

EcoMobility SHIFT - Assessment and Audit Scheme

# Indicator Descriptions

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EcoMobility SHIFT  
Indicator  
Descriptions

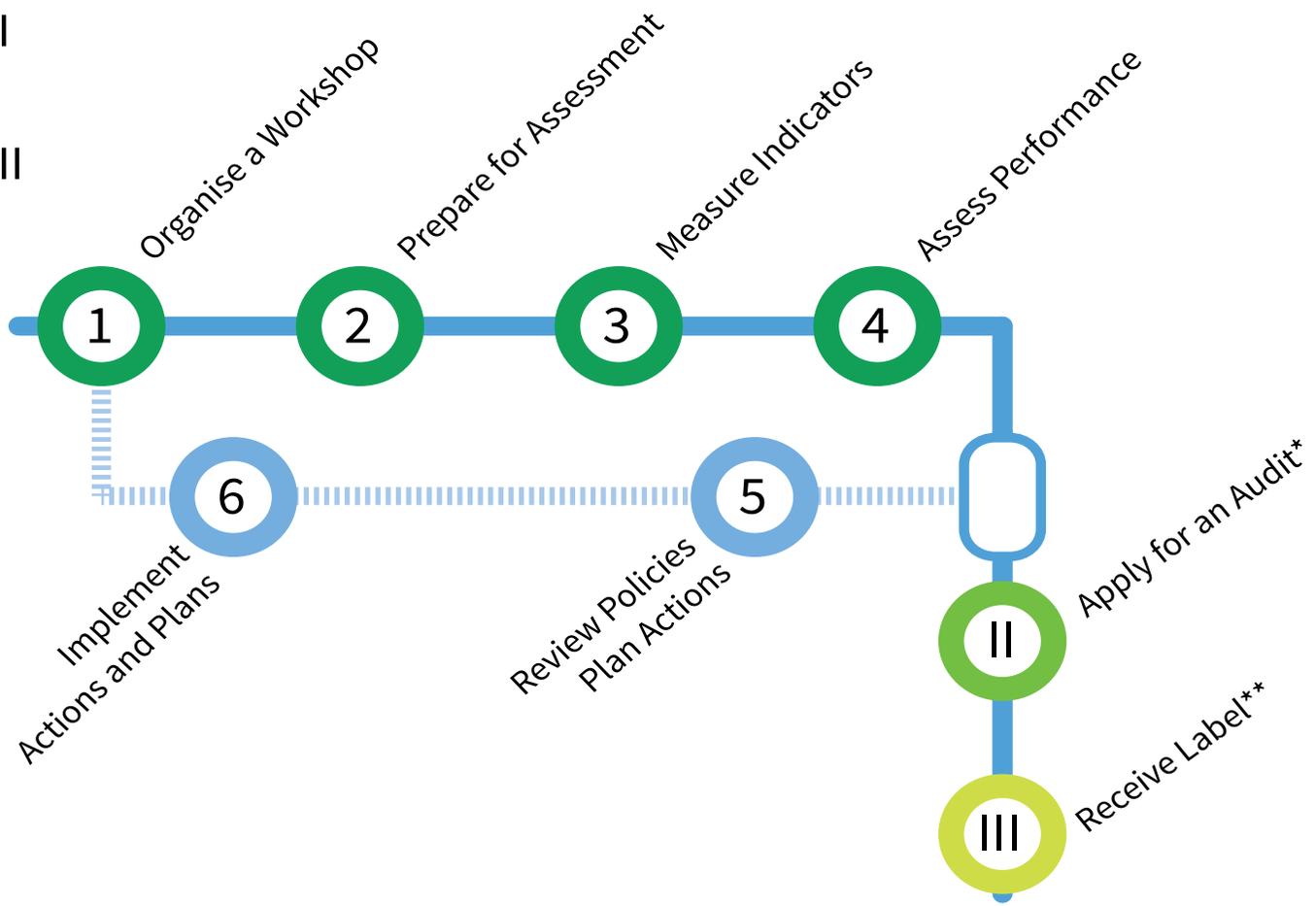
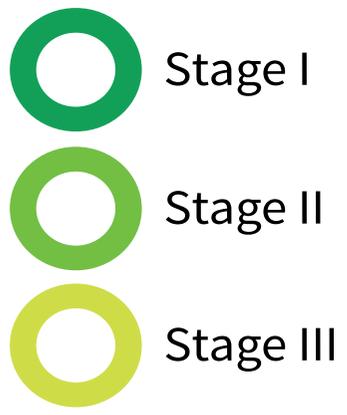




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# The SHIFT Scheme



\*Cities that have completed an audit and are not satisfied with their audit score will need to proceed to step 5 and redo the assessment

\*\* Cities that have received the label can hold the label for 3 years, upon completion of which they will need to redo the whole SHIFT process to know the change in their label

## What are the EcoMobility Indicators?

At the heart of the EcoMobility SHIFT Assessment and audit scheme is a set of 20 predefined indicators. These indicators allow cities to measure and assess EcoMobility performance at the local level, and to connect such measurements with specific improvements. The 20 EcoMobility indicators as described in the table below, are classified into three categories: Enablers, Transport Systems & Services and Results & Impacts. (See also part II, step 3 of the SHIFT-manual.)

On the following pages these 20 indicators are described in more detail with for each of these :

- The definition of the indicator
- The purpose of the indicator, i.e. the relevance of this indicator w.r.t. a city's overall EcoMobility performance
- Terminology, i.e. a further explanation of all terms used in the indicator definition
- Suggested evidence, i.e. the evidence a city should be able to provide in order to verify a particular score.
- The scoring, i.e. the weight of this indicator in the overall scoring of the city's EcoMobility performance. "Out of 10 points" in the example of E 1 means that a score 5 on this indicator counts for 10 points on a total of 350 points.
- The grounds for reducing total maximum possible score.
- Links to further information and best practice.

The last page of this document shows a summary table of the 20 indicators with their respective weight in the overall EcoMobility score.

## How and when to use these EcoMobility Indicator descriptions?

These EcoMobility indicator descriptions are an important source of information to measure and assess the EcoMobility Indicators in a correct way. They are mandatory reading for all the people that are actively involved in a city's EcoMobility assessment and audit. These EcoMobility indicator descriptions will be intensively used during the assessment by all EcoMobility Working group members especially during step 2 (measurement) and step 3 (assessment). Note that is important for WG-members to bring this document to the assessment meeting(s). For SHIFT-advisors and auditors, this is a key document to verify resp. advise a city throughout the SHIFT-process.

### ENABLERS

- E1: Understanding User Needs
- E2: Public Participation
- E3: Vision, Strategy and Leadership
- E4: Finance for EcoMobility
- E5: Personnel and Resources
- E6: Monitoring, Evaluation and Review

### TRANSPORT SYSTEMS AND SERVICES

- TSS1: Planning
- TSS2: Low Speed / Car Free Zones
- TSS3: Information Provision & Systems
- TSS4: Mobility Management
- TSS5: Parking
- TSS6: Walking
- TSS7: Cycling
- TSS8: Public Transport Coverage & Speed
- TSS9: Usability of Public Transport
- TSS10: Low Emission Vehicles

### RESULTS AND IMPACTS

- RI1: Modal Split
- RI2: Safety
- RI3: Greenhouse Gases
- RI4: Air Quality

## ENABLERS

E1: Understanding User Needs

E2: Public Participation

E3: Vision, Strategy and Leadership

E4: Finance for EcoMobility

E5: Personnel and Resources

E6: Monitoring, Evaluation and Review

# E1: Understanding User Needs

## Definition

The degree to which the city investigates the current and future needs of all city users (citizens and visitors i.e. not just the people who live in the city, but also those who travel to it) and collects relevant baseline data on the EcoMobility status (environment, liveability, safety, etc.) of the city. Degree to which the city has knowledge of the needs of pedestrians, cyclists and public transport users and of those who currently do not travel in an ecomobile way (i.e. solo car drivers).

## Purpose

In order to make the city more ecomobile, the city administration needs to know how its people travel at the moment (see also Indicator RI.3 Modal split) and what their transport and related user needs are both now and, as far as reasonably possible, in the near and medium-term future. This indicator addresses that need.

## Terminology

It is important to distinguish between the following two terms:

refers to what the users of the transport system require from it, for example:

- Where do they need to travel, and how often?
- What services and activities do they need to access?
- What level of quality do they expect in their journey and what goes to make up their perception of quality?
- In the future, how might these needs change?

means that information on user needs is gathered in a purposeful, regular and methodical way.

## Suggested Evidence

- Data collection methods: How? Standard (e.g. surveys, focus groups), innovative (e.g. citizens panels, dialogue cafés, visiting user group sites like schools, community centres, shopping malls); Systematic?; How long?; Current & future needs collected?;
- Collection of user complaints & suggestions: Systematic? How is it done? (e.g. via online tool, call centre etc.); How is feedback used to improve services?

## Scoring

Out of 10 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
Summary	Limited; ad-hoc	Use of external data for user needs	Occasional, survey collection of citizens needs	Understanding of citizens current needs	Clear view of citizens current & future needs
Data Collection	Ad-hoc	From national data (not local)	Not systematic Survey method only	Systematic Methods: standard Current needs only	Systematic Methods: innovative Current & future needs
Length	Never	Never	1 year or less	1 - 4.9 years	5 years and over
Complaint and suggestion Collection	Never	Never	No collection of complaints and suggestions	Collects complaints and suggestions but not clear how these are used	Systematic For ALL mobility services Proven use to improve services

## External influence on score

If any part of the public transport system is run by organisations other than the city, there might be difficulty in gathering data on user needs. If this is the case, note this in the relevant report(s).

## Grounds for reducing total maximum possible score

For this indicator there are no grounds for reducing the total maximum possible score.

## Measuring this indicator in the future

Survey a representative sample of travellers within the city (e.g. <http://www.measuringusability.com/survey-sample-size.php>) including people living in the city, but also those living elsewhere and travelling to it; ask questions found under terminology user needs.

Also, consider what ecomobile modes might be available in future for these users.

## Links to other indicators

This indicator is related to E2 (Public participation in decision making), although the two are fundamentally different in that E1 is concerned with identifying user needs, and E2 relates more to how users needs are taken into account in the decision making process (e.g. whether projects planned/measures that are introduced are based on user requirements, participation and consent).

## Further information

[http://www.mobilityplans.eu/docs/SUMP\\_guidelines\\_web0.pdf](http://www.mobilityplans.eu/docs/SUMP_guidelines_web0.pdf), Section 3.1 p 51

## E2: Public participation in decision making

### Description

Following on from E1, this indicator is concerned with the way in which the city involves citizens and stakeholders in the decision-making and delivery of EcoMobility and whether any particular focus is given to certain groups (disabled people, pedestrians, cyclists and PT users). Whether or not the city's plans for sustainable transport are easily accessible and communicated to citizens and the extent to which there are systems in place to measure customer satisfaction, and also to give feedback to those involved in consultation/ participation to show how their input has been used. The frequency of communication/ consultation should also be considered.

