviews were not required. The sample was stratified by population areas and then electoral divisions, following which quotas were applied for age, gender and socio-economic status. The content of the survey for Dublin Metropolitan Area was almost identical, with the exception of using kilometres rather than miles and adjusting interview instructions and question wording to be more suited for the face-to-face interview format and certain UK terminology to be more relevant to Dubliners.

All “push to online” cities: at the analysis stage, survey data for all cities conducted as “push to online” was weighted to adjust for differences in address/household response rates, and differences in individual response rates.

Tower Hamlets (face to face): the main sample was weighted by age and gender. All weighting proportions were based on ONS 2018 mid-year population estimates for Tower Hamlets. A similar process was followed to weight the combined main and boost sample, in order to ensure that the rate of cycling in the main sample was the same as the rate of cycling in the main plus boost sample

Dublin Metropolitan Area (face to face): a two-step weighting process was applied. At the first step, weighting was applied by working status, ethnicity and age. All weighting proportions were based on the National Census 2016. For the second step, a corrective weight was applied to the regional areas.

Appendix B: Questionnaire

(City) Travel Survey

{ASK ALL}

Firstly, we'd like to ask some questions about travelling around.

Q1

How many cars or vans are owned, or are available for use in your household?

None

One

Two

Three or more

{ASK ALL}

Q2

Thinking about the different ways in which you travel around, how often do you...?'

Please give your best guess.

- a) Travel in a car or van as a driver
- b) Travel in a car or van as a passenger
- c) Walk
- d) Cycle
- e) Use public transport

7 days a week

5-6 days a week

2-4 days a week

Once a week

Once a fortnight

Once a month

Less often

Never

{ASK if says they cycle at any frequency besides 'Never' i.e. codes 1 to 7 at Q2d}

Q3a

How often do you cycle to and from work?

7 days a week

5-6 days a week

2-4 days a week

Once a week

Once a fortnight

Once a month

Less often

Never

Not applicable

{ASK IF CYCLE TO WORK AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q3a}

Q3b

Please give your best estimate of the typical distance in miles [km for Dublin Metropolitan Area] of a one-way cycle trip to or from work.

Please give us the distance in miles (e.g. 3 miles, 1.5 miles). [km for Dublin Metropolitan Area]

NUMERICAL RESPONSE IN MILES [*km for Dublin Metropolitan Area*]

0.25-50.00 miles [*km for Dublin Metropolitan Area*]

{ASK IF CYCLE TO WORK AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q3a}

Q3c

Please give your best estimate of the typical duration in minutes of a one-way cycle trip to or from work.

NUMERICAL RESPONSE IN MINUTES.

1..150 minutes

{ASK if says they cycle at any frequency besides 'Never' i.e. codes 1 to 7 at Q2d}

Q4a

How often do you cycle to get around as part of your job? For example, for delivering items or travelling to meetings?

7 days a week

5-6 days a week

2-4 days a week

Once a week

Once a fortnight

Once a month

Less often

Never

Not applicable

{ASK IF CYCLE IN THE COURSE OF WORK AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q4a}

Q4b

Please give your best estimate of the typical distance in miles [*km for Dublin Metropolitan Area*] of a one-way cycle trip to get around as part of your job. For example, for delivering items or travelling to meetings?

Please give us the distance in miles (e.g. 3 miles, 1.5 miles). [*km for Dublin Metropolitan Area*]

NUMERICAL RESPONSE IN MILES [*km for Dublin Metropolitan Area*]

0.25-50.00 miles [*km for Dublin Metropolitan Area*]

{ASK IF CYCLE IN THE COURSE OF WORK AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q4a}

Q4c

Please give your best estimate of the typical duration in minutes of a one-way cycle trip to get around as part of your job. For example, for delivering items or travelling to meetings?

NUMERICAL RESPONSE IN MINUTES.

1..150 minutes

{ASK if says they cycle at any frequency besides 'Never' i.e. codes 1 to 7 at Q2d}

Q5a

How often do you cycle to or from school, college or university? This includes accompanying a child or someone else.

7 days a week

5-6 days a week

2-4 days a week

Once a week

Once a fortnight

Once a month

Less often
Never
Not applicable

{ASK IF CYCLE TO SCHOOL, COLLEGE AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q5a}

Q5b

Please give your best estimate of the typical distance in miles [km for Dublin Metropolitan Area] of a one-way cycle trip to or from school, college or university. This includes accompanying a child or someone else.

