



**CiViTAS**

Cleaner and better transport in cities



03

POLICY ADVICE NOTES

## Cycle-friendly cities – How cities can stimulate the use of bicycles



The CIVITAS Initiative is a European action that supports cities in the implementation of an integrated sustainable, clean and energy efficient transport policy. Lessons learned during the planning, implementation and operation phases of the activities are summarised in twelve Policy Advice Notes and give an idea on how to cope with urban transport problems which cities of the European Union have to face in the future.



# Cycle-friendly cities – How cities can stimulate the use of bicycles

Fostering environmental friendly and  
healthy mobility



Within CIVITAS II (2005–2009) several measures were implemented aimed at stimulating the use of bicycles in a city in order to foster environmental-friendly and healthy mobility. The most important information about the implementation of the measures and experiences made by the cities is summarised in this Policy Advise Note in order to support and inform local politicians interested in these actions.

## Overview

### DESCRIPTION OF THE MEASURES

To counteract urban traffic problems, cities need to support non-motorised transport modes such as cycling. The following measures can be implemented to promote and to increase the use of bicycles:

1. Extension and improvement of the bicycle networks and network connectivity of different sections to make all areas accessible by non-motorised transport modes
2. Improvement in the comfort and safety of bicycle lanes as well as adaptation of road infrastructure (e.g. junctions, crossings) and traffic signs to give cyclists priority and safer journeys
3. Offering additional bicycle services like safe and comfortable parking and transfer facilities, repair shops, rental systems or accommodation on public transport vehicles
4. Stimulating the use of electric bicycles, e.g. by offering information, charging points or special incentives





5. Information and marketing campaigns to influence citizens' travel behaviour
6. Offering training courses for safer cycling (especially in countries with dynamic growth of individual motorisation)

## TARGET GROUPS

The main target groups are inhabitants of a city as well as people coming as tourists or visitors. People who make regular short trips, such as to an institution (e.g. school, university) are especially appropriate. Depending on the already existing level of use, the measures are aimed generally at trips between 2 and 10 km. When promoting cycling, it is essential to also offer training courses, in particular addressed to vulnerable persons, such as children and the elderly. Furthermore, planners and decision-makers in urban areas should be stimulated to implement the measures described by underlining that the whole city can benefit from the support of non-motorised transport modes. Administrative units of a city responsible for spatial planning, for road construction and maintenance as well as for city marketing and promotion should be encouraged to treat cycling as an equal mode of transport with cars and public transport.

It is also important, to gather support from companies which might be interested in improved access by bicycle (shopping centres, cinemas, companies from the railway sector). Green orientated NGOs are also a valuable target group (they could also become a source of volunteers needed for different marketing events).

## IMPACTS AND BENEFITS

### For the public

By favouring cycling in a city, the use of private cars can be decreased. For example, the percentage of trips made by cycle (modal split) in CIVITAS II example cities rose by between 2% and 7% in four years. As a consequence air pollution and the need for parking spaces declines, giving the possibility of being able to reconstruct and re-use public spaces in a more citizen-friendly way. This can result in greater attractiveness of housing districts. The health-related quality of life in such areas may result in increases of social and leisure activities. By extending cycling facilities in a city, the recognition and acceptance by other road users will be enhanced. This might lead to more people using the bicycle even for their daily trips to work, school or shopping. This mode-shift reduces congestion during peak hours (generating time savings). For example, if in Austria 50% of the short trips (< 3,5 km) which are made by car in one year were made by bicycle, annual congestion costs could be reduced by EUR 300 million and environmental costs could be diminished by EUR 160 million<sup>1</sup>. Also, cities become more accessible for children and elderly people, who are often excluded from car driving.

<sup>1</sup> VCOE (2002): Mehr Radverkehr ist gesund und erhöht die Verkehrssicherheit, Fact Sheet 2002-03, <http://www.vcoe.at> (4th February 2010)





### For individuals

Each person travelling by bicycle and, therefore, using the car less, saves money by avoiding the costs of fuel and parking. Furthermore, people's health will be enhanced by cycling regularly. For example, for a person who was not doing sports at all but starts to cycle 30 minutes per day regularly, the risk of a heart attack can be diminished by 50%. Cycling can also provide independent travel for those who do not have access to cars, especially children. Concerning safety it has to be pointed out that the more people cycle the greater are the safety benefits for cyclists, because car drivers get used to noticing cyclists and both car drivers and cyclists learn how to cope with conflicts and dangerous situations<sup>2</sup>.

