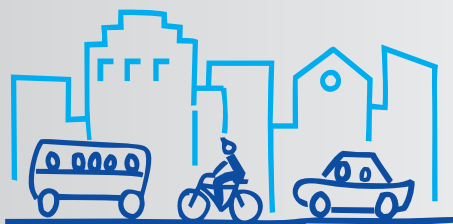


2020
CIVITAS
Cleaner and better transport in cities



START

FOR BEGINNER CITIES

**Manual on the
integration of measures
and measure packages
in a SUMP**



European Platform
on Sustainable Urban
Mobility Plans



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About

CIVITAS SUMP_s-Up is a 42-month project funded under the European Union's Horizon 2020 Research and Innovation Action programme under grant agreement no 690669. It works together with planning authorities across Europe to accelerate the development and implementation of sustainable urban mobility plans and bring cleaner and better transport to cities.

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1. EXECUTIVE SUMMARY

This manual provides support for planners in cities that are not yet familiar with sustainable urban mobility planning and who need support with where to start in the context of measure selection. As a complementary manual to the general Sustainable Urban Mobility Plan (SUMP) guidelines, it gives examples and suggestions on how to conduct measure selection for the first SUMP, types of measures that can be of interest for a SUMP, how to grade the measures and how to gain approval for the selected measures.

When entering the measure selection-process, this manual describes four steps to conduct a verified list of feasible, effective measures for a starter city.

Figure 1: Four steps for an integrated set of measures in starter-cities

1. Determine the baseline, reviewing already implemented measures and the status of the city's current transport system.

2. Create a list of measures designed to address the city's vision and targets for more sustainable urban planning as well as the prioritised challenges.

3. Rate measures using a rating system to identify measures that are effective and feasible for the city.

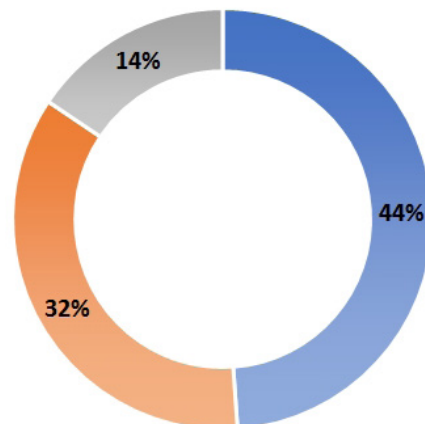
4. Describe and gain approval for selected measures.

As an inspiration and support for measure selection, a long list of over 140 measures used in a SUMP-context are summarised in Annex I.

2. INTRODUCTION

Despite the European support and learning opportunities for Sustainable Urban Mobility Plans (SUMPs) that have become available in the past years, the take up of SUMPs has been relatively slow. A survey conducted within SUMP-UP in spring 2017 collected answers from 328 cities across Europe. When asked about the status of SUMP activities, 44% of the cities stated they had no SUMP activities at all, were considering to develop their first SUMP or were in the process of developing their first SUMP, see figure 2 (Chinellato et. al. 2017). This result indicates that many European cities are starter-cities that need support in developing their first SUMP.

Figure 2: Status of SUMP-activities in the cities participating in a survey in the CIVITAS SUMP-UP project in 2017 (N=327; results weighted by country population). The full version of the survey report is available at: www.sumps-up.eu/reports



- No activities, Considering to develop first SUMP, Developing first SUMP
- Finalised SUMP waiting to be adopted, SUMP is adopted but not implemented, Implementing the SUMP
- Evaluation and revision of the previous SUMP, Preparing 2nd/3rd generation SUMP

This manual supports starter-cities with clear, hands-on guidance on measure selection and packaging. It is a part of the SUMP-UP project's ambition to systemise the SUMP process, identify the most effective planning tools and methods for the SUMP process and give guidance in key topic areas relevant for high-quality, effective and efficient SUMP development.

2.1 A product of SUMP-UP

This manual is a product of the project SUMP-UP, see Box 1 for links to more information.

CIVITAS SUMP-UP is an EU-funded project that brings together European cities, researchers, universities, environmental organisations, climate institutes, transport consultants and mobility experts into a singular initiative to help cities introduce cleaner, sustainable mobility solutions. It brings together eight partner organisations and seven partner cities and is one of the three projects related to sustainable urban mobility plans under the European Union's CIVITAS 2020 initiative.

The SUMP-UP Objective is to:

“Enable mobility planning authorities across Europe to embrace SUMP as the European-wide strategic planning approach, especially in countries where take-up is low and the negative effects of transport are severe.”

Box 1: SUMP-UP

SUMP-UP is a project taking place from 2016-2020 and aims to produce several supporting materials and trainings for cities that want to develop a SUMP.

- Outreach Cities: 600 cities will be reached out to over the course of the project. With Outreach Cities, the emphasis will be on capacity building.
- Cities in the Innovation Pilot Pool: 100 cities will become members of the Innovation Pilot Pool. The Pool will facilitate significant peer knowledge exchange and be split into an expert and a leadership group.

For more information, news and supporting materials, visit: www.sumps-up.eu



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2.2 Context of measure selection and packaging

Measure selection and packaging are highly important parts of the overall process of developing a SUMP. Mobility policies and measures are at the heart of the planning approach for sustainable urban mobility planning. The general process regarding this subject is further described in the SUMP Guidelines, see link in Box 2.

Measure selection can be a challenging task due to several reasons, as described in the measure selection manual developed within the European project CH4ALLENGE. For example, there is a wide range of possible measures which can make the selection process complex, many stakeholders have preconceived ideas of what to do and the selected measures must be feasible to implement (May, 2016).

The general guidance and information available about measure selection (see Box 2) makes a strong foundation of how to approach the measure selection process.

However, guidance has to be better adapted for practitioners in different types of cities. The wide range of cities with differing conditions in Europe implies that the challenges to select the right kind of measures depend on how mature a city is in terms of sustainable urban mobility planning, but also on the city's baseline. The three manuals on integration of measures and measure packages published by SUMP-UP provide targeted guidance for cities with different levels of SUMP experience.

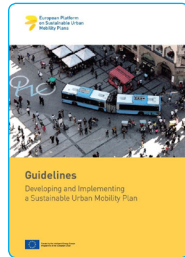
Box 2: Guidelines for SUMP planning

Guidelines: Developing and Implementing a Sustainable Urban Mobility Plan

The SUMP Guidelines are available on the ELTIS-platform, www.eltis.org/guidelines/sump-guidelines.

These guidelines are intended for urban transport and mobility practitioners and other stakeholders involved in the development and implementation of a Sustainable Urban Mobility Plan.

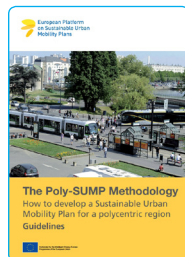
The guidelines are introducing the concept and the benefits of Sustainable Urban Mobility Plans and contain a description of the 11 steps of the SUMP-process (Rupprecht Consult, 2014).



The Poly-SUMP Methodology: How to develop a Sustainable Urban Mobility Plan for a polycentric region: Guidelines

Based on the SUMP process there are also guidelines available for how to develop a Sustainable Urban Mobility Plan for a polycentric region.

www.eltis.org/sites/eltis/files/tool/polysump-sump-guidelines-final.pdf.



Measure selection: Selecting the most effective packages of measures

For more information about the theory and evidence behind measure selection, see Measure selection – Selecting the most effective packages of measures for Sustainable Urban Mobility Plans. The publication produced in the CH4ALLENGE project gives a wide introduction to the subject measure selection, how measure selection is an important part in sustainable urban mobility planning and what evidence and principal constraints there are regarding measure selection.

www.sump-challenges.eu/kits



2.3 Overview of the manuals

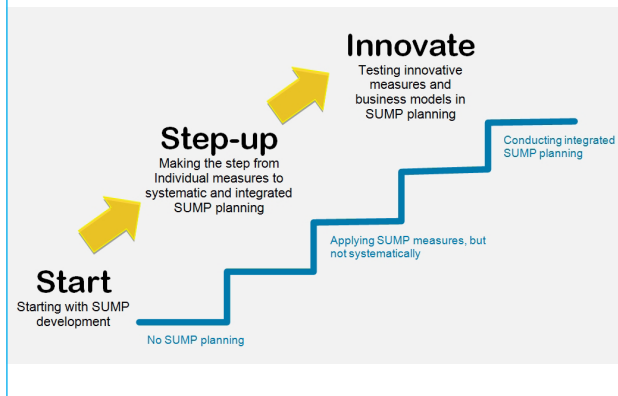
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Figure 3: Schematic overview of the three manuals.



Start – Starting with SUMP development (this manual)

This manual provides guidance to cities that would like to get started with SUMP development. The addressed cities typically want to take the step from the daily business of “keeping the wheels spinning” to more strategic planning for sustainable mobility in the city. The target group are cities that are not yet familiar with sustainable urban mobility planning and need support with where to get started in the context of measure selection.

The issues to be addressed are how to start from scratch with long-term, strategic planning for measure selection, how to gain instant impact from selected measures, and how to find a balance between the ambition of the SUMP planning and the capacity of the city’s administration.

