



**CiViTAS**  
Cleaner and better transport in cities

**CAPITAL**



## Catalogue of tools and measures

Fourth edition, linked to the CIVITAS Activity Fund Call October 2015

Polis  
September 2015

This document is one of three documents supporting the 4th call for proposals of the CIVITAS Activity Fund. The two other documents are:

- The Terms of Reference;
- The Frequently Asked Questions document.

The application form is available [online](#).



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# Introduction

## About CAPITAL

The CIVITAS CAPITAL project has been set up to systematically capitalise on the results of CIVITAS and create an effective value chain for urban mobility solutions. It places specific emphasis on supporting the transfer of successfully implemented CIVITAS measures to (take-up) cities across Europe.

Over the last ten years, CIVITAS has supported more than 700 urban transport measures in 58 cities across Europe. CIVITAS is one of the most successful EU programmes in promoting innovative solutions for sustainable development. The public and private sector partners in these 19 projects have invested one billion Euros – considerably leveraging the Community support of over 180 million Euros. However, the goals of the EU Transport White Paper can only be achieved through a strategy of capitalising on the experiences and the network of CIVITAS stakeholders and by mainstreaming its principles. The CIVITAS CAPITAL project proposes an effective mechanism to achieve these goals built on the know-how and support of some of the most experienced stakeholders in the "CIVITAS family".

The mission of the CAPITAL project is therefore to contribute significantly to the goals of the European Union's Transport White Paper by capitalising systematically on the results of CIVITAS and creating an effective "value chain" for urban mobility innovation. CAPITAL will help to mainstream CIVITAS into other policy fields by identifying the capacity of sustainable transport measures to contribute to high-level goals.

## Document structure

In order to support the organisation of the activity fund activities, this document has been divided into 2 parts:

- [Part 1](#) provides information on the selection of measures, and the cities that will support exchange.
- Part 2 provides information on CIVITAS tools and their take up level.
- Part 3 provides information on the CIVITAS Long Term Evaluation programme.

<p>This document has been produced by Polis. In case you have any questions or comments please email <a href="mailto:activityfund@civitas.eu">activityfund@civitas.eu</a>.</p>
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## Part 1. Measure offer

This catalogue provides guidance on which transferable and successful measures and tools could be explored in the 4th CAPITAL Activity Fund.

This fourth call of the CAPITAL Activity Fund provides a chance to learn from inspiring cities and experience interesting, practical and relevant tools that have been developed, applied, tested and/or evaluated during the 4 phases of the CIVITAS initiative so far. Measures and tools cover any of the CIVITAS themes and can also address topics such as planning, evaluation, business models and exploitation. Also in this call, the opportunity to engage in a long term evaluation process of CIVITAS measures is available. Individual selection criteria, co-funding amounts and a specific application process is applicable for these opportunities

Information is made available on the potential measures and tool, indicating the level of exchange they can offer.

## 1.1. Activity Fund offer “at a glance”

City	Car-independent Lifestyles	Clean fuels and vehicles	Collective Passenger Transport	Demand Management Strategies	Integrated planning	Mobility Management	Public Involvement	Safety and Security	Transport Telematics	Urban Freight Logistics
Bologna	X	X	X	X		X	X		X	
Bristol	X	X	X	X		X	X		X	
Donostia-San Sebastian	X		X		X	X		X	X	X
Funchal			X			X				
Graz	X		X			X	X			
Koprivnica	X	X	X		X					
Ljubljana	X		X			X	X			X
Madrid	X									
Nantes	X	X	X	X	X			X	X	
Utrecht	X		X	X		X		X	X	X
Vitoria-Gasteiz				X	X					

## 1.2. City fact sheets

## Bologna (IT)

Located in the centre of Italy, Bologna is a city of 373,300 inhabitants covering 14,085 km<sup>2</sup>. Because the city was built during the Middle Ages, it is characterised by very narrow streets with their famous arcades or porticoes. Despite this compact layout, the city centre is still the focus of much public, commercial and cultural life.

Bologna participates in [CIVITAS MIMOSA](#).



Bologna can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/Italian
Availability of local politicians:	No

### City Contact:

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## Proposed CIVITAS measures for take-up:

### Clean fuels and vehicles

#### Clean public transport vehicles.

Bologna wanted to improve the environmental performance of its public transport bus service. Based on a well-to-wheel analysis carried out under this measure, the public transport operator TPER decided to build up a small hybrid bus fleet tailored to the local context. Two serial-hybrid buses were introduced that were equipped with innovative super capacitors that replace conventional electric batteries.

#### Personnel training activities for maintenance staff were carried out.

The average daily consumption, measured in real service conditions and during summer, is about 80 litres for a daily service of 200 km. Compared to traditional hybrid vehicles, the new hybrid buses yielded considerable cost savings because they have no batteries, which need to be replaced every three years at a cost of EUR 15,000.

#### Cleaner private vehicles.

The city of Bologna wanted to boost its efforts to encourage private car owners to shift from petrol to liquefied petroleum gas (LPG) and compressed natural gas (CNG). The city provided financial incentives for clean(er) cars while exempting them from circulation restrictions under the Air Quality agreement. For its part, the municipality procured 41 methane and LPG vehicles, thus increasing the share of clean vehicles in its fleet to 50 percent. Together with the Emilia-Romagna Region (RER), the municipality promoted an innovative programme to promote electric vehicles, with financial incentives worth EUR 300,000. It also built two on-street charging points for electric vehicles.

The e-mobility programme was based on unprecedented agreements signed by the RER, the national electricity company Enel and the multi-regional utility Hera which allowed for e-company interoperability and plug-in device standardisation. The city of Bologna launched an information campaign to spread awareness of the incentives available to shift to methane or LPG. The city made the promotion of private vehicle renewal a priority in 2007 as part of its urban traffic plan.

The measure increased the share of LPG- and CNG-powered vehicles in the city's private fleet to 16 percent in 2011. That was an increase of 87 percent from 2007. Approximately 900 electric bikes were purchased in one year and the measure got new funding in early 2013.

### Collective Passenger Transport

#### Clean public transport vehicles.

Bologna wanted to improve the environmental performance of its public transport bus service. Based on a well-to-wheel analysis carried out under this measure, the public transport operator TPER decided to build up a small hybrid bus fleet tailored to the local context. Two serial-



hybrid buses were introduced that were equipped with innovative super capacitors that replace conventional electric batteries.

### **Park-and-ride system**

To reduce on-street parking and satisfy the mobility needs of its public transport passengers, the city used CIVITAS support to improve its park-and-ride (P&R) services. The measure consisted of three main components: introduction of a P&R car park and improvements to existing ones; better public transport connections; and the design of an electronic system for booking parking spaces in advance. An information campaign promoted the improved service. Users perceived the presence of the bus service (71 percent) along with the fare convenience as the main advantages of the P&R zones. The measure resulted in a 163 percent increase in users of the parking areas, with revenues rising by 34 percent from 2008 till 2011. Car park occupancy increased by 65 percent from 2009 to 2010 and 34 percent from 2010 to 2011. A key to the success of this measure was the fare policy that offered free parking to bus and bicycle users.

### **Integrated public transport fare system**

Supported by CIVITAS, Bologna introduced in 2010 an integrated public transport fare system for trains and buses called STIMER/MIMUOVO. It included public bike and car sharing as well as the park-and-ride service. The system was launched together with a big information campaign on the new fares and the validation system. There was very positive feedback on the integration of services (bus and train), which clearly encouraged the use of public transport. The sales of intermodal bus+train passes increased 33 percent from 2010 to 2012.

### **On-board ticketing**

Together with the new electronic ticketing system CIVITAS supported the introduction of an on-board ticketing system that uses an on-board computer and validator already installed on buses. After a testing phase on three bus lines, the service was activated on all suburban lines and 600 drivers were trained on system functionality.

The main barrier was the additional pay requested by drivers to issue the tickets as they considered it an extra duty; an agreement with the trade unions foresees a payment of 30 percent of total ticket value to the drivers.

According to a survey of 50 bus drivers on the first three activated bus lines, the measure improved quality and accessibility to extra-urban bus services because of the possibility to buy the ticket on board.

### **Recharging system for public transport season tickets**

With the aim of improving the attractiveness of contactless smartcards for season tickets, Bologna created a wide network of self-service recharging points. These include selling points integrated in bank terminals (ATMs) and online services on the public transport company's website.

The bus service operator and the banks were involved in the process. A widely promoted information campaign reached users through various channels, including direct mailings to pass holders, website postings and information at ticket offices. The measure resulted in customers saving time and a record 5,636 public transport passes were renewed through ATMs within a year. The measure also achieved a reduction in operational costs of ticket offices (i.e. a personnel saving of 4,360 hours or EUR 100,000 per year — 12 percent of total personnel costs at ticket offices).

## **Demand Management Strategies**

### **Flexible access restrictions to the city centre.**

Prior to CIVITAS, the control of access to the limited traffic zone (LTZ) via electronic pillars had not been very effective. In order to decrease access by unauthorized vehicles to eight semipedestrian zones within the LTZ, this CIVITAS measure updated the access control system with new software and mechanical features.

Under the new scheme, smart cards with different institutional categories allowed for differentiated access and prevented the illegitimate use of passwords.

A communication campaign was carried out in the form of letters sent to citizens (around 3,000 people including residents and parking space owners). These explained how the new electronic pillar system worked. The system was integrated with Bologna's new mobility multiservice smart card (named "MI MUOVO", see measure 5). The measure evaluation showed a 42 percent reduction in access to limited zones between 2009 and 2012. That equalled around 250 fewer vehicles entering the zones each weekday.