Please give us the distance in miles (e.g. 3 miles, 1.5 miles). [km for Dublin Metropolitan Area]

NUMERICAL RESPONSE IN MILES [km for Dublin Metropolitan Area]

0.25-50.00 miles [km for Dublin Metropolitan Area]

{ASK IF CYCLE TO SCHOOL, COLLEGE AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q5a}

Q5c

Please give your best estimate of the typical duration in minutes of a one-way cycle trip to or from school, college or university. This includes accompanying a child or someone else.

NUMERICAL RESPONSE IN MINUTES.

1-150 minutes

{ASK if says they cycle at any frequency besides 'Never' i.e. codes 1 to 7 at Q2d}

Q6a

How often do you cycle for shopping, personal business or social trips?

7 days a week
5-6 days a week
2-4 days a week
Once a week
Once a fortnight
Once a month
Less often
Never
Not applicable

{ASK IF CYCLE FOR SHOPPING, PERSONAL BUSINESS AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q6a}

Q6b.

Please give your best estimate of the typical distance in miles [km for Dublin Metropolitan Area] of a one-way cycle trip for shopping, personal business or social trips.

Please give us the distance in miles (e.g. 3 miles, 1.5 miles). [km for Dublin Metropolitan Area]

NUMERICAL RESPONSE IN MILES [km for Dublin Metropolitan Area]

0.25-50.00 miles [km for Dublin Metropolitan Area]

{ASK IF CYCLE FOR SHOPPING, PERSONAL BUSINESS AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q6a}

Q6c

Please give your best estimate of the typical duration in minutes of a one-way cycle trip for shopping, personal business or social trips.

NUMERICAL RESPONSE IN MINUTES.

1-150 minutes

{ASK if says they cycle at any frequency besides 'Never' i.e. codes 1 to 7 at Q2d}

Q7a

How often do you cycle just for enjoyment or fitness?

- 7 days a week
- 5-6 days a week
- 2-4 days a week
- Once a week
- Once a fortnight
- Once a month
- Less often
- Never
- Not applicable

{ASK IF CYCLE FOR ENJOYMENT OF FITNESS AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q7a}

Q7b

Please give your best estimate of the typical distance in miles [km for Dublin Metropolitan Area] of your round trip cycle ride for enjoyment or fitness.

Please give us the distance in miles (e.g. 3 miles, 1.5 miles). [km for Dublin Metropolitan Area]

NUMERICAL RESPONSE IN MILES [km for Dublin Metropolitan Area]

0.25-150.00 miles [km for Dublin Metropolitan Area]

{ASK IF CYCLE FOR ENJOYMENT OF FITNESS AT ALL – ALL EXCEPT NEVER OR NOT APPLICABLE Q7a}

Q7c

Please give your best estimate of the typical duration in minutes of your round trip cycle ride for enjoyment or fitness.

NUMERICAL RESPONSE IN MINUTES.

1-500 minutes

{ASK ALL}

And now some questions about why you cycle or not.

Q8

Which one of the following statements best describes you? Would you say you are someone who...

- does not cycle but would like to
- does not cycle and does not want to
- is new or returning to cycling
- occasionally cycles
- regularly cycles

{ASK ALL}

Q9

Here are reasons some people have given for not cycling or not cycling more often.

Please select all that apply to you.

- I am concerned about safety
- I am not confident in my cycling skills
- Lack of facilities at home or work, for example secure cycle storage and shower facilities
- I have children, other passengers or too much to carry
- I live too far away from where I need to get to
- Poor weather
- It's too hilly in my area
- The cost of a suitable cycle

Cycling is not for people like me
None of these

{ASK ALL}

Q10

How useful, if at all, would any of the following be to help you start cycling or to cycle more?

- a) More cycle tracks along roads which are physically separated from traffic and pedestrians
- b) More traffic-free cycle routes away from roads e.g. through parks or along waterways
- c) More signposted local cycle routes along quieter streets where there is less traffic
- d) Improvements to your local town or city's public cycle sharing scheme [If applicable]
['Improvements to the public cycle sharing scheme – the Dublin City Bikes scheme' for Dublin Metropolitan Area]
- e) Streets with 20mph speed limits *[30kmph for Dublin Metropolitan Area]*
- f) Cycling training courses and social rides
- g) Fewer motor vehicles on our streets
- h) Restricted car parking
- i) Access to an electric cycle
- j) Access to an adapted cycle, e.g. a tricycle or recumbent cycle (where the rider sits in a reclining position)
- k) Access to a cargo cycle (with space to carry children or shopping)
- l) Better links with public transport, e.g. secure cycle parking at train stations *['at train/DART/LUAS stations' for Dublin Metropolitan Area]*

Very useful

Fairly useful

Not very useful

Not useful at all

Not applicable d) only

{ASK ALL}

Q11

Here are some ideas for safe cycling routes that could connect you to different destinations. Please say which, if any, of the following, would be most useful to help you start cycling or to cycle more. Please select all that apply.