### Purpose

Other quality management systems such as MaxQ and BYPAD stress the importance of public participation in the design and successful implementation of transport measures. This is also stressed in guidance on Sustainable Urban Mobility Plans (SUMP) - see [www.mobilityplans.eu/index.php?ID1=8&id=8](http://www.mobilityplans.eu/index.php?ID1=8&id=8). Evaluation of SUMP in England also found that those cities that had evolved more sophisticated approaches to participation and consultation ran into fewer problems in implementing potentially "difficult" measures in their plans.

### Terminology

It is important to distinguish between the following two terms:

*Consultation* - when the city discusses EcoMobility policy or measures with citizens in order to get their advice or opinion about it.

*Participation* - when the city involves citizens directly in decision making about EcoMobility policy or measures.

### Suggested evidence

- Policy and technical documents guiding city staff on how and when to run participation activities;
- Minutes, photos, agendas and recorded outcomes of participation activities;
- Lists of participants at participation events;
- Actual consultation/participation materials (e.g. questionnaires).

### Scoring

Out of 10 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	No public participation	Information not participation	Very limited opportunity for public to contribute	Broad consultation on plans; feedback used	Broad consultation on all aspects of transport; feedback used
<b>Citizen involvement in planning</b>	None	Information only	Can give feedback on information	Can help to develop plans and give feedback	As left; also for projects
<b>Use of feedback from citizens</b>	None	None	None	Clear that input used to modify plans	As left; also for projects
<b>Who is involved in participation</b>	None	Public	Public	As left; attempts made to reach out to people	Very wide range of people – old, young, ethnic minority, business etc.
<b>Involvement Methods</b>	None	Basic information given on paper, email	Basic information given on paper, email	Wider range of media than paper and email	Innovative methods to reach difficult target groups
<b>Frequency of Involvement</b>	None	None	When plans are made	When plans are developed and made	Continuous through all stages of project development and implementation

In addition to the differences identified in the main list of indicators, the following points are relevant:

- A level 5 city will have an emphasis in its approach on participation as well as consultation. This means that it will involve (groups of) citizens early in the development of policy and measures, rather than simply presenting its plans to them for feedback. It will explain how the results of participation and consultation have been used to modify policy and measures. It will consult frequently, although do so in an efficient way to minimise "survey fatigue" amongst people being consulted. It is likely to use innovative approaches such as planning workshops, citizens' juries and panels and focus groups to involve people, and it will experiment with new

approaches (e.g. consultation in schools) to elicit responses from hard-to-reach groups such as teenagers via, for example, youth clubs.

- A level 4 city will perhaps experiment with participatory approaches but be more comfortable with consultation. This will however be in-depth consultation with a wide range of citizens and other stakeholders. It will be clear that plans and measures can and do change in response to consultation feedback. There is a real effort made to secure consultation input from citizens from a wide variety of backgrounds.
- A level 3 city will make an attempt to gather people's input, through very simple "yes/no" type questions in short questionnaires, for example. However, little effort will be placed on securing a broad and representative response and it will not be clear whether the consultation input is used in any way.
- A level 2 city will announce its plans publicly before implementing them.
- A level 1 city will implement many of its plans without forewarning.

### **Grounds for reducing total maximum possible score.**

For this indicator there are no grounds for reducing the total maximum possible score since the city to a large degree can choose how to involve its citizens in planning its mobility policies and measures.

### **Quantitative measures of this indicator for a city to monitor it in the future**

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Number and format of consultation and participation events held each year on mobility issues;
- Number and format of consultation and participation mechanisms used to get citizen input on mobility issues;
- Number of modifications to policies and measures arising from citizen input.

### **Links to further information and best practice**

See for example [http://www.mobilityplans.eu/docs/SUMP\\_guidelines\\_web0.pdf](http://www.mobilityplans.eu/docs/SUMP_guidelines_web0.pdf) pp 62-68.

## E3: Vision, strategy and leadership

### Definition of Indicator

Whether or not the city has an EcoMobility strategy (most likely in the form of a SUMP), and the status and content of this strategy. The level of political and managerial support and sponsorship given to the strategy, and how far the senior staff and politicians lead the policy both strategically and at an implementation level.

### Purpose

For a city to be ecomobile, it must have a vision and strategy to become so, and this vision and strategy must be supported at a senior management and political level.

### Terminology

An EcoMobility strategy is set out in a document, but this document is the summary of a process for the implementation of the strategy. The document should set out the reasons why the city wishes to become more ecomobile, its objectives for EcoMobility (e.g. to become a more liveable city) and targets to measure whether it has achieved these objectives. It should then include a set of measures that it will implement to achieve the objectives.

Leadership at the strategic level is provided when politicians and senior managers repeatedly state their support for the objectives of the strategy. At the implementation level this strategic support should translate into a willingness by politicians and senior staff to help city staff to overcome problems in the implementation of projects and measures that are part of the strategy.

### Suggested evidence

- Copy of SUMP or action plans with evidence of EcoMobility policies;
- Evidence of senior management and political endorsement of policy;
- Budget documents;
- Evidence of review showing how EcoMobility policies have been followed through to implementation;
- Staff evaluations showing links between personal job performance and EcoMobility.

### Scoring

Out of 20 possible points. See Ecomobility definition to assist in scoring. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	<b>No Clear policy on EcoMobility</b>	<b>Limited Policy with Limited political support for EcoMobility</b>	<b>EcoMobility Policy exists, with some support</b>	<b>EcoMobility Policy has been in existence for some time and is supported</b>	<b>EcoMobility is the cornerstone for the city's transport policy and has a strong political support</b>
<b>Vision on sustainable mobility (based on EcoMobility definition)</b>	The vision does not include EcoMobility/ The Vision aims at automobile friendly infrastructure	The document merely mentions promoting all transport modes	The document/ vision aims at promoting optimal modal choice and infrastructure to all modes	The documents aims at promoting optimal modal choice and also reducing/ minimising travel	The document not only promotes optimal modal choice, aims at reducing/minimising travel, but also prioritises the use of active travel modes, emphasises reduction of fossil fuel dependency and focusses on automobile restraint measures
<b>Political endorsement of the document</b>	None	Very little attention, if document exists	Endorsed by Senior Management and Politicians	Clear that input used to modify plans	As left; also for projects
<b>Who is involved in participation</b>	None	Public	Public	As left; attempts made to reach out to people	Very wide range of people – old, young, ethnic minority, business etc.
<b>Involvement Methods</b>	None	Basic information given on paper, email	Basic information given on paper, email	Wider range of media than paper and email	Innovative methods to reach difficult target groups
<b>Frequency of Involvement</b>	None	None	When plans are made	When plans are developed and made	Continuous through all stages of project development and implementation

The five levels and the differences between them are clearly defined in the main indicator sheet (and the assessment level descriptions appear above). If it is clear that in spite of the existence of an EcoMobility strategy (most likely defined in a SUMP), the city is implementing significant transport measures that are not in, and run counter to, this strategy, then the points scored should be reduced by 1-2 levels (e.g. from a 3 to a 1). For example, if the strategy includes policies and measures to restrict parking, but at the same time the city has other plans for and/or is building new off-street car parks in its city centre, this would be grounds to reduce the points scored.

### **Grounds for reducing total maximum possible score.**

For this indicator there are no grounds for reducing the total maximum possible score

### **Links to further information and best practice**

The European Commission has produced Guidelines on SUMP (2011) available at [www.mobilityplans.eu](http://www.mobilityplans.eu).

## E4: Personnel and resources

### Definition of Indicator

Level of staff and resources available to implement the Sustainable Urban Mobility Plans (SUMP) (or similar transport policy document); ways in which tasks and responsibilities within the mobility/transport team are structured; how collaboration between city departments/divisions/units takes place, and between whom exactly (such as spatial planning, traffic planning, public works, marketing and communication).

### Purpose

If there are insufficient resources to deliver EcoMobility then it cannot be implemented. Resources here are defined mainly in staff terms and how these staff work together. Finance is covered in the next indicator.

### Suggested evidence

- Meeting notes from inter-department/inter-sectoral meetings and written policies on this activity;
- Evidence of how these meetings have led to outcomes that are more ecomobile;
- Names and posts of staff, departments, number of employees across departments working on EcoMobility;
- Details of training programmes (internal and external); staff attended.

### Scoring

Out of 15 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	No specific resources for EcoMobility	Short term limited resources	Stable long term resources for EcoMobility	As left, with collaboration between departments	As left; increasing resources; staff encouraged to train and innovate
<b>Staff availability</b>	No specific staff	Short term, discontinuous	Long term, continuous	As left*, staff collaborate across departments	As left but staff also encouraged to train and innovate
<b>Collaboration across departments</b>	None	None	None	Encouraged	An accepted part of the way of working
<b>Training</b>	None	None	None	Ad-hoc	As above

\*Note: "As left" in the table means "same as the previous column".

In addition to the differences identified in the table above, the following points are relevant: a level 5 city will have systematic and accepted practices for co-working between departments. These will take the form of activities such as secondments of one staff member to another department, multi-functional teams that are assembled to deal with projects, and regular meetings of all relevant departments working on transport and in related areas in order to keep one another updated and to identify ways of resolving problems. Face to face contact between staff at all levels in different departments will be encouraged. The mobility department is likely to hold the majority of the financial budget for transport to ensure that it is spent to support EcoMobility. Successively fewer of these criteria will be satisfied in lower scoring cities.

## Grounds for reducing total maximum possible score.

It is possible to change the total maximum possible score for this indicator to take into account how the city profile can make it more difficult for a city to achieve in this indicator area.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	Where one or more functions that are listed in the indicator (e.g. spatial planning) are in whole or in part the responsibility of non-city organisations (e.g. in Slovenia part of spatial planning is the responsibility of the national level), then joint working will be much more difficult than where they are part of the same organisation.	Reduce maximum possible score by 5% for each function that is the responsibility of another organisation

## Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following, as a measure of their personnel and resources for EcoMobility:

- Number of staff available to work on EcoMobility across different departments, expressed as full-time employees;
- How often staff from different departments meet to discuss joint implementation of the EcoMobility strategy;
- How often they attend training to improve their skill set.

## Links to further information and best practice

See for example [http://www.mobilityplans.eu/docs/SUMP\\_guidelines\\_web0.pdf](http://www.mobilityplans.eu/docs/SUMP_guidelines_web0.pdf) p84.

