



## T.aT. - Students Today, Citizens Tomorrow



EIE/07/239/SI2.466287

# REPORT

## European Best Practice on Sustainable Mobility in University Campus

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September 2008





*Increased mobility has improved the quality of life and boosted economic growth and job creation in Europe over the last 50 years. But the increasing mobility has a price, that our cities and towns are paying with poor air quality, constant traffic jams, high levels of noise and reducing the average life expectancy. For its part, emissions of greenhouse gases and other pollutants, caused by daily urban mobility, is contributing significantly to air pollution at regional level and for warming the climate globally. Technological developments and new ways of thinking about the sustainable use of means of transport, know that many cities are part of the solution and is essential to restore the urban spaces to its inhabitants and create a healthy environment for our children, ourselves and our businesses.*

*Stavros Dimas, European Environment Commissioner*

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# 1. Introduction

T.aT. – Students Today, Citizens Tomorrow (from now on referred to as T.aT.), is a non-technological project co-funded by the Intelligent Energy Europe Program (IEE) and by the group of project partners. It aims, on the one hand, at evaluating the mobility patterns of academic campuses and to assess the energy consumption and pollutant emissions produced by the universities in the project. On the other hand, the project is expected to have a strong impact on the target population in terms of energy efficiency and lower environmental impacts, helping to change mentalities and behaviours on mobility.

Mobility issues have been in the center of the EC discussion over environmental issues during the last decades. In fact an important amount of research funds were endorsed to projects focusing on several aspects regarding mobility and energy consumption during this period and to projects that involved partnerships between institutions of all the EC countries in all of its configurations.

Early projects focused on the definition of a common framework on mobility, introducing the European perspective on the vast set of concepts regarding these issues. After a period of important research on policies, methodologies, technologies and their applications to the EC countries, some large funded projects started to take place focusing on the sheer application of the European framework to specific problems and situation. T.aT. is one of this last generation projects in which the goal is to apply previously acquired knowledge to particularly focused situations.

The issue of improving mobility efficiency by reducing its energy consumption and the consequent environmental impacts is crucial for the development of a successful environmental policy. The promotion of a sustainable conscience in transport behaviour among students can be considered as an important first step towards the desirable sustainable future.

Academia is by definition a place of knowledge, awareness, and discussion where young citizens can reflect and develop more conscious ways of participating in the society to which they belong. This principle is on the very definition of T.aT.: Students Today,

Citizens Tomorrow. It is very important that academia should be able of introducing and consolidating sustainable concepts of mobility to people that, in a near future, will belong to the core of the active society, not only as regular citizens but also as future community decision-makers.

Another important issue to mobility arises within the T.aT. project: institutional cooperation and capacitation. The project brings together a series of institutional partners from Cyprus, Italy, and Portugal covering academia, local administration, and energy agencies with the goal of improving energy efficiency in academia considering the main stakeholders involved in the process.

In each country, a university campus will be the subject of a deep study that will characterize the mobility patterns of academia members, assess the amount of emissions and energy consumption, and propose and implement a series of measures to reduce these emissions and improve energy efficiency within given values. This process is developed by a local team of experts in mobility and environmental assessment with the participation of the local administration and of the local energy agency. The goal is to guarantee the necessary political and technical involvement to ensure that the proposed measures are implemented and the project can produce the expected reductions on emissions and the enhancement of energy consumption efficiency.

The three universities involved on the project are: the University of Cyprus (UCy) at Aglantzia, Cyprus, the University of Gabriele d'Annunzio (UdA) at Chieti Italy, and the Polytechnic Institute of Leiria (IPL) at Leiria, Portugal. The administrations of the cities where these universities are located are also involved in the project: the Municipality of Aglantzia, Cyprus, the Province of Chieti, Italy, and the Municipality of Leiria, Portugal. Finally, three energy agencies are also involved: Stratagem in Cyprus, ALESA in Italy and Enerdura in Portugal.

Universities participate in the project as both case studies and providing technical experts for the local project teams. These local teams are expected to carry out all the working packages considered in the project program.

Local administrations participate as the hosts for the university campuses. These facilities produce important impacts on the mobility patterns of the territories where they are located in. On the other hand, only local administrations have competence over the use of the territory; universities are legally powerless of promoting the implementation of accessibility infrastructures. These two constraints impose the

consideration of the local decision-making agents – the local administrations – in order to ensure a desirable degree of execution for the project outcomes.

Energy agencies are the natural link between the previous partners for these energy efficiency issues. They are in charge of a series of local energy policies and they represent local administrations in the energy consumption forums. So, they are naturally able to link universities (the demand) and local administration (the supplier) in promoting efficient means of transportation that can reduce energy consumption (and pollutant emissions) beyond university campuses boundaries.

This document presents the result of an overview of the European Best practices and therefore inspiring models that can be adapted and followed in Europe's University sites. It is one of the deliverables of the project's Work Package 2 (WP2).

Chapter 2 gives a brief description of the underlying principals at stake namely the road and parking system, the pedestrian and bicycle infrastructure, the public transport system and multimodal systems.

In chapter 3 we will find a characterization of University Mobility main issues along with some basic principles and mobility management programs that can be applied in these contexts.

Chapter 4 presents the European Best practices gathered by the participants in this project. For clarity and convenience purposes these examples are presented in a standardized format enabling a quick comparison of the practices.

In chapter 5 the conclusions of this part of the project are drawn as well as some considerations concerning the implementation of some of the best practices identified.







## 2. General Concepts

Lately there has been a generalized search for mobility strategies that can be more efficient in providing accessibility to some types of spaces although allowing them to maintain their identity, functionality and traditional values. University campus are somewhat beyond their physical space as they generally also have to sustain and enable a variety of functions and diversities such the social interaction, constant interaction with the surrounding urban space, different cultural values, a variety of working rhythms and also several forms to the campus and sometimes even different transport modes within the campus. Therefore they usually provide a unique challenge to land and transport planners. It should be stressed that recently this theme has seen its relative importance and public awareness rise quite a bit due to global warming concerns and also increasing fuel price costs.

In this context university campus should be seen as spaces that require the use of sustainable transportation policies and therefore appropriate mobility management strategies. In an ideal scenario these should also be fully integrated and in accordance with the city's global approach on this matter.

On the other hand these locations due to their variety of uses and most importantly their typical users can be extremely important as an example for promoting sustainable transport habits that can maintained throughout the whole life. They can also act as good examples for students that in the future will have an active role on institutions responsible for urban mobility management. Other advantage is that generally young people are less reluctant in changing habits and accepting new concepts and mobility strategies. It should be noticed that the mobility management strategies described in this text although applied in a University campus context can be easily adapted to other urban spaces naturally with some adjustments.

The following chapters will briefly present some of the basic concepts and core aspects related to urban mobility, transport modes, as well as transport strategies. This document does not have the goal to serve as a transport manual but it is important to

point out some of the main concepts and aspects of the problem so we can broaden our understanding of the tools and solutions that can be implemented.

## **2.1. The Road and Parking System**

One of the main problems faced by our society and the so called western way of living on a mobility perspective is the massive reliance on private cars as the main transport choice in urban areas. This fact is mainly justified by the advantages of vehicles in terms of flexibility as well as their comfort (Seco, 2004). This led to an increasing car ownership and consequently to a rise of parking space needs. Due to a generalized police of adjusting available parking spaces and road capacity to demand the increasing use of private vehicles has been on an upward trend in most urban areas. All these measures generally require an increasing use of urban space usually at the expense of pedestrian areas. Given that this transport mode is very inefficient from an energy use and an environmental view point we have also witnessed a decline in the quality of urban spaces and also to a rise in the mobility problems. Therefore in order to invert this situation and as a consequence reduce the current problems new transport policies must be used in order to promote sustainable mobility patterns restraining the use of private vehicles in certain areas.

