The Walking and Cycling Index: Guidance for cities

S1 - Total length of best practice cycle routes and S2 - Percent of households within 125m of best practice cycle routes

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To find out more, please contact:
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Introduction

This guidance outlines what data to provide for **S1 - Total length of best practice cycle routes**. You will find detailed explanations of the different types of cycle routes and the format the data must be provided in. The data from each city should accurately reflect the cycling infrastructure on the ground.

S1 data helps us assess the quality and quantity of cycle routes in each city. From this we can identify what works well or if improvements need to be made to encourage people to walk and cycle more.

Information on the calculations performed for **S2 - Percent of households within 125m of best practice cycle routes** is also included in this guidance document. No data needs to be provided for S2 as we use what you provide for S1 to calculate this.

S2 data relates the cycle route length to population size and proximity to where people live. The figures produced for S2 show the progress towards households having easy access to best practice cycle routes. The distance of 125m is used in the Welsh Active Travel Act[1], the only statutory standard of this type in the UK.

S1 Data Format

Data must be provided in shapefile format. This is so we can run calculations in a Geographic Information System (GIS). We cannot accept any other data types.

There are component file types that make up shapefiles (Figure 1). Ensure you have at least **the .shp, .shx, .dbf and .prj file** components for each dataset. Without all of these, the data cannot be processed and is invalid. It is important to check the file 'Type' and not just the 'Name' column. As you can see in Figure 1, not all the names contain the file 'Type' suffix. Please send us the shapefile in a .zip file and ensure all the supporting file types are contained.

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[1] https://www.gov.wales/sites/default/files/consultations/2020-02/draft-active-travel-guidance.pdf

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Figure 1: Example of the component files required to draw the shapefile called 'TrafficFree'.

Name ^	Date modified	Type	Size
TrafficFree.cpg	16/11/2022 09:16	CPG File	1 KB
TrafficFree	16/11/2022 09:17	DBF File	94,696 KB
TrafficFree.prj	16/11/2022 09:17	PRJ File	1 KB
TrafficFree	16/11/2022 09:17	SHP File	5,086 KB
TrafficFree.shx	16/11/2022 09:17	SHX File	307 KB

For more information on shapefiles, visit ArcGIS online[2].

If possible, all data should be projected in British National Grid (EPSG: 27700) coordinate system.

Where urban areas extend to a conurbation, such as Tyneside, it is essential that we receive one combined data file. We do not want these areas broken down into local authorities.

S1 Route Classifications

The Walking and Cycling Index cycle route data is classified into three categories, outlined in Table 1. One of these categories is an optional category for submission. If it is not relevant to your city/area, it can be ignored.

The cycle route data the cities provide need to be allocated to the category names in Table 1. We will not accept any other classifications or names.

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[2] https://doc.arcgis.com/en/arcgis-online/reference/shapefiles.htm

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Table 1: Summary of the cycle route categories for the Index

Category	Definition	Primary Users
SegregatedCycleLane	Cycle tracks within road, physically separated from traffic and pedestrians	Cyclists
TrafficFree	Traffic free cycle routes away from the road	Pedestrians, cyclists
[Optional] SignedRoute	Signed cycle routes on low-trafficked and low speed roads	Cars, cyclists

Please ensure that routes captured in the optional route category do not duplicate or double count routes in the standard CDO categories.

For consistency, it is important that cycle lanes are counted in the following way:

- 1 mile of road with cycle path on one side of the road = 1 mile

- 1 mile of road with cycle path on both sides of the road = 2 miles

- 1 mile of off-road cycle path that you can cycle both directions on = 1 mile

S1 Details and examples

SegregatedCycleLane

Cycle routes 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.

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Examples of this type of route include Oxford-Wilmslow Road in Greater Manchester; London Cycleways; Baldwin St, Bristol; A38 Birmingham; John Dobson Street, Newcastle and Alfred Street, Belfast.

Figure 2: A segregated cycle route on Oxford-Wilmslow Road in Greater Manchester

TrafficFree

Traffic free cycle routes 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.

Other users of the paths include (but are not limited to) pedestrians and wheelchair users.

Paths advertised for cycling on electronic and paper city cycle maps are included in this classification type. This includes any short link paths shown, for example in parks. This is regardless of whether:

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- they have a formal cycle route designation

- they are signposted or not

- they have feature access barriers or not

Examples of this type of route include old railway lines like the Bristol to Bath cycle route; the Liverpool Loop Line, or Edinburgh's off-road network. Traffic Free also includes new routes like Comber Greenway in Belfast and the guided busway in Cambridge.

Figure 3: An example of a Traffic free route.