- a) More cycle routes into the city or town centres
- b) More cycle routes to shops, schools or other local destinations
- c) More cycle routes to employment areas outside of the city or town centres
- d) More cycle routes to public transport hubs, for example train stations *['for example LUAS/DART stations' for Dublin Metropolitan Area]*
- e) More cycle routes to green spaces and the local countryside
- f) None of these

{ASK ALL}

And now some questions on your views about transport and cycling in your local area.

Q12

We would like to ask you what you think about cycling in your local area. For each statement, please say whether you think it is good or bad?

- a) Your local area overall as a place to cycle
- b) Cycling safety
- c) Children's cycling safety

- d) The amount of cycle routes
- e) The directness of cycle routes – to the places you want to go
- f) The condition of cycle routes
- g) The signposting of cycle routes
- h) The security of cycle parking
- i) Your local city or town's public cycle share scheme [If applicable] [*The public cycle sharing scheme – the Dublin City Bikes Scheme' for Dublin Metropolitan Area*]

Very good
 Fairly good
 Neither good nor bad
 Fairly bad
 Very bad
 Not applicable i) only

{ASK ALL}

Q13

For each of the following please say whether or not you think safety needs to be improved?

- a) Walking around your local area
- b) Cycling around your local area
- c) Using public transport in and around your local area
- d) Driving a car in and around your local area

Yes
 No

{ASK ALL}

Q14

Please say how important you think each of these issues is for improving cycle safety

- a) Reducing levels of traffic on the roads
- b) Reducing the speed of traffic on the roads
- c) Improving the behaviour of people driving cars
- d) Improving the behaviour of other people cycling
- e) Reducing anti-social behaviour or crime
- f) Improving routes and facilities for safe cycling
- g) Better road quality and fewer pot holes
- h) Better lighting on cycle routes in poorly lit areas

Very important
 Fairly important
 Not very important
 Not at all important

{ASK ALL}

And now some questions about making improvements to your local area

Q15

Here are some ideas to make your local area a better place to live, work or visit. How much do you agree or disagree with each one?

- a) Close streets outside local schools to cars during drop-off and pick-up times
- b) Restrict through-traffic on local residential streets
- c) Make it easier to drive on local residential streets

- d) Reduce speed limits on local roads
- j) Provide more car parking spaces along your local high street [*'local main street' for Dublin Metropolitan Area*]
- e) Increase space for people socialising, walking and cycling on your local high street [*'local main street' for Dublin Metropolitan Area*]

Strongly agree
 Tend to agree
 Neither agree nor disagree
 Tend to disagree
 Strongly disagree

{ASK ALL}

Q16

To what extent do you support or oppose the creation of more cycle tracks along roads? These are physically separated from traffic and pedestrians by kerbs and would mean less room for other road traffic? [*'cycle lanes' for Dublin Metropolitan Area*]

Strongly support
 Tend to support
 Neither support nor oppose
 Tend to oppose
 Strongly oppose

{ASK ALL}

Q17

Would you like to see more or less government spending on each of the following in your local area or do you think the level of government spending is about right?

- a) On cycling
- b) On walking
- c) On public transport
- d) On driving

More government spending
 Less government spending
 The level of spending is about right

{ASK ALL}

Q18

To what extent do you support or oppose the following ideas, if the financial proceeds were used to help fund public transport, walking and cycling in your local area?

- a) Charging more polluting vehicles entering the city centre, including private cars
- b) Charging employers who provide workplace car parking in cities
- c) Increasing the cost of car parking in the city centre
- d) Increasing the cost of car parking for visitors on residential streets

Strongly support
 Tend to support
 Neither support nor oppose
 Tend to oppose
 Strongly oppose

{ASK ALL}

Q19

How much do you agree or disagree with these statements?

- a) More cycling would make the area a better place to live and work
- b) People cycling do not follow the rules of the road and cause danger to other road users
- c) People driving do not follow the rules of the road and cause danger to other road users
- d) There are too many people cycling in this area
- e) There are too many people driving in this area
- f) I feel I should cycle more

Strongly agree

Tend to agree

Neither agree nor disagree

Tend to disagree

Strongly disagree

{ASK ALL}

And now some questions about you

Q20

How many of each of the following do you own in your household?