The strategies applied should rely on the principle that the parking spaces offered should depend on the access conditions of the surrounding space. This approach gives local citizens a clear indication of the appropriate modal choice in terms of transport sustainability. One possible instrument of the global policy is to apply or increase the parking fees forcing drivers to choose public transport modes (Comissão Europeia, 2007). This is an efficient strategy since it can influence the user type, space rotation and also provide financing that can be used to promote other transport modes.

## **2.2. The Pedestrian and Bicycle Infrastructure**

The pedestrian and bicycle infrastructure should be capable of providing sufficient space to ensure mobility and also provide an additional space that enables social and

leisure activities. This latest aspect is in a University Campus context of utmost importance since the quality of common spaces is essential to the general life quality of the environment and therefore to the perceived quality of the Campus. This can be accomplished following some general recommendations (Dijkstra et al, 1998; Seco and Ribeiro, 2003):

- An infrastructure that is coherent continuous and integrated with other transport modes especially public ones;
- Coherent integration with the road hierarchy in order to provide maximum safety;
- Good connection to the main attraction and generation areas while minimizing travel distances;
- Adequate levels of safety and comfort.

Pedestrian and bicycle crossings should be safe and attractive and integrated in the normal pedestrian and bicycle routes. They may be associated with traffic calming devices such as raised crossings to enhance safety.

### **2.3. *Public Transport***

To reduce dependency on individual transportation it is important to influence travel choice at the trip's beginning encouraging people to use sustainable transport modes and leaving their personal car at home. This modal transfer is crucial to the efficiency of other transport modes, the control of pollution levels and to the decrease in fuel consumption since public transport has a greater performance in these areas. Citizens generally expect that public transport fulfil their needs in terms of quality efficiency and availability. To be attractive at these levels public transports have to be accessible to mobility impaired citizens, senior citizens and children. They also need to be frequent, quick, reliable, comfortable, flexible and low cost (European Commission, 2007).

There are several measures that can be applied to enhance public transport performance. These measures include infrastructure changes, vehicle changes, better information systems and traffic schemes that prioritize public transport.

## **2.4. *Multimodal Systems***

Multimodal systems are usually an efficient way to promote the use of sustainable transport modes as they can combine and compliment themselves to achieve a reliable and competitive transport alternative for people and goods. The combination of different transport modes in order to offer the best global connections is therefore fundamental in the development of strategies that can reverse continuous tendency of private vehicle use. The European Commission (2003) states that each transport mode has its advantages and low points in terms of capacity, flexibility, energy consumption, safety and environmental performance. Therefore to maximize the benefits of each one it is important that they are combined and framed in a transport chain that is globally more efficient, cost worthy and sustainable. With this perspective in mind the solution for most of transport problems relies on an integrated approach and use of the best transport modes according to local constraints. Therefore non traditional solutions such as park & ride, kiss & ride and bike & ride must be used to ensure greater efficiency and sustainability to the system. As usual adaptation to local characteristics in terms of infrastructure and demand is of utmost importance.



## 3. University Mobility

### 3.1. Common Issues

A university campus normally brings together groups from different areas, whether to work, study, live, representing different habits and attitudes sharing a common space. The campuses are major centres of home-work/university-home travellers, where many are marked by the strong dependence on individual transport often justified by the inefficiency of the public transport system and the lack of alternative modes that can help contribute to the amendment of that situation (Fiadeiro, 2008). This worsens in much the provision of substantial areas for parking and sometimes even invading social areas. This is common to several campuses and according to Fiadeiro (2008) can lead to the following situation: *"in various negative impacts to the academic community and society in general, highlighting up disturbances in the classrooms, adulteration of space and visual pollution associated with the vehicles parked so disorderly, loss of green space and quality of social life, as well as the implications on the health of students and other users and environment"*.

Given this, it is important to apply innovative approaches and policies, particularly in terms of transport and to counter the tendency and common practices of extensive private car use and accept the change of paradigm of the new mobility. It is urgent to reverse situations such as: the provision of high levels of parking, roads with cross sections that allow high-speed driving, returning to pedestrian safety and convenience, while we also need to focus on the development of a public transport network that is compatible with the expected demand (schedules, routes and comfort of vehicles). Therefore bike lanes and pedestrian networks should be built around the campus to promote cycling and walking. Another setback that has to be overcome is the common mentality that considers the car as an element of social status. This usually acts as a resistance to change installed behaviours (Fiadeiro, 2008; Lehmbruck, et al, 2007).

## **3.2. Basic Principles**

Excessive private car use in urban areas results in adverse consequences to noise levels, air pollution, safety and ability to operate public transport.

Global climate changes are actually one of the greatest challenges of the world today. Private cars are one of the highest CO<sub>2</sub> emitters in terms of passenger transported and therefore having a high responsibility in the fossil fuel consumption. As a result there is an urgent need to encourage a reduction in private vehicles. Consequently effective alternatives should be made available. This will also bring positive changes to the quality of urban space and helps other environmentally sustainable transport modes to succeed.

As a result mobility policies that endorse sustainable transport modes such as pedestrians, cyclists and public transport will have a positive impact not only on greenhouse gas emissions but will also enhance the quality of urban areas (European Commission, 2000; Albatroz Group, 2005; Dry and Ribeiro, 2003).

Therefore the basic principles that can be used to promote sustainable mobility habits are the development of well defined strategies that encourage the use of cycling, walking, the use of public transport, reduction of private car use; promoting and supporting the development and operation of multimodal solutions, car-sharing or car-pooling systems (European Commission, 2007; Fiadeiro, 2008; Seco, 2004; Dry and Ribeiro, 2003).

## **3.3. Mobility Management Programs**

In this context mobility management programs aim at finding strategies and technologies that assure mobility for people and goods despite facing growing demands and also using environmentally sustainable transport modes.

Since the need for mobility varies according to the characteristics and specific local conditions, the goals, policies and strategies should be developed according to local constraints and characteristics although based on three fundamental principles, namely: *organisation, promotion and information* (Castro, 2006; Parra, 2006; Parra and Portugal, 2006th and 2006b; Pereira et al, 2002; VTPI @, 2008).

As examples of such programs we can mention the United States the Programme Management Search of Transports (Transportation Demand Management - TDM) that begun in the 70's and the European Union programme management Mobility (Mobility Management - MM) from the 90's. Both programs had similar main goals that were the promotion of alternatives to private car use (Parra, 2006) such as promotion of information services based on communication, coordination, organization and marketing; ensuring management of daily needs for mobility, focusing on its rationalisation; promoting the provision of information services and promoting partnerships with qualified persons in the transport research field (Fiadeiro, 2008).

Among the strategies set out by the TDM are the following (Ferreira, 2002; Fiadeiro, 2008; Parra, 2006):

- Incentives for the use of public transport (lower fares, better schedules, etc.);
- Incentives for a better use of private cars. This can be accomplished by encouraging people to share them through car-pooling, car-sharing, etc.) or to opting for alternative energies;
- Increase the quality of the pedestrian and bicycle infrastructure;
- Benefits for vehicles with high occupancy rate (dedicated lanes, bus lane sharing, parking facilities, etc.).
- Changes in working hours in order to dilute the effects of peak-peak.

One the other hand MM is focused mainly on "soft" measures such as through training, education, awareness and information and strategies defined as (Castro, 2006; Ferreira, 2002; Fiadeiro, 2008; MOST @, 2000; Parra, 2006):

- Establishment of operational centers to provide information regarding schedules and public transport fares, shared organizer travel, traffic conditions and parking reservations;
- Educational and awareness campaigns concerning the importance of modal shift towards environmentally sustainable transport modes;
- Marketing campaigns to persuade behaviour changes;
- Promotion of institutional partnerships.

Thus mobility management emerges essentially as a promotion strategy aimed at the use of environmentally sustainable transport habits and which as a result enhance the quality of urban areas while reducing the dependency on finite energy sources. It therefore involves behavioural changes encouraging the use of sustainable transport.