### For companies

Private companies, which support their employees in using a bicycle, can save money because their workers are healthier and they are not home sick as often as people who don't exercise. Furthermore, private companies can benefit as they need to offer fewer car parking spaces for their employees at their sites. Improvements made for cycling workers can become an important element of an image campaign. They also could serve as elements of wider campaigns, especially for companies strongly dependent on high volumes of visitors (e.g. cinemas, shopping centres). Retail shops can benefit from a cycle-friendly environment as well. Although cyclists do not spend as much money as car drivers per shopping trip, on average they spend more money than car users because they go shopping more often. For example, in the German city of Regensburg cyclists spend 10% more money than car drivers per year, but make twice as many shopping trips<sup>3</sup>.

<sup>2</sup> IRTAD 2000, European Commission 2000, in: VCOE (2002): Mehr Radverkehr ist gesund und erhöht die Verkehrssicherheit, Fact Sheet 2002-03, <http://www.vcoe.at> (4th February 2010)

<sup>3</sup> Heller, J. & Monheim, R. (1998): Die Regensburger Altstadt im Spiegel ihrer Besucher und Betriebe, in: Arbeitsmaterialien zur Raumordnung und Raumplanung, Vol 176, Bayreuth, Germany

## FRAMEWORK CONDITIONS FOR SUCCESS

Space for dedicated lanes, bicycle stands and potential places for redesigning public spaces should be available. It is an advantage if suburban neighbourhoods have comfortable and safe connections to the centre of the city. It helps if the inhabitants of the city are already aware of transport problems and if they are receptive to bicycle use shown by an existing high rate of cycle ownership.

## Implementation steps and timeline

**When implementing a program to stimulate bicycle use in a city, the following considerations need to be taken into account, as well as supportive measures and a reasonable timeline for implementation.**

### WORKING STEPS

#### 1. Establishment of a knowledge base for planning

- Analysis of the existing state of cycling infrastructure as well as of traffic, safety and level of quality of the existing bicycle network including hazardous sections and "black spots"
- Studies to assess the potential usage of new bicycle infrastructure and to identify missing segments of high priority in the bicycle network
- Definition of technical requirements for different types of cycling infrastructure (separated lanes, commonly used roads, limited speed zones, forest routes)



- Technical and economic analysis, e.g. about different bicycle rental schemes
- A roundtable/working group led by a coordinator, including all important groups of stakeholders, should be set up to gather opinions and advice
- Clarifying administrative framework conditions for tendering processes for city bike schemes

### **2. Joint development of a strategic action plan**

- Establishing a working group led by a coordinator to discuss the objectives, strategies and targets and to influence different departments of public administration, other public bodies (e.g. transport authorities) and key stakeholders
- Involving stakeholders in detailed consultation meetings
- Ensuring that a strategic action plan for cycling will be part of the wider strategic transport plan for the city and will have political support

### **3. Identifying and designing the new infrastructure, services and accompanying measures**

- Taking into account the current transport situation and the potential demand of users
- Selecting bicycle routes to be extended or upgraded as well as identifying the locations of bike & ride infrastructure (e.g. at stations to stimulate intermodality), bicycle stands and other services
- Establishing the general design principals of additional bicycle services (e.g. costs for bicycle renting, terms of usage)
- Determining supplementary measures and issues of integration (see also “Accompanying measures to amplify positive effects”)

### **4. Appointment of the responsible entity for the management and maintenance of the measure**

#### **5. Call for tender for**

- For infrastructure developments and operators, for example, of a bicycle rental system
- Specific bicycles and technical equipment for the services

#### **6. Implementation of the measure**

- Construction of new bicycle facilities
- Information sessions with local stakeholders and the wider public regarding the additional bicycle services like a rental system

#### **7. Enforcement**

- It is crucial to ensure an adequate enforcement of new regulations (e.g. speed limits for car drivers), but also of appropriate behaviour of cyclists (e.g. use of roadworthy bicycles, cycling on the right side of the road, compliance with the traffic rules)