SignedRoute (optional)

This is an optional cycle route category that can be used to count additional routes currently not covered by the other two categories.

The **SignedRoute** network connects main arterial and orbital routes with TrafficFree sections.

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SignedRoutes must:

- 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

Where necessary, there should also be junction treatments, such as actions to make it easier to cross main roads whilst on these routes. An example of this is priority pedestrian/cycle crossings (cycle zebra crossing) and signalised crossings with space in the central reservation for cycles if the crossing is in two stages.

Examples of this type of route include Quietways in Tower Hamlets and Beelines in Greater Manchester.

Figure 4: An example of a signed route.

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S1 Digitising your routes

Please draw lines to represent the cycle routes and create individual shapefile layers for each classification type. As a result, you may end up with at least 3 different shapefiles.

A few tips:

- **'Two-way infrastructure'** describes routes that have separated cycling infrastructure i.e. on both sides of the road. **Where two-way infrastructure is present, we would prefer two lines to be drawn**. If this is not possible, please draw a centreline (see below for more information). If drawing separate lines, classify each feature according to the 'Short Names' in the table in *S1 Route Classifications*.

- **Shapefile structure:** we recommend creating shapefiles with one attribute column called *CDO*. Populate this column with the relevant classification of the feature as per the 'Short Names' in the table in *S1 Route Classifications*. If drawing centrelines, please see below.

- **Shapefile extent:** please use the GIS boundary file provided and ensure all your data is within this extent. This file can be found in your City Data Collection package.

- Some routes may present small gaps (less than 10 metres) that are not technically cycle routes i.e. a canal towpath where people cycling are required to dismount for approximately 5 metres. These smaller sections (gaps under 10 metres in length) can still be included in the total route length calculation.

The map below illustrates how segregated cycle paths and traffic free routes should be digitised. The data has been kindly provided by Bristol for the Walking and Cycling Index.

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**Figure 5: The Walking and Cycling Index S1 examples**

Digitising your routes as centrelines

If presenting your data as centrelines instead of individual lines, please include the following fields (columns): **CD01** and **CD02** in your data. CD01 and CD02 represent each side of the road, use these to record the infrastructure. The following examples illustrate this:

Example 1: one centreline that represents two segregated cycle lanes on both sides of the road should be recorded as CD01:SegregatedCycleLane and CD02:SegregatedCycleLane.

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Figure 6: The image below demonstrates how to record attributes on a feature drawn as a centreline that represents a segregated cycle lane on both sides of the road.
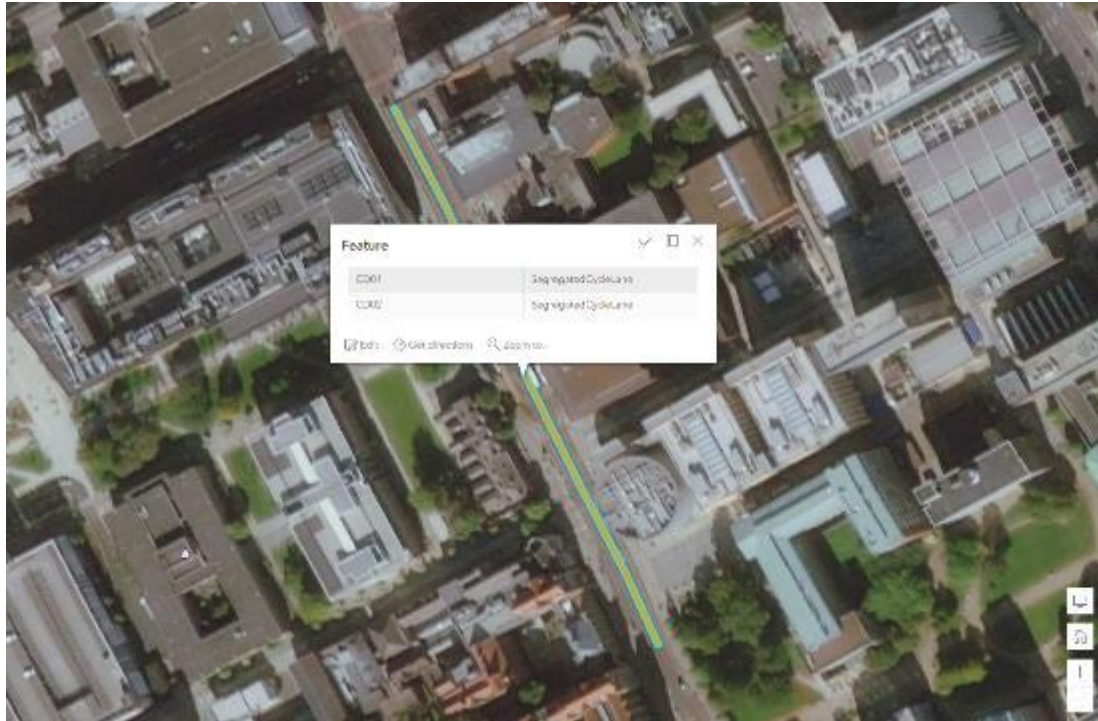
Example 2: one centreline that represents one segregated cycle lane on one side of the road only should be recorded as CD01:SegregatedCycleLane only. CD02 should remain blank.