### **Road pricing policies.**

In 2006, Bologna was the first city in Italy to implement a road pricing policy based on an intelligent transport system (ITS). As part of CIVITAS, Bologna conducted a study to develop an ITS that can identify and distinguish vehicles according to different parameters such as model, size and emissions level. To make the access control system for the limited traffic zone (LTZ, see measure 8) more flexible, the road pricing scheme foresees the possibility for occasional users to enter the LTZ by paying an access toll. Also, a new semi-pedestrian area was introduced within the LTZ.

Different stakeholders were involved in the process and many awareness raising actions, such as public events, conferences and media actions, were undertaken to increase social acceptance of road pricing. A training course on the new software was organised for users and new operators. The revision of the ITS finalised Bologna's road pricing strategy as part of the city's Urban Traffic Master Plan.

Measure implementation led to an 2 percent reduction of car and motorbike access to the LTZ and a decrease in all pollutant emissions (CO, CO<sub>2</sub>, NO<sub>x</sub> and particulates). Vehicle access to the new semi-pedestrian area dropped by 69 percent between 2006 and 2012.

### **Pricing and monitoring policies for parking.**

Limited parking places and narrow streets led to many problems such as illegal on-street parking. With the support of CIVITAS, the city of Bologna worked on technological developments for more efficient information management, reservation and enforcement methods. This included new limited traffic zone (LTZ) access permits with bar codes, a complete revision of parking fees, an update of all parking meters, vertical signs and payment vouchers, and a new system to issue fines with portable devices (see measure 20). Bologna also became the first big Italian city that realised the complete centralisation of parking meters through the GSM-network.

The awareness and acceptance of on-street parking management by citizens was evaluated via a telephone survey with a random sample of 500 citizens.

The number of fines for double parking decreased from 869 in 2009 to 297 in 2011. About 56 percent of citizens had a positive opinion on paying for on-street parking as a way to reduce congestion of parking spaces in relevant areas.

## **Mobility Management**

### **Mobility managers**

Before CIVITAS, Bologna set up a mobility management office to support big companies. With the support of CIVITAS, the city sought to engage more companies, including those with fewer than 300 employees, by offering software to manage employees' travel behaviour data. The measure also included online tools, project resources, awareness events and information sessions. An innovative e-bike scheme was set up for municipal employees with 100 dedicated racks alongside free electric charging points.

The Italian Ministry of Environment and Emilia Romagna Region gave additional funding for mobility management in companies. The number of public transport passes sold through mobility management agreements increased by 50 percent between 2007 and 2011. As a result, emissions were reduced by 35 percent compared to 2008 (average value of all pollutant types), including 5 tonnes of CO<sub>2</sub> per year.

## **Less car-intensive lifestyles**

### **Improving the car-sharing scheme.**

To improve traffic flows in the city, Bologna wanted to improve and expand its car-sharing service. With the help of CIVITAS, 17 new sharing locations were opened with new low-emission cars, a restyled car-sharing website, and technological solutions to stop reserved car-sharing parking spots from being used by unauthorised vehicles. Innovative features of the new scheme included the one-way service that allows drivers to take the car from a location and leave it in a different place; a multi-day service that makes it possible to book a car from one to four consecutive days at a reduced fare; and a long-time service with a discount for bookings of more than four consecutive days.

Regular consultation days were organised involving car-sharing customers to create a ripple effect. A car-sharing conference was attended by about 20 professionals, and the public was informed through dissemination campaigns and leaflets. An online survey among car-sharing users revealed that 81 percent of respondents appreciated the new locations and 61 percent the new cars. Due to the economic recession usage declined in terms of registered hours, even though the number of customers increased from 636 contracts in 2010 to 846 in 2012 (+33 percent) and from 767 membership cards to 1,097 (+43 percent). Bologna published a guide outlining the main steps in the implementation of car sharing.

## Urban freight logistics

### Urban freight delivery plan.

CIVITAS supported the third and final phase of the freight delivery plan, consisting of three main elements: an analysis of how freight distribution was evolving in the city, the promotion of a van-sharing system with a common electronic platform and the introduction of new access policies to the city centre (see measures 8 and 11).

Stakeholders were involved in different stages of the analysis and 21 operators were contacted to join a small-scale freight consortium.

Unfortunately only two new freight distribution operators joined the consortium despite the municipality's high expectations and efforts. The van-sharing system was not used much, as operators were afraid to lose market shares and revenue. Still, the measure highlighted the limitations of the initiative and yielded lessons for further developments on a city freight delivery strategy.

## Innovative telematics

### Automatic enforcement at traffic lights.

Italy's national plan for road safety stated that 83 percent of road accidents resulted from bad driver behaviour, and 35 percent of fatal accidents were caused by speeding and running red lights. CIVITAS supported Bologna in testing an automatic enforcement system to help detect traffic light offences and issue fines. The city installed system, called Stars, in 24 pilot areas with a dedicated information technology back office.

Publicity campaigns informed citizens of system and initial results were disseminated at mobility conferences. The measure was part of Bologna's Urban Road Safety Plan adopted in 2003.

An evaluation indicated that the Stars system was the most efficient, cost-effective technology dealing with traffic lights infringements. It led to a 21 percent reduction in accidents and a 28 percent reduction in injuries at the intersections where it was installed. The experience underscored the importance of proactive communications. After all, the aim was to improve road safety and not to boost revenue through fines as some drivers may have suspected.

### Mobile gates to control reserved bus lanes.

Bologna used a mobile intelligent transport systems (ITS) to bolster an existing electronic system enforcing intrusion into bus lanes. The mobile equipment was moved between different stretches of bus lanes to reduce violations on the entire bus network and improve public transport service.

However, the national legal system did not allow the use of such mobile camera installations and this resulted in the termination of the measure.

### **New traffic control centre.**

CIVITAS helped to realise a new traffic control centre called CISIUM that connected and integrated various intelligent transport systems to facilitate optimal real-time traffic management. This included displaying data from the traffic control centre on traffic flows on Google Maps and at the airport arrival terminal. Bologna was one of the first cities in Italy to provide a traffic service on Google Maps with information coming directly from the municipality.

A dissemination campaign informed road users about the new system and results obtained. Real-time traffic information was made available to citizens through different channels.

The measure improved traffic control in the urban area, and the traffic fluidity at intersections where waiting times were reduced by a few seconds. The enhancement in bus prioritisation at traffic lights led to shorter travel times for the bus routes, with a reduction in delays and an increase in slightly early bus departures. Bologna's CISIUM project was recognised with the CIVITAS Award in 2010.

## **Public Participation**

### **Policy planning and cooperation.**

Before CIVITAS, Bologna had made efforts to involve citizens in its Urban Traffic Master Plan with an initiative called "Bologna, a Changing City." CIVITAS helped to enhance this collaboration through new and innovative modalities.

A diverse range of awareness campaigns took place including exhibitions, bike days, European Mobility Week events, bike tours supported by interactive websites, brochures, DVDs and social media outreach. Surveys and meetings aimed at finetuning the communication strategy. The measure implementation resulted in increased interaction with residents. Up to 3,000 people took part in each European Mobility Week and over the project lifespan people's awareness of CIVITAS initiatives increased 269 percent. This resulted in Bologna winning the European Mobility Week Award in 2011.

## Bristol (UK)

Bristol is the largest urban area in South West England and is a centre of industry, commerce, education and culture. Bristol City Council is a local authority with responsibility for transport, planning and other public services covering an urban area with a population of around 400,000. Car ownership and car use in the city are among the highest in the country.



Bristol participated in [CIVITAS VIVALDI](#).

Bristol can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English
Availability of local politicians:	No

## Proposed CIVITAS measures for take-up:

### Clean fuels and vehicles

#### Clean vehicles strategy including new and retrofitted vehicles.

Prior to CIVITAS, the municipal fleet had 22 vehicles running on liquefied petroleum gas (LPG) whilst the remainder were diesel powered. Public transport used diesel buses, as well. To improve air quality, local bus operators retrofitted the exhaust of more than 60 diesel buses and introduced four hybrid-electric buses. Meanwhile, 50 vehicles running on liquefied petroleum gas (LPG) and five electric pool cars were introduced in several public and private fleets. The measure was innovative as it involved the development of a new hybrid diesel-electric engine for the local bus fleet. The City Council involved many transport and fleet operators in this measure, and received advice from the non-profit organisation Energy Savings Trust. The measure was carried out as part of the city's Air Quality Management Strategy and of the Clear Zone concept introduced within the CIVITAS project.

The LPG vehicles and the retrofitting of diesel buses led to a reduction in particulate matter, but there was a slight penalty in terms of increased fuel consumption and therefore CO<sub>2</sub> emissions. The electric cars showed admirable cost and emissions savings. In Bristol, CIVITAS contributed to the development of a market for clean and efficient vehicles, as 50 vehicles owned by residents, taxi drivers, City Council employees and three small businesses were converted.

### Collective passenger transport

#### Dial-a-Ride

At the start of the CIVITAS project, 9,500 people were registered to Bristol's Dial-a-Ride service offering door-to-door journeys on demand in two-thirds of the city at the cost of a bus fare. As part of CIVITAS, the service was extended to a new area of the city and a new booking and scheduling system was tested. An innovative feature was the introduction of a vehicle running on liquefied petroleum gas (LPG) in the new area. User satisfaction was assessed during two passenger forums. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000.

The number of registered members increased to 10,500. Even with increased fuel use, the LPG vehicles showed a significant reduction in emissions of NO<sub>x</sub> (75 percent), although this was accompanied by a slight increase in CO<sub>2</sub> emissions. In Bristol, the CIVITAS Initiative contributed to social inclusion, as for many users journeys would be difficult, if not impossible, without the service.

