Walking and Cycling Index 2025

Data sources and methodologies

Jessica Cessford and Holly Musgrove
03/03/2026

Image: Mark Savage

Document control

Category	Details
Document number	SUSR2407
Version	1.0
Purpose of issue	Providing a transparent, detailed and justified methodological approach and the data sources used for the Walking and Cycling Index 2025 reports
Date issued	03/03/2026
Originator	Jessica Cessford and Holly Musgrove
Checked	Dunja Reed and Mathilda Heyman
Approved	Dunja Reed
Contact	WalkingAndCyclingIndex@walkwheelcycletrust.org.uk

About this report

Walk Wheel Cycle Trust

Walk Wheel Cycle Trust is the charity making it possible for everyone to walk, wheel and cycle.

We work directly with communities to make change happen. Then we evidence the impact to influence policies to push those changes further.

Because people-powered movement changes everything. Our health. Our wellbeing. Our world. www.walkwheelcycletrust.org.uk

Walk Wheel Cycle Trust is a registered charity no. 326550 (England and Cymru), SC039263 (Scotland) and 20206824 (Republic of Ireland)

Report partners

The Walking and Cycling Index is supported and funded by The Freshfield Foundation and the area partners in England and Northern Ireland, Welsh Government in Wales, Transport Scotland in Scotland and the National Transport Authority in the Republic of Ireland.

Contents

About this report **2**

Walk Wheel Cycle Trust 2

Report partners 2

Contents **3**

Data sources overview **5**

Where does the data in the 2025 Walking and Cycling Index reports come from? 5

Settings data 6

Attitude and perception data 6

Behaviour data 7

Impact data 7

Index boundaries 7

Data sources and methodologies **9**

Interpretation of survey data 9

Page 2 and 3: Foreword 12

Page 4 and 5: Headlines 13

Pages 6 and 7: Walking and wheeling 24

Pages 8 and 9: Cycling 27

Pages 10 and 11: Benefits of walking and wheeling 30

Pages 12 and 13: Benefits of cycling 40

Pages 14 and 15: Walking and wheeling solutions 50

Pages 16 and 17: Cycling solutions 58

Pages 18 and 19: Neighbourhood solutions 70

Pages 20 and 21: Developing the area 80

Pages 22 and 23: Looking forward 81

Appendices **83**

Appendix A: Participating areas 83

Appendix B: Independent resident survey and methodology 86

Questionnaire development 86

Methodology details 88

Appendix C: Survey questionnaire 101

Appendix D: The walking and cycling modelling process 119

Walking and cycling models 119

Societal gain model 137

HEAT 140

MOVES 141

Appendix E: Changes in the model process between iterations 142

2023 (rerun) to 2025 142

2023 (original) to 2023 rerun 144

Data sources overview

Where does the data in the 2025 Walking and Cycling Index reports come from?

The 22 Walking and Cycling Index (abbreviated as 'The Index') reports for 2025 were produced by Walk Wheel Cycle Trust with the support and co-operation of the authorities named on the front cover of each report. The participating cities, city regions, combined authorities and metropolitan areas in the UK and Republic of Ireland for 2025[1] were:

- Aberdeen
- Belfast
- Bristol
- Cambridgeshire and Peterborough Combined Authority
- Cardiff
- Cork Metropolitan Area
- Dublin Metropolitan Area
- Dundee
- Dunfermline
- Edinburgh
- Galway Metropolitan Area
- Glasgow
- Greater Manchester
- Inverness
- Leicester
- Limerick Shannon Metropolitan Area
- Liverpool City Region
- North East Combined Authority
- Perth
- Southampton City Region
- Stirling
- Waterford Metropolitan Area.

[1] Appendix A outlines the Index participating areas since the project started in 2015.

The term 'area' is used as shorthand for all cities, city regions, combined authorities and metropolitan areas.

Data was collated in, and in most cases applies to, 2025. However, in a minority of cases some data is drawn from previous years where 2025 figures were not available. All reports were published in March 2026.

The data contained in the reports are drawn from a set of common data outputs reviewed and agreed by Walk Wheel Cycle Trust and the partner authorities. There are four categories of data:

Settings data

These are objective measures of the current environment for walking, wheeling, and cycling. They include:

- Data supplied by partner authorities outlining what is available to help someone walk, wheel or cycle[2] for example cycle route lengths, cycle parking at stations etc.
- Measures made from online geographical sources including the percentage of households within 125m from cycle routes.

Attitude and perception data

General attitudes and perceptions of the public towards walking, wheeling, cycling and transport. This includes:

- types of interventions/ facilities/ equipment that would encourage respondents to walk, wheel and cycle more
- perceptions of existing infrastructure
- views on safety
- views on public investment on specific interventions to support walking, wheeling or cycling, and
- views on levels of government spending on different transport modes.

[2] Where applicable, 2023 comparison data is also presented in the reports. In some cases, data from 2023 has been re-calculated following the identification of errors during the 2025 iteration and these are presented in the 2025 reports. In a small number of cases 2023 data has been omitted from the reports if it was not possible to re-calculate.

This data is collected in the independent representative survey in each area. Perception data was collected for all survey participants, not just for those who walk, wheel and cycle.

Behaviour data

Demand-side measures of residents' travel behaviours, the types of people who are walking, wheeling, and cycling, how often, how far, and to which types of destination. This data was collected in an independent representative survey in each area. Behaviour data were collected for all survey participants, not just for those who walk, wheel and cycle.

Impact data

Health, economic, and environmental benefits from walking, wheeling[3] and cycling. This includes modelled economic benefits, premature deaths prevented, impacts for the NHS in the UK (HSE in the Republic of Ireland) and reductions in pollutants where people walk, wheel, or cycle instead of using cars.

This data is calculated by Walk Wheel Cycle Trust's Strategy, Impact and Evidence team from a combination of the behavioural data and the best available evidence. For more information see Appendix D.

Index boundaries

All data collected for the Walking and Cycling Index follow agreed boundaries with our area partners. This ensures that all survey and settings data presented in each report is collected for the same geographical location and is consistent across reporting iterations. In most cases the Index boundaries follow administrative, ward, city, city region, combined authority or metropolitan area boundaries, except for Inverness, Perth and Stirling. For these three cities, a more bespoke boundary was created using data zones to include urban areas in and around the cities. It is important to note, that we utilise many data sources on these administrative boundaries outside of the

[3] Survey participants were instructed to consider walking to also include wheeling (the use of wheelchairs and mobility scooters). However, all other source data used as model inputs relate only to walking. This is primarily due to the lack of available data on wheeling.

survey and settings data in our modelling of survey data. Data on a data zone (Scotland) or Lower Super Output area (England, Wales and Northern Ireland) is the smallest level where we can attain data like population which is essential for our estimations.

However, for 2025, the Index boundaries needed to be amended for Inverness, Perth and Stirling due to changes in data zones following the 2022 Census[4]. As a result, the 2025 and 2023 boundaries for these cities do not cover the exact same area. Unfortunately, at the time of modelling (November 2025), National Records Scotland had not released population data on the 2022 data zone level and therefore the same 2022 Census population data was used in 2025 as well as in 2023.

[4] See Statistics Updates to Data Zones and Intermediate Zones now published - Statistics and Small area statistics - gov.scot

Data sources and methodologies

The following sections outline the data sources and methodologies behind each data point in each area report.

We recognise that some people who use wheeled mobility aids, for example a wheelchair or a mobility scooter, may not identify with the term walking and prefer to use the term wheeling. We use the terms walking and wheeling together to ensure we are as inclusive as possible. Therefore, all walking survey responses within the reports include responses from people who wheel.

Throughout the report, we have included comparisons to 2023 survey data where available and comparable for the area. For more information on data sources and the methodology used in 2023 see the 2023 methodology paper.

Please note that previously published 2023 model estimates were recalculated in 2025 to include cycling trips as part of work for all cities and walking trips as part of work in Greater Manchester. Additionally, for Scottish cities more reliable Census 2022 data was used instead of 2021 mid-year population estimates. For the metropolitan areas in the Republic of Ireland, some input data from more robust sources was also used in the re-calculation of 2023 data. For more information see Appendix E.

Interpretation of survey data

As a sample and not the entire population has been interviewed, survey results are subject to sampling tolerances, which mean that not all differences are statistically significant. No significance testing has been carried out on survey results between 2025 and 2023.

We can predict the variation between the sample results and the 'true' values (if everyone in the population had been interviewed) from the knowledge of the sample size on which the results are based, and the number of times answers are given. The confidence with this prediction is usually chosen to be 95%, in that the 'true' value will fall within a specified range 95 times out of 100. Table 1 outlines the predicted ranges for

different sample sizes and the percentage results at the 95% confidence level.

For example, with a sample size of 1,100 interviews where 50% give a particular answer, we can still be 95% certain that the 'true' value will fall within the range of 47% and 53% (+/- 3.0% of the findings). While for a sample size of 100 interviews where 50% give a particular answer, we can be 95% certain that the 'true' value will fall within the range of 40.2% and 59.8% (+/- 9.8% of the findings).

Table 1: Sampling Tolerances

Sample size	10% or 90% + / -	30% or 70% + / -	50% + / -
100	5.9%	9.0%	9.8%
300 (approximate number of cyclists interviewed per area)	3.4%	5.2%	5.7%
500	2.6%	4.0%	4.4%
700	2.2%	3.4%	3.7%
1,000	1.9%	2.8%	3.1%
1,100	1.8%	2.7%	3.0%
1,200	1.7%	2.6%	2.8%
1,300	1.6%	2.5%	2.7%
1,400	1.6%	2.4%	2.6%
1,500	1.5%	2.3%	2.5%
1,600	1.5%	2.2%	2.5%
2,900	1.1%	1.7%	1.8%
3,000	1.1%	1.6%	1.8%

In 2025, the total sample size in each area was between 1,029 and 2,936 and between 1,071 and 1,338 in 2023. The tolerances for smaller samples in the table above are relevant to subsets of the main samples. Smaller sample sizes significantly increase the likelihood of high year-over-year variation in results due to greater random statistical variability.

See Appendix B and C for further information on the survey methodology and the questionnaire used in the UK and Republic of Ireland.

Page 2 and 3: Foreword

Our vision for walking, wheeling, and cycling (page 2)

Data item	Sources and notes
Various data, depending on each individual area report	Section written by the partner authority. Figures come from data sourced from the Walking and Cycling Index report, or from data sourced separately by the partner authority.

The Walking and Cycling Index (page 3)

Data item	Sources and notes
Number of residents surveyed	Number of residents who completed the independent survey of residents conducted by NatCen in the UK and Ipsos Behaviour & Attitudes in the Republic of Ireland.

Page 4 and 5: Headlines

Population (page 4)

Data item	Sources and notes
Population • total population • adults • children	This is the total population of the area, with a breakdown on adults and children, based on the most recent available population data for the Index boundaries. England and Wales: 2024 mid-year population estimates (Office of National Statistics). Scotland (Aberdeen, Dundee, Edinburgh and Glasgow): 2024 mid-year population estimates (National Records of Scotland). Scotland (Dunfermline, Inverness, Perth and Stirling): Census 2022 (National Records of Scotland).

	Belfast: 2024 mid-year population estimates (Northern Ireland Statistics and Research Agency). Republic of Ireland: Census 2022 (Central Statistics Office Ireland).

Frequency of different travel modes (page 4)

Data item	Sources and notes
Percentage of residents who travel five days or more a week by (chart): • walking or wheeling • driving • public transport • cycling	The percentage of respondents answering '7 days a week' or '5-6 days a week' to Q02c, Q02a/b combined, Q02f/g/h combined and Q02e in the independent survey of residents. Driving includes travelling as driver and passenger in either a car, van, or motorcycle. *2023 and 2021 data from corresponding 2023 and 2021 survey questions for all available areas. 2025 UK aggregated data is presented for the same*

	survey questions for Cambridgeshire and Peterborough Combined Authority, Leicester and the North East Combined Authority.

Walking, wheeling, and cycling participation is not equal (page 4)

Data item	Sources and notes
Percentage of residents who walk or wheel at least five days a week	See explanations for page 6 of the Index report for exact question.
Percentage of residents who cycle at least once a week	See explanations for page 8 of the Index report for exact question.
Proportion of residents who walk or wheel at least five days a week	Each area selected which demographics to present in their headlines. See page 6 of the Index report for the exact question and available demographics.

Proportion of residents who cycle at least once a week	Each area selected which demographics to present in their headlines. See page 8 of the Index report for the exact question and available demographics.

Not all residents feel safe in their neighbourhood (page 4)

Data item	Sources and notes
Proportion of residents who think it's safe to walk or wheel in their local area	Each area selected which demographics to present in their headlines. See page 7 of the Index report for the exact question and available demographics.
Proportion of residents who think it's safe to cycle in their local area	Each area selected which demographics to present in their headlines. See page 9 of the Index report for the exact question and available demographics.

Proportion of residents who feel welcome and comfortable walking, wheeling or spending time on the streets of their neighbourhood	Each area selected which demographics to present in their headlines. See page 19 of the Index report for the exact question and available demographics.

Everyone benefits when more people walk, wheel and cycle (page 5)

Data item	Sources and notes
Number of serious long-term health conditions prevented annually	Combined for walking and cycling. This is estimated using the MOVES tool.
Economic benefit created for individuals and the area annually	Combined for walking, wheeling, and cycling. This is estimated using the Societal gain model.

Tonnes of greenhouse gas emissions saved annually	Combined for walking, wheeling and cycling. This is estimated using the City walking and cycling models, as described in Greenhouse gas emissions saved.
Number of cars taken off the road every day	Combined figure for walking, wheeling, and cycling. Total return walking, wheeling, and cycling trips made daily that could have used a car. This is estimated using the City walking and cycling models, as described in Trips that could have used a car. To get daily trips, the total annual trips were divided by 365 and to get return trips, these were divided by 2. Trips that could have used a car are trips to a destination (and exclude walking trips for enjoyment or fitness and cycling leisure trips) by adults who have at least one car or van in their household (from Q01 of the independent survey of residents).

Residents want to walk, wheel and cycle more and drive less (page 5)

Data item	Sources and notes
Percentage of residents who would like to use different types of transport more or less in the future: • Walk or wheel • Cycle • Take public transport • Drive (in text and chart)	The percentage of all respondents answering 'more than now' and the percentage of all respondents answering 'less than now' to Q16a_a, Q16a_c, Q16a_d and Q16a_b in the independent survey of residents.
Percentage of residents who agree that they often use a car because there are no other transport options available	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17g in the independent survey of residents.

Cycling is seen as less safe than other forms of transport (page 5)

Data item	Sources and notes
Percentage of residents who think it's safe in their local area to: • Walk or wheel • Cycle • Use public transport • Drive	The percentage of respondents answering 'very safe' or 'fairly safe' to Q15b_a, Q15b_b, Q15b_c and Q15b_d in the independent survey of residents.

Residents support more connected neighbourhoods (page 5)

Data item	Sources and notes
Percentage of residents who support and oppose shifting investment from road-building schemes to fund walking, wheeling, cycling and public transport	The percentage of respondents answering 'strongly support' or 'tend to support' and 'strongly oppose' or 'tend to oppose' to Q16b_f in the independent survey of residents.
Percentage of residents who support and oppose the stopping of vehicles parking on the pavement (footpath for the Republic of Ireland)	The percentage of respondents answering 'strongly support' or 'tend to support' and 'strongly oppose' or 'tend to oppose' to Q16b_a in the independent survey of residents.

Percentage of residents who support and oppose improving and increasing off-road walking, wheeling and cycling paths	The percentage of respondents answering ‘strongly support’ or ‘tend to support’ and ‘strongly oppose’ or ‘tend to oppose’ to Q16b_d in the independent survey of residents.
Percentage of residents who support and oppose improving walking, wheeling and cycling access to bus stops and coach or rail stations	The percentage of respondents answering ‘strongly support’ or ‘tend to support’ and ‘strongly oppose’ or ‘tend to oppose’ to Q16b_g in the independent survey of residents.
Percentage of residents who support and oppose reducing speed limits, improving crossing points and introducing protected cycle paths in school neighbourhoods	The percentage of respondents answering ‘strongly support’ or ‘tend to support’ and ‘strongly oppose’ or ‘tend to oppose’ to Q16b_i in the independent survey of residents.

Percentage of residents who support or oppose closing residential streets outside schools to cars during drop-off and pick-up times	The percentage of respondents answering 'strongly support' or 'tend to support' and 'strongly oppose' or 'tend to oppose' to Q16b_h in the independent survey of residents.
Percentage of residents who support or oppose having shops, schools, green space and public transport within a short walk or wheel of their home[5]	The percentage of respondents answering 'strongly support' or 'tend to support' and 'strongly oppose' or 'tend to oppose' to Q20 in the independent survey of residents. Walk Wheel Cycle Trust acknowledge that 20-minute neighbourhoods should be supported with the existence of at least medium density housing. This definition is not included in the survey question and therefore some respondents may not be aware of this while answering the question.

[5] Local places with services and amenities nearby your home are often known as 20-minute neighbourhoods.

Pages 6 and 7: Walking and wheeling

Walking and wheeling participation (page 6)

Data item	Sources and notes
Percentage of all residents who walk or wheel	The percentage of respondents choosing any frequency other than 'never' for Q02c in the independent survey of residents.
Percentage of all residents who walk or wheel at least five days a week	The percentage of respondents answering '7 days a week' or '5-6 days a week' to Q02c in the independent survey of residents.
Proportion of residents who walk or wheel at least five days a week within different demographic subgroups: • gender and sexuality • ethnicity	The percentage of respondents of these gender and sexuality, ethnicity, age, disability, and socio-economic demographic subgroups (Q25a, Q25b and Q26, Q28, Q23, Q34 and Q27) answering '7 days a week' or '5-6 days a week', to Q02c in the independent survey of residents.

• age • disability • socio-economic group	Republic of Ireland: the report contains data on gender, but not sexuality, as Q25b ('Do you identify as trans?') was not included in the questionnaire. Therefore, the LGBTQ+ subgroup results could not be calculated.