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Figure 7: The image below demonstrates how to record attributes on a feature drawn as a centreline that represents a segregated cycle lane on one side of the road.
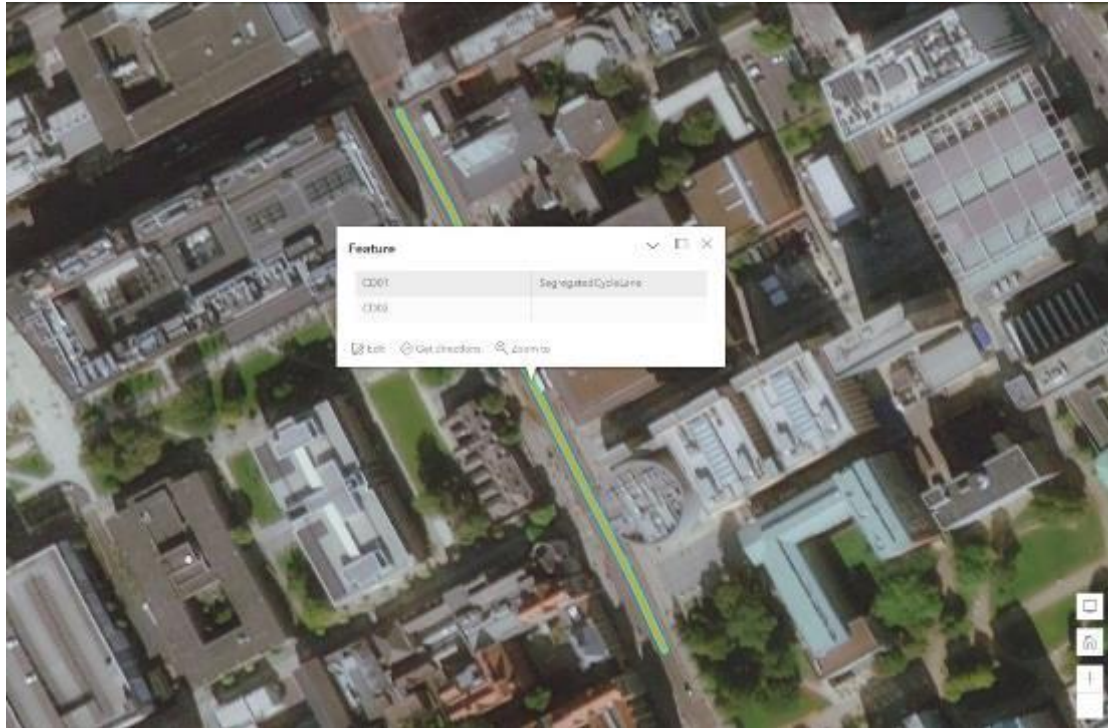
S1 Temporary infrastructure

Temporary or 'pop up' cycling infrastructure should be included in the above route length categories if they satisfy both of the following criteria:

- By **31st May 2023**, the infrastructure is either made permanent or have formal political agreements and delivery contracts in place to make them permanent.

- The infrastructure fits the above categories and are included in the relevant GIS shapefiles. Route length totals for each category should be included alongside existing infrastructure route lengths in the city data collection spreadsheet.

Please note: infrastructure still classed as either temporary beyond **31st May 2023** will **not** be included in the *S1* categories in the main report.

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S2 Description of model

Household count data will be used alongside your S1 route length data to calculate S2.

1. Using the GIS layers of cycle routes from *S1*, a 125m buffer around each segment is created.

2. Marker map data is presented as centre points of postcode boundaries. The number of households is an attribute stored in the point. Points with no households are omitted. A process is run to identify which of the marker map points fall within the 125m buffer.

3. Of those within the buffer, the sum of the number of households is calculated and divided by the total number of households for that city.

The map below illustrates the process for Cambridge. The cycle routes are depicted as the thick navy-blue line, the 125m buffer as the orange polygon either side of the cycle routes and the household count data as green or purple points. Purple points represent points with one or more households that are within the buffer. Grey points are points with one or more households beyond the buffer extent.

Figure 8: S2 Example

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