#### Southmead Interchange project

The Southmead Hospital site is bordered by roads with heavy traffic flows, which made it difficult for pedestrians to access the site safely. This CIVITAS measure promoted sustainable modes of travel to the hospital by creating a new pedestrian crossing near to the hospital entrance, relocating a bus stop to be nearer to the crossing, installing electronic real-time information in the hospital and at nearby bus stops, and producing an access map highlighting



sustainable transport modes for hospital visitors and personnel. Two dedicated car-sharing parking bays were introduced at the hospital and several on-site and off-site infrastructure improvements were made.

For this measure, the city council signed a partnership agreement with local bus operator First and the North Bristol National Health Service Trust. The measure was carried out as part of the Clear Zone concept introduced within the CIVITAS project and was a result of the city's emerging access to healthcare agenda.

As a result of the measure, the Southmead Hospital site's rating in a detailed accessibility audit improved from "below average" to "good". In Bristol, CIVITAS served as an engine for behaviour change, as the production of a new Southmead Hospital travelmap gave the opportunity to promote sustainable transport as a viable alternative to the car for visitors to the hospital.

### Transport Demand Management measures

#### Residential traffic management (home zones).

Before CIVITAS, the residential area The Dings was blighted by a severe commuter parking problem that was likely to worsen as new developments on adjacent, vacant land were realised. With the support of CIVITAS, the City Council designed a master plan to introduce a home zone in The Dings, redesigning the area as a space for social use. At the time, home zones were a relatively new concept in the UK.

The charity Sustrans provided advice on the development of the project and there was intensive involvement and close cooperation with the community (see measure 12). All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000.

The new layouts created a unique local environment that not only kept cars moving slowly, but gave equal priority to motor vehicles, cyclists and pedestrians. The CIVITAS project showed that streets can be designed with unconventional street features without comprising safety, and demonstrated the positive impact that residents can have on local transport projects.

### Mobility Management

#### City Navigators

Long before CIVITAS, Bristol recognized the need to strengthen links between transport and tourist information for visitors, particularly in relation to major events. The city introduced the Info Bus, an electric bus that provides location-relevant information to travellers at key sites such as public transport interchanges. Information is conveyed in person by staff and with displays, paper-based materials and electronic systems. To conserve battery power, the electronic display equipment on the bus was powered by a liquefied petroleum gas (LPG) generator. Prior to the introduction of this measure, stakeholders were consulted on the level and quality of transport information available. Their dissatisfaction, particularly with public transport information, was one of the main drivers for the introduction of the Info Bus. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000. In the first year and a half, the Info Bus was present at 17 events. Some 80 percent of users found that the information was useful in planning their journeys and 50 percent said it



introduced them to a service of which they weren't aware. As 60 percent of respondents agreed that the information provided had influenced the type of transport they were going to use, the measure was found capable of significantly influencing modal shift.

### **The TravelSmart scheme.**

Before CIVITAS, the Bristol region was predominantly car based, with car ownership and car use amongst the highest in the country. With the support of CIVITAS, the charity Sustrans conducted an individualized travel marketing campaign in the city, contacting people in their households and providing information and follow-up actions to those who are likely to change their travel behavior towards walking, cycling and public transport use. At the time, TravelSmart was a relatively new concept, particularly in the UK where only a few small-scale pilot schemes had been undertaken.

To support Sustrans, the city council provided the information materials, and the local bus operator supplied timetables, trial tickets and home visits to citizens interested in bus transport. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000. The programme successfully achieved shifts towards more sustainable modes of transport (including public transport) without significantly altering journey times or route distances. The CIVITAS Initiative provided Bristol with the opportunity to import the TravelSmart method that had been successfully applied in other parts of Europe, and prove the versatility of the method across different regions.

### **TravelBristol Info Centre**

At the start of CIVITAS, the need for a transport information centre was identified in order to improve access to transport information for residents and visitors to Bristol. The TravelBristol Info Centre was established to promote sustainable transport through improved information and services. An innovative feature of the measure was the integration of intelligent transport systems into a central data management and dissemination hub. Bus operator First provided information and ticketing for commercial bus services, and the city council provided a range of other travel and transport information. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000.

As a result of the measure, local bus ticket sales increased by 88 percent year on year and National Express ticket sales increased by 210 percent compared to sales made at the previous ticket office. As 29 percent of respondents stated that the information provided had influenced the type of transport that they intended to use, the measure was found capable of significantly influencing modal shift.

### **Harbourside travel plans**

At the start of the CIVITAS project, Bristol was one of the UK's leading cities in the development of employee travel plans. The CIVITAS project offered an opportunity to extend the benefits of travel planning to some of the major tourism and leisure destinations situated on Bristol's developing Harbourside. Through cooperation and collaboration, the Harbourside leisure and tourism destinations established mutually beneficial visitor travel plans that are inclusive and sustainable. A core group of major destinations was established to develop and implement an area-wide travel plan. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000. As part of the travel plan measure, a cross-harbour ferry service was introduced and 30,000 visitors' maps were distributed. In Bristol, CIVITAS acted as a catalyst for stakeholder involvement, as the core group established during the project continued to meet regularly and contribute to the development of safe and sustainable transport facilities in the area.

## Less car-intensive lifestyles

### Introducing the concept of taxi sharing

This CIVITAS measure targeted an area of the city that was particularly poorly served by public transport and where busy roads and waterways cut off residential areas from employment opportunities and leisure venues. In this area CIVITAS initiated a taxi-sharing service that enables people to travel by taxi within their local area at low cost, providing them with better access to local services and facilities. At the time, taxi sharing was a brand-new mobility concept in which buses and taxis are treated as complementary rather than competitive services. User satisfaction was thoroughly analysed through a survey and several in-depth interviews. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000. The scheme was successful as it attracted 125 members in six months, 44 percent of whom were over 55 years of age. They joined the scheme due to restricted personal mobility.

In Bristol, the CIVITAS Initiative contributed to social inclusion, enabling elderly people and people with disabilities to access local services.

## Transport Telematics

### Intermodal trip planner

At the start of the CIVITAS project, Bristol City Council was involved in both a European and a national project on public transport trip planning, but within CIVITAS the city wanted to include walking and cycling into a truly multi-modal information service. The resulting intermodal trip planner was to provide users with full door-to-door itineraries in either text or graphic form, with the option of personalising search criteria, such as accessibility to people with reduced mobility. The trip planner was the first of its kind in the UK.

To acquire all of the relevant background information it was necessary to work with a number of different teams within the City Council, such as the Information Technology Team, the Public Transport Team, and the Walking, Cycling and Access Team. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000.

## Public participation

### Community travel workers

The project plan for home zones in Bristol required significant effort to encourage inhabitants of The Dings residential area to actively participate and share their views during the planning and design process. The charity Sustrans employed two community travel workers (CTW) to involve the residents. The measure was innovative as the CTWs managed to create a network of community representatives by ensuring that each street had a recognised contact person. Communication and involvement were further developed via meetings, newsletters, street events and a successful series of door-to-door surveys. All CIVITAS measures were carried out as part of the Local Transport Plan adopted in the year 2000. The CTWs were successful in engaging 74 percent of households in The Dings, contributing towards 82 percent of residents supporting the concept of a home zone before implementation and 92 percent who were happy with the new street layout and their level of involvement.

## Donostia-San Sebastian (ES)

Donostia-San Sebastian has over 180,000 citizens. For the last twenty years, the city has been enforcing a strong integrated policy in favour of walking, cycling and public transport. Considering walking and cycling as modes of transport in their own right has led to the development of a non-motorised transport network promoting this type of mobility around the city.



Donostia – San Sebastian participated in [CIVITAS ARCHIMEDES](#)

DSS can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/Spanish/Basque
Availability of local politicians:	No

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## Proposed CIVITAS measures for take up:

### Collective Passenger Transport

#### Advanced park-and-ride network

Before CIVITAS, Donostia-San Sebastian was eager to better integrate trips made by car and public transport. Therefore the city developed a new management and pricing strategy for park and ride (P&R) and promoted this service to drivers. Four areas were selected as P&R sites and car drivers were offered free parking and bus travel to the city centre for Christmas shopping in 2009.

This measure was part of a package of measures to reduce the number of cars entering the city centre. It is most closely related to the measures on a new parking pricing and zoning strategy and on a P&R guidance system. The P&R scheme was not fully implemented due to strong public and political opposition, therefore no significant results were achieved. This measure highlighted the importance of building a sound political consensus before implementing what some could interpret as parking restrictions. One lesson was that it is important to provide clear information about measure objectives, including overall sustainable mobility issues. Communication with media is especially important, to ensure the information is used to boost the measure rather than attack it.

#### High-quality bus corridors.

At the start of the CIVITAS project, Donostia-San Sebastian had a high bus-riding rate — around 150 trips per person per year. With the support of CIVITAS, public transport operator CTSS introduced new enhanced bus services along two high-quality corridors. All buses met the ambitious UNE EN-13816 quality standard. Public transport priority and 12 km of dedicated lanes formed the backbone of the high-quality service, and real-time passenger information was also provided. This measure provided significant benefits in the form of better air quality and lower carbon emissions, resulting in better health and quality of life for Donostia-San Sebastian citizens. In 2011, for example, 88 tonnes of CO<sub>2</sub> were saved as compared to the business as usual situation. CIVITAS allowed CTSS to become a model and a reference in Spain for other companies in terms of quality, as it was the third Spanish company to obtain the UNE-EN 13816 certification.

