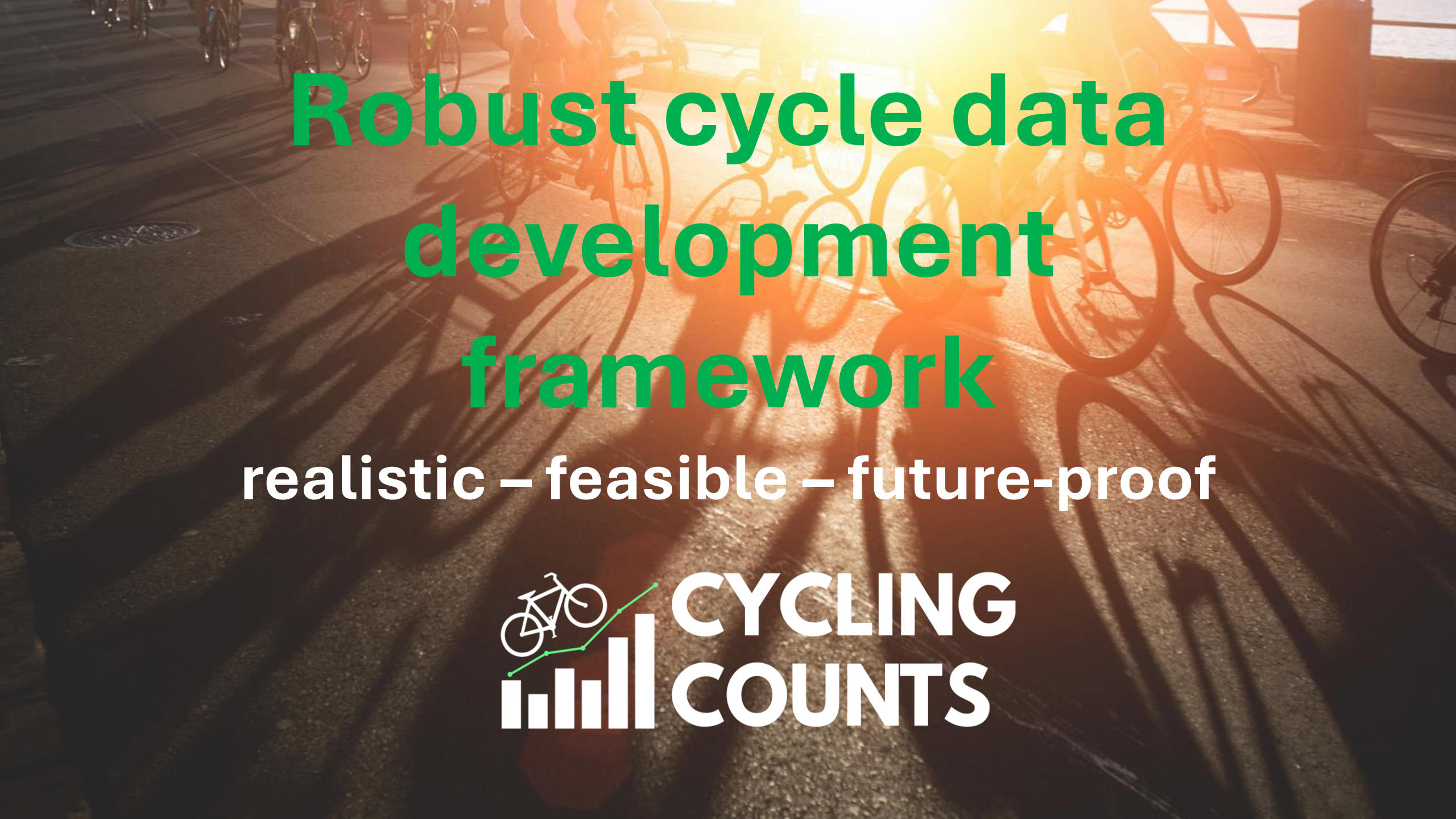
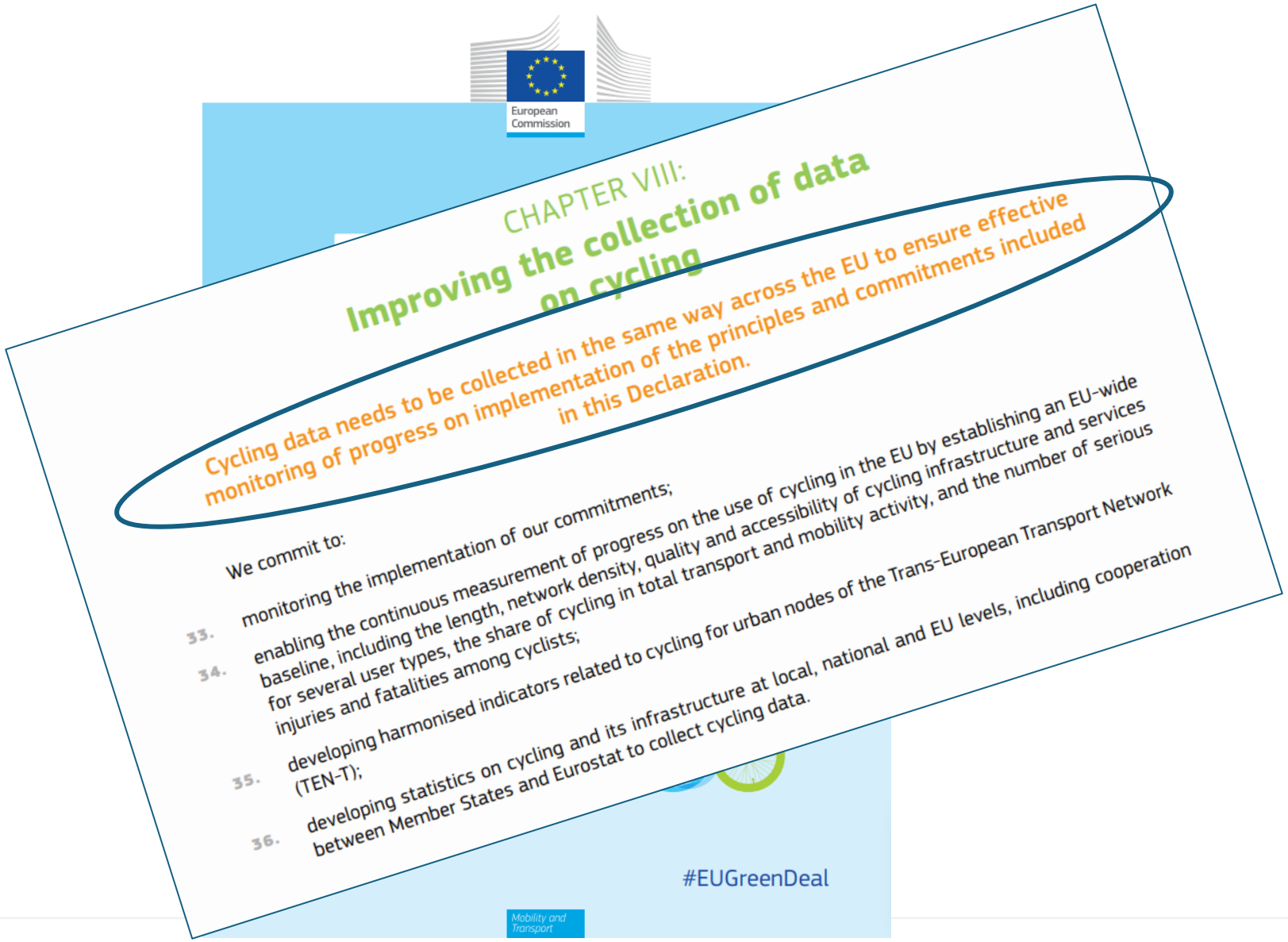


Robust cycle data development framework

realistic – feasible – future-proof

CYCLING COUNTS

Context



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Objectives

Roadmap to a robust EU cycle data development framework

OBJ 1 Define an initial methodology for the collection of relevant cycling data

OBJ 2 Collect the data to establish a baseline

OBJ 3 Define a methodology for the progress monitoring towards further infrastructure development against the baseline

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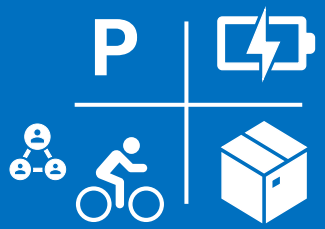
Data domains