#### **8. Launching information and promotion campaigns**

- Providing information on the new facilities and measures

#### **9. Organising educational and safe bicycle campaigns as well as training workshops**





## **ACCOMPANYING MEASURES TO AMPLIFY POSITIVE EFFECTS**

In order to enhance the success of measures which support cycling in a city, it is advisable to implement other complementary measures at the same time. On the one hand, the policy dimensions related to cycling should be strengthened. For example, developing a “Bicycle Master Plan” with fixed goals or establishing a bicycle office giving relevant information to the citizens can strengthen the results. On the other hand, measures to increase the intermodal potential of cycling can be implemented. The introduction of access and parking management measures can enhance the mode share of cycling as well as the reduction of car speed. Road space as well as street crossings should be redesigned. The appearance of public places should be adapted, e.g. by improving streetlights and small urban architecture friendly for bicycle users in order to make cycling more attractive and safe. Also the quality of the public transport service should be enhanced, offering the possibility to accommodate bicycles on buses or trams.

## **TIMEFRAME**

The completion of a study on bicycle use in a city or the implementation of a diagnostic report concerning cycling can take from a few months up to one year, depending on the available resources. Based on the results of such a study, work on the development of a strategic plan for the improvement of walking and cycling facilities in the city can be started and might take about another 12 to 18 months. The education or promotion campaigns should take place all along the implementation of the strategic plan. Their duration varies considerably depending on the number of persons who should be reached and the goals to be fulfilled.

## What are the investments involved?

Investments for the construction of new bicycle infrastructure facilities depend on the framework condition of the existing road network, the length of the new bicycle network planned, space availability and material to be used. Furthermore, the width of the path and the dividing strip, the need for marking and signage as well as the drainage, greening and rearrangement of the parking spaces are important issues which have to be considered when calculating the investments needed. Dealing with interruptions in the bicycle network using bridges, tunnels or complicated crossings is very costly. Basing on recent investments in Polish cities construction of one kilometre of high quality separated cycling lane costs about EUR 250,000. Within the CIVITAS II city of La Rochelle (France) the costs for one kilometre bicycle path was EUR 150,000. For the operation and maintenance about EUR 1,360 per kilometre bicycle path are needed in the same city for one year.

Also the costs for bicycle racks vary depending on the material used, the kind of anchorage, distance between the racks and the number of stands ordered. For example, the prices for one roofed bicycle rack range between EUR 240 and over 500 (example from Switzerland). A bicycle stand without roof costs between EUR 50 and over 200 per piece (example from Germany).

The purchase of city-owned bicycles for a renting service requires investments in bicycle purchases, for the construction of the stands, for the development and operation of the renting system, and for maintenance of the service,





which includes repairing and replacement of damaged bicycles or resupplying stolen ones. For example, for 12 rental stations with 100 bicycles set up within the CIVITAS II city of Krakow (Poland) investment costs of EUR 165,000 and running costs of EUR 120,000 per year accrued. In the CIVITAS II city of La Rochelle (France) 120 bicycles are offered at 12 stations as well. There, EUR 150,000 investment costs were required. The running costs were EUR 66,000 per year for this service.

However, revenues from the use of the bicycles might be generated. For example, in Burgos (Spain) EUR 1,440 per month are collected from eight rental stations with 250 bicycles available. Other options might be organising a tender for delivering and management of a complete integrated bicycle rental system or offering advertising space at the bicycles or rental location.

Information or educational campaigns have to consider costs for designing and printing as well as the distribution of the respective information materials. Additional money might be needed for information workshops, educational sessions and trainings.

## Main drivers that serve as precursors to success

**The following factors listed below are the main drivers for the initiation as well as for an efficient and successful implementation of the measures described above:**

- Local politicians who favour the use of bicycles
- Strong local cyclist association, powerful enough to influence decision-makers

- A highly motivated working group led by a coordinator composed of authorities with different competencies (e.g. police, traffic department, private sector, universities, spatial planning, public transport, NGO)
- Sense of urgency about the traffic situation created by traffic congestion and parking issues in the city centre as well as the increasing environmental and health consciousness
- Increased environmental awareness; residents who want to improve the environment and the living conditions in their city
- City authorities faced with EU air quality and noise directives
- High pre-existing bicycle ownership levels
- Topographic and weather conditions favouring cycling
- Attractive city centre or other appealing places accessible by bicycle
- Target groups that identified the benefits of increased bicycle use, like
  - University which might benefit from higher accessibility and promotional activity
  - Car drivers who are frustrated with increasing driving costs
  - Companies that are facing serious parking problems on their sites and would like to encourage cycling among their employees
  - School districts interested in organising educational sessions for young people





