

MODAL SHARE

This document has been prepared by a group of experts under the “European Urban Mobility Observatory and Support” contract. It does not reflect or anticipate the position of the Commission. It does not constitute a legal proposal. The purpose of this document is to outline the indicators and the data required to calculate them, which the experts consider to be most appropriate for urban nodes to measure in the respective area. This document is intended to serve as a basis for reflection and further work on relevant indicators required by the TEN-T Regulation.

Data requirements

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|---|---|--|--|----------------------------------|--|
| D1 | I1. Total population [# inhabitants] | Data on the size of the total population on 1 st January | Cities, Offices for national or local statistics | | Data collected every year | Survey: 93 city, 4 FUA, 113 both city and FUA 210 total at city and/or FUA level (98% of respondents) 1 doesn't know (0.5% of respondents) |
| D2 | O1. Number of trips by city/FUA inhabitants broken down by mode per year [# trips per mode per year] | Preferred dataset Data from an overall household survey Alternative datasets Data from a representative sample survey Data from a multi-modal traffic model | Cities, Offices for national or local statistics | Household survey by internet or paper Telephone, internet or paper survey | Every 3-5 years | Survey: <u>mobility survey done:</u> 99 city, 5 FUA, 64 both city and FUA 168 total at city and/or FUA level (78% of respondents) 6 don't know (3% of respondents) <u>traffic model used:</u> 91 city, 7 FUA, 57 both city and FUA 155 total at city and/or FUA level (72% of respondents) 7 don't know (3% of respondents) |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|---|---|--|--|----------------------------------|--|
| D3 | O2,O3,O4,O5 Number of trips by city/FUA inhabitants to and from a workplace, school, shop, leisure place by mode per year [# trips per mode per year] | <p>Preferred dataset Data from an overall household survey</p> <ul style="list-style-type: none"> ○ Work trips ○ School trips ○ Shopping trips ○ Leisure trips <p>Broken down by the following modes:</p> <ul style="list-style-type: none"> ○ Walking ○ Cycling (including by pedelec) ○ Moped (including speed-pedelec) ○ Motorcycle ○ E-micromobility ○ Taxi and ride-hailing ○ Car (except taxi and ride-hailing) ○ Public transport (including bus, coach, trolleybus, tram, light rail, metro, train, water bus) <p>Alternative datasets Data from a representative sample survey Data from a multi-modal traffic model</p> | Cities, Offices for national or local statistics | Household survey by internet or paper Telephone, internet or paper survey | Every 3-5 years | <p>Survey: <u>mobility survey done:</u> 99 city, 5 FUA, 64 both city and FUA 168 total at city and/or FUA level (78% of respondents) 6 don't know (3% of respondents)</p> <p><u>traffic model used:</u> 91 city, 7 FUA, 57 both city and FUA 155 total at city and/or FUA level (72% of respondents) 7 don't know (3% of respondents)</p> |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|---|---|-------|-------------------------------|----------------------------------|---|
| D4 | O6,O7 Number of all trips to and from workplaces, schools in the city/FUA broken down by mode per year [# trips per mode per year] | <p>Preferred datasets</p> <p>Employers database containing data on employees</p> <p>Schools database containing data of schoolchildren and students and employees (including teachers)</p> <p>Broken down by the following modes:</p> <ul style="list-style-type: none"> ○ Walking ○ Cycling (including by pedelec) ○ Moped (including speed-pedelec) ○ Motorcycle ○ E-micromobility ○ Taxi and ride-hailing ○ Car (except taxi and ride-hailing) ○ Public transport (including bus, coach, trolleybus, tram, light rail, metro, train, water bus) <p>Alternative datasets</p> <p>A representative sample survey of workplaces</p> <p>A representative sample survey of schools</p> | | | | <p>Survey:</p> <p><u>total number of daily commuting trips</u> 45 city, 4 FUA, 47 both city and FUA 96 total at city and/or FUA level (45% of respondents) 20 don't know (9% of respondents)</p> <p><u>daily commuting trips by car</u> 44 city, 3 FUA, 48 both city and FUA 95 total at city and/or FUA level (44% of respondents) 18 don't know (8% of respondents)</p> <p><u>daily commuting trips by cycling</u> 40 city, 3 FUA, 40 both city and FUA 83 total at city and/or FUA level (39% of respondents) 21 don't know (10% of respondents)</p> <p><u>daily commuting trips by walking</u> 36 city, 3 FUA, 40 both city and FUA 79 total at city and/or FUA level (37% of respondents) 23 don't know (11% of respondents)</p> <p><u>other means of travel used</u> 28 city, 3 FUA, 30 both city and FUA 61 total at city and/or FUA level (28% of respondents) 28 don't know (13% of respondents)</p> <p><u>daily commuting trips by powered two wheelers (PTW, i.e. motorcycle or moped)</u> 28 city, 2 FUA, 29 both city and FUA</p> |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|---|--|-----------|-------------------------------|----------------------------------|--|
| | | | | | | <p>59 total at city and/or FUA level (27% of respondents) 25 don't know (12% of respondents) <u>daily commuting trips by taxi and ride-hailing</u> 22 city, 2 FUA, 25 both city and FUA 49 total at city and/or FUA level (23% of respondents) 29 don't know (13% of respondents) <u>mobility survey done:</u> 99 city, 5 FUA, 64 both city and FUA 168 total at city and/or FUA level (78% of respondents) 6 don't know (3% of respondents) <u>traffic model used:</u> 91 city, 7 FUA, 57 both city and FUA 155 total at city and/or FUA level (72% of respondents) 7 don't know (3% of respondents)</p> |