Cycle use

Safety of cyclists

Cycle services



Cycle network

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Cycling Counts partners

Cycling Industries Europe

ECF
EUROPEAN CYCLISTS' FEDERATION

EUROCITIES

TRANSPORT & MOBILITY LEUVEN

RUPPRECHT CONSULT
Research - Consulting - Innovation

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Agenda

Time	Topic	Speaker
15:30 – 15:40	Welcome & Introduction to Cycling Counts	Bonnie Fenton, Rupprecht Consult
15:40 – 15:55	Overview of the proposed methodology for cycling data collection	Holger Haubold, European Cyclists' Federation
15:55 – 16:20	Consultation on the proposed methodology for **Cycle use**	Jaume Estellers, European Cyclists' Federation Dirk Engels, Transport & Mobility Leuven
16:20 – 16:40	Consultation on the proposed methodology for **Cyclists' safety**	Reičela Bišere, European Cyclists' Federation Dirk Engels, Transport & Mobility Leuven
16:40 – 16:55	Break	
16:55 – 17:25	Consultation on the proposed methodology for **Cycle services**	Ebru Akgün and Kevin Mayne, Cycling Industries Europe
17:25 – 18:05	Consultation on the proposed methodology for **Cycle network**	Aleksander Buczyński & Christos Konstantinou, European Cyclists' Federation Dirk Engels, Transport & Mobility Leuven
18:05 – 18:15	Wrap-up	Bonnie Fenton, Rupprecht Consult

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1 - Methodology for establishing a baseline from available data

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Methodology for the establishment of the baseline

Data entities + definitions (from regulations, EU/UN guidelines etc.)

Available data sets

Data sets + exposure data = **key indicators**

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Methodology for the establishment of the baseline

Member state analysis

Data collection maturity

- Data collection methodology and structure
- Data collection frequency, maintenance and upgrading
- Data availability

EU baseline

Country Fiche

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2 - Data collection: Preliminary Results

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Data domains: Use

Cycle use

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Cycle use

Key indicators: EU Summary

Cycle use

Share of population (15+) that cycles to and from places at least once a week: 23.6% (range: 0.6% – 61.3%)

Female population (15+): 20.0%

Male population (15+): 27.6%

Source: European Health Interview Survey, third wave 2019 (hlth_ehis_pe3e)

	EU-wide travel survey 2021	National travel surveys
Cycling modal share	7.8% (of all trips < 300km) (range: 0.8% - 28.0%)	*no harmonised/comparable data available*
Kilometres cycled per year per person of the reference population	512 km per person (population aged 15-84)	

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Cycle use

Main data sources

- EU-wide sources:
  - European Health Interview Survey
  - EU-Wide Travel Survey 2021
- National sources:
  - National travel surveys
  - National cycling surveys
  - Physical activity + health surveys
  - Counting platforms (only 1 Member State has a representative sample of counters so far)
- Important but not included as a core source: Satisfaction surveys

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Data domains: Safety

Safety of cyclists

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Safety of cyclists

Key indicators: national summary

(no EU summary available due to lack of harmonisation of exposure data)

Cyclists' safety

	Base for exposure data: EU-wide travel survey 2021	Base for exposure data: National Travel Survey 2023
Cyclist fatalities: 3-year average (Source: CARE Public Dashboard)	25 (2020-2022)	25.3 (2021-2023)
Cyclist fatalities per 100 million kilometres cycled	0.66	0.95

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Cycling Safety

Main data sources

- EU-wide sources:
  - CARE database on road safety
- National sources:
  - National road safety statistics, based on:
    - Police reporting (all Member States)
    - Death certificates (few Member States)
    - Hospital statistics (few Member States)

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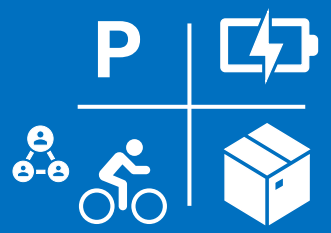
Data domains: Services

Cycle services



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Cycling services
Selection of services + status

	Bike Sharing	Cycle Logistics	Cycle parking
Standardised indicators agreed?	Y	Y	Y Based on MMTIS data
Definitions of the data?	Y	Y	Via NAPCORE: MMTIS required
A method of collection?	Y	For certain sub-sectors Not comprehensive	Possible
EU-wide data sets?	Y 21 countries very good	Tested method in 3 countries only	OSM only – with wide gaps in coverage

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European Commission

Cycling Services

Key indicators

Bike sharing - EU data set

Number of cities over 150k population with bike sharing	204 of 292 (70%) - range from 0-100%
Fleet size	289,000, of which 44% e-bike (Range from 2% to 100% e-bike share)
Fleet size relative to population	0.6 bikes per 10k population (Range from 0 to 15 bikes per 10k)
Trips	200 million per year
Trips contribution to EU mode share	0.9% of all cycling trips (Range from 0 to 4.5%)

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Cycling Services

Key indicators – work in progress

Cycle logistics - National examples

Distance travelled per year in cycle logistics relative to population or to national cycle use.	France: 159 million km (2.36 km per million pop, 1% national cycling trips)
Number of commercial users of bikes per year in cycle logistics relative population.	France: 24,000 users (359 per million population)
Ratio between the number of incidents and the number of KM travelled in cycle logistics	Belgium: 92 incidents (7.9 per million km)

Cycle parking - partial EU data set

Number of parking places	Locations found in OSM 523,000, of which 80% have capacity information, giving 4.5 million places
Number of bike parking places relative to kilometre of cycling infrastructure.	In progress
Number of parking places relative to kilometres travelled per day by whole population.	0.009 places per daily km cycled (Range from 0 to 0.028)
Number of parking places (NBPP) relative to daily trips taken by whole population.	0.08 places per daily trip cycled (Range from 0 to 0.24)