#### New business district bus service

Before CIVITAS, the business districts were poorly served by public transport, and private cars were the preferred mode, encouraged by the availability of large, free car parks. The city wanted to make bus services more convenient for potential public transport users by increasing frequency and introducing an adapted timetable. The needs of different user groups were assessed leading to the decision of the bus company to offer an increased service of direct bus lines from the centre and residential areas rather than minibuses for the last mile. Industrial area managers promoted the improved bus services to all the companies of each business district. The use of public transport to reach the business districts increased: 123,000 extra travellers were attracted in 2010 and 230,500 in 2011, with 2006 levels as a base. At the same time, car traffic entering these areas decreased by almost 2,500 cars per day. With the new business area routes, CIVITAS found an economically viable way to introduce new services during peak hours — a difficult task in times of economic hardship.

## Mobility Management

### Personalised travel plans

Before CIVITAS, Donostia-San Sebastian had no experience with a personalised travel planning approach. Within this measure 300 households that were using their private cars for trips within the city, received personalised travel advice, and over 200 were provided with a free public transport pass and other incentives to try out sustainable transport options. The measure was presented to the general public in September 2010 during European Mobility Week and received good coverage in the regional press. A direct mailing campaign was sent to 3,000 households, followed by 2,000 telephone calls. As a result, 132 people tried out the alternatives, 77 percent of whom continued to use them in the three months after the free trial period. In Donostia-San Sebastian, CIVITAS served as an engine for behaviour change. The measure was calculated to have reduced the number of car trips in the city by 1.5 percent. The city decided to upscale the measure to other city corridors with the objective of reaching areas where there had been no convenient alternatives to the private car until then.

### Travel plans

Daily journeys between home and work or school account for a significant part of urban travel and congestion. Donostia-San Sebastian took a proactive approach, targeting pupils and employees to opt for sustainable modes. The city made a travel plan for 10 schools and five business districts. A company specialised in organising events for children held over 60 sessions at the participating schools to promote walking, cycling and road safety to pupils, teachers and parents. It aimed at other stakeholders in the targeted areas, as well, including shopkeepers and neighbourhood organisations. The municipality worked with the managers of the business areas to develop mobility plans with the involvement of employees. A survey revealed that walking levels significantly increased after the implementation of the school travel plans (from 60 percent to 70 percent of all trips to school), while the share of the other modes declined. No significant results were observed in the business areas, because the commuter travel financial crisis delayed the company implementation of most initiatives requiring investment; only “interaction, information and awareness” actions achieved any progress.

### Mobility management for the university campus

Donostia-San Sebastian wanted to reduce private car traffic to the city's university and encourage people to use sustainable alternatives. Therefore the University of the Basque Country developed a mobility management plan containing awareness-raising campaigns and programmes for students and personnel to make collective and energy-saving means of transport more attractive and easier to use. The sustainable mobility concept has been included throughout the university educational and curricular system. Sustainable mobility analysis has been included in master's degrees such as the sustainable development postgraduate course and another on Local Agenda 21 management.

Behaviour change on the campus resulted in an estimated savings of over 300 tonnes of CO<sub>2</sub> emissions annually. Thanks to a successful car-pooling scheme the average occupancy rate for cars increased from 1.3 to 1.6 occupants per car. Not only did CIVITAS act as an engine for behaviour change in the university community, it also improved perceptions of accessibility and security among cyclists.

## Safe and secure road infrastructure

### Road safety measures

After having published a Road Safety Strategy in 2004, the city of Donostia-San Sebastian wanted to commit citizens and mobility stakeholders to road safety. With the active involvement of 30 associations, the city drafted its Road Safety Pact. This called for awareness-raising campaigns, post-accident attention services, and an observatory for monitoring progress, co-ordination of traffic safety data from all stakeholders and the implementation of nine radar systems along arterial roads to enforce speed limits.

For this participatory approach, the city involved stakeholders such as associations of drivers, cyclists, motorists, people with disabilities and the elderly. The Road Safety Pact was in line with the European Road Safety Charter and was based on the city's Plan for Traffic Safety and Security from 2007.

The area covered by the radar system showed a 14 percent reduction in the number of deaths and injured people. Donostia-San Sebastian's lesson learned was that, although this kind of restrictive measure tends to get negative reactions from car drivers, the increased perception of safety among both pedestrians and cyclists manages to tip the balance in favour of those affected.

### Safe districts and limited speed zones

Donostia San Sebastian wanted to reduce the average speed limit for motorised traffic and provide safe crossings for cyclists and pedestrians in selected areas called "safe districts". To this end, the city developed road safety plans for and implemented 30 kph zones in three neighbourhoods with dense car and bicycle traffic. This was an innovative measure that took advantage of the opportunity created by recent changes to the Spanish law regarding 30 kph zones.

The city organised an intensive promotional campaign in each of the three neighbourhoods. This measure was implemented as part of the city's Road Safety Strategy published in 2004, and was closely related to another CIVITAS measure that included the Road Safety Pact and the installation of speed radar control (see above).

In the 30 kph zones, a reduction of speed between 3 to 8 km/hr was measured during peak hours, depending on the area of implementation. Also, significant reductions in the number of deaths and injured people have been achieved: 11 percent, 7 percent and 1 percent respectively in the three 30 kph zones. Donostia-San Sebastian learned that ongoing dialogue with civic associations during the preparation and implementation stages is needed to build consensus on the approach and to achieve success.

## Less car-intensive lifestyles

### Car-sharing scheme

Before CIVITAS there was a long tradition of citizens owning their own cars. With this measure the municipality wanted to change people's mentality by promoting smart car use for the first time. After a research period and a tender procedure, the city issued a 25-year contract with operator IBILEK to provide a car-sharing service in the city.



Donostia-San Sebastian launched the car-sharing service in cooperation with the Basque government and other major cities in the Basque Country. After the CIVITAS project there were six vehicles in operation, four of which were electric and two hybrid plug-ins. By the end of the CIVITAS project, only two months after the carsharing system started operating, only three customers had registered for the service, with a total driven distance of 100 km. Nevertheless, this situation was likely to change after more intensive promotion. A public survey showed that among those who knew about the system, 81 percent assessed it as positive. One lesson was that more targeted promotions are needed for this kind of service. Donostia-San Sebastian aims to attract 100 to 250 registered users of its car-sharing service.

### **City bike scheme**

Before CIVITAS, the number of cycling trips in Donostia-San Sebastian was growing. To maintain this trend, the municipality introduced a public bike-sharing scheme. The service consisted of 150 bikes and nine docking points and is available between 7:30 a.m. and 9:00 p.m. seven days a week.

The number of registered users increased steadily. In the first year of operation (2008) 1,534 users were registered, and by the end of the CIVITAS project (2012) the figure had risen to 5,678 users. The measure managed to encourage users to also make more use of their own bicycles: among the users of the public bikes in 2011 there was an increase of 25 percent of trips on private bicycles as compared to 2010. After CIVITAS, the city considered the expansion of the service to more areas in the city as well as the possibility of extending the service hours.

## **Urban freight logistics**

### **Efficient goods distribution**

Before CIVITAS, there was no integrated action plan or coordination between the various stakeholders involved in urban freight transport. Creating a new and efficient system for goods distribution in the old city centre and the Ensanche area was the focus of this measure. The proposed actions included changes in the time windows for delivery and improved enforcement of time regulations using cameras. An urban distribution centre was established that operates with cargo bikes, night distribution for larger shops was introduced, changes were made to the directions of some streets, and a parking area for motorcycles was relocated.

CIVITAS gave the city the opportunity to increase stakeholder involvement in city planning and strategy development related to urban freight transport. A Freight Quality Partnership was established among representatives from shopkeeper associations, the transport sector, the municipal police and the mobility department.. This action aligned with the city's freight distribution policies which were described in the Sustainable Urban Mobility Plan.

The implementation of this measure contributed to increased efficiency in urban goods distribution in two highly populated neighbour hoods. The new last mile delivery service with electric cargo-bikes contributed to saving up to 26,849 kilometres per year. As a consequence, a yearly reduction of 23 percent in energy consumption was achieved and the transport companies reduced their operating costs by more than EUR 6,800 per year.

## **Transport Telematics**

### **New fleet management system**

Donostia-San Sebastian had set ambitious goals for improving the quality of its public transport system and, as a result, significantly increasing its passenger numbers. With CIVITAS, the public transport company CTSS introduced a new planning and fleet management system for its vehicles, personnel and public transport network. The measure was innovative, as it automated the time-consuming and highly specialised work of expert employees.

The existing CTSS planning employees were involved in the process of implementation in order to use the existing knowledge and make sure that the system would meet the labour conditions of the drivers.

As a result of the measure, drivers' planning timetables were optimised with less time loss during operations. Operating costs were reduced by 2.5 percent in relation to the total company costs, leading to annual savings of EUR 600,000 to 700,000. In Donostia-San Sebastian, CIVITAS brought a significant change in the way services are scheduled and drivers' hours assigned.

### **Real-time information for bus passengers**

The quality standards for the high-quality bus corridors that the city implemented, required the provision of real-time passenger information. The city used CIVITAS support to make this available on buses, at bus stops, via SMS and on a new website that was also accessible to the visually impaired. The measure included the creation of new data sources, such as a passenger counting system and an automated vehicle location system.

Future plans include a discussion forum on the website for travellers related to the bus services.

The traveller information system is very successful, with more than 3,500 daily requests for real-time information via SMS or the website. The provided information is highly reliable, with 98 percent of all information requests assessed by the users as correctly answered. Surveys reveal that information issues are perceived as very important by the users, with an average score of 8.47 out of 10.