| D5 | O8,O9,O10,O11 Number of trips by shared bicycle, shared e-micromobility, shared moped, shared car in the city/FUA per year [<i># trips per year</i>] | <p>Operational data from operators</p> <ul style="list-style-type: none"> ○ <u>Number of trips per year for</u> <ul style="list-style-type: none"> ○ <u>shared bicycle</u> ○ <u>shared e-micromobility</u> ○ <u>shared moped</u> ○ <u>shared car</u> | Operators | | Data collected every year | <p>Survey: <u>annual number of trips taken by shared bicycle</u> 75 city, 4 FUA, 26 both city and FUA 105 total at city and/or FUA level (49% of respondents) 16 don't know (7% of respondents) <u>annual number of trips taken by shared e-scooter (i.e. e-micromobility)</u> 54 city, 1 FUA, 14 both city and FUA</p> |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|--|---|--|-------------------------------|----------------------------------|--|
| | | | | | | <p>69 total at city and/or FUA level (32% of respondents) 22 don't know (10% of respondents) <u>annual number of trips taken by shared car</u> 41 city, 2 FUA, 18 both city and FUA 61 total at city and/or FUA level (28% of respondents) 23 don't know (11% of respondents)</p> |
| D6 | <p>O12,O13,O14,O15 Annual number of shared bicycle, shared e-micromobility, shared moped, shared car subscriptions in the city/FUA per year [# subscriptions]</p> | <p>Reports and data of shared mobility service operators in the city/FUA:</p> <ul style="list-style-type: none"> ○ <u>Subscriptions valid at a reference moment in the reported year for</u> <ul style="list-style-type: none"> ○ <u>shared bicycle</u> ○ <u>shared e-micromobility</u> ○ <u>shared moped</u> ○ <u>shared car</u> | <p>Cities, Shared mobility operators</p> | | <p>Data collected every year</p> | <p>Survey: <u>number of subscriptions for shared bicycles</u> 54 city, 16 FUA 70 total at city and/or FUA level (33% of respondents) 18 don't know (8% of respondents) <u>number of subscriptions for shared cars</u> 35 city, 16 FUA 51 total at city and/or FUA level (24 % of respondents) 17 don't know (8% of respondents) <u>number of subscriptions for shared e-scooters (i.e. e-micromobility)</u> 29 city, 11 FUA 40 total at city and/or FUA level (19% of respondents) 18 don't know (8% of respondents) <u>number of subscriptions for mopeds and motorcycles</u></p> |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|----|--|--|---|-------------------------------|----------------------------------|--|
| | | | | | | 14 city, 5 FUA 19 total at city and/or FUA level (9 % of respondents) 31 don't know (14% of respondents) |
| D7 | O16. Number of cyclists counted at bicycle counters per year [<i># cyclists per year</i>] | Database of counts at the bicycle counters at strategic points in the city. | Cities | | | To keep data comparable over the years, the same set of counters are needed. Survey: <u>permanent traffic-oriented sampling points (e.g. loops, radar etc.):</u> 97 city, 2 FUA, 38 both city and FUA 137 total at city and/or FUA level (64% of respondents) 16 don't know (7% of respondents) |
| D8 | O17. Number of cars counted at traffic counters per year [<i># vehicles per year</i>] | Database of counts at the car counters at strategic points in the city. | Cities | | | To keep data comparable over the years, the same set of counters are needed. Survey: <u>permanent traffic-oriented sampling points (e.g. loops, radar etc.):</u> idem 97 city, 2 FUA, 38 both city and FUA 137 total at city and/or FUA level (64% of respondents) 16 don't know (7% of respondents) |
| D9 | O18. Annual number of public transport passes valid for one month [<i># passes per year</i>] | Reports of public transport operator serving the city/ Functional Urban Area | Cities, Public transport authorities or operators | | Data collected every year | Survey: <u>number of monthly public transport passes sold per year</u> 99 city, 13 FUA, 57 both city and FUA 169 total at city and/or FUA level (79% of respondents) |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|-----|---|--|---|-------------------------------|----------------------------------|--|
| | | | | | | 13 don't know (6% of respondents) <u>data availability from PT providers:</u> 97 city, 2 FUA, 38 both city and FUA 137 total at city and/or FUA level (64% of respondents) 6 don't know (3% of respondents) |
| D10 | O19. Annual number of public transport passes valid for one year [# passes] | Reports of public transport operator serving the city/ Functional Urban Area | Cities, Public transport authorities or operators | n/a | Data collected every year | Survey: <u>number of yearly public transport passes sold per year</u> 92 city, 13 FUA, 55 both city and FUA 160 total at city and/or FUA level (74% of respondents) 11 don't know (5% of respondents) <u>data availability from PT providers:</u> 97 city, 2 FUA, 38 both city and FUA 137 total at city and/or FUA level (64% of respondents) 6 don't know (3% of respondents) |
| D11 | O20. Annual passengers carried by public transport [# passengers per year] | Reports of public transport operator serving the city/ Functional Urban Area | Cities, Public transport authorities or operators | n/a | Data collected every year | Survey: <u>number of public transport tickets sold per year</u> 98 city, 14 FUA, 58 both city and FUA 170 total at city and/or FUA level (79% of respondents) 12 don't know (6% of respondents) <u>number of yearly public transport passes sold per year</u> 92 city, 13 FUA, 55 both city and FUA 160 total at city and/or FUA level (74% of respondents) |