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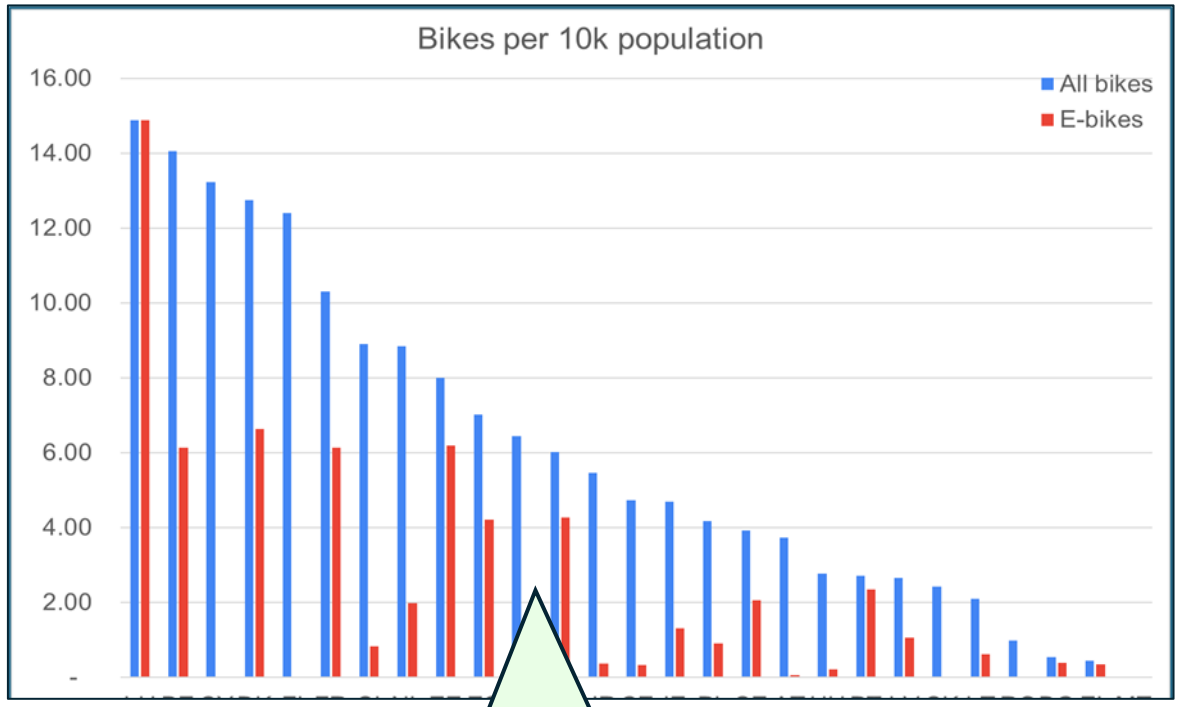
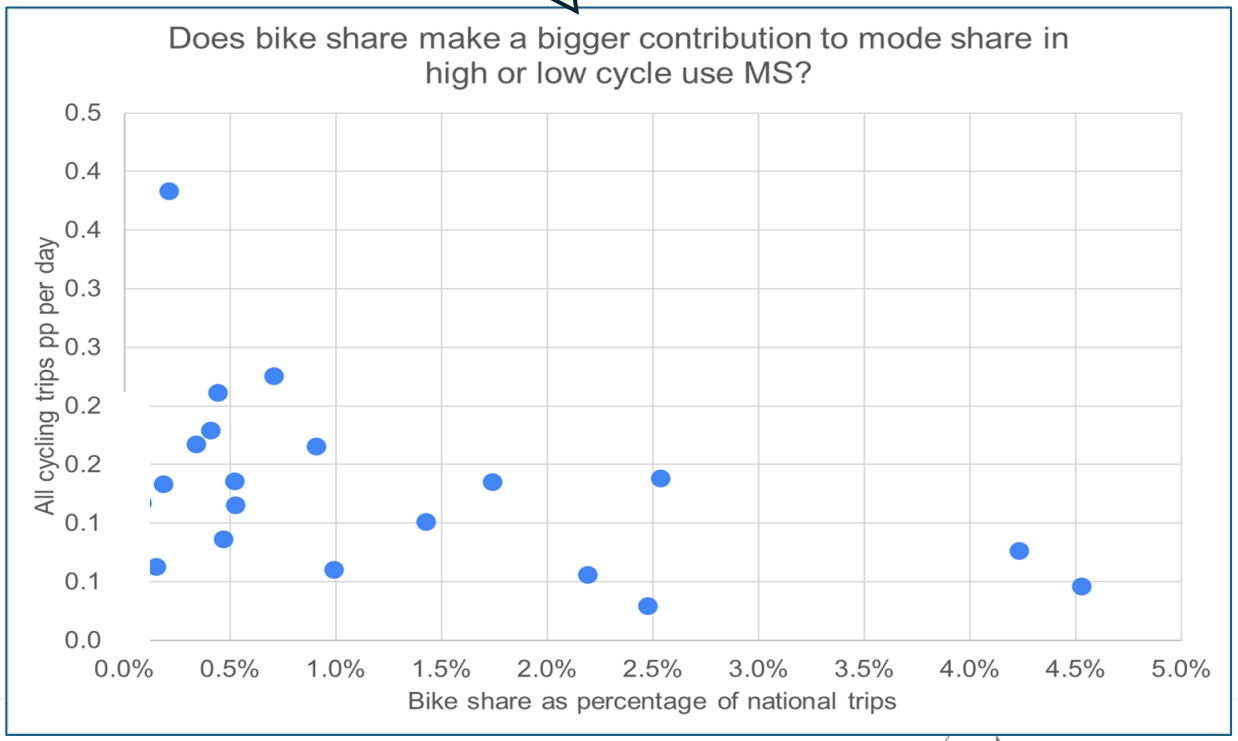
Overall:
The data is distinctive enough be analysed for trends



Within data components
e.g. sharing

Across data components –
e.g. cycle use and sharing



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Data domains: Network

Cycle network

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Cycle network

Key indicators: EU Summary

	Cities	Towns and suburbs	Rural areas	Outside LAU	Unknown	Total
Cycle tracks	60,729 km	105,880 km	70,493 km	189 km	66,056 km	**303,346 km**
Cycle lanes	6,311km	8,300 km	4,481 km	3 km	10,986 km	**30,080 km**
Cycle-friendly mixed traffic	121,758 km	197,823 km	128,054 km	64 km	133,322 km	**581,021 km**
Total network	**188,798 km**	**312,002 km**	**203,028 km**	**256 km**	**210,364 km**	**914,447 km**
Contraflow cycling	8,067km	4,700 km	854 km	1 km	5,954 km	**19,576 km**

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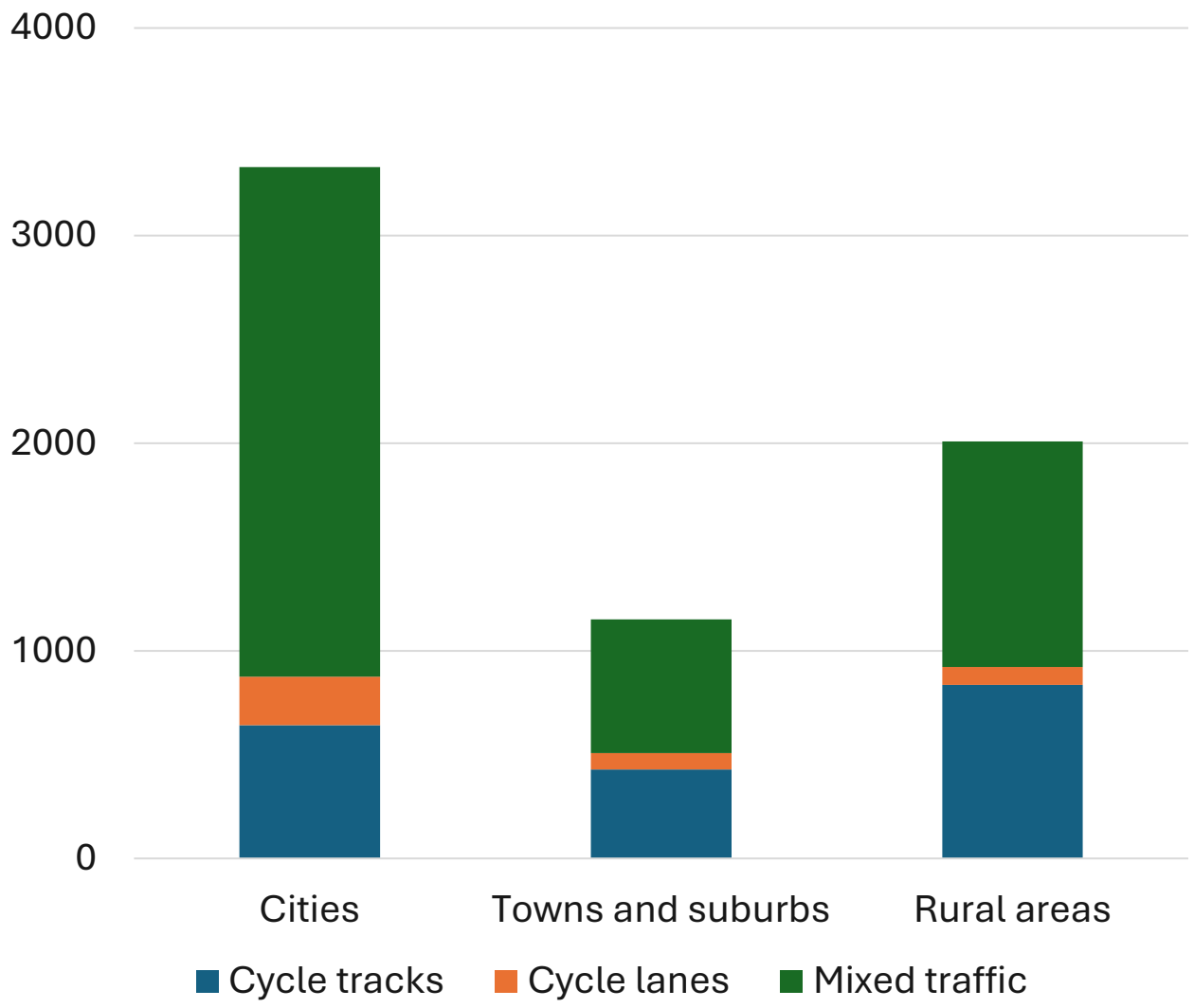
Cycle network

Baseline data calculated for each Local Administrative Unit:

- Type of infrastructure vs type of area
- Cycle network "densities" in relation to area, population, public road network