Walking and wheeling safety and satisfaction (page 7)

Data item	Sources and notes
Percentage of all residents who think it's safe to walk or wheel in their local area	The percentage of respondents answering 'very safe' or 'fairly safe' to Q15b_a in the independent survey of residents.
Percentage of all residents who think it's safe for children to walk or wheel in their local area	The percentage of respondents answering 'very safe' or 'fairly safe' to Q15b_e in the independent survey of residents.
Percentage of all residents who think their local area overall is a good place to walk or wheel	The percentage of respondents answering 'very good' or 'fairly good' to Q15a_a in the independent survey of residents.

Proportion of residents who think it's safe to walk or wheel in their local area within different demographic subgroups: • gender and sexuality • ethnicity • age • disability • socio-economic group	The percentage of respondents of these gender and sexuality, ethnicity, age, disability, and socio-economic demographic subgroups (Q25a, Q25b and Q26, Q28, Q23, Q34 and Q27) answering 'very safe' or 'fairly safe' to Q15b_a in the independent survey of residents. Republic of Ireland: the report contains data on gender, but not sexuality, as Q25b ('Do you identify as trans?') was not included in the questionnaire. Therefore, the LGBTQ+ subgroup results could not be calculated.
Story from a resident	Case studies from local residents were sourced from local contacts.

Pages 8 and 9: Cycling

Cycling participation (page 8)

Data item	Sources and notes
Percentage of all residents who cycle	The percentage of respondents choosing any frequency other than 'never' for Q02e in the independent survey of residents.
Percentage of all residents who cycle at least once a week	The percentage of respondents answering, '7 days a week', '5-6 days a week', '2-4 days a week' or 'once a week' to Q02e in the independent survey of residents.
Proportion of residents who cycle at least once a week within different demographic subgroups: • gender and sexuality • ethnicity	The percentage of respondents of these gender and sexuality, ethnicity, age, disability, and socio-economic demographic subgroups (Q25a, Q25b and Q26, Q28, Q23, Q34, Q27) answering '7 days a week', '5-6 days a week', '2-4 days a week' or 'once a week' to Q02e in the independent survey of residents.

• age • disability • socio-economic group	Republic of Ireland: the report contains data on gender, but not sexuality, as Q25b ('Do you identify as trans?') was not included in the questionnaire. Therefore, the LGBTQ+ subgroup results could not be calculated.

Cycling safety and satisfaction (page 9)

Data item	Sources and notes
Percentage of all residents who think it's safe to cycle in their local area	The percentage of respondents answering 'very safe' or 'fairly safe' to Q15b_b in the independent survey of residents.
Percentage of all residents who think it's safe for children to cycle in their local area	The percentage of respondents answering 'very safe' or 'fairly safe' to Q15b_f in the independent survey of residents.

Percentage of all residents who think their local area overall is a good place to cycle	The percentage of respondents answering 'very good' or 'fairly good' to Q15a_b in the independent survey of residents.
Proportion of residents who think it's safe to cycle in their local area within different demographic subgroups: • gender and sexuality • ethnicity • age • disability • socio-economic group	The percentage of respondents of these gender and sexuality, ethnicity, age, disability, and socio-economic demographic subgroups (Q25a, Q25b and Q26, Q28, Q23, Q34, Q27) answering 'very safe' or 'fairly safe' to Q15_b in the independent survey of residents. Republic of Ireland: the report contains data on gender, but not sexuality, as Q25b ('Do you identify as trans?') was not included in the questionnaire. Therefore, the LGBTQ+ subgroup results could not be calculated.
Story from a resident	Case studies from local residents were sourced from local contacts.

Pages 10 and 11: Benefits of walking and wheeling

Annual walking and wheeling trips by purpose (page 10)

Data item	Sources and notes
The number of times residents walk or wheel around the world every day	Miles (km for the Republic of Ireland) walked or wheeled per day (below) divided by the equatorial circumference of the Earth (24,901 miles / 40,075 km).
[Dunfermline only] The number of times residents walk or wheel the length of Great Britain every day	Miles walked or wheeled per day (below) divided by the length of Great Britain using the Land's End to John O'Groats cycle route (1,189 miles).

Number of annual walking and wheeling trips in the area	This is the sum of the total estimated number of trips walked or wheeled for all purposes. See below for how the annual walking and wheeling trips by purpose was calculated.
Miles (or km for the Republic of Ireland) walked and wheeled in the area in the past year	This is estimated using the Walking and cycling models, as described in Adult (16+) walking trips, Child leisure trips and Child school trips.
[Cambridgeshire and Peterborough Combined Authority, Leicester and the North East Combined Authority only] Miles walked and wheeled in the area per day	This is estimated using the Walking and cycling models, as described in Adult (16+) walking trips, Child leisure trips and Child school trips. Distance per year was divided by 365 to get miles per day.

[Cambridge and Peterborough Combined Authority, Leicester and the North East Combined Authority only] Number of days spent walking or wheeling (based on each resident walking continuously, 24 hours a day) for all yearly miles walked and wheeled in the area	This is calculated as: • miles walked or wheeled in the past year (see above) • divided by the average walking speed in miles per hour (5.3 kmph, HEAT[6]) • divided by the number of hours in a day (24) and • divided by the population of the area.
Annual walking and wheeling trips by purpose: Destination – such as work, school, shopping (adults[7])	This is estimated using the Walking and cycling models, as described in Adult (16+) walking trips.

[6] The Health Economic Assessment Tool (HEAT) for walking and cycling by World Health Organisation.

[7] Destination trips for Greater Manchester also includes trips by children, due to using TRADS data as an input for modelling.

Annual walking and wheeling trips by purpose: School (children)	This is estimated using the Walking and cycling models, as described in Child school trips.
Annual walking and wheeling trips by purpose: Enjoyment or fitness, including running (adults and children)	This is estimated using the Walking and cycling models, as described in Adult (16+) walking trips and Child leisure trips.
Average walking or wheeling trip distance (miles for UK and km for Republic of Ireland)	This is calculated as: • miles (or kms) walked or wheeled in the past year (as above; this is estimated using the Walking and cycling models, as described in Adult (16+) walking trips, Child leisure trips and Child school trips) • divided by the number of annual walking and wheeling trips in the area (as above; this is the sum of the total estimated number of trips walked or wheeled for all purposes. See above for how the annual walking and wheeling trips by purpose was calculated).

Walking and wheeling benefit residents and society (page 10)

Data item	Sources and notes
The total annual economic benefit from all trips walked and wheeled	This is estimated using the Societal gain model.
Net economic benefit to individuals and society for each mile (or km for the Republic of Ireland) walked or wheeled instead of driven	This is estimated using the Societal gain model. It is calculated as: • the net benefit per mile (or km) of driving • minus the net benefit per mile (or km) of walking.
Net annual economic benefit for residents and society from total distance walked or wheeled by adults with access to a car (excluding trips for enjoyment or fitness)	This is estimated using the Societal gain model. It is calculated as: • total distance walked or wheeled by those that could have used a car (estimated by the Walking and cycling models, as described in Trips that could have used a car) • multiplied by the net economic benefit to individuals and society for each mile (or km) walked or wheeled instead of driven (see above).

Total miles (or km for the Republic of Ireland) walked or wheeled by those that could have used a car	This is estimated using the Walking and cycling models, as described in Adult (16+) walking trips and Trips that could have used a car.

Walking and wheeling unlocks health benefits for everyone (page 11)

Data item	Sources and notes
Number of serious long-term health conditions prevented each year by walking (total, and by condition in the chart)	This is estimated using the MOVES.
Cost saving to the NHS (HSE in Republic of Ireland)	This is estimated using the MOVES.
Number of GP appointments this cost equates to	The total cost saving to the NHS (HSE in the Republic of Ireland) in the area was divided by the average cost of a GP appointment.

	UK: £45 (The unit costs of health and social care 2024 (for publication) Amended 12 October 2025.pdf). Republic of Ireland: €60 (How Much Does It Cost To See A Doctor In Ireland [2025 Guide] - Roxboro Medical Centre).
Number of early deaths prevented annually	This is estimated using HEAT.
Value of the early deaths prevented	This is estimated using HEAT. Note that the value of early deaths prevented (from HEAT) may be greater than the value shown at the bottom of page 10 of the Index report for the overall net benefit of walking and wheeling. The HEAT figure is a gross value including the value of early deaths prevented only, while the net benefit of walking and wheeling takes into account the wider range of benefits and costs associated with walking.
Kilograms of NO_x (Nitric oxide and nitrogen dioxide) and particulates (PM_{10} which includes $PM_{2.5}$) saved annually	This is estimated using the Walking and cycling models, as described in Kg of NOx and particulates saved.

Percentage of residents agreeing the air is clean in their local area	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17f in the independent survey of residents.

Walking and wheeling helps mitigate the climate crisis (page 11)

Data item	Sources and notes
Tonnes of greenhouse gas emissions saved annually	This is estimated using the Walking and cycling models, as described in Greenhouse gas emissions saved.
Equivalent number of flights to a worldwide destination	This is calculated as: • the total greenhouse gas emissions (see above) • divided by the average emissions from a single flight from the nearest airport to a destination area (based on the online flight emissions calculator carbonfootprint.com).

Contextual data on transport emissions over time	England: Department for Energy Security and Net Zero, 2023 UK Greenhouse Gas Emissions [Online] Available at: 2023 UK Greenhouse Gas Emissions, Final Figures (publishing.service.gov.uk). Scotland: Scottish Government, Scottish greenhouse gas emissions 2023 [Online] Available at: (Scottish Greenhouse Gas Statistics 2023 - gov.scot). Cardiff: StatsWales, Emissions of Greenhouse Gases by Year [Online] Available at: Emissions of Greenhouse Gases by Year (gov.wales). Belfast: Department of Agriculture, Environment and Rural Affairs (2023) Northern Ireland greenhouse gas inventory 1990-2023 [Online] Available at: Northern Ireland Greenhouse Gas Inventory 1990 – 2023 (datavis.nisra.gov.uk). Republic of Ireland: Environmental Protection Agency data (2023) Ireland's Final Greenhouse Gas Emissions [Online] Available at: Ireland's Final Greenhouse Gas Emissions 1990-2023 (epa.ie).

Walking and wheeling keeps the area moving (page 11)

Data item	Sources and notes
Number of return walking and wheeling trips that are made daily by residents who could have used a car	This is calculated as: • the total number of trips that could have used a car (estimated by the Walking and cycling models, as described in Trips that could have used a car) • divided by 365 to get a value per day and • divided by 2 to get return trips.
Length of the traffic jam that would result from these cars	This is calculated as: • the number of return walking and wheeling trips that could have used a car (above) • multiplied by the average length of a parking space (4.8m), to represent one car in a traffic jam for every trip. The place for the end of the traffic jam was identified by using the Google Maps journey planner.

Pages 12 and 13: Benefits of cycling

Annual cycling trips by purpose (page 12)

Data item	Sources and notes
The number of times residents cycle around the world every day	Miles (km for the Republic of Ireland) cycled per day (below) divided by the equatorial circumference of the Earth (24,901 miles / 40,075 km).
[Dunfermline only] The number of times residents cycle the length of Great Britain every day	Miles cycled per day (below) divided by the length of Great Britain using the Land's End to John O'Groats cycle route (1,189 miles).
Number of annual cycle trips in the area	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips, Child leisure trips and Child school trips.

Miles (or km for the Republic of Ireland) cycled in the area in the past year	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips, Child leisure trips and Child school trips.
[Cambridgeshire and Peterborough Combined Authority, Leicester and the North East Combined Authority only] Miles cycled in the area per day	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips, Child leisure trips and Child school trips. Distance per year was divided by 365 to get miles per day.
Annual trips by purpose: To work (adults)	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips.
Annual trips by purpose: Part of work (adults)	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips.
Annual trips by purpose: School, college or university (adults)	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips.

Annual trips by purpose: School (children)	This is estimated using the Walking and cycling models, as described in Child school trips.
Annual trips by purpose: Shopping, personal business, and social trips (adults[8])	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips.
Annual trips by purpose: Leisure (adults and children)	This is estimated using the Walking and cycling models, as described in Child leisure trips.
Average cycling trip distance (miles for UK and km for Republic of Ireland)	This is calculated as: • miles (or kms) cycled in the past year (as above; this is estimated using the Walking and cycling models, as described in Cycling trips and distance (Adult 16+), Child leisure trips and Child school trips) • divided by the number of annual cycling trips in the area (as above; this is the sum of the total estimated number of trips cycled for all

[8] Shopping, personal business and social trips for Greater Manchester also includes trips by children, due to using TRADS data as an input for modelling.

	purposes. See above for how the annual cycling trips by purpose was calculated).

Cycling benefits residents and society (page 12)

Data item	Sources and notes
The total annual economic benefit for individuals and society from all trips cycled in the area	This is estimated using the Societal gain model.
Net economic benefit to individuals and society for each mile (or km for the Republic of Ireland) cycled instead of driven	This is estimated using the Societal gain model. It is calculated as: • the net benefit per mile (or km) of driving • minus the net benefit per mile (or km) of cycling.

Net annual economic benefit for residents and society from total distance cycled by adults with access to a car (excluding trips for leisure)	This is estimated using the Societal gain model. It is calculated as: • total distance cycled by those that could have used a car (estimated by the Walking and cycling models, as described in Trips that could have used a car) • multiplied by the net economic benefit to individuals and society for each mile (or km) cycled instead of driven (see above).
Total miles (or km for the Republic of Ireland) cycled by those that could have used a car	This is estimated using the Walking and cycling models, as described in Adult (16+) cycling trips and Trips that could have used a car.

Cycling unlocks health benefits for everyone (page 13)

Data item	Sources and notes
Number of serious long-term health conditions prevented	This is estimated using the MOVES.

per year by cycling (total, and by condition in the chart)	
Cost saving to the NHS (HSE in Republic of Ireland)	This is estimated using the MOVES.
Number of GP appointments this cost equates to	The total cost saving to the NHS (HSE in the Republic of Ireland) in the area was divided by the average cost of a GP appointment. UK: £45 (The unit costs of health and social care 2024 (for publication) Amended 12 October 2025.pdf). Republic of Ireland: €60 (How Much Does It Cost To See A Doctor In Ireland [2025 Guide] - Roxboro Medical Centre).
Number of early deaths prevented annually	This is estimated using HEAT.
Value of the early deaths prevented	This is estimated using HEAT. Note that the value of early deaths prevented (from HEAT) may be greater than the value shown at the bottom of page 12 of the Index report for the

	overall net benefit of cycling. The HEAT figure is a gross value including the value of early deaths prevented only, while the net benefit of cycling takes into account the wider range of benefits and costs associated with cycling.
Kilograms of NO_x (Nitric oxide and nitrogen dioxide) and particulates (PM_{10} which includes $PM_{2.5}$) saved annually	This is estimated using the Walking and cycling models, as described in Kg of NOx and particulates saved.
Percentage of residents agreeing the air is clean in their local area	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17f in the independent survey of residents.

Cycling helps mitigate the climate crisis (page 13)

Data item	Sources and notes
Tonnes of greenhouse gas emissions saved annually	This is estimated using the Walking and cycling models, as described in Greenhouse gas emissions saved.
Equivalent number of flights to a worldwide destination	This is calculated as: • the total greenhouse gas emissions (see above) • divided by the average emissions from a single flight from the nearest airport to a destination area (based on the online flight emissions calculator carbonfootprint.com).
Contextual data on transport emissions over time	England: Department for Energy Security and Net Zero, 2023 UK Greenhouse Gas Emissions [Online] Available at: 2023 UK Greenhouse Gas Emissions, Final Figures (publishing.service.gov.uk). Scotland: Scottish Government, Scottish greenhouse gas emissions 2023 [Online] Available at: (Scottish Greenhouse Gas Statistics 2023 - gov.scot).

	Cardiff: StatsWales, Emissions of Greenhouse Gases by Year [Online] Available at: Emissions of Greenhouse Gases by Year (gov.wales). Belfast: Department of Agriculture, Environment and Rural Affairs (2023) Northern Ireland greenhouse gas inventory 1990-2023 [Online] Available at: Northern Ireland Greenhouse Gas Inventory 1990 – 2023 (datavis.nisra.gov.uk). Republic of Ireland: Environmental Protection Agency data (2023) Ireland's Final Greenhouse Gas Emissions [Online] Available at: Ireland's Final Greenhouse Gas Emissions 1990-2023 (epa.ie).

Cycling keeps the area moving (page 13)

Data item	Sources and notes
Number of return cycle trips that are made daily by residents that could have used a car	This is calculated as: • the total number of trips that could have used a car (estimated by the Walking and cycling models, as described in Trips that could have used a car)

	• divided by 365 to get a value per day and • divided by 2 to get return trips.
Length of the traffic jam that would result from these cars	This is calculated as: • the number of return cycling trips that could have used a car (above) • multiplied by the average length of a parking space (4.8m), to represent one car in a traffic jam for every trip. The place for the end of the traffic jam was identified by using the Google Maps journey planner.

Pages 14 and 15: Walking and wheeling solutions

New homes and existing communities should have services and amenities within walking and wheeling distance (page 14)

Data item	Sources and notes
Percentage of residents who agree they can easily get to many places they need to visit without having to drive	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17c in the independent survey of residents.
[UK only]: Percentage of residents who support stopping new housing developments in areas where driving is the only practical option to visit local services, such as shops and doctors surgeries	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q16b_e in the independent survey of residents. This question option was only asked in the UK survey.

[Republic of Ireland only]: Percentage of residents who support prioritising new housing developments that support walking, wheeling, cycling or the use of public transport	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q16b_e in the independent survey of residents. This question option was only asked in the Republic of Ireland survey.
Percentage of residents who would find more local amenities and services useful to help them walk or wheel more: • More shops and everyday services, such as banks and post offices, close to their home • More government services, such as doctors surgeries and schools, close to their home	The percentage of respondents answering 'very useful' or 'fairly useful' to Q11a, Q11b, Q11l and Q11k in the independent survey of residents.