## **Sustainable Urban Mobility Plans**

### **General approach**

Municipality's awareness about citizens tendency regarding the way they manage their daily trips, have supposed a constant challenge with the objective to reduce the use of the private car. Initiatives and measures were developed during CIVITAS ARCHIMEDES project, covering individuals through initiatives like personalised travel plans and specific groups like schools with "walk to school" platform or business areas with "Work Travel Plans" project. Mobility needs generated by those groups have a direct impact in the urban mobility of the city, in both peak and lean hours of the day and the results obtained with this kind of measures (also known as soft measures) have reflected a general unknownledge of the urban public transport offer in the city, which have encourage the city council to analyse more in depth this kind of studies that offers a big amount of data regarding citizen behaviour in mobility therms.



## **Vertical Transport**

Being part of an overall strategy to reduce the number of private cars entering the city and circulating within its neighbourhoods, this measure was part of a package of measures directed to increase the use of non-motorized modes

The hilly configuration of Donostia-San Sebastián poses significant physical barriers for walking and cycling, especially for elderly and impaired people, who are more sensitive to high slopes and long detours. This measure contributed to curve these barriers by providing an efficient vertical transport system that improves non-motorized accessibility to hilly neighbourhoods, encouraging more people to walk and cycle.

The city of Donostia – San Sebastián (ADS) expanded the policy of vertical transport with 7 new elevators and 6 escalators/ramps to support cycling and walking inside and towards the city centre. The vertical public transport systems links the cycling and walking networks between the flat and the hilly city. The offer of vertical transport facilitates made walking and cycling trips easier towards the city centre and hence encourage people to change mode.

## **Bicycle scheme**

During last 25 years the city of Donostia-San Sebastián has worked with the aim to foster non-motorized modes among citizens, pedestrians and bicycles, commissioning different measures to avoid the abuse of particular vehicle and hence, to offer a more liveable and environmentally friendly city.

Since the first bicycle fostering plan in urban mobility was approved in 2001 by the municipality, the city has been continuously progressing around new bicycle policies, creating a cycle lane network throughout the city and new infrastructures to promote the use of bicycle not only for leisure but also for daily common trips.

One of the most important initiatives was the implementation of the public bicycle service. The first step developed within the CIVITAS Archimedes framework, offered 9 bicycle stations with 150 bicycles. The figures of the service showed a successful measure with more than 5.000 registered users and an average use of the service of 4.5 uses per day.

The second step goes a step further and it offers a service with 100% electric bicycles to cover not only flat areas of the city but also the hilly ones which represent around the 50% of the population of the city.

## Funchal (Portugal)

Funchal is the capital of Madeira, an archipelago in the Atlantic Ocean. At the time of the CIVITAS project, the town had 104,000 inhabitants. Funchal is the commercial centre of Madeira, which is a Portuguese region with political and administrative autonomy and a local parliament and government. The beautiful mountainous setting that attracts many tourists poses a particular challenge to the development of the public transport network and the promotion of alternative modes such as cycling.

Funchal participated in CIVITAS MIMOSA

Funchal can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/German
Availability of local politicians:	No

## Proposed CIVITAS measures for take up:

### Collective Passenger Transport

#### Bus and Bike

Funchal has a very hilly landscape except for a small flat area on the west and central coastal line. This discourages people from cycling. With CIVITAS support, Funchal introduced a bus and bike scheme enabling cyclists to hang their bicycles on the back of buses free of charge in order to comfortably reach the hill tops. It was the first time that Funchal tried to integrate bike and bus use in one service. During the preparation phase of the measure, the public transport operator was able to secure the patronage of local stakeholders including sports associations and cycling-related companies. The Bus and Bike programme is part of the city's concept for sustainable mobility defined by its Action Plan for Sustainable Energy (PAES Funchal, developed under the ISLEPACT project).

The measure resulted in a 0.7 percent increase in bike usage. With 56 bicycles transported via public transport in one year, results fell short of expectations, but there was some evidence that several public transport users were considering using the service in the future. As the city started out with a very low share of cycling and behaviour change takes a long time, the city regarded the slow but positive trends observed as a promising step towards the development of a cycle-friendly city.

#### Control system for dial-and-ride services

The Santa Luzia area near the city centre was a dense area with a 50 percent higher aging index than elsewhere in Funchal. Due to the narrowness and steepness of the roads, Santa Luzia was not served by public transport before the CIVITAS project. The city tested and launched a dial-and-ride service in this area. Whereas traditional demand-responsive services operate in low-density areas, Funchal tested it in a very dense area. To tailor the service to market demand, the public transport operator conducted a door-to-door survey among residents in Santa Luzia.

Users gave the service an overall rating of 10 out of 10. In the first half year of operations, only 1.5 passengers were transported per trip, which resulted in high emission levels per passenger. The city expected passenger numbers to increase as the service would be expanded to other areas of the city. In any case, the concept of dial a ride enhanced the overall mobility quality of Funchal and enabled the city to offer public transport services to all citizens regardless of social and physical challenges.

#### Park and ride with public transport school service

Before CIVITAS, attempts to develop P&R in Funchal failed because of the low frequency of P&R shuttles and bad tariff integration between the car park service and transport service. With the support of CIVITAS, Funchal integrated four peripheral parking lots within the public transport area through an integrated tariff. An innovative feature of the measure was the establishment of a new bus service connecting the parking facilities with the main school in the city to solve the problematic traffic situation during school peak hours. The municipality played a crucial role in establishing cooperation with car-park managers and schools in the target area. The measure supported the goals of the Energetic Regional Plan 2002, including the aim to implement a differentiated parking tariff to promote peripheral parking advocated in the local parking policy. After the first year, the service attracted 6,000 new public transport

passengers. The P&R service was found financially sustainable, but the new school services could only be maintained if the number of users increased.

## **Mobility Management**

### **Awareness-raising campaigns for sustainable mobility**

In the years before CIVITAS, there was a drastic increase in car ownership and a steady decrease in public transport use in Funchal. With the support of CIVITAS, the city conducted four awareness-raising campaigns to encourage schoolchildren to use sustainable modes, promote the pedestrian areas in the city through a city treasure hunt, encourage citizens to travel by bus, and foster eco-driving skills among citizens. The innovative aspect of this measure was the full integration of private and public transport and school schedules.

At the implementation stage, workshops were organised by the municipality to target drivers and the wider public, including through school mobility projects. The city treasure hunt attracted 1,500 participants. Surveys among participants showed that they were familiar with ecodriving, perceiving it as a way to save fuel (31 percent of respondents in 2010 and 31 percent in 2011) and lower CO<sub>2</sub> emissions (47 percent in 2010 and 43 percent in 2011). The city found that the bus campaign was easy to organise, innovative and inexpensive. It created a synergy among schools and environmental associations enabling the latter to reach a large audience.

## Graz (AT)

Graz is the capital of Styria. With approx. 270.000 inhabitants it is a very important commercial and industrial centre in south-east Austria. Mobility - with all its challenges – is a very important topic of policy. Due its historic structure there are narrow streets and restricted space for car-traffic. Therefore the slogan of “Gentle Mobility” is the guideline to strengthen public transport, cyclists and pedestrians. The target is an environmental friendly way of mobility.



Graz participated amongst others in [CIVITAS TRENDSETTER](#).

Graz can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/German
Availability of local politicians:	No

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## CIVITAS measures for take-up

### Collective passenger transport

#### Altstadtbim

In order to promote public transport for citizens and for tourists, people can use the tramlines in the city center free of charge. The stops where this offer is valid are signed by labels “Altstadtbim”. This is a present initiative for fostering trams and is funded by the City of Graz.

#### Public Transport Hub

In 2012 the new hub “Hauptbahnhof” was opened. Now it is possible that the tramlines 1, 3, 6 and 7 drive directly to the main railway station. There you can change in short distances between long distance trains, commuter trains, tramlines and busses (inner-city service and regional service).

#### Park & Ride Murpark

Together with to prolongation of tramline 4 from Liebenau Stadium to Liebenau Murpark a big parking house has been built. There you can park your car directly coming from the highway and take the tram to go to the city center. A special combo-ticket (parking and PT) is well used by the commuters coming from south-east Styria.

#### Primacy of PT at traffic lights

The schedule speed of tram and bus decides whether people use PT. Therefore the vehicles announce the approaching at traffic lights by special communication. Then the traffic lights change to green light so that the vehicles can pass the corresponding crossing without a loss of time.

### Mobility Management

#### Mobility information

A special “education” for mobility is offered by the City of Graz:

Specialists of mobility go to school and teach the pupils about mobility, public transport ... Then the pupils are the multipliers at home and may influence the behavior of their parents.

Older people are used to drive car to reach their job. But after retiring an own car might not be necessary, if they know how to use PT. And this information is offered by city of Graz at special events.

#### Mobility Cheque

Students get a cheque of € 50,- each semester for co-funding the PT-ticket. This is valid for students living in Graz.

## Less car-intensive lifestyles

### Brochures for cycling

Special brochures and maps inform about the potential of cycling in Graz. The cycle-routes, repair-shops are visible, together with general information of Graz.

### Bring mE

Bring mE is a brand new delivery service for goods from the shops in the city centre to the customer's addresses. The goods will be collected by an E-cargo-bike in the late afternoon and delivered to the customers in the evening of the same day.

By this service people will be allowed to buy their goods by the way – and there is no need to use its own car to drive in the centre.

### PT-connection to recreation areas

In the north of Graz there is a big recreation area, Almenland. This is a big natural area with mountain pastures, and a big target for people of Graz to spend their leisure. But no public transport service exists. Therefore people have to use the own car and then the parking of many cars is a big contrast to the pastures.

Therefore a special "Call and collect-service" is planned in order to offer people an alternative to reach the Almenland.

## Public participation

### Active participation

The City of Graz involves their citizens in public participation in order to:

- Inform them about the intended project
- Get to know their wishes / needs
- Enable an input of the citizens
- Lower the costs (late qualified objections can increase the costs of a project)

This participation was arranged at projects like Neutorgasse, Annenstraße, Hauptbahnhof...)  
By this public participation SUMP's were worked out.