The principles and mobility strategies applied in university campuses depend to a great extent on their characteristics and specific mobility patterns. Logically they should promote sustainable habits. The vast majority of these strategies focus on parking management systems, car sharing, carpooling, park & ride schemes, incentives for public transport use, better information systems through the use of ITS (Intelligent Transportation Systems) technology and promote enhanced pedestrian and cycling infrastructure (ANUSA @, 2007; Balsas, 2003; Castro, 2006; GTPUR @, 2000; Manners, 2001; Parra, 2006; Poinsette and Toor, 1999; Toor, 2003; ULSF @, 2008; VTPI @, 2008).

In resume the implementation process should define objectives and targets and as a consequence it must be kept under surveillance so that adjustments can be made to improve results. To maximize habit change possibilities attractive alternatives that can substitute the use of individual transport should be provided. Stakeholders involvement is critical in the promotion of strong marketing campaigns for general dissemination and promotion of the local plan.





## 4. European Best Practices

In this chapter some examples of good practices concerning the mobility management of university campus or whole cities with a significant percentage of students are presented. As explained in the previously most of these plans and practices are aimed at enhancing the general quality of urban areas in terms of mobility through the use of several strategies and initiatives adapted and inspired by local characteristics and mobility needs. This vast collection of European examples can be useful in inspiring new projects or methodologies that can be translated or adapted with success to other locations improving the environmental sustainability of mobility patterns and as a result the general quality of the urban area.

The description and presentation of the projects includes the details, the key players and the results achieved.

### *Example 1*

<b>Name</b>	<b>Mobility Management in the university system of Milan</b>
<b>City</b>	Milan
<b>Country</b>	Italy
<b>Implementation date</b>	2005
<b>Main goals</b>	To elaborate and to implement mobility action plans in the various university sites in order to control and to optimize the flows; to develop an important methodology to the approach to the mobility management problems; to organize monitoring plans.
<b>Brief description</b>	The “Mobility Management in the university system of Milan” project intends to identify, to define and to test intervention policies to reduce environmental impacts joined to the mobility of working and students in the university of Milan. The project intends to use the ability and the approaches of the various universities to confront ordinary problems joined to sustainable mobility of the general population and students. In this way the project intends to elaborate and to implement mobility action plans joined to the different university sites (plans of home-work trips) in order to control and to optimize the flows, develop an approach methodology to mobility management problems and implement monitoring plans to control the effects of the measures realized.
<b>Participants/</b>	<ul style="list-style-type: none"><li>• Mobility manager to the province of Milan;</li></ul>

<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>• Mobility manager office to the Mobility and Environment Agency;</li> <li>• Euromobility;</li> <li>• Mobility managers of the University of Milan.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Plan of home-work trips;</li> <li>• Promotional tools;</li> <li>• Meetings;</li> <li>• Mailing list;</li> <li>• Mobility manager news in the web site of university;</li> <li>• Final report.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Facilitation to the local public transport;</li> <li>• Promotion of use of bike;</li> <li>• Promotion of bike-sharing;</li> <li>• Bike-works;</li> <li>• Studies to organize car-pooling service.</li> </ul>
<b>Important link</b>	<a href="http://www.unimi.it/personale/mobility/1237.htm">www.unimi.it/personale/mobility/1237.htm</a>

*Example 2*

<b>Name</b>	<b>Mobility management measures and services in the University of Catalonia (UPC)</b>
<b>City</b>	Barcelona
<b>Country</b>	Spain
<b>Implementation date</b>	2000
<b>Main goals</b>	To improve the access of the Catalonia University through mobility management measures that encourage people to use sustainable transport modes.
<b>Brief description</b>	
<p>The Polytechnic University of Catalonia (UPC) in Barcelona generates a great amount of traffic, especially private car traffic. Therefore the investigation of the University area accessibility was very useful and interesting for the whole city, especially when taking into account all problems during peak hours. The MOST project facilitated the coordination of mobility management plans in the city of Barcelona and at the university campus and introduced a number of mobility management measures and services to increase the number of sustainable transport modes at the site.</p> <p>The Polytechnic University of Catalonia has developed a mobility plan, introducing a car pool matching service. It should initiate a reduction of the environmental impact of car-based travel. So, under the direction of a Mobility Manager, the UPC has developed a mobility plan aimed at reducing the environmental impact of car-based travel.</p> <p>When the MOST project finished, in September 2002 a new agreement was signed between the City Council and UPC to introduce a complete mobility package for students, teachers and other UPC staff, enabling users to plan their trip to the UPC with any transport mode (public transport, walking, cycling...).</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Catalonia (UPC);</li> <li>• City Council of Barcelona.</li> </ul>

<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Survey of home-university trips;</li> <li>• Information campaign;</li> <li>• Leaflet to promote the use of public transport;</li> <li>• Sensibility campaign about the environmental impacts of traffic among the UPC students;</li> <li>• Web site.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• New transport organisation and coordination;</li> <li>• Car parking restrictions;</li> <li>• Car-pooling;</li> <li>• Free bike to connect a campus to the station.</li> </ul>
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=18&amp;langl=en">www.eltis.org/study_sheet.phtml?study_id=18&amp;langl=en</a> <a href="http://www.mo.st/index_msie.html">www.mo.st/index_msie.html</a>

### Example 3

<b>Name</b>	<b>Sustainable Mobility in the University “Roma Tre”</b>
<b>City</b>	Rome
<b>Country</b>	Italy
<b>Implementation date</b>	2001
<b>Main goals</b>	To reduce the use of private car in favour of collective transport modes; to offer solutions and sustainable ways to move such as collective public transport; implementation of low environmental impact means such as bicycles or electric motorcycles; to study the application possibility of car-pooling and car-sharing within the university.
<b>Brief description</b>	
<p>Sustainable Mobility is the fostering and implementation of measures, tools and initiatives aimed at reducing the volume of private traffic through encouraging collective transport. There are many solutions and innovative tools capable of considerably reducing the tendency to use private means of transport by fostering "sustainable" solutions such as: public transport, car-pooling, car-sharing, alternative powered vehicles (electric, hybrid, etc.). For the coordination of initiatives aimed at improving the mobility of staff (and reducing the impact that the University has on the city in terms of traffic), Roma Tre has appointed its own Mobility Manager.</p> <p>Roma Tre, with the collaboration of Municipality of Rome, realizing a plan of Sustainable Mobility has introduced important services such as unibus, bike sharing, electric motorcycles.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University “Roma Tre”;</li> <li>• Municipality of Rome.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Plan of home-work trips;</li> <li>• Plans of sustainable mobility in the university areas (2002-2005, 2006-2009);</li> <li>• Promotional tools;</li> <li>• Web site.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Business bus “Unibus” (n° 4 business bus for 40 travels everyday);</li> <li>• Facilitation Metrebus (a discount of 30.99 euro on the new season)</li> </ul>

	<p>tickets and a discount of 7.55 euro on the subscription renewal);</p> <ul style="list-style-type: none"> <li>• Bike sharing with 60 bicycle collected at automated pick-up points;</li> <li>• 12 electric motorcycle for the staff.</li> </ul>
<b>Important link</b>	<p><a href="http://host.uniroma3.it/uffici/mobilitymanager/index.php">host.uniroma3.it/uffici/mobilitymanager/index.php</a>  <a href="http://www.euromobility.org/documenti/strumenti/Volume_buone%20pratiche.pdf">www.euromobility.org/documenti/strumenti/Volume_buone%20pratiche.pdf</a></p>