• More parks or green spaces close to their home • More things to see and do close to their home, like cafés or entertainment venues	

Residents want walking and wheeling to better align with buses (page 14)

Data item	Sources and notes
Percentage of residents who think the following changes will help them take journeys that include walking or wheeling and the bus more often: • More information to help them plan and take a	The percentage of respondents answering 'very useful' or 'fairly useful' to Q13a, Q13b, Q13c, Q13d, Q13e and Q13f in the independent survey of residents.

journey (such as apps, maps, signage or public transport staff) • More direct walking and wheeling routes from housing estates to bus stops • Accessible walking and wheeling routes to and from bus stops • Improved safety while walking or wheeling to and from the bus stop • Improved walking and wheeling crossing facilities near bus stops • Improved bus stops (such as accessible, well lit and maintained, cover	

from rain, display of service information)	

Residents want better streets (page 15)

Data item	Sources and notes
Percentage of residents who would find the following changes helpful to walk or wheel more: • Wider pavements (footpaths for the Republic of Ireland) • More frequent road crossings, with reduced wait times • Nicer places along streets to stop and rest,	The percentage of respondents answering 'very useful' or 'fairly useful' to Q11h, Q11i, Q11j, Q11g, Q11f and Q11c in the independent survey of residents.

like more benches, trees and shelters • Better pavement (footpath for the Republic of Ireland) accessibility, like level surfaces, dropped kerbs at crossing points • Fewer cars parked on the pavement (footpath for the Republic of Ireland) • Less fear of crime or antisocial behaviour in their area	
For each road making up a junction with traffic lights: • Percentage that has a pedestrian crossing	For all roads that make up junctions within the area boundary, where the flow of vehicles is controlled by traffic signals. Each junction arm in the area is counted as either having a pedestrian phase or not. Excludes motorway

• Percentage that does not have a pedestrian crossing	junctions and 'mid-block' signals which only exist to manage the interaction between vehicles and footway traffic. Data supplied by partner authorities. The following areas supplied data: Aberdeen, Belfast, Cambridge and Peterborough Combined Authority, Cork Metropolitan Area, Dublin Metropolitan Area, Dunfermline, Edinburgh, Galway Metropolitan Area, Glasgow, Inverness, Leicester, Limerick Shannon Metropolitan Area, Liverpool City Region, Perth, Southampton City Region, Stirling and Waterford Metropolitan Area. Dundee provided data but opted out from featuring it in their report. The following areas did not supply data: Bristol, Cardiff and the North East Combined Authority. Edinburgh City Council prefer to count arms with a 2-stage crossing as 2 rather than 1. When comparing with other areas, it should be noted that this may make a small difference to the percentage of junction arms without a pedestrian phase.

	Greater Manchester could not provide data on a junction arm level, so data presented is for signalised junctions. This data is not comparable with any other Index area.
Story from a resident	Case studies from local residents were sourced from local contacts.

Pages 16 and 17: Cycling solutions

Many residents want to cycle (page 16)

Data item	Sources and notes
Percentage of residents who see themselves as someone who: • Regularly cycles • Occasionally cycles • 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 these answers to Q14 in the independent survey of residents. Responses to the question options are based the respondents' own perceptions of their cycling habits and not based on any predefined cycling frequency measures.

Proportion of residents who said they 'do not cycle but would like to' for: • Women • Ethnic minority groups • Disabled people	The percentage of respondents of these specific gender, ethnicity and disability demographic groups (Q25a, Q28, Q34) answering 'do not cycle but would like to', to Q14 in the independent survey of residents.

Residents want more support to cycle (page 16)

Data item	Sources and notes
Percentage of residents that would find the following support useful to start cycling or cycle more: • Access to a bicycle • Access to an electric cycle	The percentage of respondents answering 'very useful' or 'fairly useful' to Q12h, Q12i, Q12k, Q12j, Q12d, Q12l and Q12f in the independent survey of residents.

• Access to a cargo cycle with space to carry children or shopping • Access to an adapted cycle, like tricycle or handcycle • Access or improvements to a city cycle hiring scheme • Access to secure cycle parking at or near home • Cycling training courses and organised social rides	
Proportion of residents with access to an adult cycle	The percentage of respondents answering that they owned at least one of the following types of adult cycles in the independent survey of residents and the percentage of respondents from socio-economic demographic subgroups AB and DE.

	• Adult pedal bicycles (non-electric) (Q22a) • Adult electric bicycles (Q22b) • Other adult cycles, including hand-cycles, tricycles, tandems, recumbents (pedal or electric) (Q22c) • Cargo cycles with space to carry children or shopping (pedal or electric) (Q22d).

Residents want improved cycling infrastructure (page 17)

Data item	Sources and notes
Percentage of households within 125m of either traffic-free cycle paths away from the road, cycle paths physically separated from traffic and pedestrians or signposted routes along quieter streets	Calculated by Walk Wheel Cycle Trust based on data supplied by partner authorities for each area. The distance of 125m was taken from the Welsh Active Travel Act, where cycling networks should be designed to have a mesh width of 250m in central areas (Active Travel Act guidance (gov.wales)). For Cardiff, Cork Metropolitan Area, Dublin Metropolitan Area, Edinburgh, Glasgow, Leicester, Limerick Shannon Metropolitan Area, Liverpool City

	Region, Stirling and Waterford Metropolitan Area this figure is based on the following categories: • traffic-free cycle paths away from the road • cycle paths physically separated from traffic and pedestrians • signposted cycle routes along quieter streets. For Aberdeen, Belfast, Bristol, Cambridgeshire and Peterborough Combined Authority, Dundee, Galway Metropolitan Area, Greater Manchester, Perth and Southampton City Region the optional 'signposted cycle routes along quieter streets' category was not provided so this figure is based on the following categories: • traffic-free cycle paths away from the road • cycle paths physically separated from traffic and pedestrians. For Dunfermline, this figure is based on traffic-free cycle paths away from the road only, as they currently do not have any cycle paths physically separated from traffic and pedestrians and no data was supplied for the optional signposted cycle routes along quieter streets category.

	This figure was not calculated for Inverness as the partner authorities could not provide data for any category. Also, no figure was calculated for the North East Combined Authority, as not all local authorities in the area could provide data for each of the categories. For each area, this was calculated using the categories above and postcode data (from April 2025). Household data sources and licence numbers: UK household data (except Belfast) was supplied by Digital Mapping Solutions from Dotted Eyes as MarkerUp postcode unit point dataset with number of households per postcode. © Crown Copyright 2025. All rights reserved. Licence numbers 100019918, 100046668 (Scottish cities), 100023406 (Bristol), AC0000822131 (for Cambridgeshire only, as Peterborough could not provide data), 100031673 (Cardiff), 0100022610 (Greater Manchester), AC0000816831 (Leicester), 100019918 (Liverpool City Region) and AC0000850618 (Southampton City Region). Also contains National Statistics data © Crown copyright and database right 2025.

	Belfast households from Royal Mail Postcode Address File (PAF) database and the AddressList mail generation program by Arc en Ciel Ltd. Republic of Ireland household data is licenced under the National Mapping Agreement: CYAL50380546 © Tailte Éireann – Surveying.
Length of traffic-free cycle paths away from the road	Traffic-free cycle paths are away from roads that pass-through parks, alongside canals, on former railway lines or similar. Traffic-free paths should be waterproof surfaces that cycles are legally permitted on. Data supplied by partner authorities. Data was not provided by Inverness in 2025. For Cambridgeshire and Peterborough Combined Authority traffic-free cycle paths exclude data from Peterborough. For the North East Combined Authority, traffic-free cycle paths exclude data from Northumberland.
Length of cycle paths physically separated from traffic and pedestrians	Cycle paths on the carriageway that are physically separated from traffic and pedestrians by a kerb or something similar. This includes Orca Rediweld and flexible delineator posts.

	Data supplied by partner authorities. Data was not provided by Inverness in 2025. For Cambridgeshire and Peterborough Combined Authority cycle paths physically separated from traffic and pedestrians exclude data from Peterborough. For the North East Combined Authority, cycle paths physically separated from traffic and pedestrians exclude data from County Durham, Northumberland and South Tyneside.
Length of signposted cycle routes on quieter streets	Signposted cycle routes on quieter streets connect main arterial and orbital routes with traffic free sections. These routes should be on local roads, have good signage i.e. easy for someone unfamiliar with the route to navigate, have low traffic i.e. less than 2,500 vehicles each day, be low speed with 20mph/30km/h speed limits. Data supplied by partner authorities. This was an optional cycle routes category. The following areas supplied data: Cardiff, Cork Metropolitan Area, Dublin Metropolitan Area, Edinburgh, Glasgow, Leicester, Limerick Shannon

	Metropolitan Area, Liverpool City Region, North East Combined Authority, Stirling and Waterford Metropolitan Area. For the North East Combined Authority, data excludes signposted cycle routes from County Durham, North Tyneside, Northumberland and South Tyneside. Glasgow City Council followed the Cycling by Design 2021 guidance for Mixed Traffic Streets for this category which does not entirely match the Index definition. The following areas did not supply data: Aberdeen, Belfast, Bristol, Cambridgeshire and Peterborough Combined Authority, Dundee, Dunfermline, Galway Metropolitan Area, Greater Manchester, Perth and Southampton City Region.
[Republic of Ireland only]: Length of cycle tracks level with the footpath distinguished by a different surface	This category is unique to Republic of Ireland. Data supplied by partner authorities.

Number of cycle parking spaces across railway and bus stations (and other stations where applicable)	Number of publicly accessible and free to use cycle parking spaces at railway and bus stations (and other stations where applicable) presented alongside the total number of stations. Data supplied by partner authorities. In 2025 some areas have also included cycle parking available at park and ride stations. These are stations where people can leave their cars or cycles in car parks on the outskirts of a city and travel into the city centre by public transport, generally by bus. Park and ride stations were included for Aberdeen, Belfast, Cambridgeshire and Peterborough Combined Authority, Edinburgh, Greater Manchester, Leicester and Perth. Some areas also included other public transport stations: • North East Combined Authority included cycle parking at Metro and ferry stations • Liverpool City Region included cycle parking at ferry stations • Glasgow included cycle parking at subway stations • Dublin Metropolitan Area and Greater Manchester included cycle parking at tram stops (LUAS stops in Dublin Metropolitan Area).

Percentage of residents who would be helped to start cycling or to cycle more by: • More traffic-free cycle paths away from roads, like through parks or along waterways • More cycle paths along roads which are physically separated from traffic and pedestrians • More signposted local cycle routes along quieter streets • Better links with public transport, like secure cycle parking at train stations, bus stops/stations	The percentage of respondents answering 'very useful' or 'fairly useful' to Q12b, Q12a, Q12c and Q12m in the independent survey of residents.

Percentage of residents who support improving and increasing local off-road walking, wheeling and cycling paths	The percentage of respondents answering ‘strongly support’ or ‘Tend to support’ to Q16b_d in the independent survey of residents.
Percentage of residents who support building more cycle paths physically separated from traffic and pedestrians, even when this would mean less room for other road traffic	The percentage of respondents answering ‘strongly support’ or ‘Tend to support’ to Q18 in the independent survey of residents.
Percentage of residents who support improving walking, wheeling and cycling access to bus stops and coach or rail stations	The percentage of respondents answering ‘strongly support’ or ‘Tend to support’ to Q16b_g in the independent survey of residents.
Story from a resident	Case studies from local residents were sourced from local contacts.

Pages 18 and 19: Neighbourhood solutions

Improving the journey to school (page 18)

Data item	Sources and notes
Percentage of residents who support and oppose closing residential streets outside schools to cars during school drop-off and pick-up times	The percentage of respondents answering 'strongly support' or 'tend to support' and 'tend to oppose' or 'strongly oppose' to Q16b_h in the independent survey of residents.

Number of schools with School Streets schemes in the area	Number of schools with permanent School Streets schemes. This is where roads are closed to cars during school drop off and pick up times. Each scheme can benefit more than one school; therefore, the data is presented as the number of schools benefitting from a School Street scheme not the number of schemes in operation in the area. Cardiff, Dublin Metropolitan Area, Dundee, Glasgow, Greater Manchester, Leicester, Limerick Metropolitan Area and Southampton City Region have some schemes that cover more than one school. Excludes trial schemes and schemes operating under experimental Traffic Regulation Orders (TROs) because these are not permanent. There were no permanent school streets in Aberdeen, Belfast, Cork Metropolitan Area, Dunfermline, Inverness, Stirling and Waterford Metropolitan Area. Data supplied by partner authorities.
Percentage of residents who support and oppose reducing speed limits, improving	The percentage of respondents answering ‘strongly agree’ or ‘tend to agree’ and ‘tend to disagree’ or ‘strongly disagree’ to Q16b_i in the independent survey of residents.

crossing points and introducing protected cycle paths in school neighbourhoods	
[Republic of Ireland only]: Number of schools with a Safe Route to School programme	Number of schools that are in the Safer Routes to School Programme. The Safer Routes to School schemes aim to provide distinctive colourful schools zones at the front of schools to prioritise children walking, wheeling and cycling, discourage vehicle drop-offs, and improve crossings and key links for children choosing active travel. Data supplied by partner authorities.

Giving children the Independence to roam, play and develop (page 18)

Data item	Sources and notes
Average age when parents and carers would let children travel independently in their neighbourhood • to walk or wheel • to cycle • to use public transport	Median age given by respondents who are parents or carers of children under the age of 16 living in their household to Q31a, Q31b and Q31c in the independent survey of residents.
Percentage of residents who agree there is space for children to socialise and play	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17e in the independent survey of residents.

Residents support child-safe neighbourhoods (page 19)

Data item	Sources and notes
Percentage of residents that think that their streets are not dominated by moving or parked motor vehicles	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17g in the independent survey of residents.
Percentage of residents who support setting traffic-reduction targets and taking action to achieve these	The percentage of respondents answering 'strongly support' or 'tend to support' to Q16b_c in the independent survey of residents.
Percentage of residents who support low-traffic neighbourhoods	The percentage of respondents answering 'strongly support' or 'tend to support' to Q19 in the independent survey of residents.
Percentage of the total length of unclassified roads in the area	Based on data supplied to Walk Wheel Cycle Trust by the creators of CycleStreets' www.lowtrafficneighbourhoods.org.

that have nothing to prevent through traffic	Road classifications follow those used by Open Street Map Highway: International equivalence - OpenStreetMap Wiki For the UK, "unclassified roads" are all public roads that are neither motorways, A, B nor C roads. This is the sixth category on Open Street Map[9]. For Republic of Ireland the equivalent sixth category is "less significant minor roads". For each area, CycleStreets has sub-divided these lesser roads into ones that are either: a) Through-streets b) Through-streets with traffic calming c) No-through streets. The percentage is obtained by dividing (a) by (a)+(b)+(c).

[9] More major roads (the first to fifth categories on Open Street Map) are excluded from the calculation because they are usually necessary for traffic distribution, and it is less likely that these could ever be suitable for conversion to access-only status.

Percentage of residents who would find fewer motor vehicles on their streets useful to: • walk or wheel more • cycle more	The percentage of respondents answering 'very useful' or 'fairly useful' to Q11d and Q12g in the independent survey of residents.
Percentage of residents who support reducing speed limits on local roads in built-up areas to 20mph speed limits (30km/h for Republic of Ireland)	The percentage of respondents answering 'strongly support' or 'tend to support' to Q16b_b in the independent survey of residents.
[UK]: Percentage of the area's streets that have 20mph speed limits [Republic of Ireland]: Percentage of the area's streets that should typically have traffic	Data supplied by partner authorities. For the UK areas, 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, special roads and unadopted streets as these will never be appropriate for 20mph limits or there is no control over the speed limits on these streets.

travelling at speeds below 30km/h	Edinburgh also excludes trunk roads from their calculations. Data was not provided by Inverness and Liverpool City Region. For the North East Combined Authority, data excludes total length of streets and 20mph streets data from County Durham and South Tyneside. Republic of Ireland metropolitan areas reported on the percentage of all streets that should have traffic travelling at speeds below 30km/h, as data is NAVTEQ NAVSTREETS Speed Category data, rather than actual records of legally posted 30km/h signs.
Percentage of residents who would find more streets with 20mph (30km/h for the Republic of Ireland) speed limits useful to: • walk or wheel more • cycle more	The percentage of respondents answering 'very useful' or 'fairly useful' to Q11e and Q12e in the independent survey of residents.

Everyone should feel welcome in their neighbourhood (page 19)

Data item	Sources and notes
Percentage of residents who agree they regularly chat to their neighbours, more than just to say hello	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17d in the independent survey of residents.
Percentage of residents who feel able to participate in making their neighbourhood a better place to live	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17b in the independent survey of residents.
Percentage of residents who feel welcome and comfortable walking, wheeling or spending time on the streets of their neighbourhood	The percentage of respondents answering 'strongly agree' or 'tend to agree' to Q17a in the independent survey of residents.

Proportion of residents who feel welcome and comfortable walking, wheeling or spending time on the streets of their neighbourhood within different demographic subgroups: • gender and sexuality • ethnicity • disability • socio-economic group	The percentage of respondents of these gender and sexuality, ethnicity, disability, and socio-economic demographic subgroups (Q25a, Q25b and Q26, Q28, Q34 and Q27) answering 'strongly agree' or 'tend to agree' to Q17a in the independent survey of residents. Republic of Ireland: the report contains data on gender, but not sexuality, as Q25b (Do you identify as trans?) was not included in the questionnaire. Therefore, the LGBTQ+ subgroup results could not be calculated.

Pages 20 and 21: Developing the area

Improving walking, wheeling and cycling

Data item	Sources and notes
Information on projects, schemes and investments across the area.	Information provided by the partner authority.

Pages 22 and 23: Looking forward

Better places and streets for everyone

Data item	Sources and notes
Information on future plans for walking, wheeling and cycle schemes and investments across the area.	Information provided by the partner authority.
Percentage of residents who would like to see more government spending in their local area on: • walking and wheeling • cycling • buses • trains • [UK only] trams	The percentage of respondents giving these answers to Q21a, Q21b, Q21c, Q21d, Q21e, Q21f and Q21g in the independent survey of residents. Republic of Ireland: the report does not contain results related to trams, as Q21e was not included in the questionnaire.

• other forms of public transport • driving	
Story from a resident	Case studies from local residents were sourced from local contacts.