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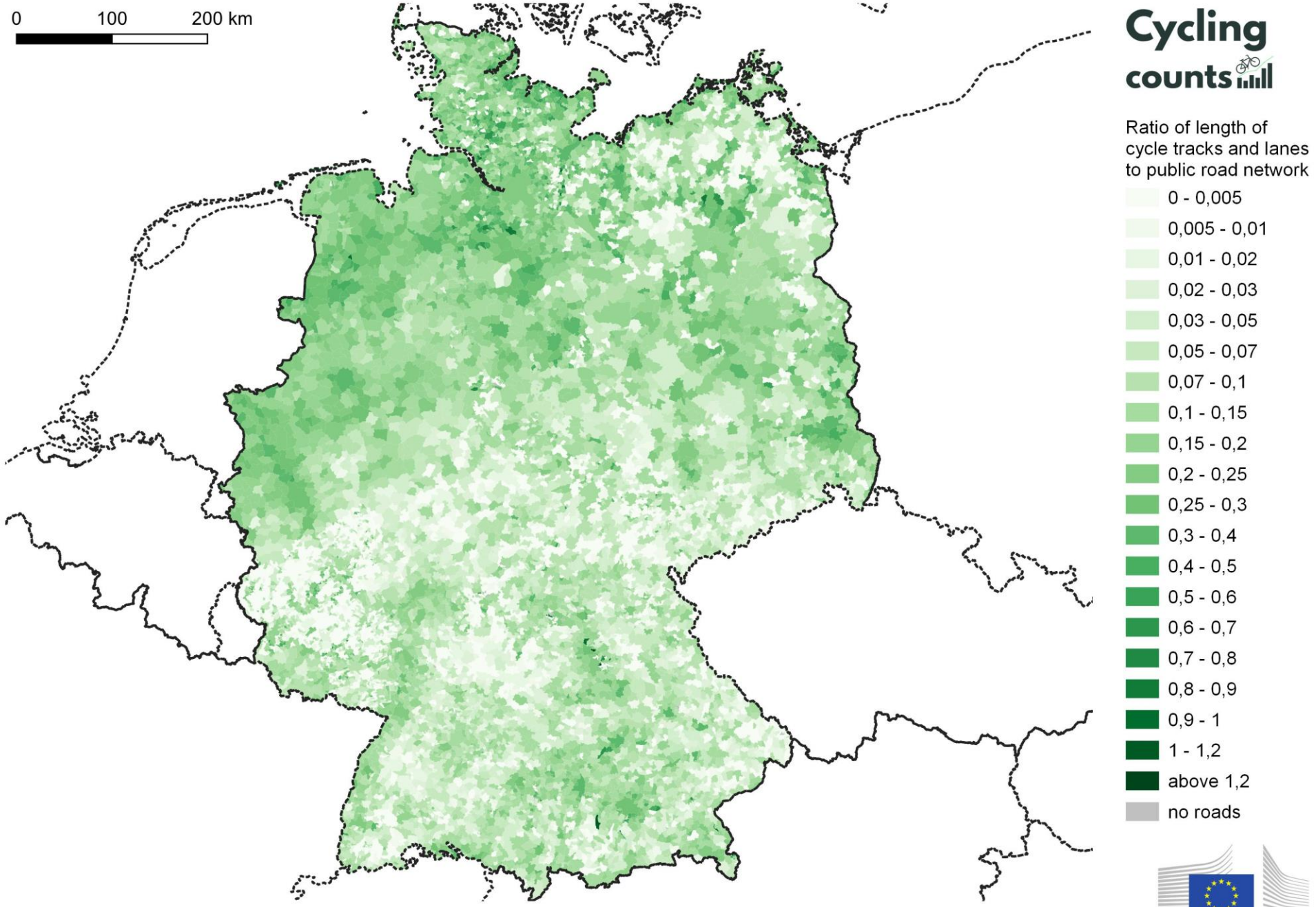

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3 - Defining methodologies for further data collection

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Methodology for future data collection

A robust EU cycle data development framework

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Robust EU cycle data development framework

Levels of development of the data framework

LEVEL 1

LEVEL 1: Data framework for the current baseline

- What we can/could collect now, considering the availability of data, as revealed from Member State analysis

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Robust EU cycle data development framework

Levels of development of the data framework

LEVEL 1

LEVEL 1: Data framework for the current baseline

- What we can/could collect now, considering the availability of data, as revealed from Member State analysis

LEVEL 2

LEVEL 2: Recommendations for a future EU-wide cycle dataset

- Balance between reasonable ambitions to come to a strong description of the overall cycle system and the realistic capabilities of the Member States to collect relevant cycle data
- Timeframe: 5 years?

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Robust EU cycle data development framework

Levels of development of the data framework

LEVEL 1

LEVEL 1: Data framework for the current baseline

- What we can/could collect now, considering the availability of data, as revealed from Member State analysis

LEVEL 2

LEVEL 2: Recommendations for a future EU-wide cycle dataset

- Balance between reasonable ambitions to come to a strong description of the overall cycle system and the realistic capabilities of the Member States to collect relevant cycle data
- Timeframe: 5 years?

LEVEL 3

LEVEL 3: The ideal EU-wide cycle dataset

- To respond to all EU policy objectives?
- Considering the ever-increasing importance of data
- Making use of growing technical capabilities

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Cycle Use

Key indicators

LEVEL 1

Data sets
Number of inhabitants per frequency of cycling (daily, once a week, never, etc.) – total population – female population – male population (age +15y)
Number of cycling trips per year – total population (+15y)
Distance cycled per year – total population (+15y)

All data for the analysed area (Member State or parts of it)

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Cycle Use
Key indicators

LEVEL 1

Data sets
Number of inhabitants per frequency of cycling (daily, once a week, never, etc.) – total population – female population – male population (age +15y)
Number of cycling trips per year – total population (+15y)
Distance cycled per year – total population (+15y)

Exposure data
Number of inhabitants (+15y)
Total number of all trips (population +15y)

All data for the analysed area (Member State or parts of it)

CYCLING COUNTS

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European Commission

Cycle Use
Key indicators

LEVEL 1

Data sets
Number of inhabitants per frequency of cycling (daily, once a week, never, etc.) – total population – female population – male population (age +15y)
Number of cycling trips per year – total population (+15y)
Distance cycled per year – total population (+15y)

Exposure data
Number of inhabitants (+15y)
Total number of all trips (population +15y)

Key Indicators
Share of population that cycles at least once a week – total population – female population – male population (+15y)
Cycling modal share of all trips – total population (+15y)
Distance cycled per year per person (+15y)

All data for the analysed area (Member State or parts of it)

CYCLING COUNTS

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Cycle Use
Key indicators

LEVEL 2

Data sets
Number of inhabitants per frequency of cycling (daily, once a week, never, etc.) – total population – female population – male population (all ages)
Number of cycling trips per year – total population (all ages) – per age category
Distance cycled per year – total population (all ages)

Exposure data
Number of inhabitants (**all ages**)
Total number of all trips (**all ages**)

Key Indicators
Share of population that cycles at least once a week – total population – female population – male population (all ages)
Cycling modal share of all trips – total population (all ages) – per age category
Distance cycled per year per person (all ages)

All data for the analysed area (Member State or parts of it)

CYCLING COUNTS

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European Commission

Cycle Use
Country fiches

LEVEL 1

REPUBLIKA SLOVENIJA
STATISTIČNI URAD

DNEVNA MOBILNOSTI POTNIKOV

(TR-MOB)

Key indicators

Cycle use

Share of population (15+) that cycles to and from places at least once a week: 35.5%

Female population (15+): 30.7%

Male population (15+): 40.3%

Source: European Health Interview Survey, third wave 2019 (hlth_ehis_pe3e)

	EU-wide travel survey 2021	National travel survey 2021
Cycling modal share	7.6% (of all trips < 300 km)	5.3 % (of all trips < 300 km)
Kilometres cycled per year per person of the reference population	646.6 km per person (population aged 15-84)	149.2 km per person (population aged 15-84)

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European Commission

Cycle Use
Country fiches

LEVEL 2

MiD
Mobilität in Deutschland

Age groups

EU-WIDE TRAVEL SURVEY 2021 (% OF ALL TRIPS < 300 KM)

Age 15-29	14.4 %
Age 30-64	10.5 %
Age 65+	9.2 %

NATIONAL TRAVEL SURVEY 2023 (% OF ALL TRIPS)

Age 0-6	9 %
Age 7-10	13 %
Age 11-13	18 %
Age 14-17	16 %
Age 18-29	8 %
Age 30-39	8 %
Age 40-49	7 %
Age 50-59	8 %
Age 60-64	7 %
Age 65-74	6 %
Age 75-79	6 %
Age 80+	5 %

TRAFIK ANALYS

Resvanor i Sverige 2024

NATIONAL TRAVEL SURVEY 2024 (AVERAGE DISTANCE CYCLED PER PERSON PER YEAR)

Large cities	511 km
Commuting municipalities near large cities	146 km
Medium-sized towns	365 km
Commuting municipalities near medium-sized towns	146 km
Commuting municipalities with a low commuting rate near medium-sized towns	110 km
Small towns	183 km