## Strategies for a successful implementation

**To counteract different barriers the whole implementation and planning process should be accompanied by discussions and working group meetings concerning different issues, such as those described in the following paragraphs.**

### **Political support**

The advantage and potential impacts of increase bicycle use are often neglected by politicians, especially in countries that still lack a wide spread bicycle culture. Meetings with stakeholders should be organised to discuss the topic and critical factors. Regular contacts with politicians are recommended to describe the benefits of bicycle promoting measures planned and the necessary modifications. Case studies of cycling successful cities are a useful tool for raising awareness among politicians. Study tours in such cities might increase support for cycling friendly measures.

### **Acceptance**

Those who don't profit from the measure or even are restricted by the measures (e.g. car drivers who are losing parking spaces or road space) might oppose investments in wider access restriction plans of which an improved bicycle path network might be part. They are afraid of substantial drawbacks to their own individual mobility. Therefore, information and participation activities, directed in particular to these groups, have to be launched in an intensive manner. As cycling might often be seen only as a leisure activity, relatively high cost investments are often not well accepted. Therefore, information campaigns should raise

the awareness of cycling and should promote these modes as suitable even for daily commuting trips to work or school. Positive impacts on the environment as well as on the people's health should be highlighted.

### **Financial management**

Costs for a large multi-annual bicycle investment plan might increase during the implementation process. Therefore, in order to reduce the financial risk a detailed financial plan must be established that accounts for possible modifications. The availability of funding has to be secured from the very beginning of the project. Therefore, planning documents should be established carefully to ensure that the projects compete well for funding. It is also advisable to group smaller measures with other projects because this results in reduced costs and minimises negative impacts to traffic, businesses and residents. Street renewals should be accompanied by bicycle network improvements like introduction of traffic calming, redesigning smaller streets, small architecture friendly for bicycle users (e.g. balustrades near stops), marked bicycle lanes and/or bike & ride solutions to get financial synergy effect.

Initiators of the measures can apply for local, regional, federal or private funds, for example, which fund projects to enhance traffic safety or air quality. Also European funds are available to support the measures, for example:

- Seventh Framework Programme for Research, Technological Development and Demonstration (RTD) (2007–2013, 50 to 100% funding, link: <http://cordis.europa.eu/>)
- LIFE+ (2007–2013, up to 50% funding, link: <http://ec.europa.eu/environment/life/>)
- URBACT (<http://urbact.eu>)
- Structural and cohesion funds in general
- European territorial cooperation programmes (former INTERREG, supporting interregional cooperation (A), transnational cooperation (B) and interregional cooperation (C))





### Technical aspects

The implementation of new technologies for secured bicycle racks or automatic rental stations should be carefully analysed in order to avoid delays in the deployment and low usage due to the complexity of the systems. Experts of such systems should be contacted at an early stage in the planning phase of the measure.

If the design of the bicycle infrastructure or of the bicycle racks does not comply with architectural precedence regarding cultural heritage, then a new design or new locations for the facilities has to be found. Standardisation of equipment and facilities is advisable in order to assure consistency of solutions in the city centre in the future.

In order to avoid physical interferences between the measures and urban design (e.g. space for bicycle racks), a quick review should be undertaken by the responsible institutions (e.g. urban planning, streets or engineering departments). A comprehensive collection of thoughts and suggestions for solutions to these matters might be a good idea to avoid potential technological or design problems.

### Legal framework condition

Normally, measures promoting cycling are easy to implement without any issues related to national law. Of course, infrastructure facilities have to consider national construction regulations.

Contracts with the operators of a bicycle rental system should be offered on a long-term basis in order to make the business case more tangible and accountable for the potential operators, which may attract more offers at the call for tender. Moreover, potential operators should be given the opportunity to enlarge the systems, supported and financed by the city.

### Institution & Organisation

Planning and implementation processes of cycling supportive measures are usually easy to implement as resistance is limited, unless the measure coincides with car-restriction. Internal communication and exchange between all stakeholders with different interests and competences has to be established in order to guarantee a smooth implementation process. If training courses, workshops or educational activities are planned, then a strong commitment of all responsible institutions of the target groups (e.g. school department) must be obtained in advance to guarantee support for the implementation. This should be done by a specially appointed coordinator or coordinating unit.