Appendices

Appendix A: Participating areas

Table 2: UK and Republic of Ireland areas involved in the Walking and Cycling Index

Area	2015	2017	2018	2019	2021	2023	2025
Aberdeen	-	-	-	-	Yes	Yes	Yes
Belfast	Yes	Yes	-	Yes	Yes	Yes	Yes
Birmingham	Yes	Yes	-	As West Midlands	As West Midlands	Yes	-
Bristol	Yes	Yes	-	Yes	Yes	Yes	Yes

Cambridgeshire and Peterborough Combined Authority	-	-	-	As Greater Cambridge	As Greater Cambridge	As Greater Cambridge	Yes
Cardiff	Yes	Yes	-	Yes	Yes	Yes	Yes
Cork Metropolitan Area	-	-	-	-	-	Yes	Yes
Dublin Metropolitan Area	-	-	-	Yes	Yes	Yes	Yes
Dundee	-	-	-	Yes	Yes	Yes	Yes
Dunfermline	-	-	-	-	-	Yes	Yes
Edinburgh	Yes	Yes	-	Yes	Yes	Yes	Yes
Galway Metropolitan Area	-	-	-	-	-	Yes	Yes
Glasgow	-	-	Yes	-	Yes	Yes	Yes
Greater Manchester	Yes	Yes	-	Yes	Yes	Yes	Yes

Inverness	-	-	-	Yes	Yes	Yes	Yes
Leicester	-	-	-	-	-	-	Yes
Limerick Shannon Metropolitan Area	-	-	-	-	-	Yes	Yes
Liverpool City Region	-	-	-	Yes	Yes	Yes	Yes
North East Combined Authority	As Newcastle	As Newcastle	-	As Tyneside	As Tyneside	As Tyneside	Yes
Perth	-	-	Yes	-	Yes	Yes	Yes
Southampton City Region	-	-	-	Yes	Yes	Yes	Yes
Stirling	-	-	Yes	-	Yes	Yes	Yes
Tower Hamlets	-	-	-	Yes	Yes	Yes	-
Waterford Metropolitan Area	-	-	-	-	-	Yes	Yes

Appendix B: Independent resident survey and methodology

An independent representative survey of residents was carried out in each participating area (for list of areas see Appendix A). In the UK, NatCen Social Research conducted the survey using a push to online approach, while in the Republic of Ireland, Ipsos Behaviour & Attitudes (B&A) delivered the survey using a face-to-face methodology.

For the UK survey, NatCen were awarded the contract by Walk Wheel Cycle Trust following a competitive Public Procurement process, whilst Ipsos B&A were selected by the National Transport Authority in the Republic of Ireland from their supplier framework.

Questionnaire development

To keep the research current, the Index questionnaire is reviewed ahead of each iteration and developed alongside our area partners and survey suppliers. Over time, a core set of questions have been developed, and these remain constant for each iteration; these include questions on respondent travel behaviours (used for modelling) and demographic information. Additionally, there are several questions which are added and excluded to reflect the research interests of the Walk Wheel Cycle Trust and our partners during that iteration. These new questions often replace those where responses have remained relatively stable over multiple years and are no longer adding insight to these themes. Any questions removed can potentially be re-introduced in future iterations, should there be a need for them.

Any changes made to the questionnaire includes extensive consultation, both internally and externally with our partners and survey providers.

Initial review

The initial questionnaire development is undertaken by the Walking and Cycling Index programme team with engagement with the Walk Wheel Cycle Trust Policy team and our partners. This development phase shapes any new questions to align with our research aims, whilst also refining any existing questions. This phase additionally considers any respondent feedback from previous iterations which has either been provided in free text responses to

the survey itself or sent directly to us. Generally, this feedback allows us to make questions and instructions clearer to aid easier completion for respondents.

Stakeholder engagement

Following the initial review, Walk Wheel Cycle Trust consult with the programme partners to identify any additional local requirements and research priorities that will shape our final questionnaire design. The rationale for any survey changes is presented during partner meetings so they can review the proposed updates, provide input, and offer collective feedback. This process helps to assess whether any adjustments are needed to improve question clarity or update wording to reflect different local contexts. Partners are also given the opportunity to conduct additional reviews within their own internal teams and share any further feedback following these meetings.

All feedback is carefully considered and worked through by the Walking and Cycling Index programme team. It is important to note that, because the survey is delivered across 22 areas in the UK and Republic of Ireland, a single standardised version of the survey is used in all areas and localised variations to individual questions cannot be accommodated. While there are some differences between the UK and Republic of Ireland surveys, these differences are applied consistently across all areas within each country.

Survey supplier review

Following the consultation with our partners, the Index survey suppliers also play an important role in the development of the survey. This is to ensure the most robust approach is being utilised based on the best available methodological evidence. Both suppliers have teams of dedicated methodologists with expertise in questionnaire design who review the proposed questionnaire and recommend improvements to question wording, response options and survey instructions, ensuring alignment with the appropriate survey methodology for each nation.

From a UK perspective, NatCen also reviewed the proposed questionnaire to ensure it could be delivered effectively across multiple modes. This included considering completion via online web browsers, mobile devices, and paper questionnaires and altering the questionnaire to work across all modes.

To ensure questions work from a face-to-face perspective, Ipsos B&A provided recommendations to the questionnaire with this methodology in mind. They proposed updates to question instructions to ensure they were appropriate for this approach and recommended wording changes that reflected the Irish context, for example, using kilometres instead of miles, or referring to footpaths rather than pavements. Generally, the content of the Republic of Ireland survey was mostly the same as the UK survey. There were some questions/ question options which were included in the UK survey but not in Republic of Ireland version (and vice versa).

A copy of the 2025 Walking and Cycling Index questionnaire can be found in Appendix C.

Methodology details

UK survey

Methodology, sample sizes and data collection period

The UK survey was delivered using a 'push to online' methodology, where postal letters, including access codes and login credentials for an online survey, were posted to specific addresses in each of the participating areas (see Sampling strategy and procedure below). There was also a paper format of the survey for non-responding households (or available on request during the initial invitation letters) that could be returned by prepaid postage.

The survey aimed to gather a representative sample of at least 1,100 respondents aged 16 and above in each of the 17 UK areas. The actual number of completed surveys per area in 2025 ranged between 1,029 and 2,936. The total number of completed surveys overall in the UK survey was 22,416, of which 9,305 were responses from Scotland.

Data collection for the 2025 survey took place from 25th March to 30th June and included any paper surveys which arrived by 30th June. However, paper survey returns in Stirling were accepted until 8th July to try and achieve as close to 1,100 responses as possible, due to a slightly lower than expected response rate.

The 2023 survey in 18 UK areas was conducted between 31st March and 2nd July by the same research agency, following the same sampling process and using the same methodology, with a similar questionnaire. The total number of completed surveys per area in 2023 ranged between 1,071 and 1,338. The total number of completed surveys overall in the UK survey was 21,374, of which 9,688 were responses from Scotland. For more information see the 2023 methodology paper.

Sampling strategy and procedure

The survey uses a random probability sample design. The sample of respondents was stratified first by the Index of Multiple Deprivation quintiles[10] and then by Output Area classifications[11] to reflect the profile of each area.

Residents in each of the participating 17 areas of the UK were sampled for the survey using an un-clustered stratified random sample of addresses drawn from the Postcode Address File (PAF)[12]. This is because there is no other sampling frame available that provides almost complete coverage of the general population and is considered the best option for a 'push to online' surveys.

The limitation of sampling from the PAF is that it includes ineligible non-residential addresses[13]. Moreover, the sample from the PAF is a list of delivery points, meaning there may be more than one dwelling and/or household at each point, and within each household there can be more than one adult. Unlike face-to-face surveys, 'push to online' surveys cannot control which household opens the invitation letter, so a random selection of households is not possible. The overall proportion of such addresses is around 1% at the national level and this is generally considered too small to lead to any systematic bias in the responding sample. Therefore, in multi-household addresses, the selection of which household takes part in the survey is left to chance i.e. whichever household opens the letter. Once a household has received the letter, the question then becomes which household member(s) should take part in the study. 'Push to online' surveys have limited means of randomly selecting eligible individuals within households. Generally, in the

[10] The Index of Multiple Deprivation is an official statistic produced by the UK Government.

[11] Output Areas are the lowest geographical level at which Census and mid-year estimates are provided.

[12] The PAF is an up-to-date address database maintained by Royal Mail and containing over 30 million UK postal addresses.

[13] Levels of ineligible 'deadwood' addresses are incorporated into sampling calculations.

survey methodology, the benefits of asking everyone in the household to complete the questionnaire depends on whether interest clusters within households are important. Loss in precision due to household clustering is more than outweighed by the gain in precision from reduced variation in within-household weights. Survey invites up to three participants per household, which increases the number of total responses without compromising precision.

Reducing biases

As the survey uses a mixed mode data collection approach (online and paper), it could be prone to mode effects where the method of survey administration can affect the data collected. There are two factors that contribute to mode effects:

- **Selection effects:** where different groups are more likely to respond in one mode rather than the other, and
- **Measurement effects:** caused when differences in how questions are presented affect the responses given.

This mixed mode approach is beneficial for selection effects as, although there may be differences between those who opt to complete the survey online or on paper, the combination of the two modes is specifically used so that the responding sample overall will be balanced. Also, by offering a paper survey to all addresses, this ensures that those without internet access or those who prefer not to complete the survey online are still able to participate.

As survey uses a random probability sample design, it avoids the potential for selection biases which can often happen with other sampling approaches, for example self-selection bias in online panels. A fundamental principle of random sampling is that each sample case has a known, non-zero probability of being selected. This avoids introducing bias, for example it removes any concerns about the survey being co-opted by special interest groups who may want to disrupt the data collection and skew the sample to favour a particular type of respondent. Additionally, random sampling allows for the application of common statistical tests, like confidence intervals and significance testing. For these reasons it is recognised as the most robust sampling approach and therefore the best approach to enable claims about the general population of each area.

Measurement effects can influence response in two main ways:

- The extent to which respondents feel they can answer the questions honestly, and
- The cognitive effort and processes required to complete the survey.

The first of these is primarily related to if the survey is interviewer-administered and hence the potential for social desirability bias. As the survey is entirely self-completion based, the UK survey largely reduces this risk.

When reviewing new questions, NatCen also considers the impact of the mode on the effort required to complete the survey. There are two main ways in which measurement effects between web and paper self-completion surveys are caused:

- Item non-response – Generally postal surveys offer less control than web surveys, so more questions are unanswered in postal questionnaires.
- Response effects – The way in which questions are presented in postal and web surveys can differ, which can create response effects.

To reduce item non-response in the postal questionnaires, NatCen inserted clear instructions, minimised the need for routing, and made the questionnaire visually appealing.

With respect to response effects, some studies have shown that there is minimal mode effect between postal and web surveys, but some variables are more prone to mode-effects than others. It is important to use a unified design to minimise the differences between online and paper questionnaires as much as possible. NatCen ensured that the questions are designed to be suitable for administration in both paper and online forms. In practice, this meant that NatCen:

- Retained all answer scales and options in the same order. In a purely online approach randomising or reversing answer scales and options is recommended to limit the possibility of primacy and recency effects. This is less possible in a postal survey, so for the sake of consistency across the modes NatCen left the same order.
- Minimised any routing within the questionnaire. While online surveys can easily direct respondents to the correct question, routing in paper questionnaires can be difficult for respondents to follow and can lead to item non-response; or even question order effects as they will see questions which they are not required to answer.

NatCen also utilised the framework for maximising response[14] and minimising non-response bias, with the focus on making the survey inclusive and accessible for traditionally under-represented groups. This included younger people, those from ethnic minority groups, those living in more disadvantaged areas, the digitally excluded, or those with communication difficulties or other health problems that make it more difficult for them to take part. Additionally, incentives are offered to respondents as one of the strategies for increasing response rates.

The application of weighting also works to reduce the impact of any further response bias that does exist in the achieved sample, such as systematic differences between the addresses/households that participated and those that did not or in number of completed surveys returned by responding households, as well as demographic profile.

Republic of Ireland survey

Methodology, sample sizes and data collection period

While the UK survey was conducted as 'push to online' the survey in the Republic of Ireland was conducted as 'face-to-face'. Having considered 'push to online' for Dublin Metropolitan Area in 2019, Ipsos B&A recommended the face-to-face approach due to its cost effectiveness in the Republic of Ireland, ability to use a quota control sample and having trialled a similar push to online methodology which yielded very low response rates. These reasons and rationale have remained applicable throughout all iterations of the survey.

As with the UK survey, Ipsos B&A aimed to gather a representative sample of at least 1,100 respondents aged 16 and above in each of the five metropolitan areas in the Republic of Ireland. The actual number of completed surveys in the metropolitan areas ranged between 1,106 and 1,112 (this excludes the boost of cyclists' sample, see below for more information).

The fieldwork in the Republic of Ireland was carried out from 25th April to 4th August 2025. This reflects the same period as data collection in 2023 but differs slightly to the UK survey.

[14] Framework breaks down the process of gaining the online response into different stages from the perspective of the respondent. At each stage, the framework highlights survey design features that are known to increase online cooperation based on evidence and best practice.

The 2023 survey in five metropolitan areas was conducted between 25th April to 25th July by the same research agency, following the same sampling process and using same methodology, with similar questionnaire. The total number of completed surveys in the metropolitan areas in 2023 ranged between 1,099 and 1,105. For more information see the 2023 methodology paper.

Sample boost in the Republic of Ireland

For each area, 250 cyclists are needed within the sample for modelling of cycling trips, to ensure more statistically robust sample size. In areas where the main sample falls short of the minimum requirement, a boost of cyclists is undertaken to achieve the required sample size for the modelling of cycling trips. **Data from cyclist boost samples are used for modelling purposes only and are not included in any other survey results presented in the reports.**

In 2025, there were enough interviews with cyclists for all metropolitan areas in the Republic of Ireland (and all UK areas) except in Limerick Shannon and Waterford Metropolitan Areas, where an additional 13 and 16 interviews with cyclists were conducted respectively. Similarly, in 2023, Limerick Shannon Metropolitan Area also had a boost sample where an additional 18 interviews with cyclists were conducted.

Sampling strategy and procedure

The sample was stratified by population areas and then electoral divisions, following which quotas were applied for age, gender and socio-economic status.

Stratification of sample proportionate to population

To ensure that the sample derived for the Index was proportionate to the population, the sample was first stratified using the Census 2022 population figures by sub-regions[15]. This approach ensured a representative territorial spread of primary sampling units. The appropriate number of primary sampling units i.e. Electoral Divisions (EDs) was chosen using probability sampling procedures (proportionate to the size of the population). Interviews

[15] The 2022 Census population was used as they were the most updated population data available at the time of the fieldwork preparation.

were clustered into up to 9 interviews at each paired Primary Sampling Unit (PSU), generating a Design Factor of just 1.2 – notably at the lower end of the scale. The regional strata, across which the PSUs were selected, were proportionate to the population and demographic stratifications.

Selection of randomly generated starting locations

The second phase of the sampling procedure involved the systematic sampling of individuals within each of the pre-selected PSUs within Electoral Divisions. To remove as much of the sampling process from the interviewer as possible, a randomly selected starting location is provided at each PSU. Each interviewer began their interviews starting at that particular, randomly selected location, and then followed a random route procedure. Furthermore, Ipsos B&A minimised non-response by strict control of the survey and use of experienced interviewers trained by Ipsos B&A.

Quota sampling

Finally, quota controls on age, gender and socio-economic status were also applied to the sample to ensure representativeness of the population within the sample.

Quota sampling is often criticised due to its non-probability, non-random nature, which introduces potential for selection bias and prevents the calculation of sampling error. Therefore, Ipsos B&A applied the following strategies to reduce the potential biases:

- **Using proportionate quota sampling**, to ensure that the final sample was representative of key population characteristics (e.g. age, gender, regions and electoral divisions) in the same proportion as the targeted population, by using the most recently available population data to set targets.
- **Implementation of controlled quota sampling**, by setting detailed criteria for subgroups (e.g. age, gender, regions and electoral divisions) to ensure the sample accurately reflects population characteristics of electoral divisions.
- **Randomization of locations and initial contact points**, which reduces interviewer bias.
- **Avoiding convenience sampling**, by training interviewers to strictly adhere to allocated quotas rather than selecting individuals based on convenience or personal preferences and judgment. Thus, reducing

both conscious and unconscious types of interviewer bias, such as selection and affinity bias.
- **Continuing sampling until the required, pre-set quotas are met**, at expense of prolonged fieldwork period, to reduce non-response bias.

Reducing biases

Research shows that surveys conducted using face-to-face-interviewers tend to have higher response rate when compared with all other modes including telephone, mail and web (Bowling, 2005). Singer et al. (1999) suggests that respondents may also be more willing to participate when the interviewer is present, because the interviewer reduces respondent burden during the completion of the survey.

Ipsos B&A applied the following strategies to reduce potential biases:

- **Rigorous Training:** Training interviewers to maintain neutral body language and to avoid leading questions, as well as to recognise their own unconscious prejudices.
- **Standardisation and routing:** Using a strict, consistent protocol for asking questions and use of showcards. By using Computer-Assisted Personal Interviewing (CAPI) to structure the interview, it reduces the margin for interviewer error, as well as reducing the item non-response.
- **Randomisation of options** was programmed in CAPI, to limit the possibility of primacy and recency effects.
- **Survey self-completion by respondent:** Interviewer biases were minimised with most questions being self-administrated by the respondent. After the initial eligibility questions were asked by the interviewer, the tablet was then handed to the respondent for self-completion, which also minimised the potential for social desirability bias among respondents.

The application of weighting also works to reduce the impact of any further response bias that exists in the achieved sample, such as demographic profile. However, due to using proportionate and controlled quota sample, applied weighting on demographics was minimal.

Data quality assurance

Data quality measures prior to data collection

Both survey suppliers programmed the questionnaire script for Computer-Assisted Web Interviewing (CAWI; NatCen) and Computer-Assisted Personal Interviewing (CAPI; Ipsos B&A) incorporating all agreed instructions, routing and filters. The script was then thoroughly and systematically tested by both suppliers and Walk Wheel Cycle Trust's research team. This process ensured that all question wording, routing instructions, interviewer instructions and any dynamic text substitutions were correctly implemented and aligned with the questionnaire specification.

The suppliers also validated the data map by checking it against the dummy dataset produced during the questionnaire script testing phase.

Together, these data management and validation steps ensured that any potential issues were identified and resolved before the data collection began.

Data quality measures during data collection

During the fieldwork period, both survey suppliers provided progress reports on agreed dates throughout the data collection period. This allowed for us to track progress towards achieving the targeted number of responses across each area in a consistent and comparable way. These progress reports included information on the demographic profile of respondents, helping to identify demographic groups that were more or less likely to participate or that might be harder to reach.