| # | Indicator | Dataset | Owner | (Possible) collection methods | Timing & frequency of collection | Comments on data availability |
|---|-----------|---------|-------|-------------------------------|----------------------------------|--|
| | | | | | | 11 don't know (5% of respondents) <u>data availability from PT providers:</u> 97 city, 2 FUA, 38 both city and FUA 137 total at city and/or FUA level (64% of respondents) 6 don't know (3% of respondents) |

Overview and analysis of data availability

Based on the analysis of responses to the urban mobility data and indicators survey, which was carried out in August-October 2023 and which collected responses from 215 urban nodes out of 430, the following considerations have been drawn for each dataset required for the indicators described above.

Summary and conclusions

A high number of respondents (78%) organise mobility surveys. Cities also mention that nation-wide household (and some city-wide) surveys are done. In both surveys typically questions are asked on the modes the inhabitants are using to make their trips. This is a strong indication of a high data availability of modal share for trips inhabitants of the city and FUA make on a daily basis. Likewise, a high percentage of respondents (72%) use a traffic model allowing derivation of the modal split of trips in the city and the FUA into the modes described in the model; mainly cars, public transport and cycling.

Based on the survey, the data availability for commuter modal share data is comparatively low, from 28% to 47% of the respondents. Data for number of trips by shared mobility service is variable, with data on the number of shared bicycle trips collected by almost 50% of the respondents, the number of shared e-scooter trips only by 32% and the number of shared car trips by 28% of the respondents respectively. Data availability on the number of shared mobility vehicle subscriptions is low, with 9-33% of the respondents collecting these for the different shared modes. Though bicycle and car counters were not specifically asked about in the survey, 64% of respondents reported that they use permanent traffic-oriented sampling points (e.g. loops, radar etc.). Finally, a high share of respondents reports collection of the number of monthly or yearly PT passes (74-79%) and the number of tickets sold per year (79%), allowing estimation of the annual number of passengers carried by public transport.

Detailed analysis

Please note that the figures provided do not always add up across questions, for example, in some cases respondents have replied only to the first of two related questions, or only to the second of two questions.

D1. (I1) Total urban population [# inhabitants]

Survey results

- 210 respondents reported collection of/access to data on “total number of inhabitants”:
 - 98% of respondents
 - 93 at city level only, 4 at FUA level only, 113 at both city and FUA level

D2. (O1) Number of trips by city/FUA inhabitants per year, broken down by mode [# trips per mode per year]

D3 (O2,O3,O4,O5) Number of trips by city/FUA inhabitants to and from a workplace, a school, a shop, a leisure place per year, broken down by mode [% of trips]

Survey results

- *No specific questions were asked in the survey on whether urban nodes have data available on the number or share of all trips by the inhabitants done by different modes, nor on the number or share of the trips by inhabitants to and from a workplace, a school, a shop, a leisure place done by different modes.*
- 168 respondents reported that they use mobility survey data:
 - 78% of respondents
 - 99 at city level only, 5 at FUA level only, 64 at both city and FUA level
- 155 respondents reported collection of/access to data on “traffic model used”:
 - 72% of respondents
 - 91 at city level only, 7 at FUA level only, 57 at both city and FUA level

Survey: open-ended feedback

- Respondents mention that nation-wide household (and some city-wide) surveys are done to collect modal share data. These are done every 3 to 5 years.
- Some cities report they have a traffic model to simulate flows and modal share.
- Some respondents mention that they collect modal share data as part of their SUMP monitoring.

D4. (O6,O7) Number of all trips to and from workplaces, schools, in the city/FUA per year, broken down by mode [% of trips]

Survey results

- *No specific questions were asked in the survey on whether urban nodes have data available on the number or share of trips to and from schools, shops or leisure places by different modes. Questions on the daily commuting trips (i.e. trips between one's home in the FUA and the city at the core of the urban node) by road user type (i.e. the mode they use) provide an indication that cities have some relevant data available.*
- 96 respondents reported collection of/access to data on "Total number of daily commuting trips":
 - 45% of respondents
 - 45 at city level only, 4 at FUA level only, 47 at both city and FUA level
- 102 respondents reported collection of/access to data on "Daily commuting trips by public transport":
 - 47% of respondents
 - 49 at city level only, 4 at FUA level only, 49 at both city and FUA level
- 95 respondents reported collection of/access to data on "Daily commuting trips by car":
 - 44% of respondents
 - 44 at city level only, 3 at FUA level only, 48 at both city and FUA level
- 83 respondents reported collection of/access to data on "Daily commuting trips by cycling":
 - 39% of respondents
 - 40 at city level only, 3 at FUA level only, 40 at both city and FUA level
- 79 respondents reported collection of/access to data on "Daily commuting trips by walking":
 - 37% of respondents
 - 36 at city level only, 3 at FUA level only, 40 at both city and FUA level
- 59 respondents reported collection of/access to data on "Daily commuting trips by powered two wheelers (PTW, i.e. motorcycles and mopeds)":
 - 27% of respondents
 - 28 at city level only, 2 at FUA level only, 29 at both city and FUA level
- 49 respondents reported collection of/access to data on "Daily commuting trips by taxi and ride-hailing":
 - 23% of respondents
 - 22 at city level only, 2 at FUA level only, 25 at both city and FUA level
- 61 respondents reported collection of/access to data on "Other means of travel used":
 - 28% of respondents
 - 28 at city level only, 3 at FUA level only, 30 at both city and FUA level
- 168 respondents reported that they use mobility survey data:
 - 78% of respondents
 - 99 at city level only, 5 at FUA level only, 64 at both city and FUA level
- 155 respondents reported collection of/access to data on "traffic model used":

