

# Quantifying Europe's Cycling Infrastructure using OSM (QECIO 2.1): Metadata



## General Information

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With assistance from Arnaud Briol, John Hammerschlag and Gautier Radermecker, data scientists from Agilytic, as a part of the 1% for the Planet programme.

### Date of data collection:

PBF files downloaded 10-11 January 2024 from [Geofabrik](#).

### Date of last code update:

11 January 2024.

### Information about geographic location:

37 countries including 27 EU member states.

**Methodology:** <https://european-cyclists-federation.github.io/Documents/Methodology.pdf>

**Keywords:** cycle infrastructure, Open Street Map (OSM), NUTS3.

## Data and files overview

### **Description:**

The country folder contains the cycle networks per area of analysis (NUTS3). It contains information on the OSMid, type of infrastructure, surface, smoothness, width, and a link to the OSM website of each way.

The CSV file contains information, on the country, the NUTS3, the date of creation of the summary, and values of interest.

### **Units of measure:**

The units for the data sets are either in kilometres (km) for lengths or percentages (%) for ratios.

### **Format of the files:**

The network files are in geopackage (GPKG) format and can be opened using software such as ArcGIS, or QGIS.

A comma separated values (CSV) file with a summary of numerical results for each NUTS3 area is also available.

## Sharing and accessing information

### **Restrictions:**

Please consider that this is a work in progress. Data might get updated as we improve our heuristics.

### **Links to publications:**

Please visit our previous edition [here](#).

### **Recommended citation for the data.**

Not yet established.

# Description of csv file columns

Column CSV file	Description
<b>Country</b>	The NUTS 0 country code.
<b>City</b>	Name of the NUTS 3 region.
<b>Lat, Lon</b>	Latitude, Longitude.
<b>Area</b>	Area in square kilometres.
<b>Date</b>	Last time the code was executed.
<b>local_oneway_km</b>	Length of one-way local roads.
<b>local_twoway_km</b>	Length of two-way local roads.
<b>local_contra_km</b>	Length of local roads with contraflow cycling.
<b>overview-local-road-network</b>	Total length of the local road network
<b>overview-cycle-tracks-km</b>	Total length of the cycle tracks.
<b>overview-shared_pedestrians-km</b>	Total length of the cycle and pedestrian tracks.
<b>overview-limited-access-km</b>	Total length of the limited access roads.
<b>overview-total-cycle-infrastructure</b>	Total length of the analysed roads for surface analysis. This is the sum of tracks, lanes, cycle and pedestrian tracks and limited access roads.
<b>overview-busways-km</b>	Total length of bus and cycle lanes.
<b>overview-cycle_streets-km</b>	Total length of cycle streets.
<b>overview-ext-cycle-infrastructure</b>	Total length of the extended cycle infrastructure.
<b>sum_total_surface</b>	Total length of analysed roads with surface tag.
<b>sum_total_smoothness</b>	Total length of analysed roads with smoothness tag.
<b>sum_total_width</b>	Total length of analysed roads with width tag.
<b>percentage_with_surface_tag</b>	Share of roads with the tag. Calculated as $\frac{\text{sum\_total\_surface}}{\text{overview-total-cycle-infrastructure}}$
<b>percentage_with_smoothness_tag</b>	Share of roads with the tag. Calculated as $\frac{\text{sum\_total\_smoothness}}{\text{overview-total-cycle-infrastructure}}$
<b>percentage_with_width_tag</b>	Share of roads with the tag. Calculated as $\frac{\text{sum\_total\_width}}{\text{overview-total-cycle-infrastructure}}$
<b>surface-type-infra-type*-surface-type*-km</b>	Total length of a given cycle infrastructure and their respective surface.
<b>percent_surface_type-infra-type*-surface-type*-km</b>	Share of a given cycle infrastructure type and surface to the total infrastructure type.
<b>surface-quality-infra-type*-surface-type*-km</b>	Total length of a given cycle infrastructure and their respective quality.
<b>percent_surface_quality-infra-type*-quality-type*-km</b>	Share of a given cycle infrastructure type and quality to the total infrastructure type.
<b>type-infra-type*-directionality*</b>	Total length of a given cycle infrastructure and their directionality.
<b>ratio-cycle_tracks-main_roads</b>	Ratio cycle tracks to main roads.
<b>ratio-cycle_infra-main_roads</b>	Ratio of analysed roads for surface to main roads. Not presented in the dashboard.
<b>ratio-contraflow</b>	Ratio of contraflow cycling.

**infra-type\*** = cycle tracks | cycle and pedestrian tracks | cycle lanes | limited access roads | bus and cycle lanes | cycle streets.  
**surface-type\*** = asphalt/concrete | blocks/slabs/cobbles | stabilised gravel | gravel/dirt | unknown | unrecognised  
**quality-type\*** = perfectly rideable | well rideable | moderately rideable | badly rideable | not rideable | unknown  
**directionality\*** = unidirectional | bidirectional

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