Ipsos B&A also included a data quality measure by conducting back-checking by telephone on at least 10% of interviews, with any questionable results being acted upon immediately.

Both survey suppliers provided interim raw data files and analyses for Walk Wheel Cycle Trust to review prior to the final delivery of survey data. This enabled early identification and resolution of any issues before the final data production and allowed for real-time adjustments to the data map or guidance on data cleaning, editing and manipulation. These steps helped ensure a smooth and efficient data management process for the final dataset.

Data quality measures after data collection

As part of data management, survey suppliers removed any suspicious or incomplete cases from the dataset prior to analysis. NatCen also took an additional step by removing any responses that appeared to be suspicious duplicates. This was due to the ability of three people per household completing the survey.

Once the data collection was completed, the following checks were carried out by both survey supplier:

- **Standard data editing and cleaning** - All data passed through a computer edit to check for completeness and logic.
    - CAWI/CAPI script generally eradicates all routing and filtering issues, as well as non-item response.
    - Paper responses underwent a more detailed data management process, in terms of logic control, data editing and cleaning.
- **Specific Index data cleaning, editing and data manipulation** – based on guidance documents developed for this specific project, which provides clear, standardised instructions. These documents cover, but are not limited to:
    - how to deal with logic control inconsistencies between different answers (which are not previously covered by routing and filtering)
    - how to deal with outliers
    - how to re-code system missing answers in paper versions (where logically applicable), based on other questions which are answered by respondents.

There are two guidance documents for this project – one outlining the general rules, including those for CAWI and CAPI, and a second specifically developed for paper-based responses. Both documents were produced by Walk Wheel Cycle Trust's research team, with input and feedback from the survey suppliers, to ensure consistency over time, regardless of which supplier may deliver the survey in the future.

To further strengthen quality assurance and validation, both survey suppliers provided final clean, unweighted raw data files before applying any weighting. These raw data files included both clean and unclean variables to ensure full auditability and transparency, allowing Walk Wheel Cycle Trust to verify that all data cleaning, editing and data manipulation steps had been applied correctly

in line with the guidance documents. Once Walk Wheel Cycle Trust's data analyst team successfully replicated the clean variables and data editing, the suppliers delivered the final clean, weighted raw data files, along with all required analyses in standardised template. After Walk Wheel Cycle Trust's data analyst team replicated the analysis for all areas and aggregations, the outputs were signed off and approved for use in the reporting phase.

Weighting:

Main sample weighting:

The main sample weighed data were used to generate representative results for each participating area, which are presented in the reports. The main sample excluded the boost of cyclists in the Republic of Ireland, and these were not included in the main sample weighting. The following weighting procedure was used for respective nations:

UK areas

The survey data was weighted to adjust for differences in address/household response rates, and differences in individual response rates, to match the population estimates for age, sex and ethnicity by area[16].

Differences in address/household response rates

The weights to adjust for differences in address/household response rates were calculated in two steps:

Step 1: address/household participation

The aim of the address/household participation weights is to reduce bias caused by systematic differences between the addresses/households that participated (i.e. for which at least one questionnaire was received) and those that did not.

[16] 2024 mid-year population estimates from the Office for National Statistics (ONS) and 2023 mid-year population estimates from the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA) were used to estimate age/sex where area boundaries permitted. Ethnicity estimates and age/sex data for areas with small area boundaries were from Census 2021 for England, Wales and Northern Ireland and Census 2022 for Scotland.

The probability of receiving at least one valid survey response from a given address/household was estimated using a logistic regression model. From this model, the predicted propensity to participate was estimated for each address/household. The weights for address/household participation (wt1) were calculated as the reciprocal of these propensities for the responding addresses/households in each area.

Step 2: expected number of completed surveys

This stage of the weighting aims to reduce bias caused by systematic differences in the number of completed surveys returned by responding households.

For each area, the expected number of completed surveys at responding addresses was estimated via a logistic regression model[17], which was used to estimate the likelihood of a household returning more than one questionnaire. From this model, the expected number of completed surveys was estimated as one plus the model-predicted probability. The weight (wt2) was calculated as the inverse of this expected number multiplied by the number of eligible residents in the household.

Differences in individual response rates

The composite weight for address/household level participation (wt3) was calculated as the product of the weights from the previous stages (wt3=wt1xwt2).

Step 3: Individual Calibration

The final stage of the weighting aims to reduce any residual non-response bias at the individual level using calibration weighting. Calibration adjusts the weights so that characteristics of the weighted achieved sample match population estimates.

The composite (household-level) weight from the previous stages (wt3) was calibrated so that the weighted achieved sample (weighted by the final weight) matched the population estimates for age, sex and ethnicity by area. The calibration weights were scaled to the responding sample size in each area, and these are the weights used for individual area analysis.

---

[17] The individual city models were weighted by the weight produced in step 1 (*wt1*), which accounts for the probability of address/household participation.

Republic of Ireland

For the Republic of Ireland, a two-step weighting process was applied. At the first step, weighting was applied by age and ethnicity[18]. For the second step, a corrective weight was applied to the regional areas.

Main plus boost sample weighting (where applicable in Republic or Ireland):

Main plus boost sample weighed data were used as input for modelling of cycling trips, to meet the minimum sample size for modelling. The main plus boost sample includes boost of cyclists in some areas, but not all (see Sample Boost in the Republic of Ireland for more information).

In metropolitan areas where a cyclist boost sample is used for modelling, the combined number of cyclists (from the main and boost samples) are weighted down so that the overall incidence and frequency of cycling, along with key demographics, match the weighted results for the cyclists from the main sample alone. This ensures that we reached the minimum required number of cyclists for modelling, while maintaining the 'cyclists' natural fall-out profile from the main sample. In doing this, it prevents the boosted sample from skewing the modelling of cycling trips.

Aggregated main sample weighting (UK and Scotland only):

Aggregated main sample weighed data were used to generate representative results on nation levels, which are presented in UK and Scotland aggregated reports. Aggregate weighting incorporated an adjustment factor applied to weights used for individual area analysis to account for the achieved sample in each area relative to its population. Additionally, it also adjusted for response rates *between* different areas[19].

---

[18] All weighting proportions were based on the National Census 2022. Due to quota sample, data was not weighted by gender.

[19] This additional adjustment was needed as, while addresses *within* areas were sampled with an equal probability, this was not the case *across* areas. In areas with a high issued sample requirement, relative to its population, the probability of an address being selected will be comparatively high. By contrast, in areas with a low issued sample requirement, relative to its population, the probability of selection is lower.

Appendix C: Survey questionnaire

Travel Survey

Please note:

We use the term 'wheeling' throughout the questionnaire. We recognise some people may not identify with the term walking and prefer wheeling, for example those who use a wheelchair or mobility scooter.

We use the term electric scooter (e-scooter) in this questionnaire. An electric scooter (e-scooter) is a 2-wheeled scooter, designed to carry one person in a standing position, which is fitted with an electric motor.

[ROI only]: We use the term **cargo cycle/ bike** in this questionnaire. Cargo and e-cargo cycles/ bikes are bikes with a frame specially designed to carry heavy loads or children, either in the front of, or behind the rider.

Firstly, we would like to ask some questions about how you travel around.

{ASK ALL} **Q01.** How many cars or vans are owned, or are available for use in your household?

None
One
Two
Three or more

{ASK ALL} **Q02.** Thinking about the different ways in which you travel around, how often do you…? Please give your best guess.

a) Travel by car, van or motorcycle as a driver
b) Travel by car, van or motorcycle as a passenger
c) Walk or wheel
d) Run
e) Cycle
f) Use buses
g) Use trains
h) Use other forms of public transport ([UK only] e.g. community transport, metro/ subway, tram, local ferry) *Community transport*

includes community buses, Dial-a-ride, voluntary car schemes and Demand Responsive Transport (DRT).

i) Use an electric scooter (e-scooter)

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

The following questions are about walking and wheeling.

{ASK IF CODES 1-7 AT Q02c} **Q04a.** Please give your **best estimate** of how many **one-way trips** you walked or wheeled in the last 7 days from home **to a destination** like work, school, shopping, the gym, the bus stop, or to visit friends/family. Do not count simple walks with no particular destination. If you walk / wheel to a place and back, please count that as two trips.

15+ times
13-14 times
11-12 times
9-10 times
7-8 times
5-6 times
3-4 times
1-2 times
None
I only ever walk / wheel for leisure, or not at all

{ASK IF CODES 1-8 AT Q04a} **Q04b.** Thinking about your most frequent **one-way walk or wheel to a destination**, please give your **best estimate** of how far this is (**in metres**, e.g. 250 metres, 1,000 metres).

NUMERICAL RESPONSE IN METRES. RANGE 100-10,000 metres

{ASK IF DISTANCE GIVEN AT Q04b} **Q04c.** Still thinking about your most frequent one-way walk or wheel to a destination, please give your **best estimate** of how long this takes (in minutes).

NUMERICAL RESPONSE IN MINUTES. RANGE 1-180 minutes

{ASK IF CODES 1 TO 7 AT Q02c OR Q02d} **Q05a.** Please give your best estimate of how many **walks, wheels or runs** you took in the last 7 days for **enjoyment or fitness** (just for pleasure or to keep fit, including running or walking a dog)?

15+ times
13-14 times
11-12 times
9-10 times
7-8 times
5-6 times
3-4 times
1-2 times
None
I never walk / wheel or run for recreation or enjoyment

{ASK IF CODES 1-8 AT Q05a} **Q05b.** Thinking about your most frequent **walk, wheel or run for enjoyment or fitness**, please give your **best estimate** of how far this is (**in metres**, e.g. 500 metres, 4,000 metres).

NUMERICAL RESPONSE IN METRES. RANGE 100-20,000 metres

{ASK IF DISTANCE GIVEN AT Q05b}. **Q05c.** Still thinking about your most frequent walk, wheel or run for enjoyment or fitness, please give your **best estimate** of how long this takes (**in minutes**).

NUMERICAL RESPONSE IN MINUTES. RANGE 1-500 minutes

The following questions are about cycling.

{ASK IF CODES 1 TO 7 AT Q02e} **Q06a.** 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

I do not work, or I work from home all of the time

{ASK IF CODES 1-7 AT Q06a} **Q06b.** Please give your **best estimate** of the typical distance **in miles** (Republic of Ireland: kilometres) of a **one-way cycle trip to or from work** (e.g. 3 miles, 1.5 miles).

NUMERICAL RESPONSE IN MILES. RANGE 0.25-50.00 miles (Republic of Ireland: 0.5-80 kilometres)

{ASK IF CODES 1-7 AT Q06a} **Q06c.** 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. RANGE 1..150 minutes

{ASK IF CODES 1 TO 7 AT Q02e} **Q07a.** 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
I do not work or travelling is not part of my job

{ASK IF CODES 1-7 AT Q07a} **Q07b.** Please give your **best estimate** of the typical distance **in miles** (Republic of Ireland: kilometres) of a **one-way cycle trip to get around as part of your job** (e.g. 3 miles, 1.5 miles).

NUMERICAL RESPONSE IN MILES. RANGE 0.25-50.00 miles (Republic of Ireland: 0.5-80 kilometres)

{ASK IF CODES 1-7 AT Q07a} **Q07c.** 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.

NUMERICAL RESPONSE IN MINUTES. RANGE 1..150 minutes

{ASK IF CODES 1 TO 7 AT Q02e} **Q08a**. During school term (not holidays), 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
I do not go to school, college or university, or accompany anyone else to them

{ASK IF CODES 1 TO 7 AT Q08a} **Q08b.** Please give your **best estimate** of the typical distance **in miles** (Republic of Ireland: kilometres) of a **one-way cycle trip to or from school, college or university** (e.g. 3 miles, 1.5 miles).

NUMERICAL RESPONSE IN MILES. RANGE 0.25-50.00 miles (Republic of Ireland: 0.5-80 kilometres)

{ASK IF CODES 1 TO 7 AT Q08a} **Q08c.** Please give your **best estimate** of the typical duration **in minutes** of a one-way cycle trip to or from school, college or university.

NUMERICAL RESPONSE IN MINUTES. RANGE 1-150 minutes

{ASK IF CODES 1 TO 7 AT Q02e} **Q09a.** How often do you **cycle for shopping, personal business or social trips**? e.g. to travel from your home to the supermarket, doctors, or to visit friends or family.

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
I do not make any shopping, personal business or social trips

{ASK IF CODES 1 TO 7 AT Q09a} **Q09b.** Please give your **best estimate** of the typical distance **in miles** (Republic of Ireland: kilometres) of a **one-way cycle trip for shopping, personal business or social trips** (e.g. 3 miles, 1.5 miles).

NUMERICAL RESPONSE IN MILES. RANGE 0.25-50.00 miles (Republic of Ireland: 0.5-80 kilometres)

{ASK IF CODES 1 TO 7 AT Q09a} **Q09c.** 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. RANGE 1-150 minutes

{ASK IF CODES 1 TO 7 AT Q02e} **Q10a.** 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
I do not go out for fitness / enjoyment

{ASK IF CODES 1 TO 7 AT Q10a} **Q10b.** Please give your **best estimate** of the typical distance **in miles** (Republic of Ireland: kilometres) of your **round trip cycle ride for enjoyment or fitness** (e.g. 3 miles, 1.5 miles).

NUMERICAL RESPONSE IN MILES. RANGE 0.25-150.00 miles (Republic of Ireland: 0.5-250 kilometres)

{ASK IF CODES 1 TO 7 AT Q10a} **Q10c.** 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. RANGE 1-500 minutes

And now some questions about why you walk, wheel and cycle or not.

{ASK ALL} **Q11.** How useful would each of the following be to help you walk or wheel more?

a) More shops and everyday services, such as banks and post offices, close to your home
b) More government services, such as doctors surgeries and schools, close to your home
c) Less fear of crime or antisocial behaviour in your area
d) Fewer motor vehicles on our streets
e) More streets with 20mph (Republic of Ireland: 30kmph) speed limits
f) Fewer cars parked on the pavement (Republic of Ireland: footpath)
g) Better pavement (Republic of Ireland: footpath) accessibility, e.g. level surfaces, dropped kerbs at crossing points, fewer obstructions
h) Wider pavements (Republic of Ireland: footpath)
i) More frequent road crossings, with reduced wait times
j) Nicer places along streets to stop and rest, e.g. more benches, trees and shelter
k) More things to see and do close to your home, e.g. cafés or entertainment venues
l) More parks or green spaces close to your home

Very useful
Fairly useful
Not very useful
Not useful at all

{ASK ALL} **Q12.** How useful, if at all, would any of the following be to help you start cycling or to cycle more?

a) More cycle paths along roads which are physically separated from traffic and pedestrians
b) More traffic-free cycle paths 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) Access or improvements to a city cycle sharing scheme
e) More streets with 20mph (Republic of Ireland: 30kmph) speed limits
f) Cycling training courses and organised social rides
g) Fewer motor vehicles on our streets
h) Access to a bicycle
i) Access to an electric cycle
j) Access to an adapted cycle, e.g. a tricycle or handcycle
k) Access to a cargo cycle with space to carry children or shopping
l) Access to secure cycle parking at or near home

m) Better links with public transport, e.g. secure cycle parking at train stations, bus stops/ stations

Very useful
Fairly useful
Not very useful
Not useful at all

{ASK ALL} **Q13**: For the next question we would like you to think about taking journeys that involve walking or wheeling to a bus stop, taking the bus, and then walking or wheeling at the other end to your destination.

How useful, if at all, would the following be to help you take journeys more often that include walking and the bus, or wheeling and the bus?

a) More information to help you plan and take a journey that includes walking or wheeling and a bus (e.g. apps, maps, signage or public transport staff)
b) More direct walking and wheeling routes from housing estates to bus stops
c) Accessible walking and wheeling routes to and from bus stops
d) Improved safety while walking or wheeling to and from the bus stop
e) Improved walking and wheeling crossing facilities near bus stops
f) Improved bus stops (e.g. accessible, well lit and maintained, cover from rain, display of service information)

Very useful
Fairly useful
Not very useful
Not useful at all

{ASK ALL} **Q14.** 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

And now some questions on your views about different transport modes in your local area.

{ASK ALL} **Q15a.** Thinking about transport in your local area. For each transport mode, please say whether you think your local area overall is good or bad as a place…

a) to walk or wheel
b) to cycle
c) to use public transport
d) to drive

Very good
Fairly good
Neither good nor bad
Fairly bad
Very bad

{ASK ALL} **Q15b** Thinking about safety whilst travelling in your local area. For each transport mode, please say whether you think it is safe or unsafe?

First, think about **your own safety**, and then consider **children's safety.**

a) Walking or wheeling
b) Cycling
c) Using public transport
d) Travelling by car or van
e) Children's safety when walking or wheeling
f) Children's safety when cycling
g) Children's safety when using public transport
h) Children's safety when travelling by car or van

Very safe
Fairly safe
Neither safe nor unsafe
Fairly unsafe
Very unsafe

{ASK ALL} **Q16a.** Thinking about how often you do the following, in the future would you like to…?

a) Walk or wheel
b) Drive
c) Cycle
d) Use public transport

e) Use an electric scooter (e-scooter)

More than now
About the same as now
Less than now

{ASK ALL} **Q16b.** To what extent do you support or oppose the following?

a) Stopping vehicles parking on the pavement (Republic of Ireland: footpath)
b) Reducing speed limits on local roads in built-up areas to 20mph (Republic of Ireland: 30kmph)
c) Setting traffic reduction targets and taking action to help achieve these targets
d) Improving and increasing local off-road walking, wheeling and cycling paths
e) Banning new housing developments in areas where driving is the only practical transport option to visit local services, such as shops and doctors surgeries (Republic of Ireland: Prioritise new housing developments that support walking, wheeling, cycling or the use of public transport)
f) Shifting investment from new road building schemes and using it instead to fund walking, wheeling, cycling and public transport
g) Improving walking, wheeling and cycling access to bus stops, and coach and rail stations
h) Closing streets outside schools on residential streets to cars during school drop-off and pick-up times
i) Reducing speed limits, improving crossing points and introducing protected cycle paths in school neighbourhoods

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

And now some questions about your local area.