- 72% of respondents
- 91 at city level only, 7 at FUA level only, 57 at both city and FUA level

Survey: open-ended feedback

- Respondents mention that nation-wide household (and some city-wide) surveys are done to collect modal share data. These are done every 3 to 5 years.
- Some cities report they have a traffic model to simulate flows and modal share.
- It is not clear from the open-ended feedback whether cities collect modal share data for all visitors to the listed destinations (workplaces, schools, shops, leisure places), including the inhabitants of the city as the core of the urban node or not. Nor whether they collect data for all type of commuters together or by destination type.
- Some respondents mention that they collect modal share data as part of their SUMP monitoring.

Comments

- Based on the survey, the data availability for commuter modal share data is low, from 28% to 47% of the respondents.
- For the survey question on commuter trips, the data for the city and the FUA are interlinked since the survey asks for data on commuter trips between the FUA and the city as the core of the urban node. Here a wider definition of the indicator is used since this indicator allows also data for the FUA level including destinations in the FUA but outside the city.

D5. (O8,O9,O10,O11) Number of trips by shared bicycle, e-micromobility, moped, car in the city/FUA per year [# trips per year]

Survey results

- 105 respondents reported collection of/access to data on “annual number of trips taken by shared bicycles”:
 - 49% of respondents
 - 75 at city level only, 4 at FUA level only, 26 at both city and FUA level
- 69 respondents reported collection of/access to data on “annual number of trips taken shared e-scooters (other micro-mobility than bicycles)”:
 - 32% of respondents
 - 54 at city level only, 1 at FUA level only, 14 at both city and FUA level
- 61 respondents reported collection of/access to data on “annual number of trips taken by shared cars”:
 - 28% of respondents
 - 41 at city level only, 2 at FUA level only, 18 at both city and FUA level

Survey: open-ended feedback

- One respondent mentions including questions about shared bicycles, e-micromobility (e-scooters), and cars in their household survey.

D6. (O12,O13,O14,O15) Annual shared bicycle/e-micromobility/moped/car subscriptions in the city/FUA per year [# subscriptions]

Survey results

- 70 respondents reported that they collect data on “number of subscriptions for shared bicycles”
 - 33% of respondents
 - 54 at city level, 16 at FUA level (no question in survey whether data is collected at both city and FUA level)
 - 95 respondents or 44% of the respondents collect this for *all* the operating companies
- 51 respondents reported that they collect data on “number of subscriptions for shared cars”
 - 24% of respondents
 - 35 at city level, 16 at FUA level (no question in survey whether data is collected at both city and FUA level)
 - 56 respondents or 26% of the respondents collect this for *all* the operating companies
- 40 respondents reported that they collect data on “number of subscriptions for shared e-scooters”
 - 19% of respondents
 - 29 at city level, 11 at FUA level (no question in survey whether data is collected at both city and FUA level)
 - 66 respondents or 31% of the respondents collect this for *all* the operating companies
- 19 respondents reported that they collect data on “number of subscriptions for mopeds and motorcycles”
 - 9% of respondents
 - 14 at city level, 5 at FUA level (no question in survey whether data is collected at both city and FUA level)
 - 35 respondents or 16% of the respondents collect this for *all* the operating companies

Comments

- Data availability on the number of shared mobility vehicle subscriptions is low; 33% of the respondents or fewer collect these for the different shared modes, and this includes respondents who do not even obtain data from *all* operating companies.

D7. (O16) Number of cyclists counted at bicycle counters per year [# cyclists per year]

Survey results

- *No specific questions were asked in the survey on whether urban nodes have data available on the annual number of cyclists counted at bicycle counters.*
- 137 respondents reported that they use permanent traffic-oriented sampling points (e.g. loops, radar etc.):
 - 64% of respondents
 - 97 at city level only, 2 at FUA level only, 38 at both city and FUA level

Survey: open-ended feedback

- *In relation to the question on congestion, some respondents mentioned that they have some permanent bicycle counters to count the number of cyclists passing these counters. The survey provides figures on the number of respondents using permanent traffic-oriented sampling points, although these may not include bicycle counters specifically.*

Comments

- To keep data comparable over the years, the same set of counters are needed.

D8. (O17) Number of cars counted at traffic counters per year per year [# vehicles per year]

Survey results

No specific questions were asked in the survey on whether urban nodes have data available on the annual number of cars counted at traffic counters, but the question was asked whether urban nodes use permanent traffic-oriented sampling points.

- 137 respondents reported that they use permanent traffic-oriented sampling points (e.g. loops, radar etc.):
 - 64% of respondents
 - 97 at city level only, 2 at FUA level only, 38 at both city and FUA level

Comments

- To keep data comparable over the years, the same corridor should be used.