*Example 4*

<b>Name</b>	<b>Mobility Management in Karlstad University</b>
<b>City</b>	Karlstad
<b>Country</b>	Sweden
<b>Implementation date</b>	2000
<b>Main goals</b>	To create better conditions for students, teachers and other university staff in order enable them to change their travel behaviours, being independent of private cars.
<b>Brief description</b>	<p>Karlstad university in Sweden had a great amount of students, teachers and other staff commuting by car. The EU-project MOST within the 5th framework programme for research and development was used as a platform for developing new approaches to tackle the commuting problems.</p> <p>The measures and services have been successful, as they established a platform for developing further measures and continued discussions with the different clients.</p> <p>The Most project has created a good platform for continued discussions and cooperation among involved partners (transport advisory service, the PT companies and the university), after MOST finished, many discussions started concerning the possibility of several extended services. So many activities have been implemented, such as yearly tickets for staff, paid monthly through their salaries, new bus station with real time information, B+R facilities and a new train branch line.</p>
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Karlstad;</li> <li>• Municipality transport advisory service;</li> <li>• Public transport companies.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Pre-trip information package with a free ticket for all new students;</li> <li>• Personal travel advice to students and staff: given by local and regional bus companies, the railway company and the municipal transport advisory service, semestrially at a temporary mobility office;</li> <li>• Web site;</li> <li>• Annual “bike to work” campaign.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Reconstruction of a bus station;</li> <li>• Development of new train line and stop with a bus connection.</li> </ul>
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=32&amp;lang1=en">www.eltis.org/study_sheet.phtml?study_id=32&amp;lang1=en</a>

	<a href="http://www.mo.st/index_msie.html">www.mo.st/index_msie.html</a> <a href="http://www.kau.se">www.kau.se</a>
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### Example 5

<b>Name</b>	<b>Promotion and anchoring of car-pooling at Odense University Hospital</b>
<b>City</b>	Odense
<b>Country</b>	Denmark
<b>Implementation date</b>	Not found
<b>Main goals</b>	To foster the dissemination of car-pooling at Odense University Hospital (OUH) and to work out a manual for the promotion of car-pooling within companies.
<b>Brief description</b>	
<p>The project is carried out at Odense University Hospital (OUH), the largest hospital in Denmark including more than 8.000 employees. The promotion of car-pooling is taking place within a specific context, in which the potential users of the car-pool programme are colleagues. Using the workplace as a starting point for the project a number of expected barriers for car-pooling is taken care of, likewise it is possible to create a common identity among the car-poolers.</p> <p>The aim of the project is partly to further the dissemination of car-pooling at OUH, partly to gather and evaluate experiences from the specific project, in order to the experiences can be organised into a manual directed at other companies wishing to promote car-pooling among its employees.</p> <p>A number of tools to support the objectives of the project is brought forward, as well as a number of measures presuming to have a positive effect on behaviour in relation to promoting car-pooling at OUH likewise is brought forward.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• Odense University Hospital</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Mapping of potential barriers for car-pooling at OUH;</li> <li>• Matching service;</li> <li>• Home-page - either via the OUH intranet or via a web solution;</li> <li>• Marketing campaigns;</li> <li>• Manual for the promotion of car-pooling within companies.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Car-pooling;</li> <li>• Reserved parking.</li> </ul>
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=226&amp;lang1=en">www.eltis.org/study_sheet.phtml?study_id=226&amp;lang1=en</a>

### Example 6

<b>Name</b>	<b>Mobility Management in the university system of Verona</b>
<b>City</b>	Verona
<b>Country</b>	Italy
<b>Implementation date</b>	Not found

<b>Main goals</b>	The aim of the activity is that of involving both employees and students of the university in the field of the sustainable mobility, as much as possible, through a series of initiatives useful to make people know the figure of the mobility manager and to make possible a collaboration with the local government as for the activities to improve mobility.
<b>Brief description</b>	
The activity of the University of Verona, for what concerns the field of the sustainable mobility, is based on an important popular campaign which could awaken both students and workers and spread the culture of the eco – mobility through the scientific research and the diffusion throughout the territory. The university is also very active as for the many actions to realize the bicycle parking lot and the creation of a heterogeneous group (teachers, students, and mobility manager) devoted to mobility and that has approved the Home – Work Transfer Plan too.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Verona;</li> <li>• Municipal district of Verona.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Plan of home-work trips;</li> <li>• Promotional tools;</li> <li>• Creation of a special link in the University home page;</li> <li>• Informative campaign.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Starting of particular transport tickets for about 100 employees;</li> <li>• Making of bicycle parking lots, closet and protected by cameras and access passes;</li> <li>• Starting of a car-pooling service;</li> <li>• Growing of the bicycle use;</li> <li>• Starting of phone working for those employees living very far from the university seat.</li> </ul>
<b>Important link</b>	<a href="http://www.univr.it/mobilita">www.univr.it/mobilita</a>

*Example 7*

<b>Name</b>	<b>Mobility Management in the university system of Pisa</b>
<b>City</b>	Pisa
<b>Country</b>	Italy
<b>Implementation date</b>	Not found
<b>Main goals</b>	The aim of the Mobility Manager Office of the University of Pisa is to promote the use of eco sustainable transport for the home – work, home – study transfers, and in particular to encourage the use of the public transport instead of the private one.
<b>Brief description</b>	
The mobility management activity has started with the acquisition of information related to the needs and transfer habits of the employees and the academic staff of the university to develop its own improvement research, concentrating on the analysis of the home – work transfers. To make the mobility more sustainable, the university has made settlements with the public transport societies to have discounts on passes, has promoted agreements for the ecosustainable transport (car pooling, bicycles etc.), has spread information on traffic and transport.	
<b>Participants/</b>	<ul style="list-style-type: none"> <li>• University of Pisa;</li> </ul>

<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>• Municipal district of Pisa;</li> <li>• Transport Pisana company;</li> <li>• Upper-school S. Anna of Pisa;</li> <li>• Normal upper-school of Pisa;</li> <li>• Regional company for the Study.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Plan of home-work trips;</li> <li>• Promotional tools;</li> <li>• University report;</li> <li>• Mobility manager news in the web site of university.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Facilitation to the local public transport and discounts on the passes for employees;</li> <li>• Private parking lots passes;</li> <li>• Starting of a service of car-pooling;</li> <li>• Growing use of bicycles.</li> </ul>
<b>Important link</b>	<a href="http://www.unipi.it">www.unipi.it</a>

### *Example 8*

<b>Name</b>	<b>MOMACT - Mobility Management in the university system of Catania</b>
<b>City</b>	Catania
<b>Country</b>	Italy
<b>Implementation date</b>	Not found
<b>Main goals</b>	The aim is to contribute, in collaboration with the stakeholders and the activities of the area of reference, to the sustainable development of the urban area, the university one in particular, through policies for the reduction of the mobility effects that is congestion, fuel consumption, pollution, accidents).
<b>Brief description</b>	
The project aims to the adoption, from the university management, of appropriate interventions to make the connections among the seats quicker and easier, through the realization of a suitable mobility plan. Moreover, another aim is that of improving the living conditions inside the university facilities allowing, for example, to walk from a seat to another or to find a safe parking for the bicycles and also to find new places where to park the students' motorcycles. Through the Mobility Management Office, the University of Catania has the function of planning and coordinate possible, practicable interventions as: new bus connections, the making of innovative strategies of flexible mobility (such as car pooling and car sharing) of controlled entrances and special parking charges. The main instrument which is going to be used to come to this point is the Piano degli spostamenti casa – università <sup>1</sup> (PSCU), made after a detailed analysis going on at the moment.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Catania.</li> <li>• Municipal district of Catania;</li> </ul>

<sup>1</sup> Home – university transfer plan.