{ASK ALL} **Q17.** For each of the following statements, how much do you agree or disagree with these characteristics of your neighbourhood?

a) You feel welcome and comfortable walking, wheeling or spending time on the streets of your neighbourhood
b) You feel able to participate in making your neighbourhood a better place to live
c) You can easily get to many places you need to visit, without having to drive
d) You regularly chat to your neighbours, more than just to say hello
e) There is space for children to socialise and play
f) The air is clean
g) The streets are not dominated by moving or parked motor vehicles
h) You often use a car because there are no other transport options available

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

{ASK ALL} **Q18.** To what extent do you support or oppose the creation of more **cycle paths along roads**? These are physically separated from traffic and pedestrians by kerbs and would mean less room for other road traffic.

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

{ASK ALL} **Q19.** To what extent do you support or oppose the creation of more **low-traffic neighbourhoods**? Low traffic neighbourhoods are groups of streets, bordered by main roads, where 'through' motor vehicle traffic is greatly reduced. Residents still have access to all parts by car.

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

{ASK ALL} **Q20.** To what extent do you support or oppose the creation of **20-minute neighbourhoods**? These are neighbourhoods where it is easy for

people to meet most of their everyday needs in a short, convenient and pleasant 20 minute return walk or wheel. For example, having local shops, schools, green space and public transport options within a 10 minute walk or wheel (or 20 minute round trip) of your home.

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

{ASK ALL} **Q21.** 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 walking and wheeling
b) On cycling
c) On buses
d) On trains
e) [UK only] On trams
f) On other forms of public transport [UK only (e.g. community transport, metro/ subway, local ferries)]
g) On driving

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

We would now like to ask you some questions about yourself to help us understand travel choices, barriers and solutions for different groups of people.

{ASK ALL} **Q22.** How many of each of the following do you own in your household?

a) Adult pedal bicycles (non-electric)
b) Adult electric bicycles
c) Other adult cycles, including hand-cycles, tricycles, tandems, recumbents (pedal or electric)
d) Cargo cycles with space to carry children or shopping (pedal or electric)

e) Children's bicycles, tricycles and other types of cycles (pedal or electric)

None
One
Two
Three or more

{ASK ALL} **Q23.** Please can you tell me your age?

NUMERICAL ENTRY. RANGE 16..120

{ASK ALL REFUSED OR ANSWERED DON'T KNOW IF PROMPTED AT Q23] **Q24.** 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} **Q25a.** Which of the following describes how you think of yourself?

Female
Male
In another way

[UK only]: {ASK ALL} **Q25b.** Do you identify as trans? This question is voluntary.

No
Yes
Prefer not to say

{ASK ALL} **Q26.** Which of the following best describes your sexual orientation?

Heterosexual (attracted to people of the opposite sex)
Gay or Lesbian (attracted to people of the same sex)
Bisexual (attracted to more than one sex)
Another sexual orientation – write in your answer, for example, pansexual or asexual_____
Prefer not to say

{ASK ALL} {VERSION OF Q27a FOR WEB VERSION ONLY}: **Q27a.** What is the occupation of the MAIN INCOME EARNER in your household?

List below

{VERSION OF Q27a FOR PAPER VERSION ONLY}: **Q27a.** The next question is about the occupation of the main income earner in your household. Is the main income earner of working age or retired?

Main income earner is of working age
Main income earner is currently retired {ANSWER Q27b}

{IF RETIRED AT Q27a}. **Q27b**. Please indicate which one of the following best describes the PREVIOUS OCCUPATION of the main 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) **Looking after home or family**

i) **Retired** {ONLY ON LIST FOR Q27a IN ONLINE VERSION}.

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

{ASK ALL} **Q28.** What is your ethnic group?

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

White

- English / Welsh / Scottish / Northern Irish / British [Republic of Ireland: shown as second option on a list)
- Irish [Republic of Ireland: shown as a first option on a list]
- Gypsy or Irish Traveller
- Roma
- 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

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

Black / African / Caribbean / Black British

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

Other ethnic group

- Arab
- Any other ethnic group (please specify)

{ASK ALL} **Q29.** Which of these applies to your home?

Owned outright (without mortgage)
Owned with a mortgage or loan
Owned with a mortgage or loan through an affordable housing scheme
Rented from the council
Rented from someone else
Rent free

{ASK ALL} **Q30a.** Please could you tell us the number of children under 16 in your household?

None
One
Two
Three or more

{ASK IF Q30a=1+} **Q30b.** Are you a parent or guardian to any of these children?

Yes
No

{ASK IF Q30a=1+} **Q31.** At what age would you let children in your household travel independently by the following modes for local journeys?

a) Walk or wheel
b) Cycle
c) Use public transport

Enter age. NUMERICAL ENTRY. RANGE 3..21

{ASK ALL} **Q32.** When travelling with children do you use:
(Select one answer only)

A buggy or pushchair when walking or wheeling?
A child seat or cargo bike when cycling?
Both
None
I do not travel with children

{ASK ALL} **Q33.** Please could you tell me the number of adults aged 16 or over in your household **including yourself**?

One

Two
Three or more

{ASK ALL} **Q34.** 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 select both responses.

Yes, I have a physical condition
Yes, I have a mental health condition
No {EXCLUSIVE ANSWER}

{ASK IF YES AT Q34} **Q35.** In which of the following areas, if any, does your physical or mental health condition affect you? Please select all that apply.

Reduced mobility (including physical / dexterity / stamina impairments)
Learning disability
Deaf or hard of hearing
Blind or partially sighted
Mental health conditions (depression, anxiety, bipolar disorder)
Neurodivergent (including dyspraxia, autism and ADHD)
Long term health conditions or chronic illness (diabetes, high blood pressure, long term pain, chronic fatigue)
Other, not listed above
Prefer not to say {EXCLUSIVE ANSWER}

{ASK IF YES AT Q34} **Q36.** Do you use a mobility aid to get around? Please select all that apply.

Wheelchair
Mobility scooter
A cane or guide dog
A walking stick or frame
An adapted cycle
Other
I do not use a mobility aid {EXCLUSIVE ANSWER}

{ASK ALL} **Q37.** Please use this space for any further comments you would like to make:
WRITE IN:

[ROI only]: **Q38** County

Dublin
Meath
Kildare
Wicklow
Cork
Limerick
Galway
Waterford
Clare
Kilkenny

[ROI/ Dublin only]: Could you please tell me your Dublin post code? (e.g. Dublin 1, Dublin 2 etc.)

[SELECT FROM DROP DOWN]

Thank you for your time today.

[UK only] Please encourage others aged 16+ in your household to also take part. See the letter you received for further details.

Appendix D: The walking and cycling modelling process

The Walking and Cycling Index uses several models that, in combination, provide estimates of the area-wide level of walking, wheeling, and cycling, and associated economic, health and environmental impacts.

Walking and cycling models

These models estimate how much walking, wheeling and cycling happens across the area. They use data from the residents' survey along with other factors, such as the area's population and how children travel to school.

Using government-approved data sources, they also calculate the environmental benefits of trips that could have used a car, for example, the carbon emissions and air pollutants saved.

Figure 1 through Figure 4 show how various outputs of the model are calculated. These are also described below. Any reference to population refers to the population of the Index area.

The method for calculating total annual walking and wheeling and annual cycling trips is slightly different, but the method for converting those trips to pollutants avoided is the same. Additionally, there are different calculation processes for:

- Adult trips
- Child leisure trips, and
- Child trips to school.

Walking trips and distance (Adults 16+)

See Figure 1. The number of trips for each purpose is calculated as per the calculation in the box below. The result is summed across frequency responses and **seasonally adjusted**. The results for each of the purposes are summed to give the estimate of **the total annual number of walking and wheeling trips**.

The number of trips is calculated by multiplying together:

- the **number of walkers and wheelers** in the area who walk or wheel at least once a week,
- the **proportion of respondents who walk or wheel** for a particular purpose (to a destination/for enjoyment or fitness) from the residents survey **for each frequency** response,
- the **number of trips per day** for that frequency response, and
- the **number of days walked or wheeled per year** for that purpose.

For Greater Manchester, walking and wheeling trip estimates are modelled from responses to the Transport for Greater Manchester Travel Diary Survey (TRADS) 2024 instead of the Index survey data. This includes trips to destinations by children (trips to school by children are reported separately).

The **distance walked or wheeled** for each purpose is calculated as per the calculation in the box below. The result is summed across all purposes, to give the estimate of **the total annual walking and wheeling trips distance**.

The distance is calculated by multiplying together:

- the number of trips for each purpose (to a destination/for enjoyment or fitness), and
- the median distance for trips for that purpose (to a destination/for enjoyment or fitness).

The median distance is taken from Q04b/Q05b of the independent survey of residents, except in Edinburgh[20].

[20] For Edinburgh, the median walking trip distance from the Scottish Household Survey (average of 2017, 2018, 2019, 2022 and 2023) was used for all trip types. Historically, mean distances have been used. Medians results in a slightly lower distance figure.

For the UK and Scotland aggregated reports, distances used are the median of all responses to the survey in UK and Scotland areas respectively. Trips are also estimated from the survey of residents. No TRADS or Scottish Household Survey data are used.

The number of adult walkers or wheelers

This is the adult population multiplied by the percentage of respondents who walk or wheel 'once a week' or more (Q02c in the independent survey of residents).

The proportion of residents who walk or wheel...per frequency

For example, if 10% of respondents to Q04a in the independent survey of residents selected '9-10 trips', then the proportion for the frequency response '9-10' would be 0.1 (or 10%).

The number of trips per day

This is calculated by dividing the lower end of the frequency range by 7 (the number of days in a week). For example, the trips per day figure for 9-10 trips is 1.29 (9/7).

The number of days walked or wheeled per year

This is 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[21].

Seasonal adjustment

The level of walking and wheeling observed during the surveying period of spring/summer is expected to be higher than the yearly average. This is corrected by using a seasonal adjustment factor calculated from Walk Wheel Cycle Trust's database of automatic walking counters. For the UK, a selection of urban counters from across the UK is used. For the Republic of Ireland, a

[21] Source for sickness absence per worker per year:

- UK: ONS, 2024
- Republic of Ireland: estimated from the CSO Labour Force Survey and OECD and HR industry benchmarks

selection of counters located within the five Index areas is used, sourced from the National Transport Authority's database.

Cycling trips and distance (Adult 16+)

See Figure 3. The number of trips for each purpose is calculated as per the calculation in the box below. The result is summed across frequency responses, **seasonally adjusted** and multiplied by a **trip-chaining factor**. The results for each of the purposes are then summed to give the estimate of **the total annual number of cycling trips**.

The number of trips is calculated by multiplying together:

- the **number of cycle riders** in the area who cycle at least once a month,
- the **proportion of respondents who cycle** for a particular purpose (to or from work/as part of work/to school, college, or university/for shopping or other personal business/for leisure) from the residents survey **for each frequency** response,
- the **number of days cycled per year** for that purpose, and
- the **number of trips in a day**.

For Greater Manchester, cycling trip estimates are modelled from responses to the Transport for Greater Manchester Travel Diary Survey (TRADS) 2024 instead of the Index survey data. This includes trips for the purpose of shopping, personal business and social by children.

The **distance cycled** for each purpose is calculated as per the calculation in the box below. The result is summed across all purposes to give the estimate of **the total annual cycling trips distance**.

The distance is calculated by multiplying together:

- the number of trips for each purpose (to or from work/as part of work/to school, college, or university/for shopping or other personal business/for enjoyment or fitness), and
- the median distance for trips for that purpose.

The median distance is taken from Q06b/Q07b/Q08b/Q09b/Q10b of the independent survey of residents, except in Edinburgh[22].

For the UK and Scotland aggregated reports, distances used are the median of all responses to the survey in UK and Scotland areas respectively. Trips are also estimated from the survey of residents. No TRADS or Scottish Household Survey data are used.

Number of cycle riders

This is the adult population multiplied by the percentage of respondents who cycle 'once a month' or more (Q02e in the independent survey of residents).

Proportion of respondents who cycle…per frequency

This is the proportion of respondents to the independent survey of residents who selected each answer option for Q06a/Q07a/Q08a/Q09a/Q10a.

For example, if 10% of respondents to Q06a in the independent survey of residents selected 'once a fortnight', then the proportion for the frequency category 'once a fortnight' would be 0.1 (or 10%).

[22] For Edinburgh, the median cycling trip distance from the Scottish Household Survey (average of 2017, 2018, 2019, 2022 and 2023) was used for all trip types. Historically, mean distances have been used. Medians results in a slightly lower distance figure.

Number of days cycled per year

Number of days to or from work and as part of work for the frequency seven days a week:

- 365
- minus 28 days of annual leave (20 days in Republic of Ireland)
- minus sickness absence days[21]
- minus 52 compensation rest days
- minus national public holidays.

Number of days to or from work and as part of work for frequencies of less than seven days a week:

- The number of working days per year in 2025 for each nation
- minus 28 days of annual leave (20 days in Republic of Ireland)
- minus the average number of days lost through sickness absence per worker per year for that nation/region[21].

Number of days to school, college, or university:

- the number of days for that country's school year[23]
- minus sickness absence days (the number of days in the school year multiplied by the school absence rate for the area's region[24]).

---

[23] Sources for the length of the school year:

- England: Length of the School Week Non-Statutory Guidance (DfE)
- Northern Ireland: School Optional Days and Exceptional Closure Days (DfE)
- Scotland: Term dates (Education Scotland)
- Wales: Guide to the Law [section 22: The school year, session times and term dates] (gov.wales)
- Republic of Ireland: midpoint of the primary and post-primary minimum days: School terms in primary and post-primary school (Citizens Information)

[24] Sources for the school absence rate:

- England: 2023/24 Pupil absence in schools in England (Explore Education Statistics Gov.uk)
- Northern Ireland: 2023/24 Attendance at grant aided primary, post primary and special schools in Northern Ireland (NISRA)
- Scotland: 2023/24 School attendance and absence statistics (gov.scot)
- Wales: 2024/25 Attendance of pupils in maintained schools (gov.wales)
- Republic of Ireland: 2023/24 Analysis of School Attendance Data (TUSLA)

Number of days for shopping or other personal business and for leisure:

- 365
- minus sickness absence days[21].

Number of trips in a day

For leisure, this is one trip in a day, as the survey asks about round trips. For all other purposes, this is assumed to be two (to a destination and back).

Seasonal adjustment

As with walking, the level of cycling observed during the surveying period of spring/summer is expected to be higher than the yearly average. This is corrected by using a seasonal adjustment factor calculated from Walk Wheel Cycle Trust's database of automatic cycling counters. For the UK, a selection of urban counters from across the UK is used. For the Republic of Ireland, a selection of counters located within the five Index areas is used, sourced from the National Transport Authority's database.

Trip chaining factor

This accounts for the double-counting of trips within different trip purposes. The factor used is from Primerano et al., 2008[25].

Child enjoyment or fitness walking and leisure cycling trips and distance

See Figure 1 and Figure 3. The number of trips for each purpose is calculated as per the calculation in the box below.

[25] Primerano, F et al. (2008) Defining and understanding trip chaining behaviour, *Transportation* 35, 55–72 [Online].

The number of trips is calculated by:

- Calculating the adult enjoyment or fitness walking or wheeling or leisure cycling trips (see above) for the subset of **adult walkers and wheelers** or **cycle riders who have at least one child in their household** (including seasonal adjustment)
- Dividing this by the **number of adults with children in their household** to get trips per adult per year
- Then multiplying the result by the **ratio of leisure walking or cycling trips per person per year** (adults from households with children: children), and
- Then multiplying by the **child population**.

For Greater Manchester, child enjoyment or fitness walking and leisure cycling trip estimates are modelled from responses to the Transport for Greater Manchester Travel Diary Survey (TRADS) 2024 instead of the Index survey data.

The **distance walked and wheeled or cycled** is calculated as per the calculation in the box below.

The distance is calculated by multiplying together:

- the number of trips walked and wheeled or cycled, and
- the distance of a child leisure walking and wheeling or cycling trip.

The **distance** is obtained from custom National Travel Survey data[26]. The same value is used in all areas, except for Edinburgh[27].

[26] National Travel Survey 2023: Average trip length for the purposes of day trip and just walk by cycling and walking: England, 2023 (by those aged 5-16 years).

[27] For Edinburgh, the median cycling trip distance from the Scottish Household Survey (average of 2017, 2018, 2019, 2022 and 2023) was used. Historically, mean distances have been used. Medians results in a slightly lower distance figure.

For the UK and Scotland aggregated reports, trips are estimated using data collected from the Index residents survey and the National Travel Survey is used for distances. No TRADS or Scottish Household Survey data are used.

Adult walkers and wheelers or cycle riders who have at least one child in their household

This is calculated by multiplying together:

- the proportion of respondents to the residents survey who walk or wheel at least once a week (Q02c) or cycle at least once a month (Q02e) that have at least one child in their household (Q30a) and
- the number of walkers and wheelers or cycle riders in the population.

Number of adults with children in their household

This is calculated by multiplying together:

- the proportion of respondents to the residents survey who have at least one child in their household (calculated from Q30a) and
- the adult population.

Ratio of leisure walking or cycling trips per person per year (adults from households with children: children)

This is calculated using a custom table from the National Travel Survey (2023). The table gives the number of walking and cycling trips for the purposes 'day trip' and 'just walk' only for the following subsets of the population:

- 15 and under
- 16+ and in a household with at least one child.

Child population

This is from the same source as the total and adult population.

Child school trips and distance

See Figure 1 and Figure 3. The number of trips is calculated as per the calculation in the box below. The result is **seasonally adjusted** for the areas

where the proportion of children that walk and wheel or cycle to school was collected in a specific month (rather than continuously).

The number of trips is calculated by multiplying together:

- the **proportion of children that walk and wheel or cycle to school**
- the number of children within schools for that area (school roll)
- the **number of days travelled to school** per year, and
- the **number of trips in a day** (two, for return trips).

For Greater Manchester, child school trip estimates are modelled from responses to the Transport for Greater Manchester Travel Diary Survey (TRADS) 2024.

The **distance** walked and wheeled or cycled is calculated as per the calculation in the box below.

The distance is calculated by multiplying together:

- the number of trips, and
- the average walking or cycling distance to school[28].