D9. (O18) Annual public transport passes valid for one month [# passes per year]

D10. (O19) Annual public transport passes valid for one year [# passes]

D11. (O20) Annual passengers carried by public transport [# passengers per year]

Survey results

- 169 respondents reported that they collect data on “number of monthly public transport passes sold per year”
 - 79% of respondents
 - 99 at city level only, 13 at FUA level only, 57 at both city and FUA level
- 160 respondents reported that they collect data on “number of yearly public transport passes sold per year”
 - 74% of respondents
 - 92 at city level only, 13 at FUA level only, 55 at both city and FUA level
- No specific questions were asked in the survey on whether urban nodes have data available on the yearly passengers carried by public transport.
- 170 respondents reported that they collect data on “number of public transport tickets sold per year”
 - 79% of respondents
 - 98 at city level only, 14 at FUA level only, 58 at both city and FUA level
- 185 respondents reported that they use data from public transport providers:

- 86% of respondents
- 112 at city level only, 4 at FUA level only, 69 at both city and FUA level

Comments

- A high share of respondents (86%) have access to data from PT providers, showing the potential to collect this data.

Indicators

| Number | Indicator | To be calculated by: |
|--------------------------|--|----------------------|
| <i>Input indicators</i> | | |
| I1 | Total population of the city/FUA [<i># inhabitants</i>] | Urban node |
| <i>Output indicators</i> | | |
| O1 | Number of trips by city/FUA inhabitants per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O2 | Number of trips by city/FUA inhabitants to and from a workplace per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O3 | Number of trips by city/FUA inhabitants to and from a school per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O4 | Number of trips by city/FUA inhabitants to and from a shop done per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O5 | Number of trips by city/FUA inhabitants to and from a leisure place per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O6 | Number of all trips to and from workplaces in the city/FUA per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O7 | Number of all trips to and from schools in the city/FUA per year, broken down by mode [<i># trips per mode per year</i>] | Urban node |
| O8 | Number of trips by shared bicycle in the city/FUA per year [<i># trips per year</i>] | Urban node |
| O9 | Number of trips by shared e-micromobility in the city/FUA per year [<i># trips per year</i>] | Urban node |
| O10 | Number of trips by shared moped in the city/FUA per year [<i># trips per year</i>] | Urban node |
| O11 | Number of trips by shared car in the city/FUA per year [<i># trips per year</i>] | Urban node |
| O12 | Number of shared bicycle subscriptions per year [<i># subscriptions</i>] | Urban node |
| O13 | Number of shared e-micromobility subscriptions per year [<i># subscriptions</i>] | Urban node |
| O14 | Number of shared moped subscriptions per year [<i># subscriptions</i>] | Urban node |
| O15 | Number of shared car subscriptions per year [<i># subscriptions</i>] | Urban node |
| O16 | Number of cyclists counted at bicycle counters per year [<i># cyclists per year</i>] | Urban node |

| | | |
|--------------------------|---|------------|
| O17 | Number of cars counted at traffic counters per year [<i># vehicles per year</i>] | Urban node |
| O18 | Annual number of public transport passes valid for one month [<i># passes per year</i>] | Urban node |
| O19 | Annual number of public transport passes valid for one year [<i># passes</i>] | Urban node |
| O20 | Annual passengers carried by public transport [<i># passengers per year</i>] | Urban node |
| <i>Result indicators</i> | | |
| R1 | Share of city/FUA inhabitant trips done by walking, cycling, or public transport [<i>% of total trips</i>] | EC |
| R2 | Share of modes in total city/FUA inhabitant trips [<i>% of total trips</i>] | EC |
| R3 | Share of modes in city/FUA inhabitant trips to and from a workplace [<i>% of total trips</i>] | EC |
| R4 | Share of modes in city/FUA inhabitant trips to and from a school [<i>% of total trips</i>] | EC |
| R5 | Share of modes in city/FUA inhabitant trips to and from a shop [<i>% of total trips</i>] | EC |
| R6 | Share of modes in city/FUA inhabitant trips to and from a leisure place [<i>% of total trips</i>] | EC |
| R7 | Share of modes in all trips to and from workplaces in the city/FUA [<i>% of total trips</i>] | EC |
| R8 | Share of modes in all trips to and from schools in the city/FUA [<i>% of total trips</i>] | EC |
| R9 | Annual number of trips by shared bicycle in the city/FUA per 1,000 inhabitants [<i># trips/1,000 inh./year</i>] | EC |
| R10 | Annual number of trips by shared e-micromobility in the city/FUA per 1,000 inhabitants [<i># trips/1,000 inh./year</i>] | EC |
| R11 | Annual number of trips by shared moped in the city/FUA per 1,000 inhabitants [<i># trips/1,000 inh./year</i>] | EC |
| R12 | Annual number of trips by shared car in the city/FUA per 1,000 inhabitants [<i># trips/1,000 inh./year</i>] | EC |
| R13 | Number of shared bicycle subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | EC |
| R14 | Number of shared e-micromobility subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | EC |
| R15 | Number of shared moped subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | EC |
| R16 | Number of shared car subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | EC |
| R17 | Annual number of public transport passes valid for one month per 1,000 inhabitants [<i># passes/1,000 inh.</i>] | EC |
| R18 | Number of public transport passes valid for one year per 1,000 inhabitants [<i># passes/1,000 inh.</i>] | EC |
| R19 | Annual passengers carried by public transport per inhabitant [<i># passengers/inh.</i>] | EC |