Additionally special guidelines for public participation were worked out. The Council of the City of Graz determined it for the future procedure in this topic.

## Koprivnica (CR)

Koprivnica is a city of 30,854 inhabitants in north-western Croatia. Well-known as the city of cyclists, Koprivnica is also the educational, cultural and industrial centre of regional importance. The city's active sustainable mobility policies have yielded a high percentage of cyclists and pedestrians in the city centre. The biggest current challenge for Koprivnica in making the local transport more sustainable is the lack of public transport.



Koprivnica participates in [CIVITAS DYN@MO](#)

Koprivnica can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/Croatian
Availability of local politicians:	Yes

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## Measures currently under development in the Pioneer city:

### Increasing use of alternative fuels

#### Electric municipal car sharing scheme

Koprivnica's ambition is to make one third of the municipal fleet electric by introducing a municipal car sharing system. The deployment of 6 electric vehicles, charging stations, the programming of a web platform to organise the sharing and a training scheme for staff are at the centre of the measure. It is expected to reduce CO2 emissions by 27% and the operating cost for the municipal fleet by 24%.

#### Low emission public transport

The City of Koprivnica plans to establish a public transport system within the city which is based on electric minibuses and an improved school and factory bus fleet. The City of Koprivnica will purchase two electric minibuses and set up electric charging stations for the buses. The expected result will be a reduction of CO2 emissions by 20% in relation to the current bus fleet operation.

### Collective passenger transport

#### Planning the public transport

There is no organized public transport system within the City of Koprivnica. Therefore, the city aims to develop a public transport system which will connect various options of regional public transport (railway and bus service) and the new PT inside the city. The system will comprise an integrated service of regional transport operators, including an integrated ticketing system and an intermodal passenger terminal. The result will be a plan for the establishment of an accessible public transport system in Koprivnica.

The City of Koprivnica is developing the first public transport system which will connect various options of regional public transport (railway and bus service) and the new PT inside the city. It will be the first integrated public transport in the towns and cities of a similar size in the wider region. The system will comprise an integrated service of regional transport operators with a choice of innovative and attractive new transport means and service modes: electric minibuses and light city railway, together with the campus bicycle system.

In the measures various intermodality combinations will be tested in order to reach optimal solutions and to ensure the smooth flow of passenger and freight transport.

### Less car-intensive lifestyles

#### Electric municipal car sharing scheme

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the centre of the measure. It is expected to reduce CO2 emissions by 27% and the operating cost for the municipal fleet by 24%.

### **Sustainable urban mobility plans**

Koprivnica has a long tradition of implementing sustainable mobility measures in the framework of the Local Agenda 21. The latest dynamics of the city call for more comprehensive mobility planning in a participatory process involving stakeholders and citizens directly. The Sustainable Urban Mobility Plan (SUMP) will respond to the new university campus development and promote new spatial and transport planning methodology in the city and the region. The result will be a legally adopted SUMP which will serve as an example for small and medium-sized cities in the region. An SUMP competence centre will ensure transfer of knowledge in Croatia and South-Eastern Europe.

## Ljubljana (SLO)

With 275,000 inhabitants at the time of the CIVITAS project and a surface area of 271.67 km<sup>2</sup>, the Slovenian capital Ljubljana is among the smallest European capital cities.

Ljubljana is a national and regional centre for culture, trade and science where Western and Central Europe intersect and mix with Balkan and Mediterranean influences. It is home to a university with over 47,000 students. Ljubljana residents are quite car dependent and the city absorbs 130,000 incoming cars every day. Even so, Ljubljana has made significant strides toward sustainable mobility, including by modernising its public transport fleet and services, expanding pedestrian zones and improving cycling conditions. The city aims for a modal split of one-third walking and cycling, one-third public transport and one-third “smart use” of cars by 2020.

Ljubljana participated in CIVITAS MOBILIS and CIVITAS ELAN.

Nantes can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/Slovenian
Availability of local politicians:	To be confirmed

## Proposed CIVITAS measures for take up:

<b>Collective passenger transport</b>
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### **Demand-responsive services**

Before Ljubljana's second CIVITAS project, travellers with cognitive disorders could get transport help only if they belonged to special associations in the city. There was a lack of accessible transport for nonmembers and visitors to Ljubljana. To address this need, the city set up a demand-responsive public transport service for people with cognitive disorders. To start, an application was developed and distributed to identify public transport lines where special services were needed. The process helped inform bus drivers about the plans to serve these passengers with public transport. Additionally, the public transport operator (LPP) introduced a novel service (perhaps the first of its kind in the world) in which passengers with Down Syndrome and autism could use buses on their own. LPP developed the system for passengers with Down Syndrome and autism in cooperation with an educational institution for youngsters with cognitive disorders called Janez Levec. Thanks to the involvement of relevant associations the measure was implemented differently than planned and consisted of a service with two additional vehicles, operated by LPP. Before the full implementation of the demand-responsive service, in January 2012, 17 customers were using the public transport service, while only three were registered in the system. After the full implementation and operation of the software tool in August 2012, all 17 users were registered. It has been noted that additional passengers not registered for the service have taken advantage of the system's features. The main lesson learned from the measure was about the importance of involving the target group from the earliest stage of planning.

### **E-ticketing and public transport portal**

Before Ljubljana's second CIVITAS project, differences in timetables, fares and services of different providers had made the public transport system difficult to understand. With the support of CIVITAS, Ljubljana introduced a system enabling passengers to plan journeys online and travel with a single ticket on all transport modes. An integrated city card "Urbana" was introduced as a payment tool and later as a ticket covering the entire city, and, in the last phase, the region. Based on electronic ticketing technology, passengers can purchase tickets via mobile phone among other channels. The city created a common website using Google Transit that offers travel information for the entire public transport network in the city and enables route planning in Ljubljana. Ljubljana's public transport operator (LPP) and Slovenian Railways (SZ) jointly prepared timetable and station position data for the Google Transit portal. Regular public transport users in Ljubljana's suburbs welcomed ticketing integration between two bus service providers.

It attracted an average of 34,000 users per month, with the number climbing by 600 per month. Sales and topping up of Urbana contactless cards were below expectations, although the numbers went up 20 percent from 2,167,623 in 2010 to 2,602,411 in 2012. The Ministry of Transportation viewed this measure as a national pilot project.

## **Mobility Management**

### **Individualised mobility marketing**

As public acceptance of transport policy is of crucial importance, the city wanted to enhance public participation in the policy process. With the support of CIVITAS, the area of the CIVITAS corridor was analysed through public opinion surveys, and a process of individualised mobility marketing was set up based on citizen involvement in setting transport policy. A brochure called “Mobile Ljubljana” with comprehensive information on sustainable mobility was sent to households and distributed at mobility info-points established during the previous CIVITAS project.

At least 50 meetings were held over four years with local partners. Thanks to the individualised mobility marketing campaign more than 2,600 people were involved, with 600 included in a special deep communication strategy procedure. Among the 600, 20 percent declared they would change their travel habits, and 50 percent declared they were reconsidering the future use of their current transport mode. The mobility brochure was distributed to 130,000 households. Implementation of measures with a high potential impact on mobility behaviour occurred only toward the end of the project, so their full impact could not be evaluated during CIVITAS ELAN.

## **Less car-intensive lifestyles**

### **Comprehensive cycling strategy**

One of the most innovative achievements of CIVITAS in Ljubljana was the development of a comprehensive cycling strategy. It defined quality conditions for the city's cycling network and addressed safety issues and accessibility, granting priority to cyclists. It included information about the city's cycling vision and aimed to link cycling paths, improve bike-parking facilities and intensify cycling promotion. The city also established a public bike-sharing system called Bicike (LJ) with 300 bicycles available at 31 terminals. The city hired a cycling coordinator and developed an interactive and regularly updated cycling map with information on bicycle infrastructure, Bicike (LJ) terminals, bicycle racks, services and potentially dangerous spots.

The cycling strategy was defined after an intense citizens' engagement process and innovative promotion campaigns. Afterwards, the strategy was included in the Transport Policy until 2020, which was adopted by the city council in September 2012.

The bike-sharing system was a success, surpassing expectations. It was replicated in other Slovenian cities. Thanks to CIVITAS, the cycling rate in Ljubljana increased by 20 percent, based on the number of journeys. The input from citizens during the planning process showed that safety is the biggest influence on people's decision to get on their bike to get around the city.

## **Sustainable freight logistics**

This portal is a long-term communication and information platform for stakeholders through which knowledge can be transferred. It supports stakeholders for performing logistics activities better (routing tool, parking places, physical barriers, electric charging stations). They can express their opinion and submit proposals for improvements.

The tool/portal includes:

- Basic information about deliveries in Ljubljana
- Interactive maps including parking places for delivery vehicles, charging stations for electric vehicles, physical barriers, etc
- Information on good practices in Europe
- Navigation tool for delivery drivers
- Questionnaires for stakeholders, information on events, etc.

Further there was also a transport computer model for city logistic in Ljubljana developed; demonstrating possible scenarios of sustainable logistic measures that the city can implement (e.g. consolidated delivery, deliveries with electric vehicles). The model demonstrated reduction of delivery trips to the city centre and reduction of fuel consumption, emission savings and noise reductions in different areas of the city. The results were presented on the web portal. The web address of the web portal is [www.dostave.si](http://www.dostave.si) («dostave» means »deliveries«).

This kind of promotion of sustainable freight logistics could be applied also in other cities, particular with a strong emphasis on environmental benefits that sustainable freight logistics measures can bring to cities.