[28] Sources for school trip distances:

- Edinburgh: median cycling trip distance from the Scottish Household Survey (average of 2017, 2018, 2019, 2022 and 2023). Historically, mean distances have been used. Medians results in a slightly lower distance figure.
- Rest of UK: National Travel Survey: Average one-way trip length (miles) to and from school by cycling/walking by those aged 5-16 (2023 data)
- Republic of Ireland: NTA Transport modelling 2022 and 2023 National Household Travel Survey: Average one-way school cycling/walking trip distance

Proportion of children that walk and wheel or cycle to school

This was provided by the partner authorities, except in Scotland[29]. Some of the walking values include wheeling, while others do not, or it is unspecified whether wheeling is included, see sources below for further details.

School roll

This is the sum of the school roll for all schools in the area[30].

Number of days travelled to school per year

- the minimum number of days for that country's school year[23]

---

[29] Sources for school mode share:

- Scotland: HUSS (2024). Wheeling is included.
- Republic of Ireland: POWSCAR (2022), Primary & Secondary School Trips from Origins in the area. Wheeling is included.
- Belfast: Continuous Household Survey 2023-24. It is unspecified whether wheeling is included.
- Bristol: NTS9908a Trips to and from school by main mode for South West (2023). Wheeling is included.
- Cambridgeshire and Peterborough Combined Authority: Modeshift STARS (23-24) and NTS9908a Trips to and from school by main mode for East of England (2023). It is unspecified whether wheeling is included.
- Cardiff: Public Health Wales Hands Up Survey 2024, results for Cardiff. Wheeling is included.
- Greater Manchester: TRADS (2024) – provided as number of trips.
- Leicester: Capita ONE data. It is unspecified whether wheeling is included.
- Liverpool: WOW travel tracker baseline (2023-24) for Liverpool City Region. Wheeling is included.
- North East Combined Authority: NTS9908a Trips to and from school by main mode for North East (2023). Wheeling is included.
- Southampton: Modeshift STARS (2024-2025) for Southampton and Hampshire County Councils. Wheeling is included.

[30] Sources for the school rolls:

- England: Schools, pupils and their characteristics (gov.uk)
- Northern Ireland: School enrolments (DfE)
- Scotland: Scottish School Roll and Locations (Scottish Government)
- Wales: Cardiff schools (Cardiff Council)
- Republic of Ireland: Data on Individual Schools (DfE).

- minus the number of days in the school year multiplied by the school absence rate for the area's region[24].

It is assumed that pupils who 'usually' or 'normally' walk do so on every school day they attend.

Seasonal adjustment

As with other trip types, the level of walking or cycling during the data collection period or spring/summer may be different from the yearly average. This is corrected by using a seasonal adjustment factor calculated from Walk Wheel Cycle Trust's database of automatic walking cycling counters. For the UK, a selection of urban counters from across the UK is used. For the Republic of Ireland, a selection of counters located within the five Index areas is used, sourced from the NTA's database.

School travel data were seasonally adjusted in Republic of Ireland, Scotland and Wales.

Trips or distance that could have used a car

See Figure 2 and Figure 4. Trips that could have used a car are trips to a destination (labelled "purposeful" trips in the below figures) by adults with a car in their household. The number of trips and distance are calculated using the same method, as per the calculation in the box below.

The number of trips is calculated by multiplying together:

- the **number of trips** or **distance walked or wheeled or cycled to a destination** by adults, and
- the **percentage of walkers and wheelers or cycle riders that have access to a car or van**.

Number of trips or distance walked or wheeled or cycled to a destination

For walking, this is walking trips (Q04a) or distance (Q04b) to a destination by adults.

For cycling, this is cycling trips to and from work (Q06a), as part of work (Q07a), to school, college or university (Q08a), and for shopping or personal business (Q09a), or distance of these trips (Q06b, Q07b, Q08b, and Q09b), by adults.

Percentage of walkers and wheelers or cycle riders that have access to a car or van

This is the percentage of respondents who answered 'One', 'Two' or 'Three or more' to Q01 in the independent survey of residents from the walkers and wheelers or cycle riders subset.

Kg of NO_x and particulates saved

See Figure 2 and Figure 4. This is calculated separately for emissions per trip (from cold start) and per distance unit, using the calculation in the box below.

These are calculated by multiplying together:

- the **number of trips that could have used a car**,
- the **NO_x and particulate emissions of an average** petrol or diesel **car** per trip (from cold start), and
- the percentage of the region's fleet that is petrol or diesel.

And multiplying together:

- the distance that could have used a car,
- the emissions of an average petrol or diesel car per distance unit, and
- the percentage of the region's fleet that is petrol or diesel.

Then summing the results.

Distance or number of trips that could have used a car

This is the number of trips or distance to a destination by people who have access to a car, as calculated in Trips or distance that could have used a car, see above (see also Figure 2 and Figure 4).

NO_x and particulate emissions of an average car

This includes the average per trip emissions from a cold start, emissions per kilometre at optimum catalytic convertor temperature, and emissions per kilometre arising from brake wear and road abrasion, all taken from the National Atmospheric Emissions Inventory (NAEI).

Percentage of the region's fleet that is petrol or diesel

This is the percentage of car vehicle kilometres on urban roads by fuel type[31]. Emissions from hybrid and electric cars were not included due to a lack of available data on these.

Greenhouse gas emissions saved

See Figure 2 and Figure 4.

These are calculated by multiplying together:

- the **distance that could have used a car**, and
- the **greenhouse gas emissions of an average car** per distance unit.

Distance that could have used a car

This is the number of trips or distance to a destination by people who have access to a car, as calculated in Trips or distance that could have used a car, see above (see also Figure 2 and Figure 4).

Greenhouse gas emissions of an average car

This is the amount of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) emitted by an average-sized passenger car and is expressed as tonnes of CO_2 equivalent.

From the UK government greenhouse gas reporting conversion factors (2022).

---

[31] Sources for the fleet percentages:

UK: National Atmospheric Emissions Inventory

Republic of Ireland: National Transport Authority/SYSTRA

Figure 1: Schematic of city walking model: walking and wheeling trips

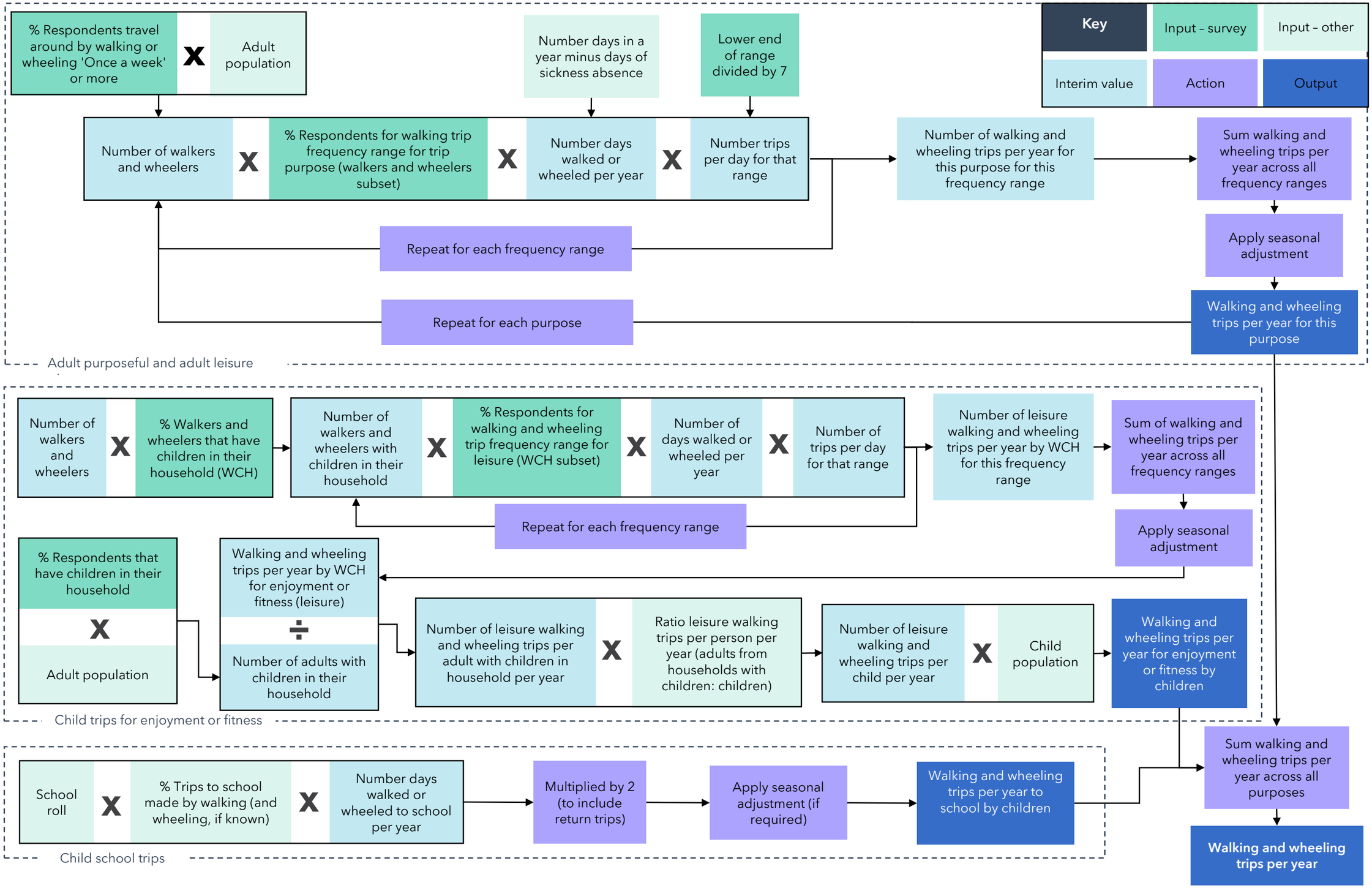


Figure 2: Schematic of city walking model: walking and wheeling distance, distance walked or wheeled that could have used a car and emissions reduction

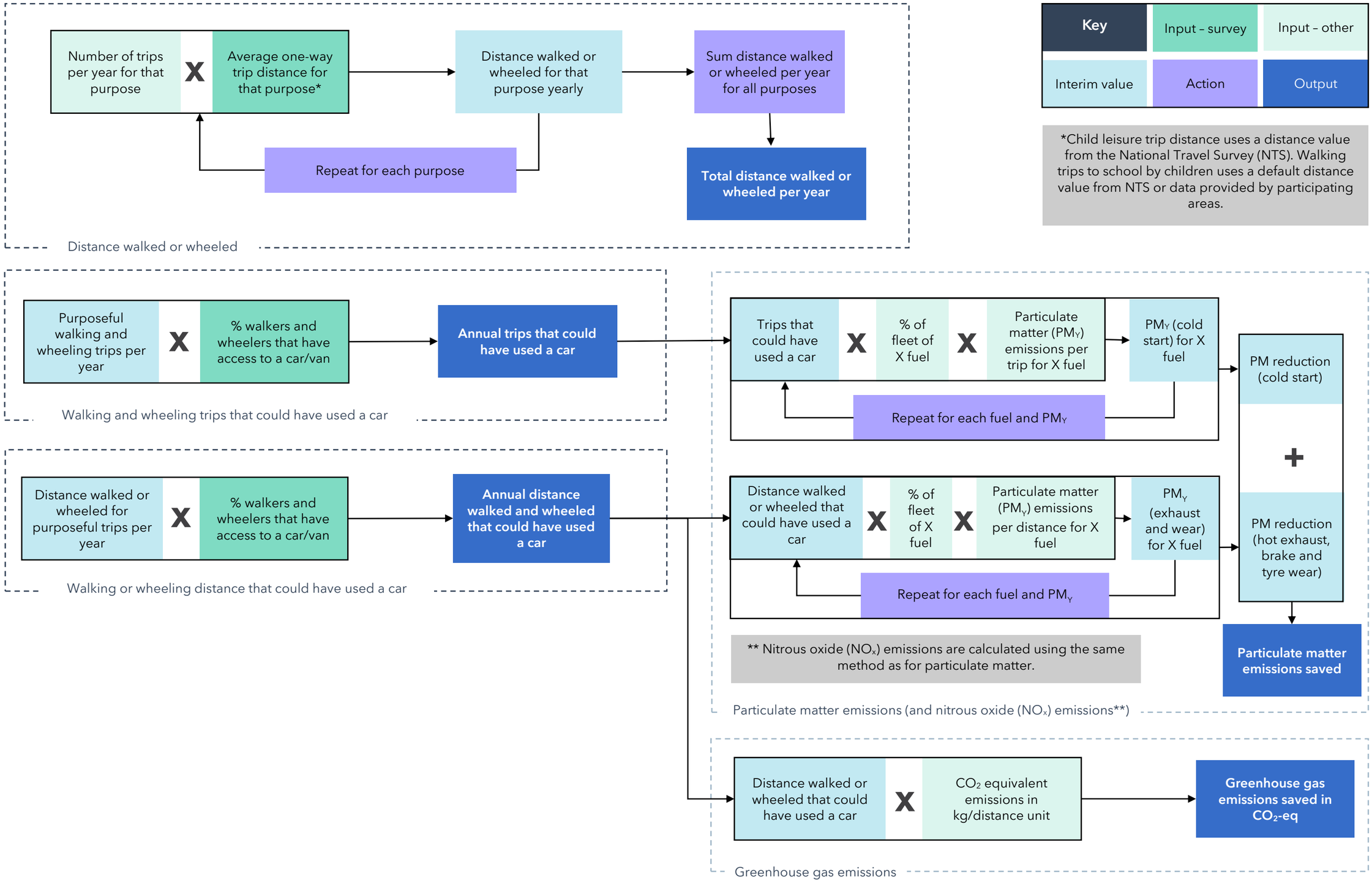


Figure 3: Schematic of city cycling model: cycling trips

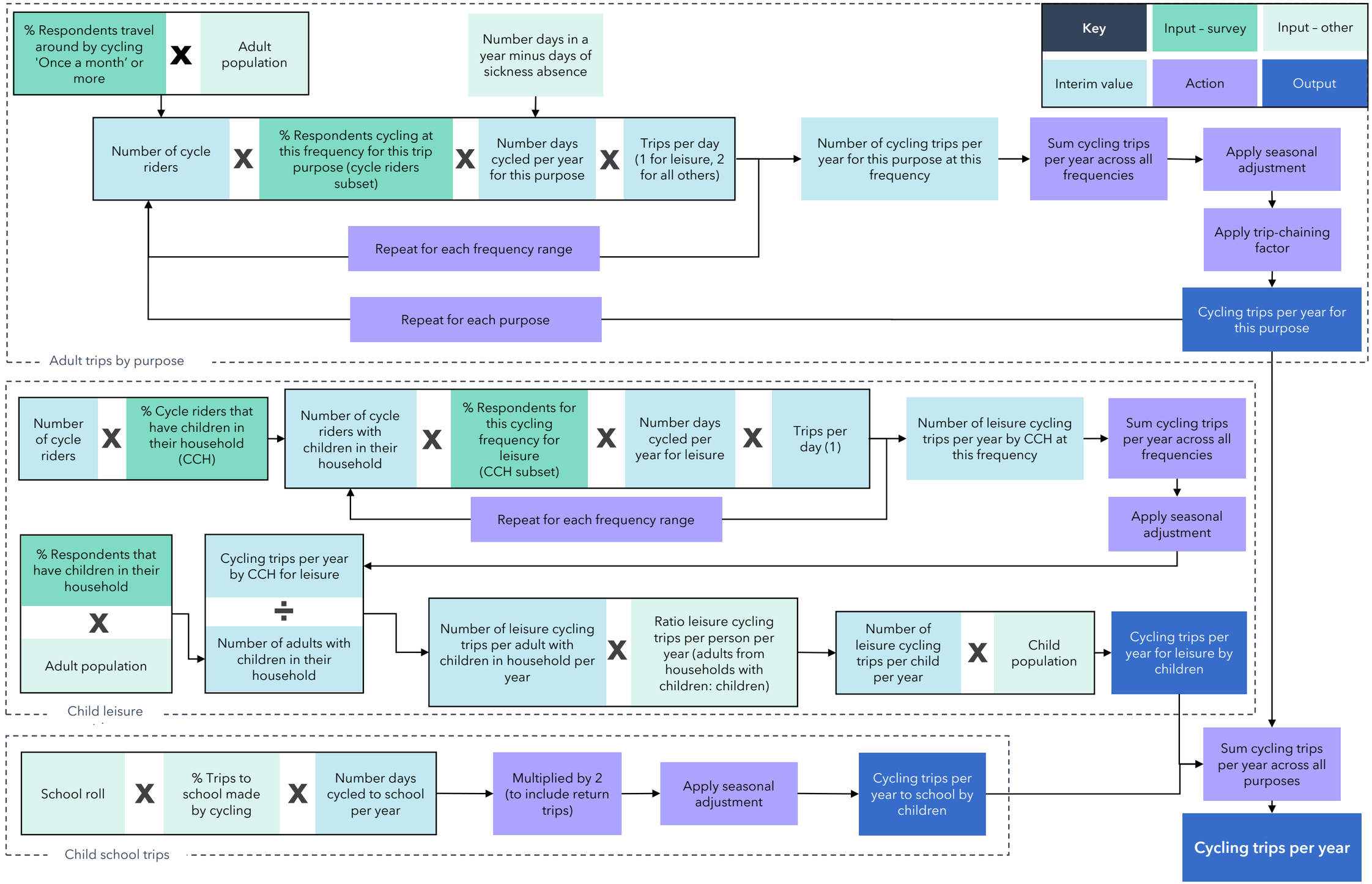
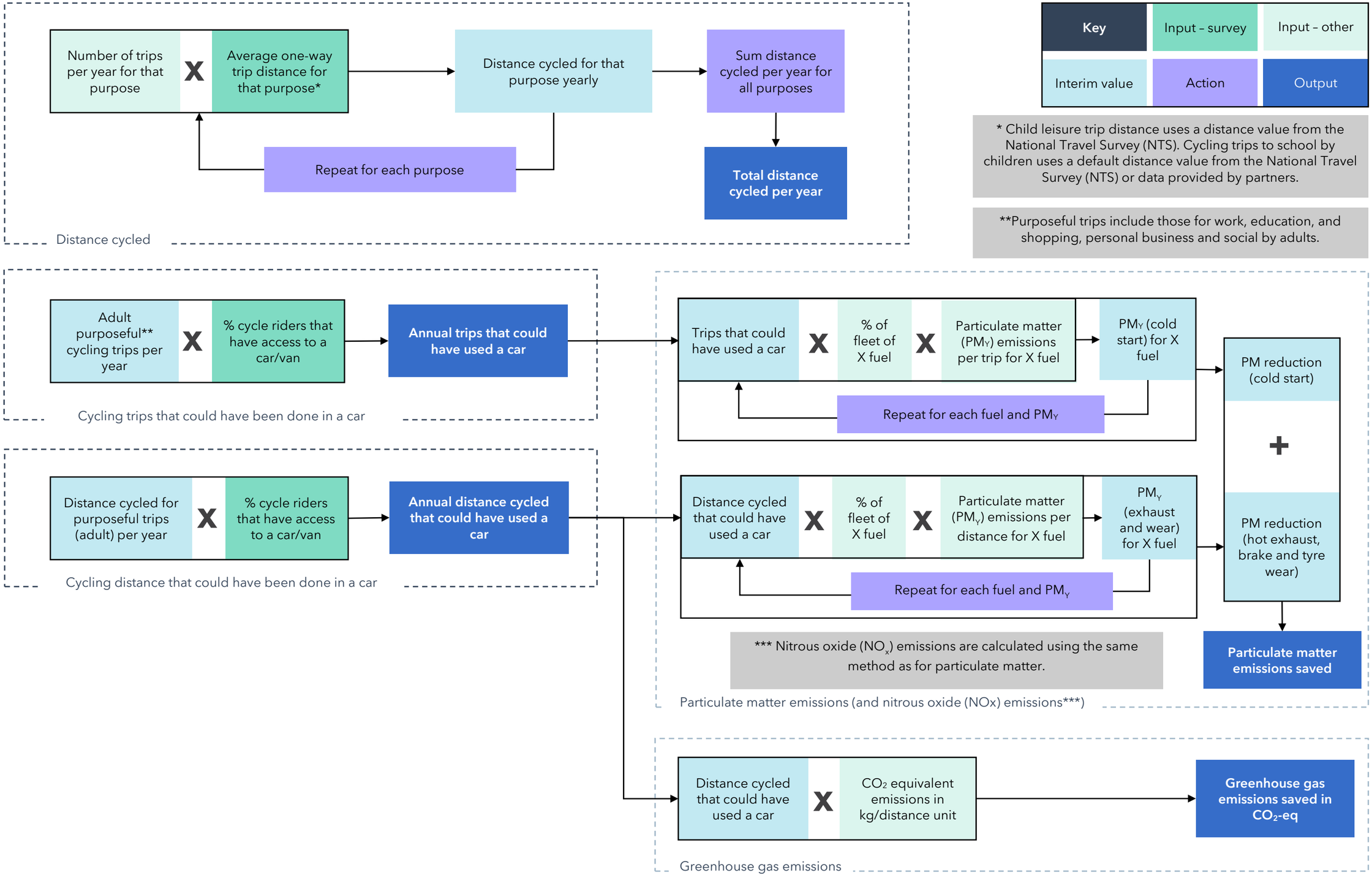