## E5: Finance for EcoMobility

### Definition of Indicator

Proportion of the city's transport budget spent on facilitating walking, cycling and public transport; or on motor traffic, where this spending is intended to reduce that traffic (e.g. traffic calming), averaged over the previous three years.

### Purpose

If there are insufficient resources to deliver EcoMobility then it cannot be implemented. Where money is spent is also a great indicator of actual policy priorities.

### Suggested evidence

- Meeting notes from inter-department/inter-sectoral meetings and written policies on this activity;
- Evidence of how these meetings have led to outcomes that are more ecomobile;
- Names and posts of staff, departments, number of employees across departments working on EcoMobility;
- Details of training programmes (internal and external); staff attended.

### Terminology

The terms are clear. Measuring this figure may be complex because spending on ecomobile modes is not always separated out in budgets and across different departments. For example, where a road is reconstructed with much improved cycling and walking facilities, this may be counted in the general roads or maintenance budget. However, because of the great importance of finance, it is worth making an attempt to find out these figures. To obtain this figure it is important to closely examine each transport related budget spend (e.g. construction, maintenance, lighting, signage, communication measures, cost of finance cycle hire schemes, promotion etc.) and to establish what proportion of the total transport related expenditure is directly related to ecomobile modes.

### Suggested evidence

Budget and spending figures. Analysis of the city's total transport related budget spent in the previous three years to show split in spending between ecomobile modes and motor vehicles. For example, in relation to the total road maintenance budget, you will need to establish what proportion of the budget is spent on maintaining roads (for motor vehicles), the footpaths (for pedestrians) and the cycleways (where they exist), and then separate, and add together the latter two components to obtain the proportion directly linked to ecomobile modes. Similarly, for street lighting, which part of the budget is specifically for roads only used by motor traffic, and which part is related to areas used by pedestrians and cyclists. You will need to do this for all

transport related budgets and then calculate the total percentage of these budgets that is specifically related to ecomobile modes. This will also include aspects such as promotion and communication about ecomobile modes.

In order to find the city's total transport budget, it is helpful to divide the total city budget by sub-department, to include all sub-departments that spend money on transport, and to distinguish between the city's own money, and money that may have been given to it by other sources (e.g. EU, higher levels of government).

### Scoring

Out of 25 possible points.

Level	1	2	3	4	5
% of transport budget over past three years that is specifically related to ecomobile modes	<10%	10%-24%	25%-49%	50%-75%	>75%

The five levels are defined quantitatively.

### Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account how the city profile can make it more difficult for a city to achieve in this indicator area.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	Where public transport is not the responsibility of the city, it is to be expected that it will spend a smaller proportion of its overall transport budget on EcoMobility.	Reduce max possible score by 25%.
	If the city receives money from higher levels of government for transport but it is required to spend this money on particular modes, this should be taken into account.	Reduce max possible score by 25% if city required to spend money on roads.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on financial resources spent on EcoMobility, it is recommended that they do so as soon as possible.

### Links to further information and best practice

See for example [http://www.mobilityplans.eu/docs/SUMP\\_guidelines\\_web0.pdf](http://www.mobilityplans.eu/docs/SUMP_guidelines_web0.pdf) p84.

## E6: Monitoring, evaluation & review

### Definition of Indicator

Degree to which monitoring, evaluation and review are an integral part of the city's processes for checking what it has done, and improving on it.

### Purpose

The EcoMobility strategy (and SUMP) should set targets to measure the achievement of objectives. It is important to monitor to check that the targets are being achieved. More generally, monitoring and evaluation shows whether the strategy and measures within it are on track and being used as intended. Evaluation helps to explain why parts of the strategy and measures may or may not have worked.

### Terminology

**Monitoring** – measuring (quantitatively or qualitatively) what has happened e.g. how people's use of a bike path increased once it was provided with street lights

**Evaluation** – why it happened. Did people use the bike path more because it had street lights or because petrol prices rose at the same time?

**Review** – modifying strategy and action plan in response to monitoring and evaluation results.

### Suggested evidence

- List of indicators;
- Monitoring and evaluation data;
- Internal working papers showing how monitoring and evaluation data has been used to improve activities.

### Scoring

Out of 10 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	Monitoring, evaluation and review (ME&R) ad-hoc if at all	Limited, occasional ME&R related to a few draft indicators	Established indicators used to structure ME & R; results used	As left*; in place for some time; appraisal also used	As left; data gathered is of very high quality; clear link from ME&R to updates of action plan
<b>Type of data gathered</b>	Ad hoc	Related to a limited set of indicators	As left	Related to all potential indicators	As left, very high quality
<b>Indicators</b>	No standard indicators	Limited set of indicators adopted	Limited set of indicators adopted	Full set of indicators used (i.e. financial, social and environmental impacts measured)	As left
<b>Frequency of data gathering</b>	Never/almost never	Not in past 5 years	At least once every 4-5 years	At least once every 2-3 years	Every year
<b>Use of data</b>	Not used	Not used	Used to update programmes and plans	As left, and review reports produced to demonstrate impacts	As left; also used to keep public informed of progress

\*Note: "As left" in the table means "same as the previous column".

In addition to the differences identified in the table above, the following points are relevant:

- A level 5 city takes care over the quality of data that it collects. For example, it will ensure that its modal split data is gathered using a statistically valid stratified random sample of residents to complete a methodologically robust household travel diary. It will have been gathering data of this nature regularly, on an annual basis. It may employ an expert(s) in the use of appraisal techniques so that it can make rational decisions about its investment priorities for new measures. Key staff at the city will meet regularly to consider the implications of findings from monitoring and evaluation, and to feed this back into the review of their activities.
- A level 4 city might also use a household survey, but one that is less methodologically robust. It will have been gathering data for a shorter time and perhaps less regularly than its level 5 counterparts.

- A level 3 city uses basic data sources (for example, traffic/vehicle occupancy counts) to carry out monitoring, and has only collected such data at least once every 4-5 years.
- Level 2 and level 1 cities have developed very little monitoring and evaluation.

### **Grounds for reducing total maximum possible score**

For this indicator there are no grounds for reducing the total maximum possible score. The city has control over the techniques it chooses to monitor, evaluate, review and appraise its policies and measures.

### **Quantitative measures of this indicator for a city to monitor it in the future**

For cities that do not currently collect data related to this indicator , it is recommended that they begin to collect data on the following:

- The frequency with which they collect monitoring and evaluation data;
- The quality of the data, and any changes over time to the methodology used;
- Where they store the data.

### **Links to further information and best practice**

See for example [http://www.mobilityplans.eu/docs/SUMP\\_guidelines\\_web0.pdf](http://www.mobilityplans.eu/docs/SUMP_guidelines_web0.pdf) (pp 88-112).

## TRANSPORT SYSTEMS AND SERVICES

TSS1: Planning

TSS2: Low Speed / Car Free Zones

TSS3: Information Provision & Systems

TSS4: Mobility Management

TSS5: Parking

TSS6: Walking

TSS7: Cycling

TSS8: Public Transport Coverage & Speed

TSS9: Usability of Public Transport

TSS10: Low Emission Vehicles

# TSS1: Planning of new city areas

## Definition of Indicator

The extent to which new city areas are planned to reduce the need to travel by car and to facilitate travel by ecomobile modes.

## Purpose

Cities that are known to be more ecomobile, such as Freiburg in Germany or Zurich in Switzerland, have placed great emphasis on the way in which new/redeveloped areas of the city are planned to link them to good public transport, cycling and walking networks to make travel by these modes as fast, convenient and safe as possible.

## Terminology

A city's "Spatial Plan" (or 'Land use plan') is their vision/planned actions, usually in the form of a written document, for the future development of the city, including the location of new developments (both residential and commercial areas) and how developments (old and new) are connected to each other by all transport modes. For a city's plan to be deemed ecomobile friendly, examples might include:

- Ensuring that the development is located along a public transport route, close to a stop; or better still, close to a node accessible in several directions by public transport;
- Connecting the development to the cycle network;
- Ensuring that walking access into the development is more convenient than car access for example, by ensuring that the building entrance is at the front, close to the public transport stop;
- Limiting car parking provided in new developments.

## Suggested evidence

- Excerpts from the spatial plan showing how it supports locations that are accessible by ecomobile modes;
- Sample of major development sites with qualitative analysis of their accessibility by ecomobile modes and whether they have any measures in place to manage access by different modes and encourage ecomobile access;
- Guidance documents to city staff on how to secure such developments through the planning system, including details of any impact assessment prior to planning permission is granted.

## Scoring

Out of 20 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	<b>Planning works against EcoMobility</b>	<b>Planning for EcoMobility not an issue in this city</b>	<b>Thinking about planning for EcoMobility</b>	<b>Some good examples</b>	<b>Systematically adopted and implemented</b>
<b>How developments are assessed and are located to support, or take into account, EcoMobility</b>	No real assessment. They are often located in places that are poor for EcoMobility	No real assessment. If their location supports EcoMobility this is not deliberate.	Some staff are starting to consider how planning could support EcoMobility, and how new developments could be assessed.	Some new developments support EcoMobility, and assessment used for some new developments	All new developments support EcoMobility, and assessment used for all new developments
<b>Content of spatial plan</b>	No detailed spatial plan exists, or it exacerbates problem above, i.e. Ecomobile considerations are not taken into account	As left*; or neutral impact on EcoMobility, i.e. Ecomobile considerations are not specifically mentioned, or only minor reference	As left; or neutral impact on EcoMobility	Plan has been changed within last 2 years to take into account and support EcoMobility	Plan has taken into account and supported EcoMobility for at least 3 years
<b>Actual implementation of ecomobile developments</b>	None	None	One or two examples	More than two, less than 5, and more planned	More than 5 examples, and more planned

\*Note: "As left" in the table means "same as the previous column".

- A level 5 city systematically ensures that all developments are located so that their users have easy access to the public transport system and walking and cycling network, and so that measures are in place at these developments to cater for people travelling by these modes. The spatial plan is orientated to reducing the need to travel by car so that, for example, land uses generating many trips are only permitted if they are located at or close to public transport nodal points; residential development is located around public transport stops, with the highest densities at the points closest to the stops. There is a recognised procedure that is always used for assessing the transport impacts of new developments and for ensuring that they include measures to reduce the car travel that they generate.
- In a level 4 city there are examples of developments conforming to the principles outlined in level 5, but there is no consistent procedure for ensuring that all developments are planned in this way. Thus the good examples that do exist have happened only because certain key people involved were interested in them.
- In a level 3 city, some staff in spatial planning and transport are making efforts to try to get the planning of new developments to conform to the level 5 principles but this is a relatively new idea and so far there are no developments of this nature that have been built.
- In a level 2 city, no thought is given to how spatial planning can be used to reduce the need to travel. If certain developments are located in areas that are accessible by other modes, and/or with access by alternative modes, this is entirely by chance.
- In a level 1 city, spatial planning makes travel by alternative modes difficult. For example, there are regulations prohibiting mixes of uses or requiring minimum parking standards even in the city centre that make it almost impossible to realise new development in a way that will reduce the need to travel by car.

### Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	The city has no control over its own land use plan (this is in the hands of a different level of government)	Reduce total maximum points possible by 5%
City management and finance	The city has no control over new developments that want to locate in its area (this is in the hands of a different level of government)	Reduce total maximum points possible by 5%

### Links to further information and best practice

See for example the results from the MAX Project, WP D, at

[http://www.epomm.eu/index.phtml?Main\\_ID=2174&ID1=2180&id=2223](http://www.epomm.eu/index.phtml?Main_ID=2174&ID1=2180&id=2223)

## TSS2: Low speed/car free zones

### Definition of Indicator

Percentage of the area of the city's streets and squares that are car free or where there is a speed limit of 30 km/h or below that is enforced (by local police or appointed traffic wardens), or is self-enforcing by means of physical measures (e.g. speed humps, barriers, etc.).

### Purpose

In order for people to consider and use ecomobile modes they need to feel safe when travelling, especially when considering walking or cycling. This includes perceived safety from traffic, and traffic calming measures which are a way to help ensure people feel safe. This measure also makes these ecomobile modes more competitive with the car in terms of journey time, as it slows down car drivers, or restricts their access to certain routes. Traffic calming (including the creation of car free zones) is a key measure in cities that are recognised to be leaders in sustainable transport, such as Freiburg, Groningen and Vienna. It also makes the city more liveable.

### Terminology

The proportion of the total city area that has active, enforced low speed zones or car free areas in place (e.g. 1 square km from a total area of 10 square km = 10%).

### Suggested evidence

- Survey or GIS mapping of the extent of 30 kph zones (including any car free zones);
- Evidence that these restrictions are enforced (e.g. speed cameras, evidence of physical measures in place, whether the local authority employs full-time enforcement officers to patrol these areas, etc.).

### Scoring

Out of 10 possible points. To score this indicator, the city should be initially scored on the percentage of 30kph/car free zones and then according to the level of enforcement in place. For example, if 50% of the city has low speed/car free zones (Level 4) but there is only some enforcement in place for some areas (Level 2) - the overall score should be Level 3.

Level	1	2	3	4	5
% of total area containing low speed/ car free zones	< 20 %	20 % - < 30 %	30 % - < 40 %	40 % - < 60 %	≥ 60 %
Level of enforcement in place	Very little or no enforcement of these areas	As left, but evidence of some enforcement measures in place for some areas	Some enforcement measures in most areas	The majority of low speed/ car free areas strictly enforced	All low speed/ car free areas strictly enforced

### Grounds for reducing total maximum possible score.

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	If at least two major roads in the city are not controlled by the city but by higher level of government (e.g. provincial)	Reduce total maximum points possible by 20%
Factors affecting propensity for active travel	If the city has at least five factors from the list of indicator definitions that make the likelihood of high levels of active travel more than average	Increase total maximum points possible by 20%
Factors affecting propensity for active travel	If the city has at least five factors from the list of indicator definitions that make the likelihood of high levels of active travel less than average	Reduce total maximum points possible by 20%

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Percentage of road network that is car free;
- Percentage of road network with speed limit of 30 kph or below;
- Evidence of how these measures are enforced.

### Links to further information and best practice

[http://www.civitas.eu/index.php?id=79&sel\\_menu=21&measure\\_id=722](http://www.civitas.eu/index.php?id=79&sel_menu=21&measure_id=722)

[http://www.civitas.eu/index.php?id=79&sel\\_menu=21&measure\\_id=744](http://www.civitas.eu/index.php?id=79&sel_menu=21&measure_id=744)

<http://www.vtpi.org/tm/tm105.htm>

# TSS3: Information provision and systems

## Definition of Indicator

Information and advice on ecomobile modes are available through different media (e.g. using the internet or smart phone applications to find the best route and transport modes, information on the fare scheme and ticket purchasing).

## Purpose

For people to use ecomobile modes, they have to be aware that these mode options exist and how to use them (e.g. specific routes available, cost of PT services, cycle hire schemes etc.).

## Terminology

All terms are clear

## Suggested evidence

Information would be organised around what the passenger needs to know, e.g.:

- How do I get from where I am (or want to start from) to where I want to go;
- When and how frequently (in real time) does the service go;
- How much will it cost me and where can I purchase tickets.

## Monitoring data

Presentation of information via different media and use of information services.

## Scoring

Out of 10 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged. (Table on the right)

Level	1	2	3	4	5
<b>Summary</b>	Little or no information provided for ecomobile modes	Some information provided, but at a basic level	Good range of information through a variety of media provided for most ecomobile modes	Comprehensive approach to information provision, for all ecomobile modes, looking at ways to improve provision of information to users	A leader in information provision and always looking to add new media outlets and improve provision of information to users
<b>General Information provision (paper based)</b>	Not very comprehensive	Quite comprehensive, but may not cover all modes and inter-modal links	As left*	Comprehensive, covering all mode options, and most inter-modal links	Comprehensive, covering all mode options, and all inter-modal links
<b>Use of media</b>	No use of electronic media	Use one electronic medium	Use at least two electronic media	Use at least 3 electronic media, looking for more	As left
<b>PT at stop/station information</b>	None	Complex, at stop, on paper	Easy to understand, at stop and on web	As left but also real time info at stop	As left, also real time on vehicle
<b>Fare information</b>	None, or very little	Some available but not for all services	Available for most services	Comprehensive information provided on all fare options and for all modes	Comprehensive information provided for all modes and integrated ticketing options. Advice focusses on providing users with best cost options

\*Note: "As left" in the table means "same as the previous column".

## Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Wealth	High tech information applications can be expensive. This may limit a city's ability to pay for, for example, real time information at bus and tram stops.	Reduce total maximum points possible by 5% for level 1 or level 2 cities

## TSS4: Mobility Management Services

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Proportion of total public transport fleet covered by GPS tracking linked to information system;
- Number of users of information media.

### Links to further information and best practice

See for example case studies on the European Platform on Mobility Management site at [http://www.epomm.eu/cs\\_search.phtml?Main\\_ID=822](http://www.epomm.eu/cs_search.phtml?Main_ID=822).

### Definition of Indicator

The availability, integration and use of high quality Mobility Management (MM) services supporting EcoMobility (e.g. awareness campaigns, bike sharing system, car sharing, teleworking, site-based travel plans, etc.), where these have been directly implemented by the city, or have/are supported in kind or financially by the city administration. This includes schemes both within and outside the city administration area.

### Purpose

As well as information provision, for people to be encouraged or persuaded to use ecomobile transport modes, MM measures are identified as a powerful set of measures that enable this.

### Terminology

MM measures include:

- A bike-sharing system – on street bike hire at various points across the city, or specific sites such as rail stations; bikes can be hired for multiples of 30 minutes for a nominal fee once a user has registered their details;
- Car-sharing – similar to bike-sharing but with cars. May also be provided as peer-to-peer car-sharing, that is, hiring your neighbours' car(s) for a short period;
- Teleworking – working away from a fixed worksite, communicating with colleagues and clients by virtual means, at a satellite work centre or at home;
- Car-pooling – facilitating people sharing lifts together on a one-off or regular basis;
- Integration of these systems – for example, is bike sharing payment combined with the payment mechanism for car parking or public transport?;
- Awareness raising campaigns to encourage people to try out alternative modes of transport. They can be implemented right across a city (car free day, for example) or at specific locations such as schools or large employers;
- Personal travel advice is an activity undertaken by personal travel advisors who work with people to look at their weekly travel habits and then identify where each person can reduce their total travel and their travel by car by, for example, adding trips together, taking a walk trip instead of a car trip, or shopping online;
- Site based MM measures are campaigns, information and incentives (such as a week's free bus travel, for example).

A full definition and list of MM measures is available at EPOMM website - <http://www.epomm.eu/>

## Suggested evidence

Documentary and actual evidence (photos, maps, user reviews, database of users and usage) of the existence and use of these various services.

## Scoring

Out of 10 possible points. Cities should only be scored on those schemes that they have directly implemented (whether in full, or provided substantial support), and not those implemented by private companies/organisations where the city has had no involvement. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Summary</b>	Very little or no consideration of MM in practice or policy	Little consideration of MM in practice or policy, and only one MM scheme implemented	Active in MM provision, but only a limited number of schemes implemented, some consideration of MM in overall transport policy	Very active in MM, with plans to introduce new MM in the future, and MM is part of the city's overall long-term transport strategy	Full range of services, well used. A leader in best practice for MM implementation, constantly looking to introduce new measures, and MM is a key part of the city's overall long-term transport strategy
<b>Number of services in full service</b>	Zero	One	Two	Three	More than three
<b>Number of services in service as pilots</b>	Zero	None but at least one in planning	One	At least one	Two, or more
<b>Length of time in service</b>	Nil	A year or less	At least a year for at least one service	Two years for at least one service	Three years for at least one service or two for at least two
<b>Usage</b>	Zero	Lightly used	Well-used, good user feedback	As left*, for at least one service	As left, for at least two services

## Grounds for reducing total maximum possible score.

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Wealth	High tech applications such as bike sharing schemes, or large scale MM measures can be expensive and/or require the city to give up advertising revenue streams for long periods into the future. This may limit a city's ability to pay for them.	Reduce total maximum points possible by 5% for level 1 or level 2 cities
Size of city (i.e. population size)	Smaller cities likely to find it difficult to achieve critical mass to support use of these schemes.	Reduce total maximum points possible by 5% for level 1 or level 2 cities
Factors affecting propensity for active travel	If the city has at least five factors from the list of indicator definitions that make the likelihood of high levels of active travel less than average	Reduce total maximum points possible by 20%

## Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Scale and use of any MM in place

## Links to further information and best practice

On car-sharing see <http://www.citycarclub.co.uk/files/city-car-club-press-pack.pdf>; history of the Swiss car-sharing scheme at <http://www.mobility.ch/files/pdf1/History3.pdf>; North American practice at <http://www.carsharing.net/library/index.html>

On bike-sharing see <http://www.nctr.usf.edu/jpt/pdf/JPT12-4DeMaio.pdf>; also OBIS handbook at [http://www.eltis.org/docs/tools/Obis\\_Handbook.pdf](http://www.eltis.org/docs/tools/Obis_Handbook.pdf); <http://www.tfl.gov.uk/roadusers/cycling/14808.aspx>

For information on personalised travel advice and its impacts in four towns in the UK (including Darlington) see <http://www2.dft.gov.uk/pgr/sustainable/smarterchoices/smarterchoiceprogrammes/index.html>

## TSS5: Parking measures

### Definition of Indicator

Degree to which the city has enforced parking regulations through which inner-city parking spaces have hourly rates or similar and/or are time-limited.