- a) Adult bicycles
- b) Other adult cycles, including hand-cycles, tricycles, tandems, recumbents
- c) Cargo cycles (with space to carry children or shopping)
- d) Children's bicycles, tricycles and other types of cycles

None

One

Two

Three or more

{ASK ALL}

Q21

In order that we interview a representative cross-section of the population, please can you tell me your age?

NUMERICAL ENTRY

16..120

{ASK ALL REFUSED AT Q21}

Q22

To which of these age bands do you belong?

16-20

21-25

26-30

31-35

36-40

41-45

46-50

51-55

56-60

61-65

66-70

71-75

76+

{ASK ALL}

Q23

Which of the following describes how you think of yourself?

Female

Male

In another way

{ASK ALL}

Just a few questions to help us classify the answers you have given...

{ASK ALL}

Q24

And are you...?

Working full time (30+hrs a week)

Working part time (8-29hrs a week)

Unemployed – seeking work

Unemployed – Not seeking work – EXCLUDING RETIRED/STUDENT

Retired

Student

Other

{ASK ALL}

Q25a

What is the occupation of the MAIN INCOME EARNER in your household?

List below

{ASK IF RETIRED AT Q24}.

Please indicate which one of the following best describes the PREVIOUS OCCUPATION of the chief income earner in your household?

- a. Higher managerial / professional / administrative (e.g. established doctor, solicitor, board director in a large organisation (200+ employees), top level civil servant / public service employee)
- b. Intermediate managerial / professional / administrative (e.g. newly qualified (under 3 years) doctor, solicitor, board director in a small organisation, middle manager in a large organisation, principal officer in the civil service / local government, teacher, accountant)
- c. Supervisory or clerical / junior managerial / professional / administrative (e.g. office worker, student doctor, foreman with 25+ employees, salesperson, policeman, nurse, secretary, self-employed)
- d. Skilled manual worker (e.g. skilled bricklayer, carpenter, electrician, plumber, painter, bus / ambulance driver, HGV/train driver, AA patrolman, mechanic)
- e. Semi or unskilled manual work (e.g. manual workers, all apprentices in skilled trades, caretaker, park keeper, non-HGV driver, shop assistant, pub / bar worker, factory worker, receptionist, labourer)
- f. Full time education/student
- g. Unemployed
- h. Home maker
- i. Retired

ASSIGN RESPONDENT TO SEG A, B, C1, C2, D, E.

{ASK ALL}

Q26**What is your ethnic group?**

Choose one option that best describes your ethnic group or background.

White

- English / Welsh / Scottish / Northern Irish / British
- Irish
- Gypsy or Irish Traveller
- Any other white background

Mixed

- White and Black Caribbean
- White and Black African
- White and Asian
- Any other mixed / Multiple Ethnic background

Asian or Asian British [*Asian or Asian Irish* for Dublin Metropolitan Area]

- Indian
- Pakistani
- Bangladeshi
- Chinese
- Any other Asian background

Black / African / Caribbean [*Black / African / Caribbean / Black Irish* for Dublin Metropolitan Area]

- Caribbean
- African
- Any other Black / African / Caribbean / background

Other ethnic group

- Arab
- Any other ethnic group (please specify)

{ASK ALL}

Q27

Is the house or flat in which you live owned by you or by another member of your household or is it rented or rent free. Which of these applies to the house or flat?

Owned outright (without mortgage)

Owned with a mortgage or loan

Rented from the council

Rented from someone else

Rent free

{ASK ALL}

Q28

Please could you tell me the number of children under 18 in your household?

None

One

Two

Three or more

{ASK ALL}

Q29

Please could you tell me the number of adults aged 18 or over in your household?

None

One

Two

Three or more

{ASK ALL}

Q30

Do you have any physical or mental health conditions or illnesses lasting or expected to last for 12 months or more? If you have a physical condition and a mental health condition please cross both boxes

Yes, a physical condition

Yes, a mental health condition

No

{ASK IF YES AT Q30}

Q31

Do you have any health conditions or illnesses which affect you in any of the following areas?

Please select all that apply.

Reduced mobility (including physical/dexterity/stamina impairments)

Learning disabilities

Deaf and hearing loss

Blind and partially sighted

Mental health problems

Other

None of these

{ASK ALL}

Q32

So that we can understand what people think about cycling in specific parts of your local area it would be useful for us to have your full postcode. We will pass your postcode to the charity Sustrans and their local council partners. It would be used for research purposes only; it would never be passed onto any marketing or advertising company.

WRITE IN

{ASK ALL WHO REFUSE AT Q32}

Q33

In that case, please could you provide just the first part of your postcode, including the number in the 2nd half? As mentioned, it would be used for research purposes only; it would never be passed onto any marketing or advertising company.

WRITE IN