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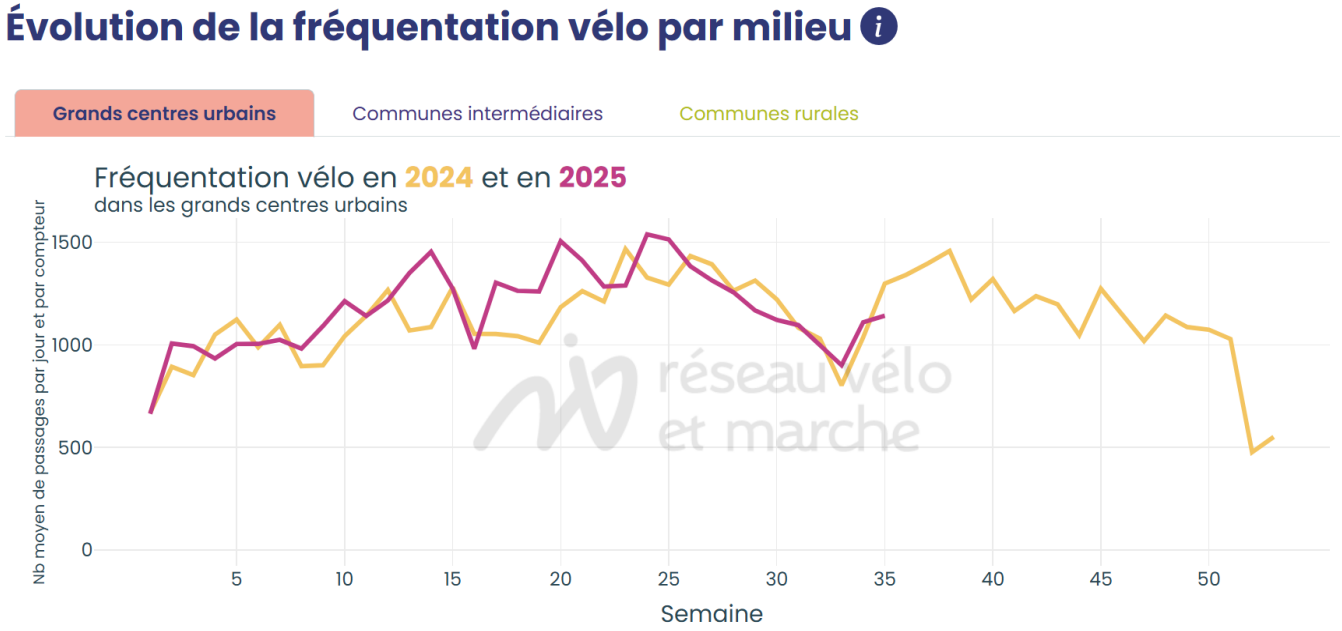
Cycle Use
Country fiches

LEVEL 3

Use of additional data sources:

- Data streamlined per country's **geography:** further analysis for policy implementation

- Use of **technological applications** as cyclists' counters or floating data for more precise results and consolidation on a national scale



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Cycle Use

LEVEL 1

- Cycling Usage data included in National Travel survey:
  - Share of population that cycles (with gender split)
  - Cycling modal share of all trips
  - Distance cycled per year per person

LEVEL 2

- EU + national surveys carried out regularly.
- Cycling usage data is now streamlined per **all age categories.**
- Gender split data included in the 3 key indicators

LEVEL 3

- Harmonised National Travel Surveys to a EU-wide scale
- Use of additional data sources (**automatic counters, floating data**) to complement surveys + track developments close to real time
- Geodata included in National Travel Survey: cities and regions data

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Cycle Use
Questions

1. Which **initiatives** or **concrete actions** are **currently being done** to improve cycle use data collection in your country?

2. What administrative, financial, or technical **changes** would be needed to improve cycle use data in your country?

3. What could be done to **improve harmonisation** of cycle use data across Member States?

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Which initiatives or concrete actions are currently being done to improve cycle use data collection in your country?

What administrative, financial, or technical changes would be needed to improve cycle use data in your country?

What could be done to improve harmonisation of cycle use data across Member States?

Cyclists' safety

Key indicators

LEVEL 1

Data sets
Number of persons **fatally injured** in road accidents while cycling per year (3-year average)

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Cyclists' safety

Key indicators

LEVEL 1

Data sets
Number of persons **fatally injured** in road accidents while cycling per year (3-year average)

Exposure data
Total number of km cycled per year

CYCLING COUNTS

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Cyclists' safety
Key indicators

LEVEL 1

Data sets
Number of persons **fatally injured** in road accidents while cycling per year (3-year average)

Key Indicator
Cyclist **fatalities** (3-year average)
Cyclist **fatalities** (3-year average) per 100 million kilometres cycled

Exposure data
Total number of km cycled per year

CYCLING COUNTS

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Cyclists' safety

Key indicators

LEVEL 2

Data sets
Number of persons **fatally injured** in road accidents while cycling per year (3-year average)
Number of persons **seriously injured** in road accidents while cycling per year (3-year average)

Key Indicator
Cyclist **fatalities** (3-year average)
Cyclist **fatalities** (3-year average) per 100 million kilometres cycled
Seriously injured cyclists (3-year average)
Seriously injured cyclists (3-year average) per 100 million kilometres cycled

Exposure data
Total number of km cycled per year

CYCLING COUNTS

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Cyclists' safety

Key indicators

LEVEL 2

Data sets
Number of persons **fatally injured** in road accidents while cycling per year (3-year average)
Number of persons **seriously injured** in road accidents while cycling per year (3-year average)

LEVEL 3

Lightly injured cyclists

Key Indicator
Cyclist **fatalities** (3-year average)
Cyclist **fatalities** (3-year average) per 100 million kilometres cycled
Seriously injured cyclists (3-year average)
Seriously injured cyclists (3-year average) per 100 million kilometres cycled

Exposure data
Total number of km cycled per year

CYCLING COUNTS

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Cyclists' safety
Country fiches

LEVEL 1

Cyclists' safety		
	Base for exposure data: EU-wide travel survey 2021	**Base for exposure data: National Travel Survey 2013/2014**
Cyclist fatalities: 3-year average (Source: CARE Public Dashboard)	44.7 (2020-2022)	45.3 (2013-2015)
Cyclist fatalities per 100 million kilometres cycled	1.06	2.43

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Cyclists' safety
Country fiches

LEVEL 2

Number of cyclist fatalities in 2023	270
Share of e-bikes in collisions with fatalities involving bicycles	At least 43%
Number of serious cyclist injuries in 2023	4,910
Share of e-bikes in collisions with serious injuries involving bicycles	At least 17%
Number of cyclists injured in a collision that were transported in an ambulance	Ca. 38,700

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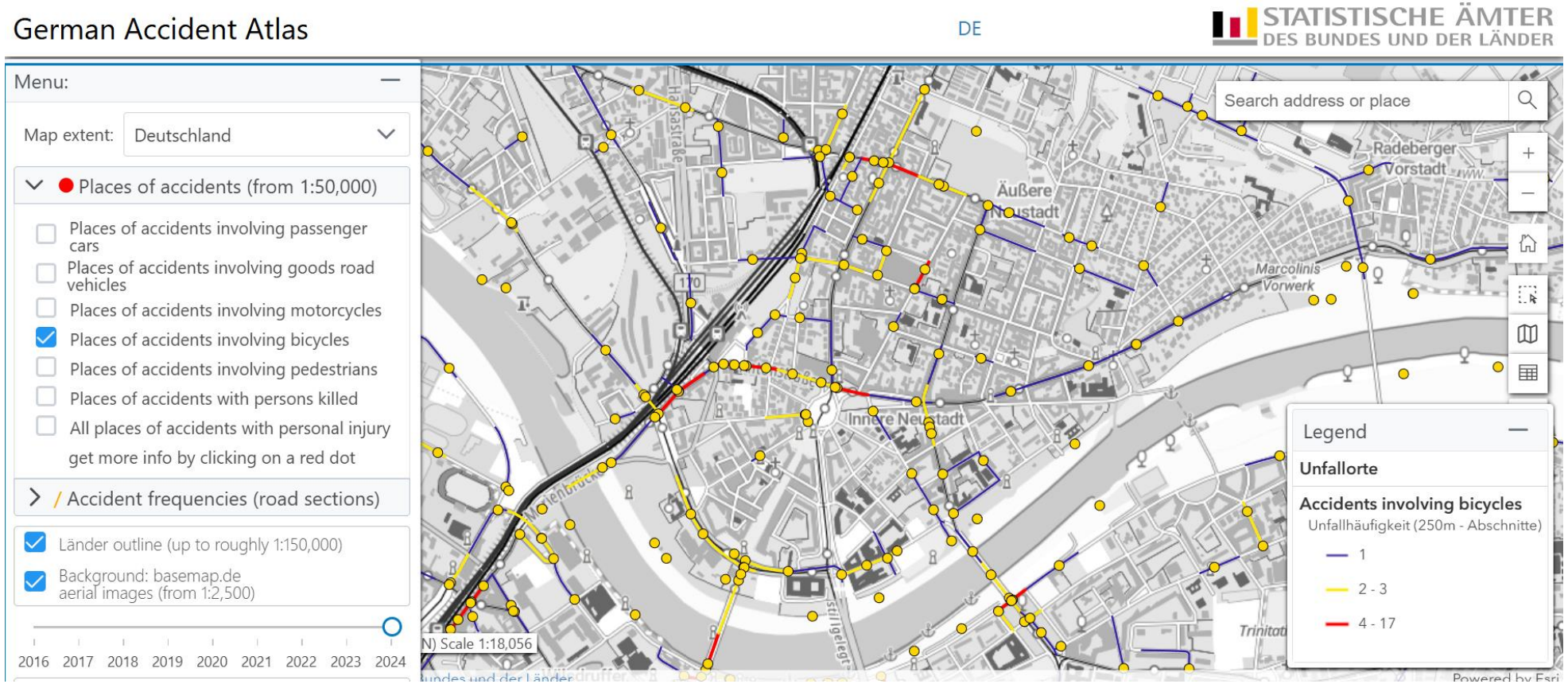
Cyclists' safety