### Purpose

Cities that are judged to be good examples of more ecomobile places, such as Vienna, Zurich, Freiburg, Groningen or Munich, have historically adopted quite restrictive car parking policies. This does not mean that it is impossible to park, but amounts of parking are limited (for all users, but especially for commuters) and it is normal to pay for parking and to find parking in certain areas targeted to only one or two user groups, such as visitors, or residents. This indicator measures a city's activity in this area.

### Suggested evidence

In order to score this indicator it is necessary for the assessor to collect and understand some data and documents. The data and documents should collect information in the following areas:

- % of available city centre parking spaces that have a maximum permitted length of stay;
- % of available city centre parking spaces on which a payment is levied;
- Percentage of total spaces that are either time limited and/or charged;
- Whether there is a parking policy – that is, a written statement of the city's objectives with regard to parking and the way it will achieve these objectives – and the status of the policy;
- Enforcement in place and city's level of control over enforcement organisation;
- Parking levels and use are monitored (including private non-residential parking, that is, parking that belongs to private organisations and that is off-street);
- Restraint-based parking strategy is integrated part of SUMP (or similar).

### Scoring

Out of 20 points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged. (Table on page on the right)

### Differences between the five levels

Performance in this measure is differentiated by the percentage of parking spaces (on- and off-street) that are charged, and the degree to which parking policy has evolved

over time. A very well-performing city would be expected to charge for almost all its public and on-street parking spaces. The city would have implemented this policy as part of an explicit parking strategy that also places other measures (residential parking zones, the amount of parking in new development etc.) in a strategic context, showing what the city wants to achieve by the use of such measures (e.g. congestion reduction, improved visual quality in the city centre). It is likely also to have identified an objective to cap or reduce the total number of parking spaces in the city centre. Enforcement in a high-scoring city would be effective but also fair. A slightly less well performing city would have adopted some of these measures but only mentioned them in passing in its wider transport strategy (SUMP), so it would not be clear what the city was trying to achieve by the use of these measures.

A moderately performing city would have some on-street parking controls but not have considered putting these in any kind of strategic context; it may also have problems with parking enforcement. A poorly performing city would have no controls beyond those necessary for traffic management and safety (at junctions, for example).

More specific guidance on how to differentiate between the performance of different cities is shown in the scoring table.

### Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	If parking enforcement and finance (e.g. receipt of fines) is not wholly controlled by city, restraint based parking more difficult. Similarly if parking standards set at national or regional level	Reduce by 20% if enforcement, 10% if parking standards outside city control
Influence of city in region	If city is powerful and attractive within region, restraint based parking policy is easier- and vice versa	If city is powerful, reduce by 10%, if city is a minor player in its region, with many competitor cities and parking policy in place, increase by 10%
Car ownership	High car ownership makes restraint-based parking more difficult	Car ownership > EU average, reduce max score by 10%

If very significant legislative or legal barriers exist to parking management, the total maximum score should be reduced by 50-70%. For example, in Russia in 2008, charging for on-street parking was declared illegal, and so there was no effective way to enforce any charged parking. If the police are responsible for parking enforcement but devote absolutely no resources to it, this could be another reason to reduce the maximum possible score.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on parking, it is recommended that they begin to collect data on the following:

- Total number of public and on street parking spaces restricted in city centres;
- % of available parking spaces which are limited in time;
- % of available parking spaces on which a payment is levied;

- Total amount of private non residential parking in their area;
- Trend in restricting parking (total number of spaces with time limits) over past 5-10 years.

### Links to further information and best practice

See for example <http://www.vtpi.org/tdm/index.php#parking>

Level	1	2	3	4	5
<b>Summary</b>	The city has no real parking strategy. The city has no parking regulations (meaning hourly rates, time-limited)	The city has no real parking strategy, or it is very limited. Some inner-city parking spaces have hourly rates or are time-limited.	Some consideration has been given to placing parking within a policy framework.	Very active in MM, with plans to introduce new MM in the future, and MM is part of the city's overall long-term transport strategy	Full range of services, well used. A leader in best practice for MM implementation, constantly looking to introduce new measures, and MM is a key part of the city's overall long-term transport strategy
<b>Many, 50-75 %, of inner-city parking spaces have hourly rates or similar and/or are time-limited.</b>	More than 75 % of inner-city parking spaces have hourly rates or similar and/or are time-limited. The city has a parking policy in place where different parking strategies and regulations are included.	The city has a comprehensive parking policy. All inner-city parking spaces have hourly rates or similar and/or are time-limited. The city has had a parking policy in place for over 5 years which includes different parking strategies and regulations intended to restrain the supply and use of parking.	Two	Three	More than three
<b>Total % of public and on street parking spaces restricted in city centres</b>	None	1-<50%	50-<75%	75-<95%	95-100%
<b>% of available publicly-available on-street parking spaces are limited in time</b>	None	1-<50%	50-<75%	75-<95%	95-100%
<b>% of available publicly-available parking spaces on which a payment is levied</b>	None	1-<50%	50-<75%	75-<95%	95-100%
<b>Parking charge per hour on and off-street related to other comparable cities</b>	No charge	Half	The same	150%	Double
<b>Enforcement in place and city's level of control over enforcement organisation</b>	Occasional police enforcement of restrictions	Enforcement out of city's hands but quite rigorous	City has recently taken over enforcement and is still modifying its operations.	High level of enforcement controlled by city, but some income may accrue to or be controlled by other levels of government (e.g. level of fines)	All areas subject to regular 24/7 enforcement based on sophisticated understanding of parking behaviour. Enforcement and all income (including fines) fully controlled by city.
<b>Parking levels and use are monitored (including private non-residential parking)</b>	No monitoring	Ad-hoc monitoring only	Considering regular monitoring, but only ad-hoc counts up until now	Biennial monitoring for 0-5 years	At least biennial monitoring for 10 years or more
<b>Restraint-based parking strategy is integrated part of SUMP (or similar); clear view on development of regulated and charged parking</b>	No SUMP or parking strategy	No strategy, although SUMP exists	Parking strategy exists separately from mentioned in SUMP, but no concrete measures expressed	Fully integrated into SUMP that has been in existence for 3 years or less; aspiration to cap or reduce numbers of spaces	Fully integrated into SUMP that has been in existence for over 3 years, with targets for (capped or reducing) numbers of parking spaces in future.

# TSS6: Walking conditions

## Definition of Indicator

The walking network is safe, accessible to all people, comfortable, and is correctly signed. Waiting times at crossings are low and pedestrians are given priority above other transport modes throughout the walking network.

## Purpose

To make walking attractive and accessible as a transport option the walking environment should be designed in such a way. Public spaces that are attractive, safe, provided with suitable amenities and way-finding information, and which are accessible to all people (including those with reduced mobility) are more attractive, easy to use and enjoyable to walk in, and if designed in such a way are more likely to encourage people to walk more often.

## Terminology

This indicator is dependent on expert judgement. Therefore much of the assessment is qualitative and depends on the expert's assessment of how it "feels" to walk in the city, compared to other places where they have walked.

"Walking network" is the footway network both alongside roads, but also across parks and other places where there is no directly parallel route for motor vehicles.

"Comfortable" means that the user feels that they have enough space, lighting, and are not subject to undue stress, noise, diversions, poor surfaces, exposure to traffic immediately adjacent to the walking route, level changes etc.

"Safe" is dependent on how the user feels (and this also relates to the point about children under 10 feeling safe on the network).

"Correctly signed" (i.e. wayfinding system) means that a visitor to the city can find their way on foot to major destinations such as districts of the city, shopping centres, main schools and hospitals, and transport hubs.

"Low" waiting times for crossing points are defined by expert opinion in this indicator but might be of the order of 10-15 seconds.

"Pedestrian priority" means that at signalised crossing points, pedestrians have crossings for which waiting times are short, or very short and where vehicles are given lower priority to waiting pedestrians.

"Accessible" refers to public areas that have been adapted to make them barrier-free for people with reduced mobility (PRM), e.g. pavements are of adequate width, even and enhanced by measures such as kerb buildouts, tactile paving, dropped kerbs etc.

## Suggested evidence

- GIS and other mapping to show accessible features of street environment that have been installed;
- Site visit;
- User feedback/comments;
- Audit of public spaces.

## Scoring (table on right)

Out of 25 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

## Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Factors influencing propensity for active travel (walking, cycling, wheeling)	If the city is one with a higher or lower propensity for active travel this should be taken into account in the assessment of this indicator	Level 4 or 5 city – increase maximum points by 20% Level 1 or 2 – reduce maximum points by 20%

## Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Percentage of streets with continuous footways;
- Footway condition;
- Frequency of signalled and non-signalled crossing points, and signal timings;
- Perceptions of safety for unaccompanied children under 10 years old;
- Coverage of wayfinding information/systems;
- Amenities provided in public spaces.

Level	1	2	3	4	5
<b>Summary</b>	Walking has no place in transport hierarchy	Walking difficult due to poor infrastructure	Walking infrastructure provided but at a basic level	Walking safe and comfortable on minor streets, less so on major streets, city works to improve	Walking safe and comfortable everywhere, year-round, with pedestrian priority at signalised crossings in most places; street areas are maintained to a very high standard, and a comprehensive way-finding system is in place
<b>Comfort/Safety and security</b>	Wholly uncomfortable and unsafe; often insecure	As left* with exception of 1-2 streets in city centre	Feels comfortable and safe except at crossing points; also secure	As left; most crossing points safe and comfortable	Walking is fast, safe, and comfortable even for unaccompanied children.
<b>Maintenance</b>	Little or no maintenance	As left	Limited to major streets	Systematic and regular	Systematic and regular, to very high standard
<b>Crossing points and directness</b>	Crossings only at traffic signals	As left except in a few city streets	Crossing points to meet demand but often detours and long waiting times at signals	As left, but no detours required	Pedestrians can cross where they want in most mixed use streets; advanced crossing infrastructure in place (e.g. kerb build-outs); routes direct
<b>Priority at signalised crossing points</b>	Always for motor vehicles	Always for motor vehicles, and only a few for pedestrians	In some streets pedestrians have priority	In majority of streets pedestrian have priority	In all streets pedestrian have priority
<b>Pedestrian amenities (lighting/benches etc)</b>	None, or very few	None, or very few	Limited to major streets	In majority of street areas (51-74%)	In all street areas (over 75%)
<b>Continuity of footpaths/pavement areas</b>	Very poor	Poor	Continuous	As left	As left, expanded to meet demand
<b>Pavement condition (adequate width, even, consideration for PRM, etc.)</b>	Very poor	Poor	Good, with appropriate tactile paving, dropped kerbs in some areas	Very good in majority of city areas, with appropriate tactile paving, dropped kerbs in most areas	Very good in vast majority/all city areas, with appropriate tactile paving, dropped kerbs in vast majority/all areas
<b>Wayfinding systems</b>	No wayfinding system for people on foot,	Some basic directional signs	Some wayfinding maps or signage, covering less than 50% of city area	Some wayfinding maps or signage, covering about 51-80% of city area	Comprehensive, area based wayfinding scheme with on-street maps throughout city area, covering all areas

\*Note: "As left" in the table means "same as the previous column".