Compared to other available guidelines, the Start manual suggests a simplified approach that lowers the entry barrier for cities that are starting with SUMP-planning. This is needed, because relevant information such as quantitative data, traffic models and extensive analyses are sometimes missing in starter-cities, which can make the advanced

measure selection approaches recommended in other guidances impractical.

Step-up – Making the step from Individual measures to systematic and integrated SUMP planning

This manual provides support for cities that are familiar with sustainable urban mobility planning. The typical step-up city is already applying typical SUMP measures, but not yet systematically. Measures may have been implemented for one or many challenges, policy fields and/or transport modes. The city would like to widen their SUMP planning to find synergies and to synchronise measures between different policy areas or other policy sectors.

The issues to be addressed are how to apply a systematic and effective approach in measure selection, how to find synergies between different types of measures and policy areas, how to adapt new fields of measures into what has already been done within the city and to find ways to be more systematic when packaging measures.

Innovate – Testing innovative measures and business models in SUMP planning

This manual provides support for cities who are experienced in SUMP planning, for example by having developed a second or third generation of their SUMP. The typical target city has integrated SUMP planning with an ambitious vision and targets. The city has a systematic way to approach measure selection among a wide range of policy areas, but needs guidance in how to select and implement innovative measures and business models in order to reach the next level of development in SUMP planning.

The issues to be addressed are how to find new ways to further develop measure selection and integration, in particular how to find ways to co-create actions with other actors (within the city, region, other cities, private sector, and other public organisations) to develop truly innovative measures.

3. START – STARTING WITH SUMP DEVELOPMENT

3.1 Measure selection as a part of the SUMP-process

Depending on what stage of the SUMP development process a city is in, measure selection needs to be considered in different ways. In early stages, it is important to analyse existing measures, goals, challenges and trends. When a city begins elaborating a plan, it is essential to identify and analyse suitable types of policy measures, to develop detailed specifications of policy measures and packages, and to conduct an appraisal of the proposed measures and packages. When a city has reached the stage of plan implementation, agreeing on responsibilities and implementing measure packages are essential (May, 2016).

It is important to start talking about identifying feasible measures when a city wants to go from a daily administrative approach to a more sustainable, long-term strategic planning. A focus on finding a solid foundation of cost effective and feasible measures can help starter-cities to take a big step towards solving prioritised challenges. Packaging of measures is important as well, but the focus of this manual will be on measure selection as the usual first step for starter-cities.

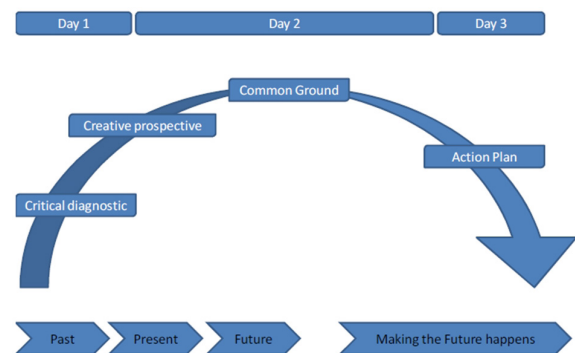
Before starting the measure selection process, it is strongly recommended to create a firm idea among planners about specific challenges, vision and targets as well as to establish a general understanding of challenges and vision/targets among politicians in the city. There are two questions that must be answered:

1. **Vision and targets:** Does the city have a vision and clear targets related to SUMP planning? Is there a common understanding among planners and politicians on vision/targets?
2. **Challenges and problems:** Are some challenges and problems more urgent than others? In that case, focus on measures targeting these priorities challenges and problems when generating a list of measures. *Example of common challenges: air pollution and noise, congestion/road space, traffic safety, climate change, public health and active mobility, and social inclusion and accessibility.*

If these two questions have not been answered yet, it is strongly recommended to invest more time in the preparatory and target-setting phases of the SUMP process (this is further described in the SUMP Guidelines, see Box 2). Starter-cities that need to strengthen a common vision/targets for their SUMP planning are also encouraged to conduct the first step of the Future Search Workshop (day 1 and day 2), see Box 3.

Box 3: Future Search Workshop

A Future Search Workshop is a tool for better decision making. This tool can be useful in the case that the inputs (vision, targets, challenges and problem definition) need to be of higher quality before entering the measure selection process. The three-day workshop is designed to create a common ground but also to create a draft action plan. Depending on where a city is in the process, the tool can be adjusted to fit its purposes as a complement to the ordinary measure selection process. For more information on how to plan and elaborate a Future Search Workshop for a SUMP, see the [practical guide](#) (Missions Publiques, n.d).



Four steps for measure integration

Given that question 1 and 2 above can be answered, the integration of measures in a SUMP for a starter-city can be done in four steps (see figure 5). If the working group responsible for SUMP development has not already been selected at this stage, it is time to select a group with enough knowledge regarding mobility measures and the city's organisation.

Figure 5: Four steps for an integrated set of measures in starter-cities

1. Determine the baseline, reviewing already implemented measures and the status of the city's current transport system.

2. Create a list of measures designed to address the city's vision and targets for more sustainable urban planning as well as the prioritised challenges.

3. Rate measures using a rating system to identify measures that are effective and feasible for the city.

4. Describe and gain approval for selected measures.

In the following chapters, based on step 1-4 above, the manual gives guidance for an effective measure selection process that is suitable for cities with little experience in SUMP development. The methods presented provide a structure for how to create a validated list of measures that is adapted to the following three aspects:

- 1. Status of transport system:** What is the status of the city's current transport system for different transport modes? Does the city have good or poor infrastructure for different modes of transport?
- 2. Measures:** Are there already selected or implemented measures for more sustainable urban mobility? Consider also policy-related measures, e.g. if the city has a bicycle plan, traffic safety program or other plans/programs related to SUMP planning.
- 3. Capacity of city's administration:** What capacity does the city possess in terms of financing, human resources, and technical competence? Do not forget to consider that measures can affect daily maintenance and that measures can require a long-term commitment.



3.2 Step 1: Determine the baseline

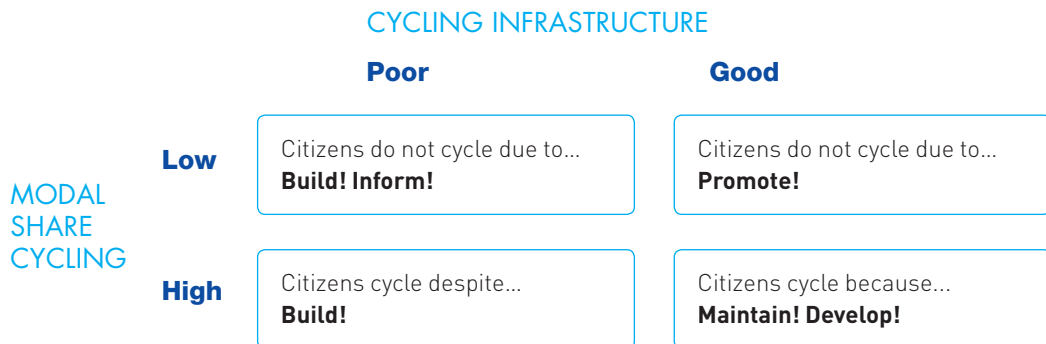
It is important to consider the city's status in terms of measures for sustainable urban mobility planning. To analyse the baseline and get an idea of a city's capacity, an analysis table can be used, which considers the key elements. The analysis table presented below can be used to analyse different elements of the transport system in the city (see table 1). The table can also be used to determine what capacity for measure implementation the city has and how the transport system looks at present.

Based on the overview provided by the analysis table, the next stage is to deepen the knowledge about the current status of the city's transport system. This can be done systematically for each transport mode with the help of the simple modal share-infrastructure comparison displayed for cycling in figure 6. This approach highlights the quality of the infrastructure for a transport mode (rated good to poor) and the citizens' use and understanding of that transport mode (rated from low to high) to determine whether the city needs to focus on physical and/or non-physical (e.g. information and communication).

Table 1: Example of how an analysis table can be used to define the status of the transport system and give support in what types of measures to select.

FUNCTIONS/ TRANSPORT MODES	MODAL SHARE	QUALITY OF INFRA- STRUCTURE	SAFETY, ENVIRON- MENTAL AND HEALTH STATUS	CURRENT STATUS, IMPLEMENTATION OF MEASURES	ANALYSIS
Walking	12%	Poor	Many accidents on road crossings near schools	Low activity	Traffic safety measures is needed
Cycling	7%	Medium	Low use gives small benefits	Efforts to mapping the bicycle network in progress. Low budget for new measures.	Increase the city administration's budget for cycling measures
Bus/tram/ metro/Light rail	16%	Good	New bus-fleet has been installed, less impact on air quality	High activity, public transport strategy planned	Progress in right direction, keep on
Car	65%	Good	Many accidents between vulnerable road users and cars. High use impact air quality.	High activity, new bypass is under construction	Work with car traffic in city centre when new bypass is completed.
Train station and larger interchanges	X	Good	Bus station is not located within walking distance from train station	Low activity	Involve location of interchanges in public transport strategy
Freight	X	Good	Heavy freight traffic in city centre is considered to be a safety risk	Low activity	Increase the city administration's capacity
Analysis	Car is the dominant transport mode	Vulnerable road users feel unsafe	Traffic safety measures is needed addressing many modes of transport	Strengthen capacity is needed in several fields.	X

Figure 6: A strategic approach when selecting measures where a combination of physical and non-physical (information and communication) measures is required. The figure is based on findings from the EU-project WALCYNG. Source: Hydén et al (1998).