Country fiches

LEVEL 2



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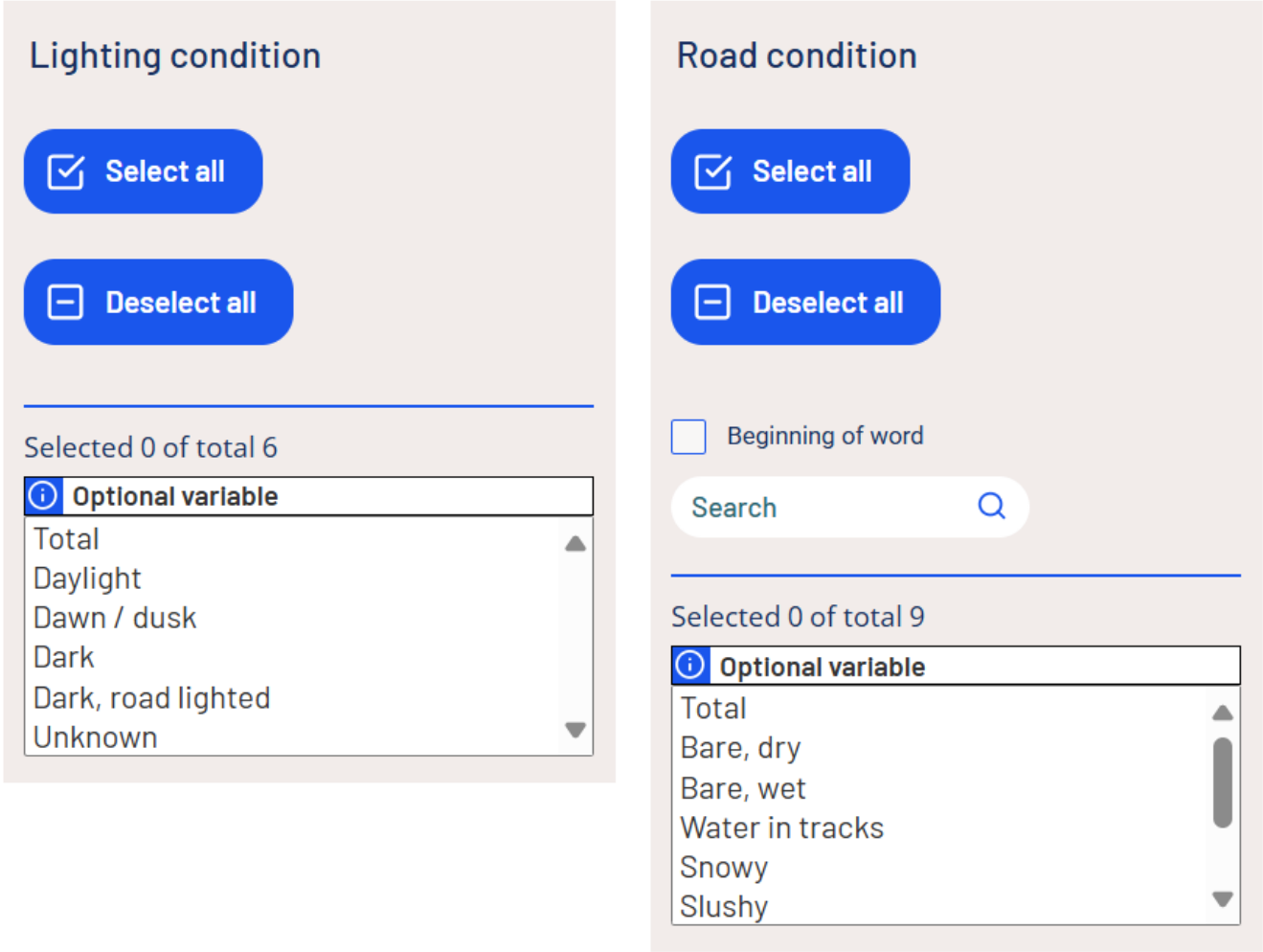
Cyclists' safety
Country fiches

LEVEL 3

Statistics Finland



CYCLING COUNTS

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Cyclists' safety
Data collection methods

LEVEL 1

- Data available from police records in **CARE database** according to Council Decision 93/704/EC
- Only data on **fatalities** is comparable

LEVEL 2

- **Expand data** from police records with hospital data, making also data on serious injuries more comparable
- Data is **geolocated**
- Harmonised **exposure data** from EU-wide travel survey (link to usage)

LEVEL 3

- Use **innovative data sources** (sensors on bicycles, apps) to also track crashes with light injuries or no injuries + „almost" crashes
- Collect additional data on the **circumstances of the crash**, such as type of the accident, road condition, lighting condition etc.

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Cyclists' safety
Questions

1. What administrative, financial, or technical **changes** would be needed to improve data on cyclists' safety in your country?

2. Are we missing any data sets that are **being collected** in your country that can enhance the safety data?

3. What can be done to **minimise underreporting** of cycling crashes?

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What administrative, financial, or technical changes would be needed to improve data on cyclists' safety in your country?

Are we missing any data sets that are being collected in your country that can enhance the safety data?

What can be done to minimise underreporting of cycling crashes?

Cycling Services

Selected services to measure

- Two sources of standardized indicators

  - Bike sharing
  - Cycle logistics

  < Industry data – aggregated data from service providers

  - Cycle parking

  < Infrastructure data from mapping, MMTIS required

CYCLING COUNTS

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Cycling services – bike sharing and logistics

Key indicators

Data sets
Bike sharing systems exist in cities over threshold size
Number of shared bikes in the national fleet
Number of commercial delivery/cargo bikes in the national fleet

LEVEL 1

Key Indicator
Percentage of cities with bike share
Shared bikes per 10k population
Delivery bikes per 10k population

Exposure data
Number of cities over threshold population
National population

CYCLING COUNTS

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Cycling services – bike sharing and logistics
Key indicators

Data sets
Bike sharing systems exist in cities over threshold size
Number of shared bikes in the national fleet
Number of commercial delivery/cargo bikes in the national fleet
Annual number of bike sharing trips
Annual distance of cycle logistics deliveries (km)

LEVEL 2

Key Indicator
Percentage of cities with bike share
Shared bikes per 10k population
Bike share trips per 1000 population per day, contribution to national trips %
Delivery bikes per 10k population
Delivery km per national population, contribution to national cycle km %

Exposure data
Number of cities over threshold population
National population
National cycle use in km and trips

Cycling services – bike sharing and logistics
Key indicators

Data sets
Bike sharing systems exist in cities over threshold size
Number of shared bikes in the national fleet
Number of commercial delivery/cargo bikes in the national fleet
Annual number of bike sharing trips + distance travelled
Annual distance of cycle logistics deliveries (KM) + number trips
Number of unique users/riders
Incidents reported by operators