## Links to further information and best practice

Making the case for investing in the Walking Environment (UK) <http://www.livingstreets.org.uk/expert-help/resources/>

<http://www.eltis.org/index.php> (select case studies on walking)

<http://www.tfl.gov.uk/corporate/projectsandschemes/20947.aspx> for examples from London UK

Inclusive Mobility (UK) – Guidelines on Making Street Environment Accessible - <http://www.lancashire.gov.uk/environment/documents/mobility.pdf>

# TSS7: Cycling Conditions

## Definition of Indicator

The extent to which measures are taken to create a cycling network that is cohesive, direct, safe, comfortable and attractive; and well connected to public transport services.

## Purpose

The potential of cycling to establish a modal shift away from fossil-fuel reliant modes can be realised with a consistent approach to increase the overall quality of conditions for cycling.

## Terminology

Overall cycling conditions hinge on the quality and functioning of a cycling network. The three key requirements are: cohesion, directness and safety. Comfort and attractiveness are two additional requirements but more at the concrete design level of routes and road sections. Additional factors of success are: parking facilities and the extent to which cycling and public transport are integrated.

- “Cycling network” is defined as the road network that is open to cyclists along with any segregated facilities alongside roads, but also across parks and other places where there is no directly parallel route for motor vehicles.
- “Cohesion” concerns the extent to which cyclists can reach their destination. It involves the construction of a complete system of connections: every home, company and amenity must be accessible by bicycle.
- “Directness” in terms of both distance and time refers to a collection of routes and connections that offers cyclists, at best, a shorter trip and, at worst, a longer trip than a trip by car. Creating effective priority for cyclists over turning traffic at side road junctions is a concrete example of a measure. The lower the detour factor, the better.
- “Safety” refers to avoiding conflicts with crossing traffic (e.g. by signalling), separating vehicle types, reducing speed at points of conflict, ensuring recognisable road categories and ensuring uniform traffic situations. Families with children should feel safe to cycle.
- “Comfort” concerns the extent to which cyclists can use the connections as a whole comfortably. Prevention of nuisance, ease of way-finding and comprehensibility are three important elements.
- “Attractiveness” comprises factors such as public safety, an enjoyable public space, routes that are well-lit, smoothly surfaced and free of barriers such as obstacles, level changes and places where they have to dismount and walk.
- “Cycle Parking facilities” are, at a minimum, a fixed feature (e.g. pole, rack) to which a bicycle can be secured. The greater amount of convenient parking at both the residence and the destination, the better.

- Cycling is properly integrated with public transport if transport hubs are part of the cycling network and equipped with parking facilities.

## Suggested evidence

- GIS and other mapping;
- Site visit;
- User feedback/comments.

## Scoring

Out of 25 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

(Scores - table on the right)

In a level 5 city, cyclists encounter a cohesive, direct, safe, comfortable and attractive collection of routes and connections. Signage is such that a newcomer to the city could find his way to major destinations. Parking is adequate at all major destinations. The city works to make this existing network function even more effectively by, for example, responding to increasing demand for parking at transport hubs and further addressing bottlenecks for cyclists on key routes.

A level 4 city would have large parts of its network meeting the standards of level 5, but some routes and destinations clearly need improvement. Parking is sufficient at most major destinations and there are plans for further improvement.

In level 3 cities, perhaps a few routes would meet level 5 standards but for some key destinations cyclists have to use an unmodified road network and to mix inconveniently with general traffic. Only some attempts to improve are in place but without clear plans for improvement.

In level 2 cities the road network would be unmodified except where there was space to fit in cycle facilities without any impact on motorised traffic. Parking is provided sporadically and not necessarily where needed.

A level 1 city would have no cycle facilities whatsoever. Cyclists are only able to use lampposts and guard railing to park their bikes.

In level 3, 2 and 1 cities the cycle network might be underused because there are no signs to show where it is, and newcomers risk getting lost.

Level	1	2	3	4	5
<b>Summary</b>	No cycle network at all	Cycle network only where it can be fitted in around cars	One or two routes or areas with good infrastructure	High quality network widespread but not in all parts of city	Full network, best practice examples, work to improve this
<b>Network extent</b>	No network	Dependent on availability of space that can be found without taking space from cars	As left, with one or two exceptions (routes) where space taken from cars	Network is safe, and comfortable with space taken from cars where necessary in most areas	Network safe and comfortable in all areas, year-round
<b>Network quality</b>	Zero	Discontinuous, sub-standard, indirect	As left, with one or two exceptions (routes)	High and improving in some areas	Very high quality, direct, steps taken to improve/meet unmet demand
<b>Parking</b>	Zero	In fewer than 10 locations, demand unmet	In many locations but still unmet demand	Sufficient at most major destinations	Sufficient at all major destinations
<b>Maintenance</b>	Zero	Zero	Limited, cyclists not taken into account	Cycle routes have special treatment	As left*
<b>Integration with PT</b>	None	As left	Some parking at major hubs	Sufficient parking at major stations	Sufficient parking at all transport stations and stops
<b>Best practice</b>	None	None	One or two examples	3-10 examples	More than 10 examples

\*Note: "As left" in the table means "same as the previous column".

### Grounds for reducing total maximum possible score.

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Factors influencing propensity for active travel	If the city is one with a higher or lower propensity for active travel this should be taken into account in the assessment of this indicator	Level 4 or 5 city – increase maximum points by 20% Level 1 or 2 – reduce maximum points by 20%
Car ownership	Cities with very high car ownership may face bigger difficulties in taking space from cars to give to cyclists	Level 5 city – reduce maximum points by 10%

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Percentage of road network with speed limits of 50kph or above that has high quality safe cycling facilities.

### Links to further information and best practice

- <http://www.presto-cycling.eu/en/policy-guidelines-a-fact-sheets>
- Design manual for bicycle traffic:
- <http://www.crow.nl/nl/Publicaties/publicatiedetail?code=REC25>

# TSS8: Public Transport coverage and speed

## Definition of Indicator

Coverage of PT network - Percentage of citizens living within 500 m (linear distance) of a bus stop, 1km of a tram stop and/or 2 km of a local rail stop with a service interval (peak period) of less than 15 minutes.

PT journey speed - This is the average ratio between:

- The total peak hour journey time for public transport (including walking time to bus stop, average waiting time (including punctuality) and travel time on bus);
- The total peak hour journey time for car (including walking time to destination after parking, travel time by car and parking search time);
- For 5 common trips within the city (see example trips later).

## Purpose

In an ecomobile city a large proportion of the population should have access to a frequent public transport service, if it is to be attractive to them to use it.

A second, related key factor in the decision of whether or not to take public transport is its speed relative to alternative transport modes, and if PT is quicker or of equal time to private cars, there is a greater chance that people will choose this mode for their journeys

## Terminology

Rail services - in this context should only refer to local rail services, as regional/national rail services will most often have service intervals greater than 15 minutes.

Average waiting time (including reliability) – a service may be scheduled to operate every 10 minutes. If passengers arrive randomly at the stop then their average waiting time would be 5 minutes. Where services are scheduled to operate at lower frequencies, it should be assumed that the average waiting time is also 5 minutes. However, in both instances if the service is very unreliable then two buses may turn up together, making the average waiting time much longer than 5 minutes. This should be taken into account.

Five common trips should be selected by the city in collaboration with the SHIFT assessor (or by the working group for a self assessment). Typical choices could include 5 of the following trips:

- Residential areas - Inner city centre
- Residential area - Residential area
- Residential area - Main non-central employment area(s)

- Residential area - Secondary school(s)
- Residential area - Main shopping area
- Residential area - Hospital/Medical practice
- Residential area - Main rail/bus station
- Residential area - Leisure centre

Peak hour should be selected by the city in collaboration with the SHIFT assessor (or by the working group for a self assessment) as peak travel times vary from country to country.

## Suggested evidence

- PT coverage - GIS or other mapping;
- Census data;
- PT journey time - This indicator has to be measured on the basis of empirical data from the city.

## Scoring

Both aspects of this indicator should be scored separately and then added together and the average scores calculated to give final indicator score (e.g. a city might score level 3 on PT coverage and 5 on journey speed - so the final indicator score would be 4).

PT Coverage - out of 10 possible points.

Level	1	2	3	4	5
Coverage of PT network (% of people living within ...)	< 50 %	50 % - < 70 %	70 % - < 80 %	80 % - < 90 %	≥ 90 %

The five levels are defined in quantitative terms so require no further clarification. If someone lives within 500m of a bus stop, 1km of a tram stop and 2km of a rail stop they would only be counted once for the purposes of this indicator. They only have to live within the requisite distance of one mode in order to be counted in the indicator.

PT journey speed - out of a possible 10 points.

Level	1	2	3	4	5
Coverage of PT network (% of people living within ...)	< 50 %	50 % - < 70 %	70 % - < 80 %	80 % - < 90 %	≥ 90 %

The five levels are defined in quantitative terms so require no further clarification.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Frequency of public transport services on each route;
- Population density;
- Actual journey times by public transport and car for 5 common trips (guidance on choosing these trips given above);
- Average and actual waiting times;
- Parking search times.

### Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Car ownership	Level 4 and 5 cities with high and/or fast growing car ownership may find it problematic to make the political case for significant public transport priority, which is needed to ensure high speeds.	Level 4 and 5 cities – reduce maximum possible score by 10%

### Links to further information and best practice

[http://www.by-banen.no/rapporter\\_og\\_planer](http://www.by-banen.no/rapporter_og_planer) - scroll down to HiTRANS Project guides “Public transport – planning the networks”; “Public Transport – mode options and solutions”; and “Public Transport – citizens’ requirements”

[http://www.by-banen.no/rapporter\\_og\\_planer](http://www.by-banen.no/rapporter_og_planer) - scroll down to HiTRANS Project guides “Public transport – planning the networks”; “Public Transport – mode options and solutions”; and “Public Transport – citizens’ requirements”

Guidance on Making Public Transport More Accessible - [http://www.nda.ie/cntmgmtnew.nsf/0/CODBA1BA241FB9398025710F004D8EAA/\\$File/Transport\\_Guidelines\\_01.htm](http://www.nda.ie/cntmgmtnew.nsf/0/CODBA1BA241FB9398025710F004D8EAA/$File/Transport_Guidelines_01.htm)

See also [www.eltis.org](http://www.eltis.org), case studies, and select topic “Collective Passenger Transport”.