A reason to use this approach when entering the measure selection process is to avoid investing in ineffective measures that do not fit the preconditions in the city or disfavour the target or vision.

Following the same approach, table 2 shows an example of how to apply it to several transport modes. Use the table for the following three steps:

1. Start with one transport mode and tick the most suitable grade for modal share and status of infrastructure. Repeat for all available transport modes.
2. Evaluate the result and compare with prioritised targets and challenges.
3. Focus on measures aiming to fulfil the purpose stated in the red boxes in the selected square.

Table 2: Systematic approach of how to determine what type of measures to consider based on the use of the transport system. The example indicates that infrastructure measures should be considered to improve and encourage walking

		TRANSPORT MODE	STATUS OF INFRASTRUCTURE						
		Shared mobility	Poor	1	2	3	4	5	Good
		Public transport	Poor	1	2	3	4	5	Good
Modal share	Low	Cycling	Poor	1	2	3	4	5	Good
Modal share	High	Walking	Poor	1	2	3	4	5	Good
Modal share	Low		1	Build infrastructure and provide services! Inform!			Promote infrastructure and services!		
Modal share	High		4	Build infrastructure and provide services!	X		Maintain and develop infrastructure and services!		

3.3 Step 2: Create a list of measures

The second step of the measure selection process for SUMP starter-cities is to create a list of potential measures. It has to be designed to address the city's sustainable mobility vision and targets as well as the prioritised challenges. The recommended mix of non-physical and physical measures identified in step 1 should also be taken into account. There are as many lists of measures as there are cities, but some basic categories can always be recommended to use as a start, such as measure description and responsibility (see an example in table 3).

Table 3: Basic elements for a long (first) list of measures.

MEASURE	DESCRIPTION OF MEASURE	RESPONSIBILITY
Segregated Cycle Facilities	Marked lanes and tracks along major urban street. Motorised traffic excluded to increase traffic safety for cyclists.	Road owner
Develop mobility management plan		
Improve pedestrian crossings on prioritised roads		
...		

Long list of measures for a SUMP

To get a quick overview over measures suitable for a SUMP, an aggregated list is presented in Annex I based on sources such as EVIDENCE, KonSULT, MaxExplorer and CIVITAS. The list covers measures within all CIVITAS policy fields and can be used as inspiration when listing relevant SUMP measures. The measures are sorted under so-called measure areas, based on the descriptions in EVIDENCE. For most of the measures in Annex I there is a link to more in-depth information at the source site. When needed, measures suitable to the local context can be added to the list.

Starter measures

There are some measures that can be a good start for cities that are new to SUMP development (see figure 7). These are measures aiming to increase the internal knowledge and awareness of SUMP planning by capacity building activities with politicians and planners in the organisation. They also include physical measures to improve the infrastructure regarding safety, walking and cycling and management measures in order to increase the efficiency of the existing transport system.

Figure 7: Measures considered good “starter measures” for cities starting with SUMP development.

Measure	Why it should be considered
Strategic policy measures for monitoring and data gathering	Strategic policy measures, such conducting a travel survey or developing a bicycle plan, create the necessary understanding which is important when selecting measures. <i>Examples: travel survey, bicycle plan, inventory of physical barriers in traffic environments etc.</i>
Capacity building activities	When starting with SUMP planning, it is recommended to improve awareness and knowledge of sustainable mobility among politicians, planners, and others involved in the SUMP planning by capacity building activities. <i>Examples: information and education for planners and politicians, bicycle trip for politicians, disability awareness training for maintenance staff etc.</i>
Traffic safety measures	Regardless of the status of the transport system in the city, traffic safety measures should always be a priority. <i>Measures and activities concerning safe routes to school are often good “starter-measures”.</i>
Infrastructure for pedestrians and cyclists	The most sustainable way to travel, by bike or by foot, is the one with the most vulnerable road users. To increase the modal share of walking and cycling, safe and accessible infrastructure is important. <i>Examples: safe pedestrian crossings, bicycle lanes etc.</i>
Promotion of sustainable modes of transport and awareness campaigns	Encouraging citizens to use sustainable transport modes can provide a kick-start to influence the modal share in the city. It is also about increasing citizens’ awareness of the transport system and available mobility services in the city. <i>Example: Household information leaflet, marketing of public transport, etc.</i>
Traffic management	Traffic management should be a foundation in mobility planning and can be used to optimise the transport system and to steer the use of transport in a sustainable direction. <i>Examples: Traffic operational center/coordination</i>
Parking management	Car parking has a strong relation to car use and car ownership. Parking management can be a very effective way to encourage a shift to other modes of transport. <i>Example: charging for on-street parking in the city centre.</i>

The recommended measures in figure 7 are based on the idea that promoting and informing the citizens about the existing transport system can lead to a quick increase of trips by sustainable modes of transport without large investments. Then, to further improve the transport system, it is important to gain a solid understanding of how the system works before deciding to invest in costly infrastructure measures. It is also important to work with traffic management and mobility management measures, which often have a good cost-benefit ratio and can support a more efficient use of the existing transport system. The yellow boxes presented in following chapters describe examples of typical starter measures implemented in European cities. For more

information on different measures, see links to different measure databases in Box 4.

In addition to new measures, as recommended above, potential starter measures can also include measures that extend or upgrade existing measures and services in the city. The potential for these kinds of upgrade-measures can be identified and elaborated from the structured overview illustrated in table 1. There are two main reasons for upgrading a previously implemented measure: 1) to implement a successful measure in other areas of the city and 2) to correct mistakes made in the first implementation of a measure.

CITY CASE – Examples of starter measures

Development of P+R car parks and B+R storage facilities – The city of Budapest

Parking management

The need for creating a liveable urban environment in Budapest requires traffic calming measures, mitigation of private car traffic in inner zones and an increase in use of public transport. One measure to reach this goal in Budapest is to promote combined transport modes and to connect private transport and public transport. The essence of the P+R system is to combine the comfort and flexibility of private car use with the economical and space-saving operations of track-bound vehicles.

Two reasons why this is a good starter measure:

- It builds on an already existing system
- Big improvement of the transport system of the city with small initial investment

The ideal locations for P+R car parks and B+R storage facilities are connection points where passengers can use track-bound transport modes to directly access the typical commuter destination: the city centre. In addition, it should also be a “good urban location,” equipped with the services and commercial applications required for commuters’ daily needs. The construction of P+R car parks in Budapest will take place in several stages. In the short and mid-term, P+R car parks will be built along the existing high-speed rail network. In the long term, they will be developed along the high-speed rail network.



Box 4: Databases with more measures

Within a national context, there often are several country specific-sources describing different types of measures within different policy fields. In a European context, there are a number of platforms where measures for urban sustainable planning are described, rated and evaluated. These sources can complement a national knowledge and be used as inspiration for which types of measures are suitable to address specific challenges.

KonSULT

KonSULT is a knowledge-based database on sustainable urban land use and transport. KonSULT is designed to identify appropriate policy measures and packages. For more information, see www.konsult.leeds.ac.uk

MaxExplorer

MaxExplorer is an interactive tool to help “mobility management-beginners” in choosing the mobility management measures most appropriate to their specific situation. The tool is available at the EPOMM platform and describes 27 featured measures. For more information, see www.epomm.eu/index.php?id=2745

EVIDENCE

EVIDENCE was a strategic initiative designed to unlock the potential of SUMP implementation. The EVIDENCE website contains a set of 22 mobility measure reviews (summary and in depth) and training materials for academics and trainers. For more information, see www.evidence-project.eu/index.php

Innovative urban transport solutions

More information about challenges, lessons and recommendations regarding measures within the different CIVITAS policy fields are available in the [Innovative Urban Transport Solutions report](#)



3.4 Step 3: Rate measures

The third step of the measures selection process is to rate the potential measures listed in step 2 in order to identify measures that are effective and feasible for the city. Rating of potential measures can be a complex task influenced by opinions, demands and limitations. A public organisation has the responsibility to find measures that are cost-effective when using public means, the public and/or politicians have preconceived opinions that need to be considered and the measure must contribute to the overall targets in the city. All these aspects matter, but the most important one to consider when looking for quick progress is if the measure can be implemented, if it contributes to a more sustainable city and if it is feasible. If not, it should not be taken into consideration in the simplified approach for measure selection presented in this manual.

Once a long list of potential measures has been developed, rating the measures is the next step. Start by gathering representatives within the city administration and, if necessary, also other stakeholders that are going to be involved in measure implementation. The list of measures should then be presented and each representative should rate the effectiveness and feasibility of each measure on a scale from, for example, 0 to 3. In this way, measures will be chosen that have a high chance of being implemented and that contribute to the agreed upon targets. In table 4 an example of how to organise such a rating is presented.