Method of calculation of result indicators

Please note that the equations below could be applied centrally at European level to calculate the values of the result indicators based on input and output data provided by the urban nodes under the input and output indicators.

| # | Method name (component of indicator) | Indicator(s) | Equation | Variables |
|----|---|--------------|--|---|
| M1 | Share of city/FUA inhabitant trips done by walking, cycling, or public transport [% of total trips] | R1 | $R1 = (O1_{walking} + O1_{cycling} + O1_{PT}) / O1_{all\ modes}$ | <ul style="list-style-type: none"> - R1= share of trips by inhabitants done with sustainable modes (=walking, cycling, public transport) - $O1_{walking}$= number of trips by inhabitants done walking - $O1_{cycling}$= number of trips by inhabitants done cycling - $O1_{PT}$ = number of trips by inhabitants done with public transport - $O1_{all\ modes}$ = sum of trips by inhabitants for all the modes |
| M2 | Share of modes in total city/FUA inhabitant trips [% of total trips] | R2 | $R2_{mode} = O1_{mode} / O1_{all\ modes}$ | <ul style="list-style-type: none"> - $R2_{mode}$= share of trips by inhabitants with a specific mode (e.g. cycling) - $O1_{mode}$=number of trips by inhabitants with that specific mode (e.g. cycling) - $O1_{all\ modes}$ = sum of trips by inhabitants for all the modes |
| M3 | Share of modes in inhabitant trips to and from a workplace [% of total trips] | R3 | $R3_{mode} = O2_{mode} / O2_{all\ modes}$ | <ul style="list-style-type: none"> - $R3_{mode}$= share of trips by inhabitants with a specific mode (e.g. cycling) to and from a workplace - $O2_{mode}$=number of trips by inhabitants to and from a workplace with that specific mode (e.g. cycling) - $O2_{all\ modes}$ = sum of trips by inhabitants to and from a workplace for all the modes |

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|----|--|----|---|---|
| M4 | Share of modes in city/FUA inhabitant trips to and from a school [% of total trips] | R4 | $R4_{mode} = O3_{mode}/O3_{all\ modes}$ | <ul style="list-style-type: none"> - $R4_{mode}$= share of trips by inhabitant with a specific mode (e.g. cycling) to and from a school - $O3_{mode}$=number of trips by inhabitant to and from a school with that specific mode (e.g. cycling) - $sum(O3\ for\ all\ modes)$= sum of trips by inhabitant to and from a school for all the modes |
| M5 | Share of modes in inhabitant trips to and from a shop [% of total trips] | R5 | $R5_{mode} = O4_{mode}/O4_{all\ modes}$ | <ul style="list-style-type: none"> - $R5_{mode}$= share of trips by inhabitant with a specific mode (e.g. cycling) to and from a shop - $O4_{mode}$=number of trips by inhabitant to and from a shop with that specific mode (e.g. cycling) - $O2_{all\ modes}$= sum of trips by inhabitant to and from a shop for all the modes |
| M6 | Share of modes in city/FUA inhabitant trips to and from a leisure place [% of total trips] | R6 | $R6_{mode} = O5_{mode}/O5_{all\ modes}$ | <ul style="list-style-type: none"> - $R6_{mode}$= share of trips by inhabitant with a specific mode (e.g. cycling) to and from a leisure place - $O5_{mode}$=number of trips by inhabitant to and from a leisure place with that specific mode (e.g. cycling) - $O5_{all\ modes}$= sum of trips by inhabitant to and from a leisure place for all the modes |
| M7 | Share of modes in all trips to and from workplaces in the city/FUA [% of total trips] | R7 | $R7_{mode} = O6_{mode}/O6_{all\ modes}$ | <ul style="list-style-type: none"> - $R7_{mode}$= share of all trips with a specific mode (e.g. cycling) to and from a workplace - $O6_{mode}$=number of all trips to and from a workplace with that specific mode (e.g. cycling) - $O6_{all\ modes}$=sum of all trips to and from a workplace for all the modes |