LEVEL 3

Key Indicator
Percentage of cities with bike share
Shared bikes per 10k population
Bike share and delivery trips per 1000 population per day, contribution to national trips % +distance travelled and share national km
Delivery bikes per 10k population
Number of users as % of number cyclists in country - both BS & logistics
Commercial safety – incidents per M km, share of national incidents

Exposure data
Number of cities over threshold population
National population
National cycle use in km and trips
Number of cyclists
Cycle safety – national baseline incidents

Cyclists' services – bike share and logistics
Country fiches

- Bike sharing
  - 3 countries close to level 3
  - 18 countries close to level 2
  - 3 countries level 1
- Cycle logistics
  - 3 countries level 1

Key indicators

FRANCE

Bike Sharing		
Number of cities over 150k population with a bike sharing scheme	70%	
Trips per 1000 population per day for measured cities, for whole country	Cities 12.1 trips	Nat 3.3 trips
Fleet: Bikes/ e-bikes per 10,000 population for measured cities, for whole country	Cities 38.4/22.8 (59%)	Nat 10.3/6.1
Bike share contribution to national mode share	4.2%	

BELGIUM

Cycle Logistics	
Total distance covered by cycle logistics operations	10.59 million
Fleet size of (carrier) cycles used for cycle logistics	
Million km per million population, (% of national cycling trips)	0.91 (0.2%)
Incidents reported in cycle logistics operations	92
Incidents per km travelled in cycle logistics	7.9

Cycling services

Data collection methods – bike sharing and logistics

	LEVEL 1	LEVEL 2	LEVEL 3
Bike sharing source	**All data comes from bike share scheme operators**		
Completeness	Can be audited by cities, simple bike count	At least 95% trip data available	Trip, user and distance data
Aggregation and confidentiality	Supplied by cities, MS or operators	For larger countries needs a trade association, researcher or agency	
Alternative sources			Travel surveys for user data
Cycle logistics source	**All data comes from cycle service operators**		
Completeness – sectors that could be included, if there is significant support from MS and cities at national level	Challenging to extend scope to across all delivery types, voluntary participation	Target: Post, Courier, Express, Delivery and Parcel services; Transport and Logistics; Municipal & institutional; Waste collection/circular economy	Add: Food delivery platforms. Service delivery (professionals, such as plumbers, gardeners,…) Passenger transport
Aggregation and confidentiality	Only 3 countries have trade associations trying to collect	Needs a trade association, researcher or agency in cycling or logistics sectors	

Cycling services

Questions on bike sharing and logistics

1. What administrative/financial/technical changes would you need to make to implement what we are suggesting?

2. Are we missing any data sets?

3. What can be done to improve data availability?

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What administrative/financial/technical changes would you need to make to implement what we are suggesting?

Are we missing any data sets?

What can be done to improve data availability?

Cyclists' services – parking

LEVEL 1

- No realistic EU or national baselines
  - Data found for all MS, but reflects OSM use, not parking available
  - Public bodies and private providers not complete, not in same data sets
  - Partial national data collection 2 countries

Cycle parking - partial EU data set	
Number of parking places	Locations found in OSM 523,000, of which 80% have capacity information, giving 4.5 million places
Number of bike parking places relative to kilometre of cycling infrastructure.	In progress
Number of parking places relative to kilometres travelled per day by whole population.	0.009 places per daily km cycled (Range from 0 to 0.028)
Number of parking places (NBPP) relative to daily trips taken by whole population.	0.08 places per daily trip cycled (Range from 0 to 0.24)

Cycling services – parking

Data sets extractable from MMTIS requirements

LEVEL 2 | LEVEL 3

Availability	Capacity	Type (attributes)	NAPCORE suggested data standards (quality)	Additional – MMTIS requirement
A place where a cyclist can find a place to park "Locations"	Number of bicycle parking places in location "NBPP"	Stand, locker, shed, two-tier, building, rack	Covered, paid, access restriction, surveillance, e-bike access and charging	Part of a multi-modal hub

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Cycling services – parking

Key indicators

Availability	Capacity	Type (attributes)	NAPCORE suggested data standards (quality)	Additional – MMTIS requirement
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LEVEL 2

LEVEL 3

Key Indicator
Parking places available per trip
Parking places available per km cycled
Parking places available per km cycling infrastructure
Breakdown of parking mix according to attributes and quality

Exposure data
Number of daily cycling trips
Number of daily cycling km
Distance of cycling infrastructure (km)

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Cycling services

Data collection methods- parking

	LEVEL 2	LEVEL 3
Sources	OSM community and landowners for parking on private land Municipalities for publicly funded and permitted parking Public transport providers	
Completeness	All publicly funded Multi-modal hubs (as required by MMTIS)	Full MMTIS compliance
Data Standards applied	Location and capacity	Full attributes – to be defined and mapped across OSM, Datex etc. as part of NAPCORE process
Availability	National infrastructure mapping where relevant OSM if nothing equivalent is available	National MMTIS compliant service in NAP (normally same service and data set as cycling infrastructure)

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Cycling services
Questions on cycle parking

1. What administrative/financial/technical changes would you need to make to implement what we are suggesting?

2. Are we missing any data sets?

3. What can be done to improve data availability?

CYCLING COUNTS

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What administrative/financial/technical changes would you need to make to implement what we are suggesting?

Are we missing any data sets?

What can be done to improve data availability?

Cycle Network

Infrastructure type

Cycle track

Cycle lane

Cycle-friendly mixed traffic road

Cycle Network

Infrastructure type

Variations

Cycle track

Greenway

Cycle and pedestrian track

Cycle lane

Bus-and-cycle lane

Cycle-friendly mixed traffic road

Cycle street

Residential area

Specific service road

On-path shared with pedestrians

CYCLING COUNTS

European Commission

Cycle Network
Indicators

Geographic data sets		Quality requirements
		LEVEL 1
Cycle tracks		No MTB
Cycle lanes		/
Cycle-friendly mixed traffic roads		

CYCLING COUNTS

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Cycle Network
Indicators

Geographic data sets		Quality requirements
		LEVEL 1
Cycle tracks		No MTB
Cycle lanes		/
Cycle-friendly mixed traffic roads		

Indicator
Total length of the dedicated cycling network

CYCLING COUNTS

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Cycle Network
Indicators

Geographic data sets		Quality requirements
		LEVEL 1
Cycle tracks		No MTB
Cycle lanes		/
Cycle-friendly mixed traffic roads		

Indicator
Total length of the dedicated cycling network
Total length of the cycling network

CYCLING COUNTS

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Cycle Network
Indicators

Geographic data sets		Quality requirements
		LEVEL 1
Cycle tracks		No MTB
Cycle lanes		/
Cycle-friendly mixed traffic roads		

Indicator
Total length of the dedicated cycling network
Total length of the cycling network

Exposure data
Number of inhabitants
Surface area
Length of road network

All data for the analysed area (Member State or parts of it)

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CYCLING COUNTS

European Commission

Cycle Network
Indicators

Geographic data sets		Quality requirements
		LEVEL 1
Cycle tracks		No MTB
Cycle lanes		/
Cycle-friendly mixed traffic roads		

Indicator
Total length of the dedicated cycling network
Total length of the cycling network

Exposure data
Number of inhabitants
Surface area
Length of road network

Key Indicators: density of cycling network
Length (km) of the (dedicated) cycling network per 10.000 inhabitants
Length (km) of the (dedicated) cycling network per 100 km^2
Length (km) of the (dedicated) cycling network to road network

All data for the analysed area (Member State or parts of it)

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CYCLING COUNTS

European Commission

Cycle Network
Indicators

Geographic data sets		Quality requirements	
		LEVEL 1	LEVEL 2
Cycle tracks		No MTB	YES
Cycle lanes		/	YES
Cycle-friendly mixed traffic roads			YES

Indicator
Total length of the dedicated cycling network
Total length of the cycling network

Exposure data
Number of inhabitants
Surface area
Length of road network

Key Indicators: density of cycling network
Length (km) of the (dedicated) cycling network per 10.000 inhabitants
Length (km) of the (dedicated) cycling network per 100 km^2
Length (km) of the (dedicated) cycling network to road network

All data for the analysed area (Member State or parts of it)

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Cycle Network

Data attributes >> quality requirements

LEVEL 2

Geographic data sets		Quality requirements	
Cycle tracks		Min. width Min. surface quality	↑ 1.5 m ↑↓ 2.4 m Moderately rideable
Cycle lanes		Min. width Min. surface quality Max. traffic speed limit + max. traffic volume	↑ 1.4 m Moderately rideable 50 < 3000 veh./day 70 <1000 veh./day
Cycle-friendly mixed traffic roads		Max. traffic speed limit Max. traffic speed limit + max. traffic volume	30 <3000 veh./day 50 < 1000 veh./day

Examples

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Cycle Network

Attributes

Attributes of a network segment	Cycle track			Cycle lane			Mixed traffic road		
Width		L2	L3		L2	L3			
Traffic speed limit					L2	L3	L1	L2	L3
Distance to car lane			L3			L3			
Type of separation						L3			
Traffic volume					L2	L3		L2	L3
Surface quality		L2	L3		L2	L3			
Type of surface	L1	L2	L3	L1	L2	L3	L1	L2	L3
Lighted/not lighted		L2	L3		L2	L3		L2	L3
Gradient / elevation difference			L3			L3			
Curvature			L3			L3			
Crossings / intersections			L3			L3			

Attributes evaluated in combination

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Cycle Network

Part of the road network or separate?