CITY CASE – Examples of starter measures

Dynamic Solution for Public Transportation – The city of Torino

Promotion of sustainable modes of transport

The main objective of the measure is to develop a more effective answer to low density mobility demand, not satisfied by local public transport. High density mobility demand is covered by high capacity collective transport systems, while nowadays low density is answered by private transport due to the lack of routes or to the limited spatial coverage of public transport. In 2008, Turin Metropolitan Mobility Agency (AMM) implemented the MeBus service, an “on demand” service provided by public transport companies that guarantees a higher territorial extensiveness thanks to a trip reservation system, optimizing the service both for the provider and the user. For more information, see www.mebus.it



Table 4: Example of how to organise the rating of the measures listed in step 2. The rating can be done by representatives from the city (individually or together in the group) in a workshop.

MEASURE	EFFECTIVENESS	FEASIBILITY	COMMENT
Segregated Cycle Facilities	• • •	• • •	Needs to be coordinated with private land owner
Develop mobility management plan	• •	• • •	Knowledge within administration
Improve pedestrian crossings on prioritised routes	• • •	•	Other stakeholder is responsible for most of the routes
...			

How feasible a measure is will depend on a city’s capacity and other local preconditions. All cities must consider factors such as funding, time, legislation and organisational structure. For a city not used to long-term strategic planning in the field of mobility, important elements are the relevant competences among its planners, the allocation of job assignments among its employees and the ability to implement and follow-up measures of different kinds. A rapid solution to getting forward with this issue is to rate the measures together with a group of relevant personnel.

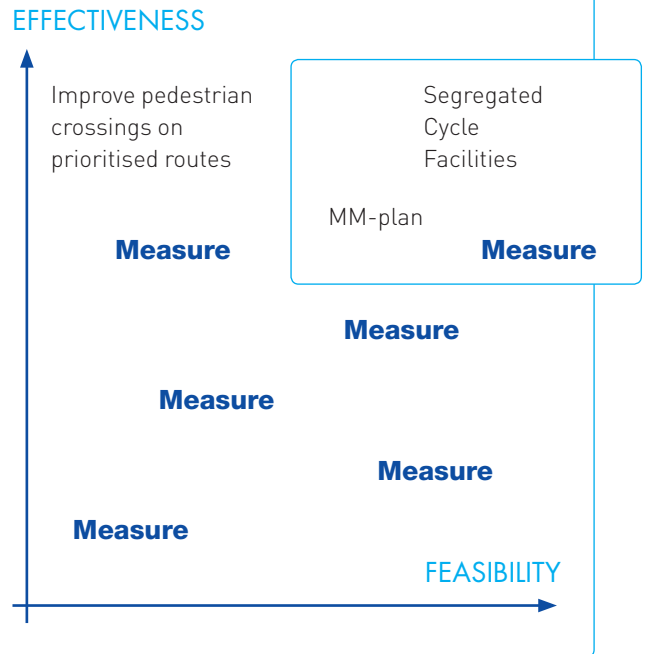
CITY CASE – Examples of starter measures

Installation of appropriate infrastructure to hinder the entry of cars – The city of Thessaloniki

Traffic safety measure

In order to prevent the illegal double row parking of cars and the dangerous driving behaviour of motorcycles, the municipality installed road elastic curbs and reflective flexible delimiters in a central main road of the city in autumn 2016. The curbs and delimiters that were installed separated traffic lanes and prevented the entry of cars and motorcycles in the opposite traffic lane. The measure resulted to the seamless movement of cars while at the same time increased the safety of pedestrian flows in the area.

Figure 8: Example of how to illustrate ranked measures



By illustrating the rated measures in a diagram as shown in figure 8, it is easier to present the selection of measures to politicians and citizens. The selected measures will be those measures from step 2 that were considered as most effective and most feasible for implementation.

When the rating is completed, a summarise of the highest rated (or most prioritised) measures can be brought on when proceeding with the SUMP planning process, see table 5.

Table 5: Example of list of measures

MEASURE	DESCRIPTION OF MEASURE	RESPONSIBILITY	EFFECTIVENESS	FEASIBILITY	COMMENT
Segregated Cycle Facilities	Marked lanes...	Road owner	● ● ●	● ● ●	Needs to be coordinated with private land owner
Develop mobility management plan	...	Daily delivery group	● ●	● ● ●	Knowledge within administration
...					

CITY CASE – Examples of starter measures

**Interactive walking and cycling maps –
The city of Donostia-San Sebastián****Promotion of sustainable modes of
transport and awareness campaigns**

In Donostia-San Sebastián there is a plan to create cycling- and walking-routes that leads to the most interesting locations in the city, covering both the tourism attractions as well as local attractions (commuting, shopping etc.). The routes shall be complemented with suitable stop-points with a nearby availability of bicycle parking (for cyclists) or resting places, playgrounds, exercise parks for elderly people or restrooms (for pedestrians). Distances between the different points of interest will be shown in a map in terms of cycling time or walking time depending on the target group for the map.

The department in charge of carrying out these tasks will be the mobility department but information must also be verified with other departments within the city's administration: parks and gardens, maintenance and urban planning.

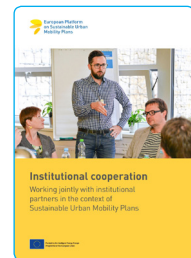
**3.5 Step 4: Describe and gain
approval for selected measures**

The fourth and final step in the measure selection process for SUMP starter-cities is to describe and gain approval for selected measures. At this point, when there is a list of selected measures that has been estimated to be the most effective in contributing to more sustainable urban mobility planning and feasible to implement in the city, it is necessary to strengthen the description of the measures and to gain approval among politicians, citizens and other stakeholders. The selected measures should be feasible and address the most prioritised challenges. If a deeper cooperation among stakeholders and citizen outside the city's administration is considered necessary, see Box 5 for useful hints and methods.

Box 5: Institutional cooperation

The manual *Institutional cooperation - Working jointly with institutional partners in the context of Sustainable Urban Mobility Plans* contains more information about institutional cooperation.

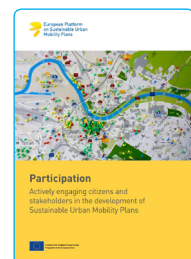
www.eltis.org/sites/eltis/files/sump-manual_cooperation_en.pdf



The manual produced in the CH4LLENGE-project gives an introduction to the subject institutional cooperation, on how to prepare, identify and involve relevant partners and how to agree on responsibilities.

In addition, the related manual on participation describes well how to actively engage citizens and stakeholders in the development of SUMP. The manual, also a product of the CH4LLENGE project, gives an introduction to the subject of participation and presents useful tools and examples of real life cases.

www.eltis.org/sites/eltis/files/sump-manual_participation_en.pdf



Confirm the feasibility

During the previous steps described in this manual, the first assessment of the feasibility of measures was conducted quickly within a limited group of planners. The next step is to present the suggested list of measures more broadly within the city's administration to gain validation that a certain measure is possible to implement or to understand what it takes to make it possible to implement.

A key element for success is to achieve a common understanding among stakeholders and politicians regarding more costly or advanced measures. One way to gain approval and investigate the feasibility is to send a draft document of the strategic choice of measures to different interested parties for consultation.

To gain support for measures which interfere with the physical environment and where there might be a strong opinion for or against such measures, temporary interventions or experiments can be a solution to visualise the benefits and gain approval for more permanent solutions (see one example in Box 6).

Box 6: Temporary beaches

A famous example of a temporary measure is the Paris Plages, a series of man-made constructed beaches on an underutilised road along the banks of the river Seine. Since the opening of the first three-kilometer temporary section in 2002 the concept has expanded and serves as a good example of how a temporary measure can help reveal another use of the street space to the benefit of the citizens (Project for public spaces 2017). For more examples of placemaking from around the globe, visit the Project For Public Spaces website:

www.pps.org/places/lqc



CITY CASE – Examples of starter measures

Monitoring of key indicators, Green paper – The city of Birmingham

Strategic policy measures for monitoring and data gathering

A mobility action plan is a long term vision and strategy for a city's transport system. It seeks to understand the current and future challenges facing people and businesses and puts in place strategies to help the city reach its ultimate goals. The Birmingham Mobility Action Plan Green Paper was a consultation document that provided a significant amount of detail on the challenges Birmingham faces or is likely to face and presented information to begin a discussion on a number of key issues. This included a review and baseline of transport data, evidence and characteristics (e.g. mode share, car ownership, travel behaviour etc.), transport issues/impacts (number of people killed or seriously injured and level of air pollution) and other key factors which influence and affect the transport network (population growth, economic development, etc.)

The intention of this analysis should help to highlight the areas where change is most needed and open up a discussion and debate as to what the future of a city's transport system should be. It will help influence concepts and ideas to stimulate thinking on what the priorities should be for over the short, medium and long term in order to create the transport system which achieves the objectives which are set.