### Public Participation

#### Participatory planning and promotion of safe and increased bicycle use

Active engagement and participation of civil society in mobility planning and implementation is crucial. Within its first CIVITAS project, Ljubljana had focused on the development of a public participation model to enhance responsibility for future mobility development. Improved cycling infrastructure was emphasised in the starting phase. Public participation was further developed during the city's second CIVITAS project.

## Madrid (ES)

Madrid is the capital and largest city of Spain. The population of the city is roughly 3.3 million and the entire population of the Madrid metropolitan area is calculated to be around 6.5 million. It is the third-largest city in the European Union, after London and Berlin, and its metropolitan area is the third-largest in the European Union after London and Paris.

Madrid is active member of CIVINET Spain.

Nantes can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/French/Spanish
Availability of local politicians:	No

## Measure to be explored

<b>Less car-intensive lifestyles</b>
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### **BiciMAd – electric bikesharing scheme**

Madrid launched its shared bicycle scheme in the summer of 2014. It makes use of electric bicycles. Taking advantage of the experience from the beautiful city of San Sebastian, Madrid has adopted the same bike model. Specially designed for sharing programs, the robust bike has an integrated battery which lasts for about 18 hours or about 70 kilometers, according to the specifications, allowing the bikes to recharge at night. The bulky handlebar displays all the instructions and contains the controls for the start/stop, lights, and electric assistance level. It also displays the battery charge state.

The bicycle is designed and built by the Spanish company BonoPark, which is at the same time in charge of the stands and management of the system. In total, there will be 1,560 bicycles and 3,120 stands shared at 123 stations. The bicycles will be available 24/7, all year long.

Starting with an annual fee of 25 euros (15 for the public transport subscribers), the users will pay 50 euro cents for the first 30 minutes and 60 additional cents for each half-hour of use. After the second hour the price rises to 4 euro per hour.



## Nantes (FR)

Located close to the Atlantic Coast, the Nantes conurbation with its 24 municipalities is the largest urban centre in western France. Since 2000, it has seen the second highest rate of population growth in France. The Nantes–Saint-Nazaire metropolitan zone combines strong economic assets with a quality of life based on a balance between the natural and urban environments.



Nantes participated in [CIVITAS VIVALDI](#).

Nantes can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	N
Systematic transfer	N
Languages:	English/French
Availability of local politicians:	To be confirmed

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## Proposed CIVITAS measures for take up:

### Increasing the use of alternative fuels

#### Developing a new clean public transport fleet.

The energy policy on the PT network in Nantes bus is currently based on the choice made in the late 90s in favour of CNG.

Currently, more than 80% of the bus fleet is CNG-powered. This choice allows the conurbation to meet environmental (reducing fine particles in particular) and economic (energy costs, investment costs) targets. To continue its policy of energy transition towards cleaner systems (Green House Gas reduction) and support citizen request to decrease the noise of public transport, Nantes Métropole and its operator SEMITAN are testing and integrating new technological developments in fuelling solutions (hybrid or electric vehicles for instance).

### Collective passenger transport

#### Developing a new clean public transport fleet.

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#### Structuring of the public transport network

The PT operator and the urban authority of Nantes cooperate on the structuring of public transport. Constructed during their CIVITAS project VIVALDI, line 4 entered into service on November 6, 2006. Completing the 3-line tram network, the bus line was the result of a bet: offer the same level of service with a bus system as with a tram. Indeed, the BusWay applied all the elements that characterise the tram: dedicated lane, dedicated rolling stock, well-designed and equipped stations, priority at all intersections, high frequency. Moreover it serves four park & ride facilities within extended hours. The line is seven kilometres long and has 15 stations.

The EUR 50 million infrastructure costs and EUR 9.2 million cost for 20 natural gas buses brought the total to EUR 8 million per kilometre, about three times less than what a tramway would have cost. Punctuality went up to 95 percent with an average service speed of 21 to 23 kilometres per hour. Frequency during peak hours was increased in 2010. Ridership increased from 17,000 users per day at inauguration to 21,000 after four months and 30,000 in 2012.

#### The smart ticketing “libertan” project

Libertan is a multimodal contactless smart card with a post payment system: users validate each time they board the PT network and are invoiced the following month on the basis of their

real consumption. The system also calculates the best rate applicable up to the maximum limit of the price of a monthly ticket.

In a first phase, the smart card is opened to all public transport modes available in the urban area: buses, busway, navibus, and regional trains.

In a second phase, Libertain will be enlarging its scope to integrate other mobility modes:

- P&R under access control
- Marguerite, the carsharing service,
- Bicloo, the self service bicycle rental system.

The objective is to give users a “key” to alternative mobility solutions, encouraging them to go from one mode to the other or to combine them to find the better match for their trips. As such, the card will increase the integration and draw coherence between all the mobility options available in the conurbation and promote their use.

The Libertain smart card is developed within an Interreg IVB project called SITE, which objective is to work together on the development of smart ticketing products and to address the barriers to interoperability of tickets in the Atlantic Area. The ultimate goal is to be able to purchase in one region a smart ticket that can also be used in the transport networks of other regions of the Atlantic area, thus facilitating the use of public transport.

### **Demand management strategies**

#### **Introducing park-and-ride facilities and parking standards.**

As Organizing Authority for transport and mobility, Nantes Metropole is fully aware of the necessity to have integrated planning strategies to reach its objectives. As such, the parking policy has been integrated as one of the main tools to serve this global mobility policy, being a way to have an impact on user behaviour by taking action directly on the demand side: car users.

Whatever on-street or off-street, almost the whole parking offer belongs to local public authorities. This situation grants Nantes Métropole a wide capacity to set its parking policy in the wake of its global mobility policy, combining public transport, traffic regulation, protection and vitalization of the centre of Nantes.

Between 2003 and 2005, CIVITAS supported a six-fold increase in park-and-ride facilities near tram lines, train stations and Busway line. In addition, parking standards were introduced for new buildings.

The conurbation now accounts for 48 P&Rs with 6541 parking spaces.

### **Safety and Security**

The low traffic zones are areas where to specifically defined beneficiaries circulating at a speed equal to or lower than 30km/h.

Under the new traffic plan for the downtown area, the major axis Cours des 50 Otages and some of the adjacent streets have become a low traffic zone (LTZ) since October 1, 2012 . This new LTZ is dedicated to pedestrians, bicycles (creation of a bike path in a central position), public transport, but also to some authorized motor vehicles: residents, shopkeepers, delivery vehicles, taxis, hotel guests, etc.

The objectives of this measure are to:

- Give public space back to pedestrians in a dense and lively urban area
- Promote bicycle routes
- Increase the efficiency of PT routes
- Encourage the modal shift

## Less car-intensive lifestyles

### Improving bicycle culture and services

Ville à Vélo and Bicloo. Before CIVITAS, Nantes did not have high cycling levels. With the initiative's help, a long-term rental service, Ville à Vélo, was introduced in 2004 and a short-term service, Bicloo, followed in 2008. New bicycle racks and secure bike-parking facilities were installed at several transport interchanges. The success of Ville à Vélo (12 percent more rentals in 2007 compared to 2006) led to the enlargement of the service. The biking culture is still growing, with 23 percent more rentals in 2012 compared to 2011. The bike service now has 120 electric bicycles and 150 regular ones.

## Transport telematics

### The smart ticketing “libertan” project

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## SUMP

The current SUMP (2010-2015, perspectives 2030) is Nantes' 3d mobility plan.

The first two urban mobility plans strongly promoted public transport whereas the 3rd, while still proposing measures to develop it, aims at a strong increase in cycling services and cycling and walking habits. However, to promote these “local modes”, the shape of the city should be worked on. The objective is to make it more compact and to bring together various functions thus favouring short trips easily made on foot and by bicycle: the “short distance city”.

The SUMP current strategy is organized around 4 axes:

- Build a “short distance city” by reinforcing existing urban centres with diversified urban functions and a better balance between housing, services, jobs, shops, facilities.
- Encourage local trips by building high quality public spaces adapted for pedestrians and cyclists;
- Coordinate and develop mobility networks (public transport, roads, cycling routes) to organize the links between urban centers;
- Encourage people to change their mobility behaviour.

The objectives of the SUMP implementation are translated into an evolution of modal share:

Mobility modes	2008	OBJ. 2030	2015
-----			
Walking	24 %	30 %	25 %
Cycling	2 %	12 %	4 %
Public transport	15 %	16 %	15 %
Car as passenger	10 %	9 %	9 %
Car as driver	47 %	31 %	45 %
PTW	2 %	2 %	2 %

By 2030, the first 4 "alternative modes" should reach an overall share of 67% against 33% for the two motorised modes.

The share of walking and cycling is to be raised by 16 points by 2030 whereas the share of car-driver must be reduced correspondingly. This trend should be initiated as early as 2015 with an increase in walking and cycling by 3 points.

## Utrecht (NL)

Utrecht is the fourth largest city of the Netherlands with a growing population of 300,000 at the time of the CIVITAS project. Given its central location and history dating from Roman times, it is a popular destination for tourists. The city attracted about 90,000 commuters a week, a figure projected to double in 20 years' time.



Utrecht participated in [CIVITAS MIMOSA](#).

Utrecht can offer the take-up level:	
Being inspired	Y
Structural dialogue	Y
Studies	Y
Systematic transfer	Y
Languages:	English/Dutch
Availability of local politicians:	No

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## Proposed CIVITAS measures for take up:

### Collective passenger transport

#### Park-and-ride facilities

Before CIVITAS, car traffic into the city centre of Utrecht had increased continuously. Park-and-ride (P&R) facilities were needed to keep the city accessible, improve air quality and offer citizens a clean and healthy living environment. CIVITAS supported the development of the P&R concept comprising a high-quality public transport service combined with an increased number of P&R facilities. A broad campaign targeted social-leisure visitors and commuters with a website, an app and promotional activities. The extension of the paid parking area in Utrecht and the closure of 1,000 parking places near the city centre made the P&R facilities more attractive.