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|-----|--|-----|---|--|
| M8 | Share of modes in all trips to and from schools in the city/FUA [% of total trips] | R8 | $R8_{mode} = O7_{mode}/O7_{all\ modes}$ | <ul style="list-style-type: none"> - $R8_{mode}$= share of all trips with a specific mode (e.g. cycling) to and from a school - $O7_{mode}$=number of all trips to and from a school with that specific mode (e.g. cycling) - $O7_{all\ modes}$= sum of all trips to and from a school for all the modes |
| M9 | Annual number of trips by shared bicycle in the city/FUA per 1,000 inhabitants [# trips/1,000 inh./year] | R9 | $R9 = O8/I1*1000$ | <ul style="list-style-type: none"> - R9= number of trips by shared bicycle per 1000 inhabitants per year - O8= number of trips by shared bicycle per year - I1= number of inhabitants |
| M10 | Annual number of trips by shared e-micromobility in the city/FUA per 1,000 inhabitants [# trips/1,000 inh./year] | R10 | $R10 = O9/I1*1000$ | <ul style="list-style-type: none"> - R10= number of trips by shared e-micromobility per 1000 inhabitants per year - O9= number of trips by shared e-micromobility per year - I1= number of inhabitants |
| M11 | Annual number of trips by shared moped in the city/FUA per 1,000 inhabitants [# trips/1,000 inh./year] | R11 | $R11 = O10/I1*1000$ | <ul style="list-style-type: none"> - R11= number of trips by shared moped per 1000 inhabitants per year - O10= number of trips by shared moped per year - I1= number of inhabitants |
| M12 | Annual number of trips by shared car per 1,000 inhabitants [# trips/1,000 inh./year] | R12 | $R12 = O11/I1*1000$ | <ul style="list-style-type: none"> - R12= number of trips by shared car per 1000 inhabitants per year - O11= number of trips by shared car per year - I1= number of inhabitants |
| M13 | Number of shared bicycle subscriptions per 1,000 inhabitants [# subscriptions/1,000 inh.] | R13 | $R13 = O12/I1*1000$ | <ul style="list-style-type: none"> - R13= number of shared bicycle subscriptions per 1000 inhabitants - O12= number of shared bicycle subscriptions I1= number of inhabitants |

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|-----|--|-----|---------------------|---|
| M14 | Number of shared e-micromobility subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | R14 | $R14 = O13/I1*1000$ | <ul style="list-style-type: none"> - R14= number of shared e-micromobility subscriptions per 1000 inhabitants - O13= number of shared e-micromobility subscriptions - I1= number of inhabitants |
| M15 | Number of shared moped subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | R15 | $R15 = O14/I1*1000$ | <ul style="list-style-type: none"> - R15= number of shared moped subscriptions per 1000 inhabitants - O14= number of shared moped subscriptions - I1= number of inhabitants |
| M16 | Number of shared car subscriptions per 1,000 inhabitants [<i># subscriptions/1,000 inh.</i>] | R16 | $R16 = O15/I1*1000$ | <ul style="list-style-type: none"> - R16= number of shared car subscriptions per 1000 inhabitants - O15= number of shared car subscriptions - I1= number of inhabitants |
| M17 | Number of public transport passes valid for one month per 1,000 inhabitants [<i># passes/1,000 inh.</i>] | R17 | $R17 = O18/I1*1000$ | <ul style="list-style-type: none"> - R17= annual public transport passes valid for one month per 1000 inhabitants - O18= annual public transport passes valid for one month - I1=number of inhabitants |
| M18 | Number of public transport passes valid for one year per 1,000 inhabitants [<i># passes/1,000 inh.</i>] | R18 | $R18 = O19/I1*1000$ | <ul style="list-style-type: none"> - R18= annual public transport passes valid for one year per 1000 inhabitants - O19= annual public transport passes valid for one year - I1=number of inhabitants |
| M19 | Annual passengers carried by public transport per inhabitant [<i># passengers/inh.</i>] | R19 | $R19 = O20/I1$ | <ul style="list-style-type: none"> - R19 = annual passengers carried by public transport per inhabitant - O20= annual passengers carried by public transport - I1=number of inhabitants |

Definitions of terms and acronyms used

| Term | Definition | Source(s) |
|-----------------|---|---|
| Bicycle | A road vehicle which has two or more wheels and is generally propelled by the muscular energy of the persons on that vehicle, in particular by means of a pedal system, lever or handle (e.g. bicycles, tricycles, quadricycles and invalid carriages). Included are bicycles with electric pedal assistance (pedelecs). | - Eurostat Glossary for transport statistics, page 37 (5th edition, 2019): https://ec.europa.eu/eurostat/documents/3859598/10013293/KS-GQ-19-004-EN-N.pdf/b89e58d3-72ca-49e0-a353-b4ea0dc8988f |
| Car | A vehicle used for carriage of passengers, comprising not more than eight seats in addition to the driver's (UNECE category M1). | - UNECE Consolidated Resolution on the Construction of Vehicles (R.E.3), Rev. 6, page 6: https://www.unece.org/fileadmin/DAM/trans/main/wp29/wp29resolutions/ECE-TRANS-WP.29-78r6e.pdf |
| City | A city is a local administrative unit where at least 50 % of the population lives in one or more urban centres (i.e., a cluster of contiguous grid cells of 1 km ² - excluding diagonals - with a population density of at least 1,500 inhabitants per km ² and collectively a minimum population of 50,000 inhabitants after gap-filling). | - Eurostat glossary (webpage): https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Regions_and_cities_glossary |
| Cycling | The act of riding a bicycle, i.e., a road vehicle which has two or more wheels and generally propelled by the muscular energy of the persons on that vehicle, in particular by means of a pedal system, lever or handle (e.g. bicycles, tricycles, quadricycles and invalid carriages). Included are bicycles with electric pedal assistance up to 25km/h (pedelecs). | - Eurostat Glossary for transport statistics (5th edition, 2019): https://ec.europa.eu/eurostat/documents/3859598/10013293/KS-GQ-19-004-EN-N.pdf/b89e58d3-72ca-49e0-a353-b4ea0dc8988f |
| E-micromobility | A motorised, micro-mobility device such as an e-micro-scooter, a segway, a monowheel or a self-balancing unicycle. The device should have at least one wheel, be designed for one person, and have an electric motor that can achieve a maximum speed of up to 25 km/h. | - CARE DATABASE – CaDaS Common Accident Data Set, page 68/133 (Version 3.8.1, September 2021): https://road-safety.transport.ec.europa.eu/system/files/2023-09/CADaS%20Glossary_v%203_8_1.pdf |