Collect information on the cost-benefit for each measure

In the meantime, as the validation of measures is strengthened, it is necessary to further improve the description of the cost-benefit rate for each selected measure. By using a form of Cost Benefit Analysis (CBA) it is possible to express a project or measure's direct and indirect costs and benefits, allowing the benefits and economic viability to be assessed and expressed in monetary terms. Cost Benefit Analysis can include the consideration of both internal and external costs and benefits. One of the main advantages of a CBA is the relative ease of communicating its results through one or more indicators. CBAs are most frequently applied to large-scale infrastructure projects. For non-infrastructure measures, most cities lack a standardised assessment approach. The selection of measures should be guided by value for money as well as by the effectiveness of the measures. In some instances, a full cost benefit analysis may be too costly and more simple approaches should be used, especially for smaller measures (KonSULT, 2015; Hüging et al., 2014; ELTIS, 2015).

To avoid costly full-scale CBAs in these first steps into sustainable urban mobility planning for starter-cities, simplified impact assessment tools can help. For example, the urban Nodes Assessment Tool is a crossover between CBA and Multi Criteria Analysis (MCA). The benefit of using this easy tool is that there is no need for any other statistical input beside the expected cost of the measure (see Box 7 for more information).

Gain approval among citizens

A step that is sometimes forgotten is to involve and gain approval among citizens for certain measures. Many typical starter measures can be of the character that the result of the measures never will be revealed to the citizens. But for some measures, the approval and understanding of citizens can be an important factor. This topic is further described in the SUMP Guidelines in the section on how to inform the public about the vision and selected goals, but some actions can also be recommended when informing about why measures has been selected and funded:

- Pro-actively provide facts about the measures and inform about expected outcomes.
- Make notes from stakeholder meetings public to guarantee transparency regarding the rating of the measures.
- Create arguments towards political decision makers of pros and cons for selected measures.
- Inform about the selected measures beyond the city administration and key stakeholders, for example to local merchant associations, central business district compounds etc.

Source: The actions are based on the SUMP Guidelines and adapted to the fields of measure selection.

Box 7: The “Urban Nodes” Assessment Tool

The Urban Nodes Assessment Tool is an Excel template to assess the impact of transport measures on high-level policy objectives related to SUMP (Sustainable Urban Mobility Planning).

The tool takes into account the variety of perspectives of different stakeholders involved in transport network development. Its strength is that it combines two commonly used approaches (MCA, Multi-Criteria Analysis and CBA, Cost Benefit Analysis) to evaluate all of a measure's impacts (both quantitative and qualitative). Furthermore, it is applicable to hard and soft measures from local to regional level projects.

Input is an initial set of planned or ongoing measures or projects identified by stakeholders to be relevant for the transport network development. With the help of the methodology, an optimal package of measures based on a defined problem and based on high-policy objectives can then be identified.

The Urban Nodes Assessment Tool was developed by Panteia together with Rupprecht Consult and PricewaterhouseCoopers Italy in the project Urban Nodes.

Download the Excel template available at: www.mobility-academy.eu/mod/folder/view.php?id=1242 to use the tool. For instructions, information, best practice and a helpful webinar, visit: www.mobility-academy.eu/course/view.php?id=84#section-3, unit 3.

CITY CASE – Examples of starter measures

SUMP department established within ThePTA – The city of Thessaloniki **Capacity building activities**

ThePTA established an in-house SUMP quality assessment unit which is assigned the responsibility of implementation, monitoring, evaluation and regular update process of the SUMP of Thessaloniki. This unit's main aims are to assess the quality of public transport services, and to follow up the implementation of the measures proposed within the SUMP. The unit is fully aware of the challenging and complex demands of the SUMP's goals. In order to fulfil its role, ThePTA is in need of appropriate tools and methodologies which will enhance the authority's capacities towards achieving those challenging aims.

Develop an action plan

When the list of measures is approved, the next step is to develop an action plan. The action plan is a clarification of how the targets of the SUMP will be met. Principles and guidelines for SUMP Action Plans (see Box 8) has been developed containing support on how the measures should be described and guidance is also given on how to implement selected measures. For the best success of implementation, the action plan should be developed in two steps:

1. Action plan with general description of measures and measure packages that correspond to the SUMP objectives, developed every 5 years.
2. Detailed description of measures and measure packages developed every year in implementation plans.

The measures should be described with, at least, the following characteristics:

- Measure description
- Responsibility for implementation
- Connection to other policy sectors
- Time of implementation
- Funding sources
- Indicators for monitoring and evaluation

Box 8: Principles and guidelines for SUMP Action Plan development

Guidance material for cities on SUMP Action Plan development, including templates, links to quality examples and tools. The material is a complement to the SUMP Guidelines and is a product of SUMP-UP, available on: www.sumps-up.eu



4. ENDNOTES

4.1 Output from SUMP-Ups

The other outputs from SUMP-Ups are available on the project website www.sumps-up.eu.

- **Manual on the integration of measures and measure packages in a SUMP - Step-up**
- **Manual on the integration of measures and measure packages in a SUMP - Innovate**
- **Principles and guidelines for SUMP Action Plan development**
- **User needs analysis for take-up**
- **CIVITAS Tool Inventory**
- **SUMP Registry**

4.2 References cited in the text

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Citta' Di Torino (2017) www.comune.torino.it/ambiente/aria/limitazioni-del-traffico-a-torino.shtml (accessed 11th April 2017)

ELTIS (2015). www.eltis.org (accessed 11th April 2017)

Hydén et al (1998) How to enhance WALKing and CYcliNG instead of shorter car trips and to make these modes safer. Deliverable D6 (final report), EU-project WALCYNG.

Hüging et al., (2014) Hüging, H., Glensor, K., Lah, O. The TIDE impact assessment method for urban transport innovations - Handbook for local practitioners.

KonSULT (2015) Knowledgebase on sustainable urban land use and transport. www.konsult.leeds.ac.uk (accessed 11th April 2017).

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Project for public spaces (2017) Lighter, Quicker, Cheaper (LQC) Placemaking from around the globe and how they are transforming our public spaces. www.pps.org/places/lqc (accessed 5 th September 2017).

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ANNEX I

Long list of measures

Readers guide: This list of measures has been assembled with the aim to give inspiration to planning authorities in the process to selecting measures related to a SUMP. The list of measures and their description are based on several sources. When information is available online the measure is linked. Sources used in the list are: EVIDENCE, DELTA, KonSULT, Trivector, Vruits, Civitas, Copenhagenize.

SUMPs-Up European Programme for Accelerating the Take-up of Sustainable Urban Mobility Plans
Responsible author(s): Trivector Traffic AB

The long list of measures is divided in to 25 different measure areas based on the Evidence structure. For each measure area, a number of measures are described and the connection to Civitas' policy fields are displayed.

- | | | |
|---|--|-----------------------------------|
| 1. Walking | 11. Parking | 21. Cycling infrastructure |
| 2. Urban freight | 12. New public transport systems | 22. Congestion charges |
| 3. Travel information | 13. New models of car use | 23. Cleaner Vehicles |
| 4. Traffic safety | 14. Marketing and rewarding | 24. Bike sharing schemes |
| 5. Traffic management | 15. Land use planning | 25. Access Restrictions |
| 6. Taxes and fares | 16. Integration of modes | |
| 7. Site-Based Travel Plans | 17. Inclusive urban design | |
| 8. Roadspace reallocation | 18. e-ticketing | |
| 9. Public transport Enhancements | 19. Environmental zones | |
| 10. Personalised travel planning | 20. Electric Battery and fuel cell vehicles | |

1. Walking ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Pedestrian areas & routes	Measures to influence pedestrian behaviour and to provide safe and attractive pedestrian areas.	
Create (temporarily) pedestrian areas	To limit traffic volumes within city or town centres, access restrictions and a clear strategy to foster pedestrian networks can be established.	
Intelligent pedestrian crossings	An Intelligent Pedestrian Detector (IPD) that provides real-time information to the Traffic Signal regarding the number of pedestrians waiting to cross, detected via the IPD, as they approach the crossing and they enter the detection area. The Traffic Signal extends the pedestrian green phase based on how many people are waiting to cross or on the number of still crossing pedestrians. The Light Demand can be switched off when the number of pedestrians isn't sufficient (based on the defined threshold). While VRUs are waiting for pedestrian green phase and during it, if the demand is active (i.e. if the number of people waiting to cross exceeds a predefined threshold) the Light Demand is also activated, regardless of the light cycle. This Light Demand is intended to alert vehicles about the presence of pedestrians in the scene. The illumination system (Light Demand) is used to highlight the crossing and its surroundings, warning vehicles about the presence of pedestrians and thus enhancing their safety	Car independent lifestyles
Increase accessibility for elderly or disabled people	Ensure accessibility for elderly or disabled people in form of smooth, even pavement, submerged pavement edge and tactile surfaces	Safety and security