	<ul style="list-style-type: none"> <li>• Province of Catania.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Plan of home-university trips;</li> <li>• Promotional tools;</li> <li>• University report;</li> <li>• Mobility manager news in the web site of university;</li> <li>• Final report.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Facilitation to the local public transport;</li> <li>• Promotion of bike-sharing;</li> <li>• Promotion of the on foot transfer among the university seats;</li> <li>• Increasing and improvement of the bicycle and motorcycle parking lots for students;</li> <li>• Studies to organize car - pooling service;</li> <li>• New bus connections.</li> </ul>
<b>Important link</b>	

*Example 9*

<b>Name</b>	<b>Mobility Management in the university system of Camerino - UNICAM MOBILITA'</b>
<b>City</b>	Camerino
<b>Country</b>	Italy
<b>Implementation date</b>	2004
<b>Main goals</b>	The UNICAM MOBILITY project, subscribed by Cotram and University of Camerino with the participation of the municipality of Camerino, have as objective that of facilitate the mobility of university students in order to facilitate the frequency of the lessons, the participation to the didactic, cultural, sporting activity and the adhesion to the town and university life.
<b>Brief description</b>	
The main aim of the project is reduce the use of the private mean in favour of the public transport in order to reduce the town traffic, in which the rush hours usually coincide with the start or the end of the university lessons. To reach this scope an important communication activity has been developed. The university of Camerino has three centres, the city of Camerino, Ascoli Piceno and Matelica. For this motive the public transports in these cities (START and SAM) have been involved, in order to render the project more homogeneous.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Camerino;</li> <li>• Cotram S.p.A.;</li> <li>• Municipality of Camerino;</li> <li>• START;</li> <li>• SAM.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Creation of a dedicate web section in the web site of Cotram S.p.A. of public transport and a link in the university web site;</li> <li>• Promotional and communication campaign (leaflet, article on the local newspapers, promotion through cultural and social activities, etc.);</li> </ul>



	<ul style="list-style-type: none"> <li>• Activation of free local transports.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Facilitation to the use of the urban service in the different cities;</li> <li>• Free monthly ticket, for the students regularly enrolled, particular pass for parking.</li> </ul>
<b>Important link</b>	<a href="http://www.contram.it">www.contram.it</a>

### Example 10

<b>Name</b>	<b>Mobility Management in the university system of Bologna</b>
<b>City</b>	Bologna
<b>Country</b>	Italy
<b>Implementation date</b>	Not found
<b>Main goals</b>	<p>The Mobility Manager Office of the University of Bologna has as main goals that of singling out and carrying out strategies for the accessibility of the university sites both for students and workers.</p> <p>It cooperates with the local authorities urban mobility aspects.</p>
<b>Brief description</b>	
<p>The activities are related to different fields of interest as the analysis of the aspects of the mobility planning related to the new university sites and the study of the conditions of accessibility to each facility.</p> <p>It also cooperates with the research work of the “Gruppo fisica dei sistemi complessi” (Fisica della Città – Department of Physics) as for the study of the transfer dynamics in the university area, through predictable analysis, in particular.</p> <p>The activities provides the management of the pass at controlled prices for workers, the carrying out of specific agreements to encourage ecosustainable transportation means, the sharing of information regarding traffic and transport, the participation and settlement of initiatives for the improvement of the accessibility to the urban transport system.</p>	
<b>Participants/Stakeholders</b>	<ul style="list-style-type: none"> <li>• University of Bologna;</li> <li>• Municipal district of Bologna;</li> <li>• Gruppo fisica dei sistemi complessi (Fisica della Città – Department of Physics).</li> </ul>
<b>Main deliverables</b>	<ul style="list-style-type: none"> <li>• Plan of home-university trips;</li> <li>• Promotional tools;</li> <li>• Fixed pass price for the public transport;</li> <li>• Newsletters;</li> <li>• Setting up of an informative site in the university home page;</li> <li>• Mobility manager news in the web site of university;</li> <li>• Settlements for an easier use of the parking area next to the university.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Facilitation to the local public transport;</li> <li>• Promotion of car-pooling;</li> <li>• Promotion of car-sharing;</li> <li>• Promoting the use of bicycles.</li> </ul>
<b>Important link</b>	<a href="http://www.unibo.it/Portale/Ateneo/Amministrazione+centrale/Mobility/default.ht">www.unibo.it/Portale/Ateneo/Amministrazione+centrale/Mobility/default.ht</a>

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*Example 11*

<b>Name</b>	<b>Access to Addenbrooke's - a travel plan</b>
<b>City</b>	Cambridge
<b>Country</b>	United Kingdom
<b>Implementation date</b>	1997
<b>Main goals</b>	Cambridge University Hospitals NHS Foundation Trust takes corporate social responsibility very seriously. The Trust generates around 16,000 trips to and from the site every day. In 1997 the 'Access to Addenbrooke's' travel plan was launched. The plan aims to reduce traffic emissions, increase the number of healthy travel choices available to staff, patients and visitors, and to reduce overall traffic congestion in and around the hospital campus.
<b>Brief description</b>	
<p>The Cambridge University Hospitals NHS Foundation Trust's activities are centred on the Addenbrooke's Hospital campus on the southern fringe of Cambridge, around three miles from the city centre. In 2003/04 the Trust treated 385,000 outpatients, and 62,000 inpatients. Around 16,000 return trips are made to and from the campus each day. The Hospital is also a teaching hospital and shares the campus with the Clinical School of the University of Cambridge. There is also a large research presence on the campus, including University, NHS, Medical Research Council (MRC) and some charitable and commercial research institutions. In total, around 9,000 staff work on the campus.</p> <p>The Trust manages the traffic and car parking arrangements across the whole of the 67-acre site. All of this activity makes the Addenbrooke's campus one of the largest traffic generators within Cambridgeshire and creates significant demand for car parking spaces.</p> <p>Up until the mid-1990s, the Trust attempted to construct additional parking capacity to meet the demands from staff, patients and visitors. At around this time, thought was being given nationally, and particularly locally, to traffic reduction, and the Trust embarked on a range of initiatives to encourage staff to travel to work by modes other than driving to work. In 1997 these initiatives were drawn together into a comprehensive travel plan. The main feature of which was to increase and promote the various access options for people travelling to Addenbrooke's – and so the travel plan was named Access to Addenbrooke's.</p> <p>The key objectives of the Access to Addenbrooke's travel plan are to:</p> <ul style="list-style-type: none"> <li>• Improve travel choices making them safe and accessible to all</li> <li>• Reduce demand for car parking so to reduce traffic congestion on the campus and on the surrounding road network</li> <li>• Encourage healthy transport options</li> <li>• Reduce the environmental impact arising from the travel needs of the Addenbrooke's campus.</li> </ul> <p>The Access to Addenbrooke's travel plan is often referred to as the benchmark for other organisations to achieve. We believe that we are the only hospital to have an on-site four bay</p>	

<p>bus station (opened in 2001) with over 50 buses an hour currently serving the campus. In order to have achieved this we have worked very closely with the local council and Stagecoach in Cambridge to influence bus service routes. We are also the first Trust to have an NHS commissioned bus service, known as the H1 shuttle bus.</p>	
<p><b>Participants/ Stakeholders</b></p>	<ul style="list-style-type: none"> <li>• Cambridge University Hospitals NHS Foundation Trust;</li> <li>• Addenbrooke's Hospital;</li> <li>• Cambridge Local Authorities;</li> <li>• Local public transport operator – Stagecoach in Cambridge.</li> </ul>
<p><b>Main deliverables/tasks</b></p>	<p>The travel plan includes:</p> <ul style="list-style-type: none"> <li>• On-site four bay bus station (opened in 2001) with over 50 buses an hour currently serving the campus;</li> <li>• Interest-free loans for season ticket rail passengers;</li> <li>• Salary sacrifice for cycle purchase;</li> <li>• Secure on-site cycle parking racks, shower facilities, dedicated cycle lanes and pedestrian and traffic calming measures to reduce vehicle speeds.</li> <li>• For people who have to bring their car onto the campus there is a Liftshare programme to encourage car sharing and provide priority parking spaces for those who do car share.</li> </ul>
<p><b>Main results</b></p>	<p>During a time span of ten years (1993-2003) the car use was reduced from 74% to 42% whereas the amount of people using the bus rose from 4% to 23%, the number of cyclist increased by 8% (from 17% to 25%) and in 2003 3% more people walked to the site than in the year 1993. It was noticeable that the bus use increased especially after the bus system had been improved.</p> <p>Being the target to reduce the number of staff driving to work in single occupancy vehicles by 1% each year from an initial level of 50% in 2000, it has been achieved a 19% reduction in six years.</p>
<p><b>Important link</b></p>	<p><a href="http://www.eltis.org/study_sheet.phtml?study_id=1960&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=1960&amp;lang1=en</a>  <a href="http://www.eltis.org/study_sheet.phtml?study_id=1477&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=1477&amp;lang1=en</a></p>

*Example 12*

<p><b>Name</b></p>	<p><b>Constance, Studiticket and other provisions for students</b></p>
<p><b>City</b></p>	<p>Constance</p>
<p><b>Country</b></p>	<p>Germany</p>
<p><b>Implementation date</b></p>	<p>Not found</p>
<p><b>Main goals</b></p>	<p>Reducing to a significant degree the share of the displacements carried out in the car for travel between the city and university;  Increasing the share of displacements carried out with bicycle or in public transport.</p>
<p><b>Brief description</b></p>	
<p>The town of Constancy, Germany counts 80.000 inhabitants in an area of low density of habitat,</p>	

which is served mainly by railway services and road and of navigation on the lake. The public transport is ensured by various owners of which the Municipal Services of Constancy, which exploit 16 lines of bus with 56 vehicles on a network of 142 km. For 2 years, a policy of management integrated of transport has been installation, from the point of view of safeguard of the environment. The project intends to reorganize public transport, by starting again the role of the owner in particular in order to improve the offer of transport between the downtown area and the university.