### KEY ELEMENTS TO BE CONSIDERED

- Measures are very successful if they address trips between 2 and 10 km in length
- When promoting and supporting cycling in a city it is also crucial to enhance safety for cyclists by different measures (e.g. speed limit introduction, special training courses)
- Enforcement is necessary to ensure that car drivers as well as cyclists respect the traffic laws
- The support of bicycle use in a city is a successful strategy to achieve the goals of the EU air quality and noise directives





## Who are the key people to be involved?

### STAKEHOLDERS

In order to consider the needs and opinions of target groups, it is important to involve cycling groups, commuters and residents of the target areas, students and even visitors to the city. Local and regional politicians should be involved to support implementation of the measure and its promotion. They should be regularly informed about the progress of the cycling action plan. All stakeholders should be involved in (public) meetings and hearings. Surveys can be implemented among these groups to gain information about their satisfaction and opinions. The stakeholders should be informed about the project via posters, promotional objects, leaflets, press releases and the internet in order to raise their awareness for the topic and to promote use of the bicycle. Furthermore, workshops and training activities can be implemented with stakeholders.

### MAIN PROJECT PARTNERS

These types of people are critical to the success and need to be involved in the implementation process of cycling measures:

#### **Decision makers:**

The leading role for the implementation of measures in the field of cycling is usually assumed by the local administration (city council, transport department etc.). For measures which support the combination of both public transport and bicycle use, public transport operators might take the lead. Creating a cycling network as an element of an integrated

transport system of a city requires strong coordination between different authorities and stakeholders. Decision makers should appoint a coordinator or gather all needed competencies into one organisational unit.

#### **Operators:**

The operator of the cycling network, as well as bicycle stands, is normally the city. Additional services like bicycle renting systems or repair shops are usually operated by private companies or through a public private partnership.

#### **Others:**

Other local or regional administrations, such as the town planning, traffic engineering, environmental or tourism departments should be involved in the implementation processes. School departments can also be involved to lead educational activities. Additionally, research institutions can support the measures by developing innovative concepts or evaluation processes. It is also advisable to work together with the public transport operators in order to improve the integration of all sustainable transport modes in a city as a real alternative to the use of private car (e.g. by offering special facilities to carry bicycles in public transport vehicles).





## Enumeration of practical examples from CIVITAS II

**Within CIVITAS II 11 cities implemented measures dealing with stimulating bicycle use in their city:**

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**Burgos (Spain):** City bike scheme; Increasing bicycle use; Safety & accident prevention plan

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**Debrecen (Hungary):** Integrated and extended cycling network

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**Krakow (Poland):** New leisure related mobility services; Bike renting scheme

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**La Rochelle (France):** Bike sharing; Extension of bike-bus scheme; Implementation of new structure for alternative modes

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**Ljubljana (Slovenia):** Participatory planning and promotion of sustainable mobility

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**Malmö (Sweden):** Integration of cycling with public transport; Internet tool for traffic planning

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**Odense (Denmark):** Interactive traffic training for children

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**Ploiesti (Romania):** Implementing new infrastructures for walking and cycling; Planning for alternative transport modes

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**Preston (United Kingdom):** Implement new infrastructure for alternative modes; Planning for alternative transport modes

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**Toulouse (France):** Promotion of bicycle use and integration with public transport services; Public space redesign

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**Venice (Italy):** Promoting safe and increased bicycle use

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www.civitas.eu

The CIVITAS website contains information about CIVITAS-related **news and events**. It provides an overview of all **CIVITAS projects, CIVITAS cities** and maintains **contact details** of over 600 people working within CIVITAS.

In addition, you get in-depth knowledge of **more than 650 innovative showcases** from the CIVITAS demonstration cities.

Visit the CIVITAS website and search for **prime examples of experiences** in sustainable urban transport currently being undertaken in cities. If any of the ideas suit your city, or you are just interested in learning more, you may then contact the relevant person responsible for this measure.



## Contact

CIVITAS Secretariat  
C/o The Regional Environmental Center  
for Central and Eastern Europe (REC)  
Ady Endre út 9-11, 2000 Szentendre  
HUNGARY

E-mail: [secretariat@civitas.eu](mailto:secretariat@civitas.eu)  
Tel: +36 26 504046, Fax: +36 26 311294



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