2. Urban freight ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Lorry routes & bans	Lorry routes are used to achieve Positive Routing by specifying the routes which lorries can take.	
Road freight fleet management systems	a number of telematics systems which use remote devices on both freight vehicles and trailers to control and monitor freight operations and present this data in a useable format to freight managers, either as real time data or static data.	
Implement a driving ban for lorries / HGVs on main travel routes during peak times	In order to avoid congestion on main travel routes, a driving ban for lorries/ HGVs (Heavy Goods Vehicles) during peak travel times should be implemented (for example on weekends).	
Freight quality partnerships	The most common tool for involving stakeholders are freight quality partnerships. FQPs aim to bring together the public- and private-sector parties involved in freight transport and logistics to discuss problems and identify and implement solutions, with the intention of improving the sustainability of freight transport activities in an economic, social and environmental sense.	
Freight advisory boards and forums	Establishing committees, boards and forums to provide an opportunity for stakeholders to meet and discuss challenges and opportunities of the freight system is the most direct way to engage all the actors. These forums can be established in the form of technical advisory committees that bring together public-sector staff from different administrative bodies and agencies, with the aim of investigating problems, conducting context studies and analyses to coordinate actions and decisions for a sound and effective urban freight policy.	Urban freight logistics
Designation of a city logistics manager	Similar to the concept of the Mobility Manager, the function of City Logistics Manager (CLM) is designed to reduce demand in relation to the mobility of goods in urban areas. The Mobility Manager as well as the City Logistics Manager represent real intermediaries between the various local stakeholders and the public authority; their task is to reconcile the needs and demands of the different companies and businesses.	
Time access restrictions	These measures impose restrictions on the times when freight activity can take place. The intent is to reduce freight traffic during peak hours in urban areas or to ban night-time deliveries due to noise constraints. The promotion of off-peak deliveries in cities is a promising strategy for offsetting the traffic impacts of urban freight.	

... 2. Urban freight ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Environmental restrictions	These kinds of measures are aimed at preserving the liveability of city centres by trying to reduce the negative externalities produced by freight vehicles, both in terms of emissions and noise. These strategies have a twofold positive effect: on the one hand they reduce the environmental impact of freight traffic, while on the other hand they foster the use of clean technologies by promoting the use of electric or low-emission vehicles for urban deliveries. Vehicles renewal programmes can support this type of initiative.	
Size/load access restrictions	These kinds of measures focuses on increasing the liveability of urban areas and optimising the use of public space, specifically of public streets. More specifically, restrictions that prevent vehicles of a certain weight or size (length or width) from using a particular road or area can result in benefits on congestion levels and on road accident rates caused by large trucks.	
Pricing (road pricing, congestion charging, parking charging)	Road pricing means that motorists pay directly for driving on a particular roadway or in a particular area. Charges can be fixed or variable according to a vehicle's emission standards if the reduction of emissions is the target. Congestion charging refers to variable road tolls (higher prices under congested conditions and lower prices or free passage at less congested times) established in central areas to reduce peak-period traffic volumes. Tolls can be dynamic, meaning that rates change depending on the level of congestion that exists at a particular time. The main challenge affecting freight vehicles parking in cities is the lack of space, especially in historical centres. This results in parking violations and fines. Through parking charge schemes, motorists pay directly for using parking facilities. These schemes can be established for the use of kerb space, some being based on fixed rates, others involve variable pricing schemes and are generally implemented as part of a group of strategies.	
Incentives and subsidies	The opposite of taxation and tolls is the use of incentives or subsidies to encourage the development of sustainable urban distribution. The direct provision of incentives or subsidies by local authorities to operators is not widely used because it is too expensive, while provisions entailing cost advantages (indirect incentives) are more frequently used.	Urban freight logistics
Adapting on-street loading zones	On-street parking measures are aimed at adapting existing street designs and loading areas to accommodate current and future traffic and commercial vehicles volumes. The measures focus on allocating adequate kerb space for parking and loading activities. Parking places and loading-zone-related strategies focus on designating and enforcing kerbside parking, reallocating kerb space, and identifying potential freight traffic parking locations.	
Nearby delivery areas	The lack of parking and loading facilities aimed at receiving freight may require the use of staging areas (or nearby delivery areas). The objective is to develop an implementation-site and off-street areas at businesses or facilities that regularly receive freight. The establishment of common loading areas for sites that are large traffic generators or for other multi-tenant facilities may be a viable option. Alternatively, municipalities might foster the development of nearby delivery or staging areas that could serve as urban transshipment platforms.	
Collection points	This initiative promotes the use of specific locations for pick-up and deliveries, such as on-street automated locker systems, parcel shops and post offices as well as minidepots. In this scheme trucks deliver to collection points and customers travel to these pick-up areas to get their goods. This practice reduces delivery costs by concentrating deliveries and reducing delivery failures. However, since customers must pick up the orders using their own cars, it may increase overall traffic.	
Urban consolidation centres	This measure contributes to the reduction of freight traffic circulating within a target area by promoting the consolidation of cargo shipments at one or more urban terminals. Carriers that would otherwise make separate trips to the target area with low load factors, transfer their loads to a neutral carrier that consolidates the cargo and manages the last leg of the deliveries. Conceptually, this may include "joint delivery systems", "cooperative logistics," and "urban distribution centres".	

... 2. Urban freight ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Modal shift	The aim of a modal shift programme is to encourage the use of alternative modes to reduce the number of trucks and vans in the city centre. Although appealing to many, this initiative faces major obstacles in urban areas where it is often impossible to find modal alternatives that effectively compete with trucks or vans. However, a number of pilot tests and small-scale implementations suggest that it is possible to induce small modal shifts. A shift of cargo flows from road to intermodal transport was achieved, using a combination of road and short sea shipping, inland waterways, rail, freight motor tricycles, or cargo bikes.	Urban freight logistics
Educate traffic planners in city logistics and freight	Develop an education in city logistics for traffic planners in regions/municipalities.	
Integrating logistics planning into land use planning	A more proactive approach is to incorporate freight planning into the land use planning process by identifying areas of conflict between freight activities and other land uses. By understanding the sources of conflict between freight activities and other land uses, efficient strategies for a compatible development can be delineated and selected.	

3. Travel information ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Conventional timetable & service information	Quality of the information, the formats in which it is offered, and hence the resources and effort that should go into providing the information.	Collective passenger transport
Real time passenger information	Real time passenger information systems allow passengers to access real i.e. live departure information for public transport services via a variety of different sources.	
Trip planning systems	Trip planning systems, or multi-modal travel information can incorporate a range of provision of information from simple descriptions of available travel options by different modes, possibly linked to maps indicating routes and to timetables, to interactive database systems enabling users to search specific information.	Transport telematics
Multimodal information & trip advice	Travel information, delivered via a range of technologies, both before and during the trip: e.g. dedicated websites and software allow information on all modes of transport to be presented in a coordinated and hence more understandable form.	
Route guide for bicyclists + real time information	Detailed route guide from bicyclists with obvious signs, preferably with real time information of temporary congestion and road maintenance.	
Route guide for bicyclists	Detailed route guide from bicyclists with obvious signs.	
In-vehicle guidance systems	Traditional IVRG means that the system primarily select routes based on the shortest distance between a source and a destination, which is very useful in unfamiliar environments or complex networks. In the next generation, the navigation systems became capable of taking into account different criteria of optimisation, not just the shortest path.	

4. Traffic safety

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Accident remedial measures	Speed limitation, speed enforcement and road marking.	Safety and security
Cycle & pedestrian safety	Safety for non-motorised transportation greatly improves the experience of living and travelling around the city as the core issue of these experiences.	
Pedestrian crossing facilities	A variety of pedestrian crossing types are available for consideration by transport and urban planners, ranging from marked (zebra) and signalised pedestrian crossings, through to more significant infrastructure investments including footbridges, underpasses and the creation of "Shared Space" junctions and streets.	
Road maintenance	Road maintenance covers a range of practices and aims. Roads experience wear and tear through combinations of vehicular use and accidents, weather and other natural events. Further measures, such as gritting, can be used to mitigate the effects of weather or temperature conditions on the ability of vehicles to use a road. Beyond this, road maintenance can be used to realise benefits from developments in materials and in understanding of the impact of road building materials on pollution.	
Traffic calming measures	Traffic calming is the use of physical and regulatory measures to reduce vehicle speeds and acceleration	
Barrier-free mobility	Measures to improve accessibility of (existing visual guidance systems, and measures to complement visual guidance systems by tactile and/or audio information.	
Educate school children in traffic safety	Implement mandatory traffic safety education.	
Improve traffic situation near schools	Congestion zones near schools/ forbid cars within 500 metres from the school.	
Prioritate VRU in regards to road maintenance	Ensure accessibility for VRU when closing a road for maintenance.	
Safe designated roads for cyclists and pedestrians	Ensure roads with sufficient width and even pavement and proper winter road maintenance.	
Traffic calming through comprehensive speed plans	Comprehensible and well-reasoned speed plans for optimal compliance.	