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|-----------------------------|---|---|
| Functional urban area (FUA) | A functional urban area consists of a densely inhabited city and a less densely populated commuting zone whose labour market is highly integrated with the city (OECD, 2012). | - Eurostat glossary (webpage): https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Regions_and_cities_glossary |
| Mode | The way in which passengers and/or goods can be transported. | - Eurostat glossary (webpage): https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Transport_glossary |
| Moped | A two-, three- or four-wheeled road motor vehicle which is fitted with an engine having a cylinder capacity of less than 50cc and a maximum authorized design speed in accordance with national regulations. Where limitations concerning the engine displacement are not applicable a restriction in terms of motor power may be in force. Refers to categories L1 and L2 of the UN Consolidated Resolution on the Construction of Vehicles (R.E.3). | - Eurostat Glossary for transport statistics, page 37 (5th edition, 2019): https://ec.europa.eu/eurostat/documents/3859598/10013293/KS-GQ-19-004-EN-N.pdf/b89e58d3-72ca-49e0-a353-b4ea0dc8988f?t=1568383761000 |
| Motorcycle | A two-, three- or four-wheeled road motor vehicle not exceeding 400 kg of unladen weight. All such vehicles with a cylinder capacity of 50 cc or over are included, as are those under 50 cc which do not meet the definition of moped. Refers to categories L3, L4 , L5 , L6 and L7 of the UN Consolidated Resolution on the Construction of Vehicles (R.E.3). | - Eurostat Glossary for transport statistics, page 38 (5th edition, 2019): https://ec.europa.eu/eurostat/documents/3859598/10013293/KS-GQ-19-004-EN-N.pdf/b89e58d3-72ca-49e0-a353-b4ea0dc8988f?t=1568383761000 |
| Pass (public transport) | Registration to a public transport service that allows you to use it at any time (for a month or year after the payment of the related fare). In the case of a subscription, if it is valid for more than a month (but less than a year), this is to be considered as a monthly subscription. | |
| Pedelec | A type of pedal-assisted bicycle where the electric assistance cuts off when the vehicle reaches approximately 25 km/h (exact limit depends on local regulations). A pedelec only provides assistance when the user is pedalling. Speed-pedelecs are considered separately. | - International Transport Forum (ITF) - Measuring New Mobility Definitions, Indicators, Data Collection, page 20: https://www.itf-oecd.org/sites/default/files/docs/measuring-new-mobility-definitions-indicators-data.pdf |

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| Public transport (PT) | Service to a transport service user provided or planned/organized by public authorities for the transport of passengers from an origin to a destination. Here it includes the following modes: buses, trolleybuses, coaches, trams, light rail, metros, trains, water buses. | <ul style="list-style-type: none"> - ISO 14083:2023. Greenhouse gases — Quantification and reporting of greenhouse gas emissions arising from transport chain operations, Chapter 3.1.31 - https://www.iso.org/obp/ui/#iso:std:78864:en |
| Shared (mobility service) | A transport system where users share a vehicle over time as personal rental, allowing them to access the service on an as-needed basis. For the scope of this document, it is generally intended for short-distance travels (within the city/FUA) and limited rental periods. | |
| Speed-pedelec | A type of pedal-assisted bicycle where the electric assistance cuts off when the vehicle reaches approximately 45 km/h (exact limit depends on local regulations). A speed-pedelec only provides assistance when the user is pedalling. | <ul style="list-style-type: none"> - International Transport Forum (ITF) - Measuring New Mobility Definitions, Indicators, Data Collection, page 20: https://www.itf-oecd.org/sites/default/files/docs/measuring-new-mobility-definitions-indicators-data.pdf |
| Subscription (shared mobility) | Registration to a shared mobility service that allows you to use it at any time (with or without additional charges). | |
| Taxi or ride-hailing (service) | A licensed passenger car for hire with a driver, without predetermined routes. Includes ride-hailing which refers to ordering a customised ride online, usually via a smartphone application, usually for immediate start of the service. Ride-hailing companies, via websites and mobile apps, match passengers with drivers. | <p><i>Taxi:</i></p> <ul style="list-style-type: none"> - Eurostat Glossary for transport statistics, page 39 (5th edition, 2019): https://ec.europa.eu/eurostat/documents/3859598/10013293/KS-GQ-19-004-EN-N.pdf/b89e58d3-72ca-49e0-a353-b4ea0dc8988f?t=1568383761000 <p><i>Ride-hailing:</i></p> <ul style="list-style-type: none"> - European Commission Notice on well-functioning and active local passenger transport-on-demand (taxis and PHV) 2022/C 62/01, I. Introduction: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022XC0204%2803%29#ntr1-C_2022062EN.01000101-E0001 |
| Total population | Total number of inhabitants (usual resident population) of a given area (functional urban area or city): the number of inhabitants on 1 st January of the year in question (or, in some cases, on 31 st December of the previous year). | <ul style="list-style-type: none"> - Eurostat glossary https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Population_figure |

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| Walking | The act of moving on foot using muscular energy. For the purposes of this document, it includes the use of a wheelchair or mobility aid. | |
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