- Part of the road network (Austria, Finland, NL, Sweden, OSM)
  - You need most of the road network for routing anyway
  - Avoiding duplicate work (for example speed limits)
- Separate cycle network (cities, regions, OSM extracts)
  - Easier to set up and maintain
  - Easier to understand and use
  - Focus on parts of the road network important for cycling

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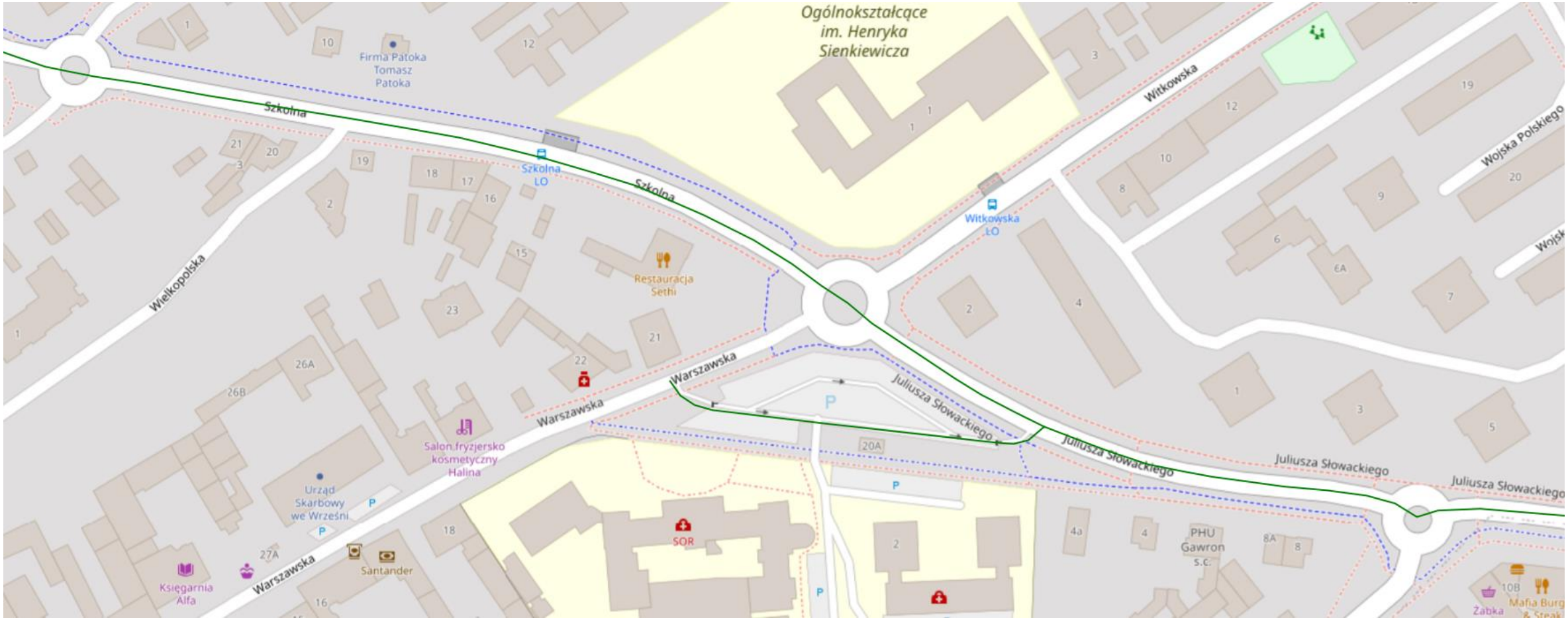
Cycle Network

How to represent geometry?



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Cycle Network

How to represent geometry?

- Road axis (e.g. Wielkopolska, OSM)
  - Variant: road axis + offset (e.g. Austria)
  - Simpler graph, easier/faster pathfinding
- Cycle infrastructure axis (most of other, also OSM)
  - More detailed maps
  - Better representation of length/distance
- As area (e.g. NL/BGT)
  - Most detailed, best to represent irregularities in widths and surfaces, but problems with routing

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Cycle Network

Baseline data – total length per Member State

LEVEL 1

Cycle track

- No quality requirement (attributes)
- We try to filter out MTB trails

Cycle lane

- No quality requirement (attributes)
- Priority attribute: width, but not commonly available

Cycle-friendly mixed traffic road

- Max. 30 km/h, or
- Cycle street signs, or
- Limited traffic of motorised vehicles (specific service roads)

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Cycle Network
Country fiches

LEVEL 1	Length in km	In relation to road network	Km per 10,000 population	Km per 100 km2	Source
Cycle tracks	4096	3.5%	3.76	5.19	Cyklovize
Cycle lanes	243	0.2%	0.22	0.31	OSM
Cycle-friendly mixed traffic	10473	9.0%	9.61	13.28	OSM
Total	14813	12.7%	13.59	18.78	

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Cycle Network
Country fiches

LEVEL 1

	Cities	Towns and suburbs	Rural areas	Total
Cycle tracks	849	1605	1635	4096
Cycle lanes	129	91	22	243
Mixed traffic	2376	2683	5413	10473
Total network	3355	4380	7071	14812
Contraflow cycling	120	149	40	308

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European Commission

Cycle Network
Country fiches

LEVEL 1

	NVDB	OSM
% of cycle tracks with surface type known	(100%)	74%
% of cycle lanes with surface type known	(100%)	87%
% of cycle tracks with surface quality known	n/a	5%
% of cycle lanes with surface quality known	n/a	4%
% of cycle tracks with width known	32%	3%
% of cycle lanes with width known	32%	n/a
% of cycle tracks with lighting known	(100%)	23%
% of cycle lanes with lighting known	(100%)	24%
% of all roads with speed limit known	100%	49%
% of all roads with traffic volume known	47%	n/a

CYCLING COUNTS

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European Commission

Cycle Network
Country fiches

LEVEL 2	% with parameter known	mean value	% meeting minimum quality threshold	% meeting high quality threshold	source
Width of unidirectional cycle tracks	90%	1.93 m	92%	54%	NVDB
	50%	1.85 m	48%	32%	OSM
Width of bidirectional cycle tracks	90%	2.91 m	84%	59%	NVDB
	60%	2.44 m	44%	39%	OSM
Width of unidirectional cycle lanes	90%	1.48 m	24%	8%	NVDB
Surface quality of cycle tracks	30%	90%	96%	83%	OSM
Surface quality of cycle lanes	30%	92%	99%	94%	OSM

CYCLING COUNTS

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Cycle Network

Sources for level 2 attributes

Attribute	Potential sources
Width	• design drawings, construction contracts • asset management • field measurements: dedicated equipment or smartphone apps
Surface quality	• visual/qualitative assessment • measurement cars/scooters/bikes, dedicated sensors, smartphone apps • degradation forecasts
Traffic speed limit	• sign databases • synergy with ISA maps • field verification
Traffic volume	• models

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Cycle Network
Questions

1. What attributes would be most important for you? (up to 6)
2. What administrative, financial or technical changes would need to happen to enable you to get data on these attributes?
3. Up to what speed limit can you consider a local, low-traffic rural road "cycle-friendly mixed traffic"?
4. What would you advise countries / regions / cities that only start to set up their cycling network database?

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What attributes would be most important for you? Select up to 6.

What administrative, financial or technical changes would need to happen to enable you to get data on these attributes?

Up to what speed limit can you consider a local, low-traffic rural road "cycle-friendly mixed traffic"?

What would you advise countries / regions / cities that only start to set up their cycling network database?

Thank you!

Join us tomorrow for the session “Spotlight on cycling data in the EU,” from 17:15-18:30!

For any further questions, please contact:

Cycling-counts@eurocities.eu

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