5. Traffic management ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Conventional signs & markings	Upright signs - various types of upright signs with textual or graphical images, for information, regulation or warning Road markings – provided to channel traffic and to convey warnings, regulatory requirements or basic information Miscellaneous signs – including traffic signals, temporary signs and lamps to identify refuges or provide additional warning in cases of dangerous obstructions.	Demand management strategies
Conventional traffic management	Conventional Traffic Management involves measures designed to affect the movement of traffic on a network. Measures include route restrictions and right of way restrictions which serve to alter the direction and movement of traffic as well as parking (and stopping restrictions) which allow for unhindered traffic movement on roads.	
Urban traffic control	Urban traffic control (UTC) systems are a specialist form of traffic management which integrate and co-ordinate traffic signal control over a wide area in order to control traffic flows on the road network.	
Variable message signs	Variable Message Signs (VMS) are digital road signs used to inform car drivers about specific temporary events and real-time traffic conditions.	
Intelligent transport systems	Intelligent transport systems cover a wide range of applications of information and communications technologies to transport. These include traffic management and control techniques, real time information for users, management systems for public and freight transport, advanced safety systems, emergency and disaster relief and electronic payment systems.	Transport telematics
Mobility coordination centre	A platform for information flow and expertise	Mobility Management

6. Taxes and fares

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Fare structures	A fare structure comprises the full range of fare policy measures short of a blanket fare rise or reduction. These elements include: differentiation of price by geographical criteria, time of day, regularity of use, and journey purpose; through-ticketing; concessions; and smartcard technology.	Demand management strategies
Fuel taxes	Fuel taxes are levied on the purchase of fuel in most countries. Levying a tax on fuel consumption not only raises revenues, it is also a relatively unselective means of charging for road use.	
Vehicle ownership taxes	Vehicle ownership taxation (an indirect tax) has two key purposes. Firstly, as a general revenue generator - income is rarely hypothecated. Secondly, to regulate the number of vehicles owned and potentially the age of the vehicle stock to meet environmental objectives.	

7. Site-Based Travel Plans ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Company travel plans	A company travel plan (CTP) is „a strategy for an organisation to reduce its transportation impacts and to influence the travel behaviour of its employees, suppliers, visitors and customers“ (Rye, 2002). Very often, the travel plan focuses on employee travel behaviour.	Mobility Management
School travel plans	School Travel Plans, or School Mobility Management (SMM) consists of a whole range of measures that primarily aim to change mobility behaviour of pupils and parents for trips to and from schools – mainly by reducing car travel.	Safety and security
Walking Bus	A Walking Bus supports children to walk in groups to and from kindergartens/ primary schools.	
Cycling Bus	A Cycling Bus supports children to cycle in groups to and from school (sometimes also kindergarten). Usually the young children are accompanied by adults.	
Cycling training	This measure provides cycling training as, especially for younger school pupils, traffic safety often plays an important role in the decision whether to cycle. Cycling training can also be given to other individuals; whole families or to employees at selected companies.	Car independent lifestyles
Investigating school routes	Review of the school roads to find strengths and weaknesses and prioritise measures.	Safety and security

8. Roadspace Reallocation ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
High occupancy vehicle lanes	High Occupancy Vehicle (HOV) lanes are designed to discourage single or low occupancy car use by providing priority to vehicles with more than a minimum number of occupants (usually two or three) and to buses.	Collective passenger transport
New road construction	Road construction has apparently simple aims of providing access to areas previously inaccessible by motor vehicle, reducing traffic volume in one area by moving it to another, or of increasing capacity.	Demand management strategies
Limit accessibility for cars on specific streets	Limit accessibility for cars on specific streets.	

9. Public transport Enhancements ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Bus fleet management systems	A bus fleet management system uses real time information on bus location and performance to ensure that buses run to schedule.	
Bus priorities	To make bus travel times competitive with individual vehicle travel times, a range of priority interventions needs to be selectively applied to bus services.	
Bus regulation	Bus service regulation is taken here to refer to governance in which transport authorities either franchise bus service provision to private providers, or arrange partnerships, either with statutory or voluntary standing, with private providers.	
Fare levels	Fares can be described as the monetary charge for making a trip by public transport, e.g. the price of a rail or bus ticket. Fare levels can be affected by subsidies provided (or taxes levied) by national or local authorities.	
Concessionary fares	Concessionary fares offer certain sections of the population the opportunity to travel on public transport at a reduced fare, which in some cases can mean free travel.	
General improvements for PT accessibility	This measure seeks to improve public transport (PT) service quality by increasing levels of accessibility, which includes increased service speed, frequency, convenience, comfort, affordability and ease of access for all individuals (also barrier free design for people with physical or mental disabilities).	Collective passenger transport
Job PT ticket / rebated seasonal PT tickets	Job tickets are monthly or annual season tickets, purchased en block from a transport association by public or private organisations for their employees.	
On-Demand Public Transport services	Also known as: 'Demand Responsive Transport' services, On-Demand Public Transport is considered as a user-oriented form of public transport characterised by flexible routing and scheduling of small/medium vehicles operating in shared-ride mode between pick-up and drop-off locations.	
Reorganisation of PT schedules	The reorganisation of PT schedules aims at optimising public transport services and increase their use by adjusting schedules to better suit travellers' lifestyles and their mobility patterns.	
Special ticket offers for pupils	Special pupils' tickets are often low priced season tickets which are purchased showing a school document.	
Clean and silent vehicles in CPT	Clean and silent vehicles in CPT	Clean fuels and vehicles
Improve local CPT with distinct paths and stops	Improve local CPT with distinct paths and stops	
Increase accessibility for elderly or disabled people within CPT	Increase accessibility for elderly or disabled people within CPT through access ramps and tactile areas	
Reduced CPT price for youths	Reduced CPT price for youths	Collective passenger transport
Reduced prices for CPT or free CPT	Reduced prices for CPT or free CPT	
Road maintenance at CPT stops	Road maintenance at CPT stops	
Sustainable options for leisure trips/ tourism	Sustainable options for leisure trips/tourism	
Trial periods with reduced CPT cost for new users	Trial periods with reduced CPT cost for new users	Mobility Management

10. Personalised travel planning ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD	
Flexible working hours	A bus fleet management system uses real time information on bus location and performance to ensure that buses run to schedule.		
Personalised journey planning	To make bus travel times competitive with individual vehicle travel times, a range of priority interventions needs to be selectively applied to bus services.		
Telecommunications	Bus service regulation is taken here to refer to governance in which transport authorities either franchise bus service provision to private providers, or arrange partnerships, either with statutory or voluntary standing, with private providers.		
Mobility Consultant/ Mobility Manager	Fares can be described as the monetary charge for making a trip by public transport, e.g. the price of a rail or bus ticket. Fare levels can be affected by subsidies provided (or taxes levied) by national or local authorities.		Mobility Management
Mobility Education	Concessionary fares offer certain sections of the population the opportunity to travel on public transport at a reduced fare, which in some cases can mean free travel.		
Personalised Travel Assistance (PTA)	This measure seeks to improve public transport (PT) service quality by increasing levels of accessibility, which includes increased service speed, frequency, convenience, comfort, affordability and ease of access for all individuals (also barrier free design for people with physical or mental disabilities).		
Telework	Job tickets are monthly or annual season tickets, purchased en block from a transport association by public or private organisations for their employees.		
Platform for MaaS	Clean and silent vehicles in CPT	Car independent lifestyles	

11. Parking ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD	
Cycle parking & storage	Cycle parking and storage within cities should ideally include the provision of: unsheltered but secure parking in convenient locations for shops and services, which is low-cost to implement; together with Cycle Lockers and supervised Cycle Stations that provide long-term storage options and the best protection from weather and theft.		
Off street parking	Off-street parking is a special facility (multi-storey) or area (surface) that is dedicated for parking. Its provision has a significant impact on car usage.		
Parking regulations	Frequently, the number of parking spaces available for delivery is not enough to satisfy the needs of delivery trucks. Carriers are forced to double-park as the demand for parking exceeds the linear capacity of the streets. The provision of loading/unloading spaces are a common local policy to organise last-mile delivery operations. Lack of delivery spaces shifts delivery operations to traffic lanes or pavements and leads to congestion and potentially hazardous situations for other street users.		Demand management strategies
Parking charges	Parking charges are financial charges paid by motorists for the use of parking spaces, either in dedicated car parks or in identified on-street parking bays.		
Parking controls	Parking controls are applied to on and off street parking (multi-storey, ground level and underground), although the style of control will vary with the type of parking space.		
Parking standards	Parking standards are the norms related to the amount of parking that is required, or permitted, for new developments of all types within the land use planning system.		
Private parking charges	Private parking charges are, in the main, levied by local authorities on existing or future non-residential developments, e.g. office buildings. They are designed to help suppress the demand for car parking and thus traffic levels, particularly in urban centres where commuting to work makes up a large percentage of the traffic.		
Parking guidance systems	Parking Guidance and Information (PGI) systems use variable message signs (VMS) to provide drivers with information on the location and the availability of spaces in car parks.	Transport telematics	
Car Parking Management	The term 'parking management' refers to the process of controlling the amount, the costs and/or access to car parking on a site.	Demand management strategies	
Site-based Parking Management	The term 'parking management' refers to the process of controlling the amount, the costs and/or access to car parking on a site.		
Co-usage of parking spaces workers 9-17 habitants 17-9 etc.	Co-usage of parking spaces workers 9-17 habitants 17-9 etc., mostly feasible in mixed settlement		

12. New public transport systems ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Bus rapid transit	Bus Rapid Transit (BRT) is public transportation by bus that is intended to provide a faster more reliable and more comfortable journey for passengers than conventional bus services.	Collective passenger transport
Bus services	Public transport services refer to the entire range of transport services that are available to the public including demand responsive transport, buses, trams, light rail systems, metro (underground) and long distance rail services.	
New rail services	New rail services on existing lines can provide new opportunities for people to travel or improved opportunities to travel by providing more direct services and so reducing the generalised cost of travel.	
New rail stations and lines	New rail stations refer to new rail stations on existing conventional railway lines that provide new places for people to board and alight from trains and hence increase the geographical accessibility of the rail network.	
Terminals & interchanges	A terminal or interchange is designed to improve door-to-door journey times involving public transport through enabling easier movement between different modes and services within a single building.	
Trams and light rail	Trams and Light Rail share many characteristics with heavy rail systems such as metros and suburban rail, but operates with a lower capacity.	
School Bus	A school bus is a bus used to transport children and teenagers to and from school and school events.	