Figure 4: Schematic of city cycling model: cycling distance, distance cycled that could have used a car and emissions reduction



Societal gain model

The societal gain model puts a financial value on walking, cycling, and driving by assigning values to their related costs and benefits. For example, the cost to run a car or the health benefits from being physically active by walking or cycling. It assumes that the benefits of wheeling are the same as walking.

This methodology is inspired by the Copenhagen Bicycle Account, which was established 20 years ago and is one of the main inspirations for the Walking and Cycling Index (formerly Bike Life) model.

The benefits and costs included in our model are shown in Table 3, along with the sources. The values assigned to each are based on the best available evidence and updated for each iteration of the Index. Internal costs and benefits are those to the individual, while external costs and benefits are to society. All values are adjusted for inflation.

The only factor that varies by area is the time cost for driving because this depends on the average driving speed in each area. However, some values vary by urban/rural status or country (UK or Republic of Ireland).

The values are totalled to give a cost/benefit per distance unit, then multiplied by the distance travelled in an area for each type of trip. Trip types are:

- trips to a destination, which are broken down further into ones made by people with access to a car and ones made by people without
- trips for enjoyment or fitness.

The cost of time is only included for trips to destinations. Trips for enjoyment or fitness are made for their own sake, so time is not counted as an incidental cost.

To calculate the value of trips to a destination made by walking or cycling:

- For people *without* access to a car, the total cost for walking or cycling is used on its own. This is typically a net cost to people and society (negative monetary value).
- For people *with* access to a car, the total cost of walking or cycling is considered relative to the total cost of driving. This is a net benefit for people and society (positive monetary value).

Table 3: Societal gain model costs and benefits

Cost/benefit	Description	Source
Time Cost (travel time, non-work)	The value of time spent travelling. The value of time is from the country's transport appraisal guidance and is divided by the average driving speed. No time cost is ascribed to leisure trips. Internal only.	Value of time, UK: DfT (2025) TAG Value of time, Republic of Ireland: Transport Appraisal Framework Average driving speed for each area[32]
Vehicle Operating Costs	The cost of owning and running a car (driving), cycle (cycling) or shoe wear (walking). Excludes initial purchase cost. Internal cost; vehicle tax is considered an external benefit but an internal cost.	Walking and cycling: Gossling et al (2019) Car, UK: Nimblefins (2025) divided by DfT (2023) NTS0901 Car, Republic of Ireland: adapted from AA (2019)

[32] Sources for speeds:

- Walking and cycling speeds: HEAT
- Republic of Ireland: 24-hr length-weighted vehicle speed estimated from TomTom 12-hour speed data.
- Aberdeen, Cardiff, Dundee, Edinburgh, Glasgow and Inverness: DfT average speed on urban 'A' roads in England 2024 - CGN0503a tab
- Belfast: INRIX speed data linked to a HERE A and B road network average (excluding motorways) by road distance (2025 Q1 24 hr)
- Bristol, Leicester, Southampton: Average speed on local 'A' roads in the respective unitary authority, 2024, DfT (CGN0503d)
- Cambridgeshire and Peterborough Combined Authority, Greater Manchester (Combined Authority), Liverpool City Region, North East Combined Authority: Average speed on local 'A' roads in the respective region, 2024, DfT (CGN0503c)
- Dunfermline: Weighted average by Average Daily Traffic volume (24-hr) across 26 sites, 2024-25.
- Perth: Vehicle weighted 24hr average from 29 sites, 2021-23.
- Stirling: Average Speeds at locations within Stirling City Area weighted by speed limit road length (2024-25)

Prolonged Life	Longer life expectancy from physical activity. Internal benefit and a small external cost (welfare cost).	Gossling et al (2019)
Health	Decrease in illness incidence, reduced cost of medical treatments, fewer days of sick leave. Includes both an internal and external benefit.	Gossling et al (2019)
Congestion	The time loss imposed on other travellers because of simultaneous use of the road network, including travel time, operating cost and fuel cost. External cost.	UK: DfT (2025) TAG[33] Republic of Ireland: EC (2019) Handbook of external costs Annex
Infrastructure Maintenance	Resurfacing, overlay and road markings of infrastructure used by cars. Infrastructure maintenance cost for cycling and walking is too low to quantify. External cost.	UK: DfT (2025) TAG[33] Republic of Ireland: EC (2019) Handbook of external costs Annex
Local Air Quality	This relates to the health and environmental impacts of atmospheric emissions of pollutants from motorised vehicles (CO_2, CO, SO_2, NO_x, PM_{10}, Hydrocarbons, Benzene, 1,3-butadiene). External cost.	UK: DfT (2025) TAG[33] Republic of Ireland: EC (2019) Handbook of external costs Annex
Noise	Based on the relationship between average noise levels and property prices. External cost.	UK: DfT (2025) TAG[33] Republic of Ireland: EC (2019) Handbook of external costs Annex

[33] TAG gives values by road type and urban/rural status. Road type was calculated as a weighted average using estimates from DfT (2023) TRA0202. Urban/rural status assigned based on TAG (A5.4), or, where unspecified, 'Other Urban'.

Greenhouse Gases	The cost associated with the impact on climate change from vehicle CO_2 output. External cost.	UK: DfT (2025) TAG[33] Republic of Ireland: EC (2019) Handbook of external costs Annex
Indirect Taxation	Fuel duty. External cost.	DfT (2025) TAG[33]
Soil and Water Quality	Pollutants released to soil, water bodies and groundwater, such as hydrocarbons, non-gaseous exhaust, heavy metal particulates from the wear of mechanical components such as brake pads, as well as salt and gravel used for anti-icing or winter maintenance. External cost.	Gossling et al (2019)
Well-to-tank Emissions	Emissions (of greenhouse gases and other pollutants) due to fuel production and transport to the consumer. External cost.	EC (2019) Handbook of external costs Annex

HEAT

The World Health Organisations Health Economic Assessment Tool (HEAT) provides the value of decreased mortality (reduction of the risk of death across the population) that is attributable to the amount of walking or cycling being done by a population, compared to a scenario in which they are not walking or cycling. Wheeling trips were modelled as walking trips for the purposes of the HEAT model.

HEAT then estimates the value of the number of early deaths prevented annually. This is based on contingent valuation studies that test the amount people would be prepared to pay to increase their chances of survival.
The HEAT tool was not modified for an Irish context as it is based on a Europe-wide context and is therefore applicable to the UK and the Republic of Ireland.

MOVES

MOVES, Sport England's Model for estimating the Outcomes and Values in the Economics of Sport and physical activity, estimates the number of cases of disease avoided by a specified level of physical activity, and the associated savings to the NHS. This is distinct from HEAT, which relates to the monetary value of longer life expectancy attributable to the level of walking or cycling being done in an area. The monetary benefit only includes the benefit to the NHS, and not any costs associated with walking or cycling, in contrast to the figures produced by the Societal gain model.

Version 2.4 was used in 2025. Credit to Sport England and the University of East Anglia (tool developers) who provided us with a pre-release copy of the new MOVES tool for use on the Index. Wheeling trips were modelled as walking trips for the purposes of the MOVES model.

Physical activity protects against many illnesses. MOVES estimates the number of cases of eight specific conditions that are likely to be prevented:

- Type 2 Diabetes
- Ischaemic Heart Disease
- Cardiovascular Disease (Stroke)
- Dementia
- Depression
- Breast Cancer
- Colon Cancer
- Hip Fracture.

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 the Republic of Ireland metropolitan areas by including Irish life expectancy data (2015-17 Irish Life Tables from the Central Statistics Office (CSO)). This was the only Irish equivalent data available.

Appendix E: Changes in the model process between iterations

In 2025, the Walking and Cycling Index modelling was updated to include trips as part of work. To allow better comparison with earlier data, the 2023 model was rerun to include these trips and other small changes in the source data. This section outlines the changes between the 2023 and 2025 Walking and Cycling Index iterations (including changes between the originally published 2023 data and the 2023 data presented in the current reports).

2023 (rerun) to 2025

UK

- For 2025, the boundary of Inverness, Perth and Stirling changed to reflect the new Census 2022 data zone boundaries.
    - This affected the school roll in these cities.
    - The same population data was used in the 2023 rerun and the 2025 run, due to delayed publication of the data using the new data zone boundaries.
- For 2025, the month in which seasonal adjustment was made was split into walking and cycling seasonality as the number of responses per month for each mode was variable; this improves accuracy of estimates.
- The following areas used a different month for seasonal adjustments of walking and cycling trips this year: Aberdeen, Greater Manchester, Dunfermline, Cambridgeshire and Peterborough Combined Authority, Leicester and Southampton City Region.
- The counters used for seasonal adjustment of walking and cycling trips were updated for 2025 (using data from 2023 and 2024)[34], to reflect post-Covid changes in walking and cycling habits:

[34] Counters used for seasonal adjustment in the 2023 iteration and earlier were from pre-2015 for Cycling and 2017-2019 for walking. Counter data do not need to be updated unless we expect there to be large changes in walking and cycling trends across the year, such as those that might have happened during the pandemic.

    - Cycling seasonality adjustment is roughly similar between 2023 and 2025 iterations.
    - Walking may have a greater reduction in trip estimates from seasonal adjustment in 2025 than in 2023 due to a higher peak in walking trips during the survey month of May.
    - North East Combined Authority and Cardiff use May as the month for walking seasonality. All other areas have roughly similar seasonal adjustment between 2023 and 2025 iterations.

- Standard practice changes, updating figures to latest available figures, without changing any sources:

    - For England and Wales, the school roll (under 16) figures changed slightly due to tighter inclusion/exclusion criteria (mostly around exclusion of colleges and sixth form colleges).
    - Car mileage saw a large increase due to the 2023 figure being taken from a year impacted by Covid-19. This has the effect of lowering the car operating cost. The overall effect on the cost of driving a mile is minimal.
    - Department for Transport's Transport Appraisal Guidance, which is used for the value of time and various measures related to driving costs, underwent a major update, including updates to the underlying data:
        - The value of time decreased, despite inflation, resulting in a lower time cost for walking and cycling and a higher overall benefit per mile.
        - The car costs also generally decreased, but this was balanced out by the aforementioned increase in mileage so the cost of driving a mile remained relatively consistent.
    - For Southampton City Region, a different average car speed, from the same source, was used, as a more regionally accurate alternative to the default.

Republic of Ireland

- For 2025, the month on which seasonal adjustment was made was split into walking and cycling seasonality as the number of responses per month for each mode was variable.

- Standard practice changes, updating figures to latest available figures, without changing any sources.

- The population data was not changed for 2025, as agreed with the National Transport Authority, as more recent data is not available on the metropolitan area level. This means that overall changes to trip figures for 2025 are likely to be lower than observed in UK areas, as the modelling of trips in the Republic of Ireland metropolitan areas have not benefited from a projected increase of population over time.

- The source for the percentage of trips to school made by walking and by cycling, used in estimating the number of trips to school by children, was changed:

    - The 2023 data was taken from the CSO published Census data, and included trips by adults in full-time education and trips to college and childcare by children.
    - The 2025 data was derived from the CSO POWSCAR[35] dataset, and included only trips to primary and secondary schools by children (may include some 16–17-year-olds in secondary schools).

2023 (original) to 2023 rerun

In 2025, we reran the 2023 model to include all relevant changes introduced in 2025. This was primarily done to include cycling trips as part of work (and walking trips as part of work, in Greater Manchester only) to allow for comparison of results to 2025, however, we also included some source changes for Republic of Ireland listed below.

UK

- Cycling trips as part of work were added.

- In Greater Manchester, business trips were added to the number of walking trips to a destination, to better reflect the type of trips included in the Index survey.

Scotland

- On 25 January 2025, National Records of Scotland (NRS) published their rebased Scotland population mid-year estimates. The previously published mid-year estimates (which we originally used for the 2023

[35] Place of Work, School or College - Census of Anonymised Records.

model) were shown to be inaccurate when compared with the 2022 Census (generally overestimates), therefore, we made the decision to update the population values from outdated mid-year 2021 estimates to Census 2022, as a more reliable source for the 2023 model rerun:

    - Differences vary from 0.4% to 2.3% change.
    - Generally, higher changes were seen in bigger cities, except for Stirling (2.1% difference).

- For Edinburgh, the way in which cycling and walking distances were calculated was changed. This was based on the recommendation of Transport Scotland Strategy & Analysis (who provide the Scottish Household Survey data used for trip distances in Edinburgh). Instead of calculating an average using incomplete data on distance brackets, a median distance was provided, using all data. This helped reduce the effect of unusually long distances and matched the method used in other areas. Additionally, the years included in the average changed from 2016-2021 to 2017-2019 and 2022-2023. This is because 2020 and 2021 data were no longer considered comparable to other years due to a difference in the method and change in "normal" patterns of behaviour during the Covid-19 pandemic:

    - The cycling distance changed from 2.71 to 2.1 miles.
    - The walking distance changed from 1.05 to 0.9 miles.

Republic of Ireland

- Trips as part of work were added for cycling, as we are seeing an increase in this trip type.

- The source for the ratio of leisure walking or cycling trips per person per year (adults from households with children : children), used in the calculation of leisure trips by children, was changed from 2022 National Household Travel Survey (Republic of Ireland) to National Travel Survey 2021 (England) due to identification of unacceptably low sample sizes in the original source:

    - Walking changed from 1.2 to 0.6.
    - Cycling changed from 0.5 to 1.0.

- The source for the average child walking and cycling trip distances, used in the calculation of leisure trips by children, was also changed from

2022 National Household Travel Survey (Republic of Ireland) to National Travel Survey 2021 (England) due to identification of unacceptably low sample sizes in the original source:

  - Walking changed from 2.2 to 0.9km.
  - Cycling changed from 2.0 to 2.7km.

- The source for Local Air Quality, Greenhouse Gases, Noise and Congestion (all external car costs) was changed from DfT TAG to European Commission's handbook of external costs (2019) to increase regional accuracy of the model. The overall impact on the cost of driving a km was an increase of 7 euro cents (€-cent). In 2016[36] prices:

  - Air Quality changed from ~1.2 €-cent[37] to 0.93 €-cent
  - Greenhouse gases changed from ~4.0 €-cent to 1.8 €-cent
  - Noise changed from 1.3 €-cent to 1.1 €-cent
  - Congestion changed from ~17.6 €-cent to 33.0 €-cent.

[36] The actual values used were in the current price year, but for ease of comparison they are shown here in 2016 prices.

[37] These values are approximate: they are provided for A and other roads; in the actual 2023 model this is weighted by road split in the UK, whereas this is just the mean of the two figures. The difference is minor.

Registered Office: Walk Wheel Cycle Trust, 2 Cathedral Square, College Green, Bristol BS1 5DD.
T: 0117 926 8893.

Belfast: T: 028 9043 4569. **Cardiff:** T: 029 2065 0602. **Edinburgh:** T: 0131 346 1384.
London: T: 020 7017 2350. **With regional offices in:** Birmingham, Bristol, Glasgow, Leeds, Manchester, Newcastle, Nottingham.

Walk Wheel Cycle Trust is a registered charity no. 326550 (England and Cymru), SC039263 (Scotland) and 20206824 (Republic of Ireland)