# TSS9: Usability of Public Transport

## Definition of Indicator

Expert judgement of how easy is it for the user to use the PT system in respect of the network design, interchange/intermodality, information and understanding the cost and how to purchase tickets. If more than one fare system is available, then the integration between them should also be included in the judgement (see also indicator TSS3: Information provision and systems).

PT is affordable. Cost of a monthly network-wide public transport ticket for all modes as a percentage of median gross monthly income for people of working age in the city (if available; or for just buses, if not available). If the city does not have a specific monthly pass for local PT services but, for example, a regional PT pass is available, then this should be noted, and this cost used.

PT vehicles, stops and terminals are accessible, i.e. have the necessary facilities (ramps, elevators) for access and use by People with Reduced Mobility (PRM).

## Purpose

Long term levels of public transport ridership are influenced by both the usability and cost of services. Easy to use, and relatively cheap services are thus more likely to encourage people to use PT, rather than drive cars. It should also be accessible to all people. PT that is accessible is essential for PRM but also makes services more attractive, usable and enjoyable for all people, including the elderly, those with small children, those carrying luggage etc.

## Terminology

Cost of monthly public transport ticket for adults of working age - should be specific, i.e. the normal cost, and not based on any discounted concessions (e.g. for older people or students).

Integration between fare systems – it may be that there are two operators, one of trams and one of buses. Simple to use fares should be inter-available, that is, the prices should be the same for the same journey and a ticket bought for the tram should also be valid for the bus. There should be no need to buy a new ticket if changing from bus to tram or vice versa. The other terms used in the definition are clear. They are however subject to some interpretation which is why this indicator is based on the expert judgement of the SHIFT advisor or auditor (or by the working group for a self assessment).

All other terms are clear.

## Suggested evidence

- Cost of a monthly public transport ticket (adult);
- Site visit;
- User feedback;
- Relevant chapters of SUMP or similar document and monitoring/review evidence to show that accessibility policies and plans have been implemented;
- Records of PT vehicle fleet.

## Scoring

Out of 20 possible points. Each of the sub-criteria should be scored separately and then averaged to obtain final score. For example, a city might score Level 5 on 4 sub-criteria and Level 3 on the remaining 4 sub-criteria- so the final score would be the average- Level 4

In a level 5 city:

- A newcomer to the city would be able to use the public transport system without prior research and would not get lost on their trip;
- All people (including those with reduced mobility) would be able to access and use all PT vehicles and interchange facilities.

This would mean that, for example:

- The same bus line goes along the same route all day everyday (without small variations at certain times of day/day of week);
- Information at the stop and on vehicles only shows the information needed; and it is simple to pay, and obvious how to do so;
- At interchanges and on vehicles, it would be obvious how to transfer to other services through to the passenger's final destination;
- Payment of a fare to enter the first bus, tram or train should then cover all subsequent stages of the trip;
- All PT vehicles and interchanges are fully accessible, in line with National/EU guidance

Other levels of performance against this indicator move away gradually from this ideal.

Level	1	2	3	4	5
<b>Summary</b>	Lacking in all respects. No work at all on access for PRM. Relatively expensive to use for many people.	Complex, poorly integrated. Ad-hoc work on accessibility. Expensive for some groups to use.	Easy to understand and use, some work to make PT vehicles and interchanges accessible. Expensive for only a small minority, if at all.	Very easy to understand and use, good integration. Vast majority of vehicles and interchanges accessible, Affordable for most, if not all people.	Best in class, very good integration. All vehicles and interchanges fully accessible, Affordable for all people.
<b>Complexity of PT network</b>	Circuitous, complex, many different lines and low frequencies. No night services or very limited services.	As left*, but slightly easier (less complex, fewer lines, more frequent services) for users to use services. No night services or very limited services.	Most lines direct, high frequency, some services operate at same frequency during day peak and off-peak periods. Limited night services.	As left, for all lines, most services operate at same frequency during day peak and off-peak periods. Night services cover all main routes	As left, but all services operate at same frequency during day peak and off-peak periods, and very good frequency and coverage of night services
<b>Fares</b>	Many different fares, distance based. Ticket purchase options very limited (e.g. just on vehicles)	As left, ticket purchasing options limited	Simple zonal fares structure 5-10 zones. Several ticket purchasing options available.	As left, but 3-5 zones. Several ticket purchasing options available.	Very simple zonal structure, 1-2 zones. Many options to purchase tickets (e.g. online, machines, by phone)
<b>Fare integration between modes</b>	None	None	Within mode integration of fares	Between mode integration of fares for 2 modes	Full fare and timetable integration all modes
<b>Ease of understanding of the PT network</b>	Complex to the point of being offputting	Only locals "in the know" can really understand	A newcomer can understand the system within a day	No problem, or very minor problems for a newcomer to use system straight away	No problem for a newcomer to use PT services straight away
<b>Cost of monthly (adult) ticket/gross monthly income</b>	More than 2.5%	Between 1.75% and 2.5%	Between 1.0% and 1.75%	between 0.5% and 1.0%	0.5% or less
<b>Accessibility of PT vehicles</b>	Not accessible	Isolated examples	Some vehicles accessible, conforming to National/EU standards	Majority of vehicles accessible, conforming to National/EU standards	All vehicles accessible, conforming to National/EU standards
<b>Accessibility of terminals/ interchanges</b>	Not accessible	As left	One or two interchanges accessible, conforming to National/EU standards	All major interchanges accessible, conforming to National/EU standards	All interchanges accessible, conforming to National/EU standards

\*Note: "As left" in the table means "same as the previous column".

## Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Cost of public transport monthly passes;
- Average (mean and median) incomes;
- Citizen perceptions of the ease of use of the public transport system using a simple attitudinal questionnaire (see MaxSumo at [www.epomm.eu](http://www.epomm.eu));
- Proportion of public transport vehicles that are accessible;
- Proportion of public transport stops that are accessible;
- Proportion of terminals/ interchange facilities that are accessible.

The five levels are clearly defined. The policy referred to in the five levels could be a SUMP or a specific strategy to improve the mobility situation of PRM in the city. The strategy should state objectives and present a prioritised action plan to achieve those objectives.

## Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
City management and finance	City does not have control over public transport operator and therefore purchase of vehicles (accessible)	Reduce by 10%

## Links to further information and best practice

See for example [http://www.by-banen.no/rappporter\\_og\\_planer](http://www.by-banen.no/rappporter_og_planer) - scroll down to HiTRANS Project guides "Public transport – planning the networks"; and "Public Transport – citizens' requirements"

# TSS10: Low emission vehicles (LEV's)

## Definition

Percentage of passenger vehicles with four or more wheels in the city that are low emission (<100g CO2/km) that the city either has direct control over or has a very high influence on (e.g. in its own vehicle fleet), and additional measures introduced by the city to achieving low vehicle impacts amongst its own employees and members of the general public.

## Purpose

An ecomobile city is one that is reducing its reliance on fossil-fuel run vehicles. Whilst a city has very little control over the types of vehicles its citizens purchase, it can lead by example, by choosing the types of vehicles its employees use and also by the introduction of other measures that lessen the environmental impacts.

## Terminology

Additional measures a city can take to lessen the environmental impacts of passenger vehicles, include: the introduction of lower cost parking for low emission vehicles, funding eco-driving courses/advice leaflets (both for its own staff and members of the general public) and the promotion of low emission vehicles by installing electric vehicle charging points.

## Suggested evidence

- Percentage of low emission vehicles in its fleet;
- Evidence of other actions (e.g. number of charging points, parking concession schemes, promotional activities, etc.).

## Scoring

Out of 10 possible points. A city might score relatively high on one, or some of the sub-criterion, but lower on others, and for the actual level to be determined, all scores for all sub-criterion need to be totalled together and then averaged.

Level	1	2	3	4	5
<b>Percentage of city's vehicle fleet that are low emission</b>	0%	1-20%	21-40%	41-60%	61%+
<b>Additional measures to promote/ reduce vehicle emissions</b>	No additional measures	None, or very few additional measures that are limited in scale	Some additional measures, but limited in scale	A wide range of additional measures in place, and further measures been examined/or trialled	Comprehensive additional measures in place, based on best practice and city actively looking to introduce further measures

The five levels are defined in quantitative terms so require no further clarification.

## Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- CO2 emissions characteristics of vehicles within the city's fleet;
- Evidence of additional measures to lessen the environmental impacts of passenger vehicles.

## Grounds for reducing total maximum possible score

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to implement this measure.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Wealth	A poorer city would expect to have an older fleet with lower turnover of vehicles than a richer one, meaning that its default position would be to have a less green fleet than a wealthier city.	Level 2 city – reduce maximum score by 20% Level 1 city – reduce maximum score by 30%

### **Links to further information and best practice**

See for example <http://www.tfl.gov.uk/assets/downloads/corporate/fuel-and-fleet-management-guide.pdf>

See also <http://www.eltis.org/index.php>, select topic “Clean and Energy Efficient Vehicles”, then select by keyword.

<http://cyclelogistics.eu/>



RESULTS AND  
IMPACTS

RI1: Modal Split

RI2: Safety

RI3: Greenhouse Gases

RI4: Air Quality

# RI1: Modal Split

## Definition of Indicator

Modal split for all trips by city residents.

## Purpose

To measure the impact of the city's Ecomobility policies on travel behaviour.

## Terminology

The terms are clear.

## Suggested evidence

This indicator is best derived from a survey of a sample of households in the city, stratified by age and social class, carried out at the same "neutral" time of year such as early spring or early autumn. Other methods do exist such as telephone surveys, cordon counts or on-street interviews but these are less reliable than a household survey.

Data collection is not standardised across Europe or within individual countries, so cities should use available data for their city. However, they should note where the data used to assess this indicator is derived from (which people, how many, for all or specific trips, etc.) and the methods used to collect data.

## Scoring

Out of 40 possible points

Level	1	2	3	4	5
Car trips as % of all trips	Car trips more than 75 % of all trips	Car trips 61-75 % of all trips	Car trips 51-60 % of all trips	Car trips 41-50% of all trips	Car trips less than 40 % of all trips

These levels have been selected in view of the best performing cities in Europe in terms of modal split, for which data is available. Thus, for example, Zurich and Freiburg are cities where the total mode share for trips by car is less than 40%, implying that over 60% of people are using Ecomobile modes.