The new policy of displacement was declined according to 3 principal forms:

- Studiticket which is a season ticket reserved to the students, which allows them to use all the lines of bus in the urban zone of Constancy and the network of coaches, as well as the network of the urban transport of the Swiss city close to Kreuzlingen, organized by the Municipal Services of Constancy. The zone of validity also covers the suburban trains between Constance and Engen, serving several stations downtown and the service of vats towards Meersburg;
- A service station for bicycles which offers a new free service to students to allow them to monitor and repair of their bicycles;
- The management of car parks for the cars - parking fees are introduced for students and visitors (personnel pay no fee).

<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• Municipal Services of Constancy;</li> <li>• General Association of the Students (AstA);</li> <li>• University of Bade-Württemberg;</li> <li>• Land of Bade-Württemberg.</li> </ul>
<b>Main deliverables</b>	<ul style="list-style-type: none"> <li>• Studiticket;</li> <li>• A service station for bicycles;</li> <li>• parking fees for students and visitors (personnel pay no fee).</li> </ul>
<b>Main results</b>	<p>The studiticket proved to be a success with more than 5.000 charts sold during the six-month period of winter and more than 4.000 during the six-month period of summer. The increase in the sales is all the more remarkable as the number of students fell by 25% during 4 last years. The studies show that about half of the students use public transport with Studiticket. One noted a reduction of 35% of the ways in the car bound for the university while the pedestrians and the cyclists consider Studicket useful as solution of replacement in the event of bad weather.</p>
<b>Important link</b>	<p><a href="http://www.eltis.org/study_sheet.phtml?study_id=608&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=608&amp;lang1=en</a>  <a href="http://www.uitp.com">www.uitp.com</a></p>

### Example 13

<b>Name</b>	<b>Technical University Graz - Motivate colleagues to leave their car at home</b>
<b>City</b>	Graz
<b>Country</b>	Austria
<b>Implementation date</b>	2006
<b>Main goals</b>	In the summer of 2006 the vice principal of the Technical University in Graz

	Johann Theurl and project manager Gerhard Kelz started an initiative to prevent their colleagues from going to work by car. Instead they should use public transport, bicycles or they should simply walk to work. Thereby the university wants to act as a role model to reduce CO <sub>2</sub> emission.
<b>Brief description</b>	
Especially in winter particulate matter in Graz causes huge environmental problems. Small dust particles caused by car traffic derogate the quality of life of the citizens and the carbon dioxide emissions harm the atmosphere. A study showed that half of the employees of the Technical University that get to work by car live very near to their working place. Gerhard Kelz stated that this causes useless harm to the environment and decided to do something against it. First of all several measures such as 300 new bicycle parking racks were taken to motivate people to leave their car at home. The university also pays half the prize of the annual tickets for public transport. Those who live less than 1,5 kilometres from the university are encouraged to leave their car at home because they are not allowed to park their car at one of universities parking lots anymore. Additionally the University introduced low parking fees. The whole project costs the university 500.000 Euros but parts of it will be paid by the Federal Ministry of Environment. The main part is cross-sectoral financed by the parking fees.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• Technical University in Graz;</li> <li>• Austrian Federal Ministry of Environment.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• 300 new bicycle parking racks;</li> <li>• Half the prize of the annual tickets for public transport;</li> <li>• Low parking fees.</li> </ul>
<b>Main results</b>	In the time span of six month the number of people getting to work by car decreased by one third and the number of people allowed to park at the campus declined from 1.360 to 900. All in all the employees of the Technical University save 250 tons of carbon dioxide per year.
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=1318&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=1318&amp;lang1=en</a> <a href="#">Website TU Graz</a> (link in German)

#### *Example 14*

<b>Name</b>	<b>Bike service for students “Velo”</b>
<b>City</b>	Leuven
<b>Country</b>	Belgium
<b>Implementation date</b>	1994
<b>Main goals</b>	To promote the bicycle as an ecological means of transport in the city by recycling, renting and repairing bikes for students in the City of Leuven.
<b>Brief description</b>	
In order to encourage bicycle use amongst students in the City of Leuven, the non-profit organisation ‘Velo’ was established. Thanks to the support of the City of Leuven, the Catholic University of Leuven, the Leuven Student Organisations and the Flemish Christian Employees Association this service can be provided for Velo offers a bike rental and repair service for students and is organised as a training and employment project for young people.	

<p>At Velo, students in the city of Leuven can rent a safe, fully equipped and registered second-hand bike with a solid lock. Bikes can be rented for a month or up to one year at cheap rates. A 12 month subscription costs up to 35 euro.</p> <p>Further, students can come to repair their own bikes at the bike repair shop or have their bikes repaired for a small price.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• City of Leuven</li> <li>• Catholic University of Leuven</li> <li>• Leuven Student Organisations</li> <li>• Flemish Christian Employees Association</li> </ul>
<b>Main deliverables</b>	To establish a non-profit organisation ‘Velo’ to provide a bike rental and repair service for students.
<b>Main results</b>	In 2007, 5 165 bikes were rented out and 5 544 times a “Velo” bike got repaired.
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=1879&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=1879&amp;lang1=en</a> <a href="http://www.kuleuven.be/velo/_eng/index.htm">http://www.kuleuven.be/velo/_eng/index.htm</a>

### Example 15

<b>Name</b>	<b>Bus Rider Project</b>
<b>City</b>	Lund
<b>Country</b>	Sweden
<b>Implementation date</b>	2000
<b>Main goals</b>	The main goal of this project is to convert half of a group of regular car commuters (72 persons in total) to go to work by public transport.
<b>Brief description</b>	
<p>Lund is a medieval university city in the south of Sweden with a population of about 75.000 inhabitants. A number of mobility measures have been put in place over recent years in an effort to reduce traffic in the city, such as pedestrian zones, bicycle lanes etc, but despite this CO<sub>2</sub> emissions continue to increase.’</p> <p>LundaMaTs is a programme of initiatives for Lund with the aim of developing an integrated, environmentally friendly, transportation system, introduced in 1997. One of the initiatives of LundaMaTs is the Bus Rider project which aimed to convert half of a group of regular commuters to go by public transport after a one or two month trial.</p> <p>The Bus Rider Project was carried out by Lund's Mobility Centre and was tested in Soedra Sandby, a village near Lund which functions as a kind of laboratory as to what extent it is possible to change travel behaviour. Some 72 former car commuters signed an agreement to go to work by public transport for a period of two months and their travel behaviour was followed up a year later.</p> <p>The goal of the Bus Rider project to convert half of a group of regular car commuters to travel by public transport following a 2 month trial, was almost achieved. In the three groups (72 persons in total) the use of public transport at the start of the project was 0%.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• City of Lund - Lund's Mobility Centre;</li> <li>• Local public transport operator Stadstrafiken;</li> <li>• Regional public transport operator Skanetrafixen.</li> </ul>
<b>Main</b>	Reducing CO <sub>2</sub> emissions by converting to half a group of regular car