13. New models of car use ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Car clubs	Car clubs are usually organised schemes, which members of the public can join to gain access to a vehicle for short periods of time.	Car independent lifestyles
Ride sharing	The concept of ride sharing is not new, but there is great disparity between the ways schemes have been developed in different countries. The disparity includes differences in terminology. Ride sharing can be loosely defined as any process which facilitates a car driver giving a lift to another person. This can range from informal lift giving between friends and family to a formally organised workplace scheme for journeys to and from work. Ride sharing (a European term) is variously known as lift giving, carpooling (in North America) and car sharing (in the UK). In the UK, a car pool is the term used to describe the situation where a company owns one or more vehicles for use by its employees on company business as and when needed.	
Carpooling	Carpooling is where two or more people share the same journey, using one of the participants' own private cars (in the UK this is called Car Sharing).	
Car Sharing	Car Sharing is a mobility service where people pay to use a car by hour / day etc., and the car is owned by an individual company that runs the scheme on a commercial basis. Normally the cars are not located in one central depot, but spread across the city or even several cities.	
Van Pooling	Van-pooling is where employees in a group run a minibus to and from work, sharing the cost of the vehicle and its operations. Sometimes this arrangement is subsidised by the employer; it may also be organised by a third party rather than by the employees.	

14. Marketing and rewarding ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Promotional activities	Under the term promotional activities several different promotional tools are considered, ranging from very traditional tools like brochures, newsletters etc. to more progressive tools like Facebook, you tube etc.	Mobility Management
Crowd sourcing	Crowd sourcing can work in two different ways. The first is through the passive/semi-passive collection of information via Web 2.0 enabled devices such as smart phones which may be being carried by travellers on public transport services or in cars on the road network. This can be enriched by asking the crowd to provide supplementary information such as what mode they are travelling on and if public transport what the service number is.	Public Involvement
Advertising & other promotion actions	The core of the idea is encouraging voluntary behaviour change through awareness raising and promotion of alternatives to the car.	
Travel Awareness Campaign & Events	Media aimed at improving public understanding of the problems caused by traffic growth and the impact of travel behaviour, as well as conveying what can be done to solve these problems, including changing one's own travel behaviour. There may be various types of travel awareness campaigns, including annual events	Mobility Management
Campaign towards cycle-helmet use	Reduced price/free helmet along with traffic safety information	
MM-Advertisement and discounts to newcomers	MM-Advertisement and discounts to newcomers	

15. Land use planning

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Developer contributions	Developer contributions to infrastructure involve a developer providing a payment (or levy) to support infrastructure in the area they develop.	Public Involvement
Development density and mix	Higher densities of development may encourage shorter journeys and, thus, the use of walking and cycling. They may also help to make public transport more viable. In a similar manner, a better mix of developments can improve accessibility and hence reduce the need to travel.	
Land use to support public transport	Improve conditions for the efficient operation of public transport;	Demand management strategies
Sustainable transportation in land use planning	Improve the accessibility of urban areas and enable people to travel more by alternative modes; Increase the demand for public transport, particularly by encouraging mode change from the private car.	

16. Integration of modes ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Park & ride	Park and ride is a form of integrated transport that allows private transport users to park their vehicles at a car park and travel into the city centre using a public transport mode.	Demand management strategies
Integrated ticketing	Integrated ticketing allows a passenger to transfer within or between different public transport modes using a single ticket for their entire journey.	
Offering integrated fares	This measure allows passengers to use one single ticket for different services, e.g. all public transport modes within a city or a region, or to use an entrance ticket for a sports event as a ticket for public transport.	Transport telematics
Demand responsive transport	Demand Responsive Transport is an intermediate form of transport, somewhere between bus and taxi and covers a wide range of transport services ranging from less formal community transport through to area wide networks.	Collective passenger transport
Plan for multimodal travel, change from bus to bike etc.	Plan for multimodal travel, change from bus to bike etc.	Demand management strategies

17. Inclusive urban design ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Shared space, measure implementation in Madrid	Freeing the city of cars	Demand management strategies
Shared space solutions	Minimise the segregation of VRU and vehicles.	

18. e-ticketing ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Buying CPT trips from app etc.	Buying CPT trips from app for increased accessibility	Transport telematics

19. Environmental zones ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Car free zones around schools	Car free zones within, for example, 500 m around schools	Demand management strategies
Low emission zones	Low Emission Zones (LEZs) are areas where access by vehicles is limited to those with low emissions. They tend to be focused on city and town centres, where land-use is dense, traffic is heavy and population exposure is high.	

20. Electric Battery and fuel cell vehicles ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Electric cars awarded with the closest parking space	Can be used in industrial areas as well as city centres	Clean fuels and vehicles
Power stations for electric cars	Power stations for electric cars	

21. Cycling infrastructure ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Cycle networks	A Cycle Network provides the framework for a series of cycle infrastructure interventions and improvements covering a given area or city and can incorporate: a network of Cycle Routes incorporating Segregated Cycle Facilities; provision of Cycle Parking and Storage; and integration of cycling with public transport. Ideally these "hard" infrastructure measures should also be supported by "soft" marketing, promotional and travel planning activities.	Car independent lifestyles
Segregated cycle facilities	Segregated Cycle Facilities is a collective term for a range of cycling infrastructure consisting of marked lanes, tracks, shoulders and paths designated for use by cyclists and from which motorised traffic is generally excluded.	
Cycling facilities improvements	Cycling facilities improvements aim to increase cycling activity by enhancing conditions for that. There are many ways to improve conditions for cyclists. These include: improving paths and bike lanes, bike parking, increasing personal security for cycling, as well as combining cycling with public transport.	
Power stations for electric bicycles	Power stations for electric bicycles	
Stations for bicycle pump and service etc.	Stations for bicycle pump and service etc.	

22. Congestion charges ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Road user charging	Urban road user charging (also called congestion charging or road pricing) involves charging drivers for the use of roads they drive on.	Demand management strategies

23. Cleaner Vehicles ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Promoting low carbon vehicles	Promotion of the use of Low Emission Vehicles	Clean fuels and vehicles
Cleaner vehicles and alternative fuels	Reduction of pollutant emission of road traffic	
Eco-driving	Eco-driving is a way of driving that reduces fuel consumption and therefore greenhouse gas emissions and accident rates. Special campaigns, workshops, and training aim for a change in driving behaviour in favour of energy efficiency and road safety.	

24. Bike sharing schemes ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Bike sharing	The concept of a sharing programme is to make bicycles free or affordable for users as an urban means of transportation, in order to limit the increase of automobile traffic and the resulting pollution and congestion problems.	Car independent lifestyles
Pool Bikes	A mobility service whereby bicycles are made available in a city or a workplace allowing people to have ready access to these shared bikes rather than rely on their own bikes.	
Electric pool bikes	Electric pool bikes	

25. Access restrictions ([link](#))

NAME OF MEASURE	DESCRIPTION OF MEASURE	CIVITAS POLICY FIELD
Physical restrictions	Physical restrictions limit car use in urban areas or other specific zones by reductions in road capacity such as street closures or reallocation of road capacity from cars to other traffic such as buses, cyclists and pedestrians. They include bus priorities, cycle lanes, extensive pedestrian areas, street-running rail such as tram or light rail systems and also traffic calming measures.	Demand management strategies
Regulatory restrictions	Two principal types of regulatory restriction exist: permit systems in which only designated vehicles are allowed to enter an area and number plate restrictions which prohibit certain number plates on certain days.	
Create zones to which only permitted vehicles are allowed	Create zones in which only selected vehicles are allowed to drive around. These zones could be sensitive areas low emission zones, central or historical areas, nature parks etc. Restrictions may apply to all vehicles except e.g. clean vehicles.	
Create zones to which motorised traffic is generally banned	Create access controlled zones, in which motorised traffic is banned totally. Such zones may be central or historical areas, nature parks etc. This measure increases the attractiveness for pedestrians and slow traffic modes and also the quality of life and air quality in this area.	



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