## How to collect data

A good explanation of how to collect modal split data is available in Section 5.12 of Maxsumo, available at [http://www.epomm.eu/docs/1057/MaxSumo\\_english.pdf](http://www.epomm.eu/docs/1057/MaxSumo_english.pdf).

## Grounds for reducing total maximum possible score.

It is possible to change the total maximum possible score for this indicator to take into account the various aspects of the city profile that make it more difficult for a city to achieve in this area.

City profile factor	Example(s) in relation to this indicator	Impact on maximum possible score
Administrative area assessed	If the area assessed is wider than just the city (e.g. the city region) then it will be more difficult to attain a given mode share	Reduce maximum possible points by 20%.
City size (i.e. population)	Smaller cities normally have a more car-based modal split due to fewer congestion and parking problems and less well-developed public transport	For smaller cities (levels 1 and 2) reduce maximum possible points by 10%.

## Links to further information and best practice

See for example <http://www.epomm.eu/tems/index.phtml> for a wide range of city modal split data. This link also shows the variety of methods that are used to derive modal split data.

## IMPORTANT:

**This indicator is compulsory for cities that want to qualify for a Silver or Gold award.**

## RI2: Safety conditions

### Definition of Indicator

Traffic fatalities and serious injuries per year per 10,000 inhabitants.

### Purpose

To measure road safety. It is particularly important for people who are considering, or actually using, Ecomobile modes (especially walking and cycling) to feel safe when travelling.

### Terminology

A traffic fatality is as defined in the country in which the city is located, and should be used for scoring purposes, although how traffic accidents are classified (e.g. killed/seriously injured) should be noted by the city.

### Suggested evidence

- Traffic fatality and injury data as collected in/relevant to the city.

### Scoring

Out of 20 possible points

Level	1	2	3	4	5
People killed of seriously injured per year, per 10,000 inhabitants (i.e. combined number of people killed and seriously injured)	More than 20	15.5-20	10.5-15.4	6-10.4	<6

These are defined quantitatively and based on the range found in the EU.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Numbers of people killed, or seriously injured in traffic crashes or who die within 30 days of being involved in a crash.

### Grounds for reducing total maximum possible score

For this indicator there are no city profile indicators that should be used to adjust the maximum score achievable.

### Links to further information and best practice

See for example [http://ec.europa.eu/transport/road\\_safety/specialist/statistics/care\\_reports\\_graphics/index\\_en.htm](http://ec.europa.eu/transport/road_safety/specialist/statistics/care_reports_graphics/index_en.htm) for further information on casualty statistics.

## RI3: Greenhouse gas emissions

### Definition

Greenhouse gas emissions stemming from the transport sector (both passenger and goods) in tonnes of CO<sub>2</sub> equivalent per person per year for city residents.

### Purpose

To give an indication of how efficient the city's transport is in CO<sub>2</sub> terms. Whilst ideally this indicator would measure emissions resulting from all travel in the city, methodologically this is likely to be very difficult, so it is limited to residents.

### Terminology

The terms are clear.

### Suggested evidence

In order to calculate this indicator, it is necessary, from a household survey or other method used to derive modal split (including goods vehicles), to also gather data on average trip lengths. Emissions data (grams of CO<sub>2</sub> per km) is available for certain countries – see links at end of this section. Multiplying the mode share (in trips per person per year) by trip length by emissions factor gives the emissions for each person for a year. In some countries fuel statistics can be used.

### Scoring

Out of 20 possible points

Level	1	2	3	4	5
Greenhouse gas emissions from transport in tonnes of CO <sub>2</sub> equivalent per person, per year for city residents	>2.5	2.05-2.5	1.56-2.04	1.1-1.55	<1.1

These are defined quantitatively and based on the range found in the EU.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- Mode split (based on sample survey of residents);
- Distance travelled per trip (based on sample survey of residents);
- Vehicle fuel type and engine size used for trips (based on sample survey of residents).

### Grounds for reducing total maximum possible score.

For this indicator there are no city profile indicators that should be used to adjust the maximum score achievable.

### Links to further information and best practice

For data at national level see <http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators/theme7> and [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env\\_air\\_emis&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_air_emis&lang=en)

[http://www.its.leeds.ac.uk/projects/sustainability/resources/Annex\\_Final\\_Report.pdf](http://www.its.leeds.ac.uk/projects/sustainability/resources/Annex_Final_Report.pdf) shows average CO<sub>2</sub> emissions per car in UK fleet (2005) was 184 grams of CO<sub>2</sub> per km

## RI4: Local air quality

### Definition

Daily exceedances of EU air quality standards for cities (e.g. PM10, NO<sub>x</sub>).

### Purpose

To give an indication of how well the city is addressing air quality targets.

### Terminology

City air quality targets set by the EU are, according to Directive 1999/30/EC:

- For NO<sub>2</sub> are 40 µg/m<sup>3</sup> (annual average) and 200 µg/m<sup>3</sup> (hourly average not to be exceeded more than 18 times a year);
- For PM10 the indicative limit values are 20 µg/m<sup>3</sup> (annual average) and 50 µg/m<sup>3</sup> (daily average not to be exceeded more than 7 days a year).

These targets were originally to be met in 2010.

### Suggested evidence

- Air quality monitoring data is required.

### Scoring

Out of 10 possible points.

Level	1	2	3	4	5
<b>Occurrence of daily exceedances of EU air quality standards for cities</b>	Daily exceedances occur (and increasing, over past year/2-3 years)	Daily exceedances occur (but stable, over past year/2-3 years)	Daily exceedances occur (but decreasing trend, over past year/2-3 years)	Daily exceedances occur (but fewer than 10 exceedances in past year)	No exceedances (in past year)

These are defined quantitatively and based on the range found in the EU.

### Quantitative measures of this indicator for a city to monitor it in the future

For cities that do not currently collect data on this indicator, it is recommended that they begin to collect data on the following:

- NO<sub>2</sub> and PM10 levels at a selection of sites around the city;
- Emissions standards of a cross-section of vehicles on the city's roads.

### Grounds for reducing total maximum possible score

For this indicator there are no city profile indicators that should be used to adjust the maximum score achievable.

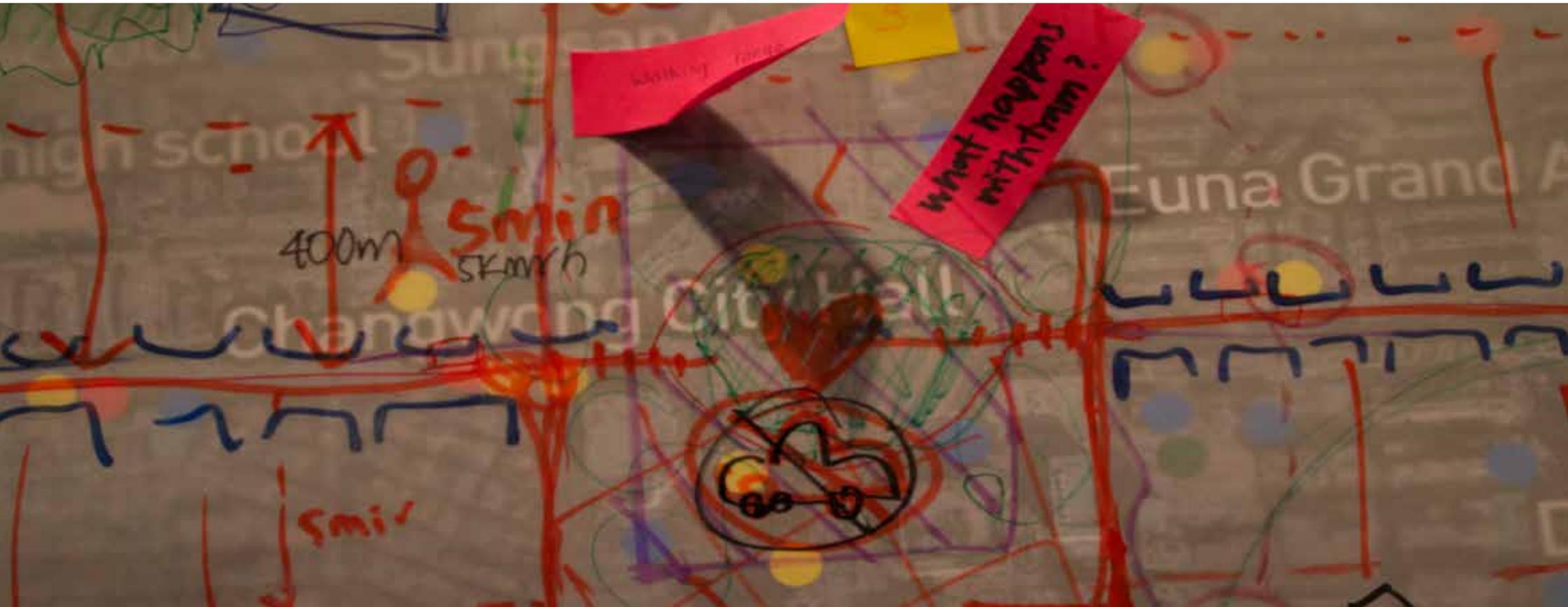
### Links to further information and best practice

For data at national level see <http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators/theme7> and [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env\\_air\\_emis&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_air_emis&lang=en)

## Overview of the Indicator Scores

	Scoring	Weight in % of total EcoMobility index
<b>Enabler indicators</b>	<b>90 points</b>	<b>25,7%</b>
E1: Understanding user needs	10	
E2: Public participation in decision making	10	
E3: Vision, strategy and leadership	20	
E4: Personnel and resources	15	
E5: Finance for ecomobility	25	
E6: Monitoring, evaluation & review	10	
<b>Transport Systems &amp; Services indicators</b>	<b>170 points</b>	<b>48,6%</b>
TSS 1: Planning of new city areas	20	
TSS 2: Low speed/car free zones	10	
TSS 3: Information provision and systems	10	
TSS 4: Mobility management services	10	
TSS 5: Parking measures	20	
TSS 6: Walking conditions	25	
TSS 7: Cycling conditions	25	
TSS 8: PT coverage and speed	20	
TSS 9: Usability of PT	20	
TSS 10: Low emission vehicles	10	
<b>Results &amp; Impacts indicators</b>	<b>90 points</b>	<b>25,7%</b>
R11: Modal split	40	
R12: Safety conditions	20	
R13: Greenhouse gas emissions	20	
R14: Local air quality	10	
<b>Overall EcoMobility Index</b>	<b>350 points</b>	<b>100%</b>





## SHIFT PROJECT (2010-2013) PARTNERS



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