<b>deliverables/tasks</b>	commuters to go to work by public transport, after a 2 month trial.
<b>Main results</b>	<ul style="list-style-type: none"> <li>• During the project 95% of the participants travelled by public transport at least 3 days a week and one year later 40% were still using public transport at this level;</li> <li>• During the period of the project the bus riders reduced the total distance travelled by car by 82,000 km, and by more than 200,000 km during the following year;</li> <li>• In the area where the bus riders of one of the groups lived, around 65% of the inhabitants were aware of the project and in total almost 30% of all Lund citizens know about it;</li> <li>• The Bus Rider project will become part of SMART, an information and awareness campaign aimed at employees of numerous companies and organizations in Lund.</li> </ul>
<b>Important link</b>	<a href="http://www.eltis.org/study_sheet.phtml?study_id=1450&amp;lang1=en">http://www.eltis.org/study_sheet.phtml?study_id=1450&amp;lang1=en</a> <a href="http://www.smile-europe.org/locxpdb/front/show.php?lang=en&amp;lxp_id=97">http://www.smile-europe.org/locxpdb/front/show.php?lang=en&amp;lxp_id=97</a>

### Example 16

<b>Name</b>	<b>Integrated mobility plan for Technical University</b>
<b>City</b>	Krakow
<b>Country</b>	Poland
<b>Implementation date</b>	2007
<b>Main goals</b>	The aim of the measure is to implement an integrated mobility plan for the Krakow University of Technology. One tangible and pioneering outcome of this measure will be the creation of an institutional consultant of mobility who will formulate strategic decisions about mobility initiatives and influence the target groups.
<b>Brief description</b>	
<p>Krakow University of Technology will be responsible for the implementation of a integrated mobility plan for the Krakow University of Technology. Within this measure several research and technological development activities are conducted namely the following:</p> <ul style="list-style-type: none"> <li>• Preparation of the general structure of the mobility plan for the Krakow University of Technology;</li> <li>• An inquiry to Transport system users concerning their behavior related to work trips and their usage of the public transport bus lines;</li> <li>• Development of the concept of better public transport connections between the campuses of Krakow University of Technology;</li> <li>• Development of the technical and organizational concept of the car pooling system;</li> <li>• Development of the technical and organizational concept of the bicycle path between all university campuses;</li> <li>• Development of the new website for mobility information;</li> <li>• Creation of an institutional consultant of mobility.</li> </ul>	

There are some demonstration activities that come with this action including the implementation of all of the mobility plan measures for the Krakow University of Technology.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• Technical University in Krakow</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Institutional consultant of mobility;</li> <li>• A new Internet-based information about bicycle parking, walking initiatives, public transport;</li> <li>• An integrated mobility plan.</li> </ul>
<b>Main results</b>	Among the expected results and targets that can be easily verified are a decrease of 5% of traffic congestion around the campuses of Krakow University of Technology, an increase of 5% in public transport patronage of employees/students and an increase of 15% in bicycle trips. There are additionally some training activities for students and employees involved in the project and for officials from two chosen institutions/companies interested in the measure.
<b>Important link</b>	<a href="http://www.civitas-initiative.org/measure_sheet.phtml?language=en&amp;id=382">http://www.civitas-initiative.org/measure_sheet.phtml?language=en&amp;id=382</a>

*Example 17*

<b>Name</b>	<b>Durham Bicycle Users Group - DBUG</b>
<b>City</b>	Durham
<b>Country</b>	England
<b>Implementation date</b>	2006
<b>Main goals</b>	The objective of Durham University is to make this one of the most environmentally sustainable universities in the UK within the next five years. To achieve this goal some policies are made to create the necessary commitment of every member of the University community. DBUG is one group that exists with the slogan cycling is fun, sociable, healthy and reduces pollution!
<b>Brief description</b>	
<p><b>Durham Bicycle Users Group</b> was set up in 2006 as a forum for cyclists working in Durham City. The main goal is to make it easier to cycle to work and encourage more people to use bikes around the University and also all the members that make part of the that to do so. They try to be closely related with other sustainable programmes that are occurring across the University.</p> <p>They are currently involved in putting together a request for more secure cycle parking across the University in Durham. They also organise events, such as lunch hour bike rides, and the Bike Week event in June.</p> <p>Queen's Campus is keen to promote cycling. Each College has its own secure cycle shed for use by resident students.</p> <p>The University is keen to promote car sharing between staff and students. A Car Share website has been developed to enable staff and students to register sharing opportunities as both drivers and passengers and all the information is shared by email.</p> <p>Students who wish to park a motor vehicle at Queen's Campus Stockton must apply for and be issued with a parking permit. Vehicles must only be parked within the areas designated for parking and no vehicles may be left overnight.</p>	



Several public transport are offered to student community, such as, bus and train with several travel lines.	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>University of Durham.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>To analyse the University's environmental footprint and initiate changes necessary to improve the University's environmental performance;</li> <li>To make all members of the University community aware of their environmental impacts and to encourage them to develop a sustainable approach to their work and lifestyle;</li> <li>To co-operate, where possible, with the wider community, in order to implement environmental action plans from the local community through to the global level.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>Carbon emissions «management;</li> <li>Reduce and management parking space;</li> <li>Reduce pollution and traffic;</li> <li>Promote cycling and car sharing.</li> </ul>
<b>Important link</b>	<a href="http://www.dur.ac.uk/environment/policies/strategic-plan/">http://www.dur.ac.uk/environment/policies/strategic-plan/</a> <a href="http://www.dur.ac.uk/environment/durini/dbug/">http://www.dur.ac.uk/environment/durini/dbug/</a> <a href="http://www.dur.ac.uk/travel/cycling/">http://www.dur.ac.uk/travel/cycling/</a> <a href="http://www.dur.ac.uk/travel/carshare/">http://www.dur.ac.uk/travel/carshare/</a>

### Example 18

<b>Name</b>	<b>University of Limerick, Environmental Committee – Transport Subgroup</b>
<b>City</b>	Limerick
<b>Country</b>	Ireland
<b>Implementation date</b>	2002
<b>Main goals</b>	Influence transportation policies in the region while simultaneously becoming a leader in creative transport solutions.
<b>Brief description</b>	
<p>As a major employer, research centre, and transport nexus, the University of Limerick lies in a powerful position to influence transportation policies in the region. The focus of this group is to seek more environmentally friendly solutions to forms of transport utilised on campus, and getting to and from campus.</p> <p>The subgroup has identified strategies which are most likely to alleviate the ever-increasing transport problem the University is facing:</p> <ul style="list-style-type: none"> <li>Improved reliable public transport would facilitate moving from private to public means of transport.</li> <li>Carpooling would reduce the flow of traffic and the demand for parking places.</li> <li>Bicycle lanes would encourage greater use of bicycles (as would reliable bike parking lots and shower facilities).</li> <li>A safe path between the University and Limerick City would encourage pedestrian traffic.</li> </ul>	
<b>Participants/</b>	<ul style="list-style-type: none"> <li>Limerick Corporation;</li> </ul>

<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>• Limerick Co.;</li> <li>• Council and Bus Éireann;</li> <li>• University of Limerick, Ireland.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Promotional tools;</li> <li>• Creation of a special link in the University home page;</li> <li>• Informative campaign;</li> <li>• Car polling systems with database facilities in a web site.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Improved traffic flow and decreased demand;</li> <li>• Increased use of environmentally friendly transport modes.</li> </ul>
<b>Important link</b>	<a href="http://www.ul.ie/envirocom/Transport_Subgroup.htm">http://www.ul.ie/envirocom/Transport_Subgroup.htm</a> <a href="http://www.ul.ie/envirocom/Carpooling.htm">http://www.ul.ie/envirocom/Carpooling.htm</a>

### Example 19

<b>Name</b>	<b>Projecto BUGA - Bicicleta de Utilização Gratuita de Aveiro</b>
<b>City</b>	Aveiro
<b>Country</b>	Portugal
<b>Implementation date</b>	2000
<b>Main goals</b>	This main goal of the BUGA project is to promote a mobility network based on environmental sustainability, comfort and safety principles. It includes the urban road transport <i>Movebus</i> , the river transport <i>Moveria</i> , the cycling transport <i>MoveBuga</i> and complimentary services such as parking spaces and tourist mobility <i>Movepark</i> which ensures alternatives to private car use. Actually the BUGA project is run by the company <i>Moveaveiro</i> .
<b>Brief description</b>	
<p>Aveiro is a city with 60000 habitants including 13000 students. Percentage wise it is quite a significant proportion of students.</p> <p>The BUGA Project (Free Use Aveiro Bicycle) started back in the year 2000 with an exclusive bicycle design and had at the beginning 200 bicycles and 33 parking locations. The project also had its own brand image with specific signing, maintenance centers, logistic support and some new cycle paths were created. The number of bicycles available has increased notoriously since early days.</p> <p>With the creation of the company <i>MoveAveiro</i> in 2005 the project is now part of a wider plan that aims at increasing the use of bicycles beyond leisure trips and into daily habits.</p> <p>BUGA is therefore a public service available to residents and visitors that enhances healthy habits and provides an environmentally way to get around the city. Consequently it is extensively used by students.</p>	
<b>Participants/ Stakeholders</b>	Aveiro City Council
<b>Main deliverables</b>	Web site
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Increased awareness towards the use of environmentally friendly transport modes;</li> <li>• A good bicycle support and promotion infrastructure.</li> </ul>

<b>Important link</b>	<a href="http://www.moveaveiro.pt">www.moveaveiro.pt</a>
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### Example 20

<b>Name</b>	<b>Ecocampus of the environmental development of the University of Alicante</b>
<b>City</b>	Alicante
<b>Country</b>	Spain
<b>Implementation date</b>	2005
<b>Main goals</b>	Reduce the reliance on individual transport and promote the university's community in the development of solutions and proposals to increase the environment quality and the promotion of sustainable transport solutions.
<b>Brief description</b>	
<p>The University of Alicante is promoting a sustainable mobility plan integrated in the <i>Oficina Ecobus</i> project which comprehends bicycle and the promotion of public transport and a car pooling system (<i>Autocolega</i>) A. Several urban and interurban bus lanes are available as well as a light rail that connects the University to the City Center. Students have lower fares which promotes their use.</p> <p>The mobility plan also has a free bicycle lending program called <i>Bicisanvi</i>. This program is automated and has several strategically pick up and leave sites in the City and University.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• University de Alicante;</li> <li>• City Council of San Vicente del Raspeig;</li> <li>• Generatitat Valenciana Transport;</li> <li>• Renfe of Alicante;</li> <li>• Group Súbus;</li> <li>• Agencia Valenciana de la Energia.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Information Web site;</li> <li>• Free bicycle sharing program;</li> <li>• Students Mobility plan.</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• Reduction of car use and therefore increase in the use of environmentally sustainable transport modes;</li> <li>• Free bicycle sharing program <i>Bicisanvi</i>;</li> <li>• New public transport routes with reduced fares for students.</li> </ul>
<b>Important link</b>	<a href="http://www.ua.es/oia/es/transporte/index.html#TransporteBus">www.ua.es/oia/es/transporte/index.html#TransporteBus</a> <a href="http://ev1.epd.ua.es/autocolega/index2.htm">http://ev1.epd.ua.es/autocolega/index2.htm</a> <a href="http://www.bicisanvi.es/">www.bicisanvi.es/</a> <a href="http://www.ua.es/presentation/vicerrectorado/vr.viena/ecocampus/presentation/index.html">www.ua.es/presentation/vicerrectorado/vr.viena/ecocampus/presentation/index.html</a>

*Example 21*

<b>Name</b>	<b>BUTE – Bicicletas de Utilização Estudantil</b>
<b>City</b>	Braga
<b>Country</b>	Portugal
<b>Implementation date</b>	2008
<b>Main goals</b>	<ul style="list-style-type: none"> <li>• Minimize pollution emissions;</li> <li>• Enhance awareness for the urban benefits of bicycle use;</li> <li>• Provide a mobility alternative to all community members ;</li> <li>• Reinforce the links of students with the environmental issues.</li> </ul>
<b>Brief description</b>	
<p>The project's main goal is to provide the students with a sustainable transport alternative either inside or outside the campus in their everyday life. The idea is simple: to have a practical and efficient transport at a zero cost.</p> <p>The "BUTE" students bicycle are free for a 3 year period. After that students can keep them for a 25 euro fee. Actually there are 400 BUTE in circulation but the goal is to reach 2000.</p> <p>The bicycles are mad with recycled materials which enhances their environmentally friendly characteristics.</p>	
<b>Participants/ Stakeholders</b>	<ul style="list-style-type: none"> <li>• Ideia Biba;</li> <li>• Biclás – Eco Urban Mobility;</li> <li>• BKI Cruisers;</li> <li>• University of Minho.</li> </ul>
<b>Main deliverables/tasks</b>	<ul style="list-style-type: none"> <li>• Web site</li> </ul>
<b>Main results</b>	<ul style="list-style-type: none"> <li>• A good bicycle support and promotion infrastructure based in concept of "advertising in motion".</li> </ul>
<b>Important link</b>	<a href="http://www.bute.com.pt/index.php">http://www.bute.com.pt/index.php</a> <a href="http://www.ideiabiba.pt/index.php">http://www.ideiabiba.pt/index.php</a>



## 5. Conclusions

University campuses are an important and fundamental part of the urban landscape. They deal with hundreds or thousands of people every day that can be very diverse in terms of cultural values and working habits. They can also have quite different time schedules and transportation habits. Therefore from a transport planning viewpoint this can pose quite an interesting challenge.

The usual difficulties that arise in university campus are related with the misuse of private vehicles generating as a result constraints in the road infrastructure capacity, parking space availability, invasion of pedestrian areas and high pollution levels.

Therefore to reverse this situation new mobility management strategies have to be applied. The main goal is typically to shift transport habits to environmentally sustainable transport modes like walking or cycling, public transport and to make a better use of private cars. There are several tools that can accomplish this and as a consequence their use should be programmed according to several local dependant factors that have to be considered when studying a mobility plan for the campus. The local mobility management strategy has therefore to consider all variables and use the best tools in order to maximize the results.

From the analysis carried out in this report it is possible to separate the measures of the global mobility strategy in four main areas namely the infrastructure, the public transport availability and convenience, infrastructure management rules and also awareness campaigns.

On the infrastructure side depending on local constraints such as space and resources available many things can be done to improve the conditions provided to the environmentally friendly transport modes. Pedestrian areas and bicycle pathways can be built or improved just to give one example. This is usually done at the expense of private car conditions (parking space availability and road capacity) which by itself starts to shift the balance towards the more environmentally modes.

Regarding the public transport many measures are also possible like improving spatial coverage, improving timetables, increasing frequencies, better conditions at bus stops, more comfort and so on.

The infrastructure management has also a great role in this process. It usually deals with car-sharing, car pooling, parking fares and time limit rules and also bicycle use rules.

Awareness campaigns are also paramount in this process as they can explain local population why are the transport policies changing, exactly what is changing and which are the new alternatives. This can serve as a catalyst to start the whole process of changing long implanted mobility habits. Global awareness on pollution and global warming issues should be used here as an additional reason to promote new mobility habits.

All these measures usually require the intervention of more than one local authority. As a consequence this involves coordination and commitment of all stakeholders to the global plan.

It must also be highlighted that that the main target populations which are the university students is of utmost importance since they will incorporate environmentally friendly transport habits that can be maintained throughout lifetime and passed to younger generations.

The examples shown in section four show quite a wide variety of good examples of interesting initiatives implemented throughout European university sites. The ideas concepts and approaches they contain can indeed be good starting points when planning a mobility strategy to a given location.



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