A baseline survey helped to better target the promotional activities. Specialised contractors for the various parts of this kind of measure proved to have added value.

There was a significant increase in the number of P&R tickets sold at three of the four facilities. As there were multiple CIVITAS measures aimed at decreasing traffic it is difficult to gauge the precise impact of this measure. The increase in awareness and satisfaction was marginal, however. The city recommended a thorough analysis of transport and parking options, as well as of potential P&R users, before implementation. Beyond the framework of CIVITAS, the city of Utrecht recognised the relevance of P&R services and decided to implement two additional P&R facilities by 2016.

### Mobility Management

#### Planning road construction and communication

Before CIVITAS, communication about accessibility and traffic disruption was done by five different municipal departments, as well as by institutions such as the province and the national road authorities. With the help of CIVITAS, the Utrecht Accessible Foundation wished to make communication more consistent and standardised. Detailed synchronisation of the planning of roadwork activities was therefore necessary.

As part of this challenging and innovative measure, a brand was developed that was used in all communication about roadworks. Messages were conveyed through a single media channel by one spokesperson. The Manual for Communication on Roadworks and Events was developed. It was a practical tool guiding the planning and implementation of project communications.

The communication strategy was considered to be clear, as 65 percent of survey respondents knew when roadworks would commence in their neighbourhoods, 47 percent knew when they would start on highways and 22 percent knew about project details elsewhere in the city, even if they were not affected by the works. Furthermore, 91 percent said they would change their travel behaviour if they were aware of roadworks



### **School road safety label**

Before CIVITAS, road traffic education had been given low priority because school curricula was already chock-a-block with other important lessons. With the help of CIVITAS the Utrecht Road Safety Label (URSL) was developed, offering schools the opportunity to set up and execute a structural traffic education plan at their own pace. It helped raise awareness of road safety through education and to improve road safety around schools.

A pilot study was conducted with eight schools in five school zones to test the concept and materials. It was a difficult task to get schools involved due to their many other activities. Getting parents engaged was also a challenge. But the measure was a huge success story in Utrecht. In October 2012, 38 primary schools received the label and another 32 schools were actively working to meet the criteria. Satisfaction about road safety around URSL schools increased and 54 of the 70 participating schools' environments were redeveloped with a school zone. The city would recommend: a pro-active approach to the school by a partner with a firm understanding of school practices; a consistent package of information that shows why it is in their interest to participate; and participation being free of charge.

## **Demand Management Strategies**

### **Innovation of the system of parking permits and rates.**

The city centre had a shortage in parking spaces. This CIVITAS measure consisted of an advanced digitalised parking system that would increase efficiency of parking management and enforcement. It promised to improve "payment behaviour", decrease the number of visitors to the parking reception desk and generate parking data. Under this measure, new hardware and software was developed and implemented.

Lessons learned included the need for the establishment of a productive and continuous dialogue with local politicians and stakeholders during the entire process from the earliest stage.

Payment behaviour changed. The percentage of short-term parked cars with a ticket increased by 10 percent between 2010 and 2012 compared to the business-as-usual situation, while the number of enforcement officers decreased from 63 in 2008 to 45 in 2012. These personnel were replaced by a scan car. Furthermore in the first few months, almost 15 percent of paid parking by visitors was ticketed by mobile phone. The number of visitors to the parking reception desk decreased by more than 10,000 per year compared to the business-as-usual situation, and personnel costs at the Department of Parking decreased proportionally. One of the barriers encountered concerned privacy issues connected to the collected data.

### **Promoting the use of clean vehicles through an innovative parking policy.**

As part of the new parking policy the city aimed to develop a tariff system that differentiates between vehicles according to environmental performance. This enabled the city to promote the purchase and use of less polluting vehicles. The measure was innovative as it required new national and municipal legislation. This action was part of the city's Air Quality Action Plan. Research was conducted on how to classify vehicles based on environmental characteristics and how to enforce the parking rules. A national pilot with experimental legislation was stopped in 2011 due to lack of political support. This led to the suspension of the local pilot, as well. Differentiated parking tariffs based on environmental performance was clearly a politically

sensitive idea. A lesson learned is that a city needs a strong, consistent political and legislative framework to implement such measures.

## **Safety and security**

### **School road safety label**

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## **Urban Freight logistics**

### **City distribution by boat**

Before CIVITAS, heavy vehicles damaged the historic and cultural heritage of the city and caused a nuisance in the form of accidents, noise and air pollution. These were enough reasons for the city to take advantage of the centre's good accessibility by waterways.

With the help of CIVITAS the city introduced a new zero-emission electric vessel, the beer boat, to transport goods to clients, shops, bars and restaurants in the city centre. Since 2010, the Beer Boat has operated six times per day on four days of the week, supplying more than 60 catering businesses. A multi-purpose vessel and an "eco-boat" were launched, as well. The zero emission vessel gave immediate emission benefits of 38 tonnes of saved CO<sub>2</sub>, 31 kg of saved NO<sub>x</sub> and 6 kg of saved PM<sub>10</sub> emissions during the CIVITAS period. Overall, the Beer Boat measure yielded a net present value of well over EUR 420,000 at a 3.5 percent discount rate. Due to the many positive effects of the Beer Boat it is considered one of Utrecht's most popular CIVITAS measures, having garnered significant attention and recognition at the national and international levels.

### **Distribution centres for fresh and perishable goods.**

Catering goods are usually delivered multiple times per week to guarantee freshness. This increases freight traffic in the inner-city. With the support of CIVITAS, the city explored the delivery of fresh products using urban distribution centres bundling fresh and perishable goods and using cleaner freight transport vehicles for the distribution. This was a measure in the Netherlands. Based on the results of two roundtables with retailers, wholesalers, transport

companies and the Chamber of Commerce and desk research, a business plan for the bundling of fresh and perishable goods was finalised at the end of 2010.

Several meetings with stakeholders ensued to discuss a pilot project. However, the changes that were required in the organization of the catering providers turned out to be too complex. The success of such a measure depends on the ability of the stakeholders to change their behaviour which requires a step-by-step process over a long timeframe. However, the outcomes of the field research pointed out the challenges of creating a bundled delivery service. Caterers are nevertheless aware of the pressing necessity to shift the current freight transport towards a more sustainable system.

### **Merchandise pick-up points (MPuP)**

In 2009, the proportion of customers driving their cars into the city centre for big purchases decreased from 20 to 9 percent. But car-driving shoppers still represented 13 percent of sales by innercity shops. The idea of this CIVITAS measure was to install merchandise pick-up points (MPuPs) at accessible locations such as park-and-ride facilities or railway stations. Based on a feasibility study, the city looked to combine the MPuPs with the existing “inner city service”: a bundling concept in which one transporter offers delivery of goods, the pick up and sending of parcels, and waste returns. This would be done to and from a hub outside the city centre. No shopkeepers, however, were willing to participate in such a pilot project.

The experience made it clear that the concept of the MPuP should be context-oriented and attractive for the different stakeholders. MPuP should offer direct benefits for the customers and shopkeepers to encourage them to change their mobility habits. A combination of services would increase the chance of success of the measure.

<h2><b>Transport Telematics</b></h2>
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### **Improving bus service quality between the centre and the north.**

The bus line between the central station and the north of Utrecht was the only public transport corridor in the city where buses did not have a separate, priority lane. This resulted in long travel times and unpredictable services. With the help of CIVITAS, traffic light prioritisation was installed and a series of medium- and long-term measures were suggested for implementation or continuation after the end of the CIVITAS project.

### **The traffic light priority system was part of the city's action plan for air quality.**

The impact of the priority system was not measured due to the lack of efficient tools to collect data on travel times. Measuring the travel times would have been an expensive task considering the modest scale of this measure. Thus, impact evaluation was postponed until more of the proposed measures had been implemented. The city's lesson learned is that the objective of this type of project should be clearly embedded in policy documents beforehand. Secondly, the involvement of residents at the earliest stages of the process is essential for the measure's success. Thirdly, sufficient time and efforts should be devoted to compile an inventory of the interaction with other (infrastructural) projects for the area concerned.

## **Less car-intensive lifestyles**

### **Car sharing**

Before CIVITAS, the city facilitated carsharing initiatives with around 200 cars in and around the city centre, particularly in neighbourhoods with paid and reserved parking spaces. With the help of CIVITAS, these services were expanded to residential areas on the outskirts of the city, based on market and segmentation research with more than 1,000 participants.

The city worked together with marketing company Emotion and network agency Nudge and with all relevant businesses. One of the main barriers observed was a disagreement between one of the car-sharing providers and the other stakeholders involved regarding the special tariff proposed to users during the campaign.

Implementing the measure led to reduced private car mileage and increased use of car sharing. Between June and August 2012, the number of car-sharing members increased by 298. Of these, 13 percent (39 new members) signed up through the campaign website. The success was partly due to the combination of a consumer platform that promotes sustainable projects by bringing people together (bottom-up) and cooperation with a communication agency that designed the campaign's visual identity (top-down).

### **Public and rental bikes (not fully implemented).**

At the start of the CIVITAS project, bicycle use in Utrecht was high: 52 percent of the residents normally made city centre trips by bike. As the city wanted to give priority to the bicycle as the main mode of transport within the city, this measure aimed at implementing a bike rental system with a dense network of pick-up and return points for both commuters and visitors.

A preliminary survey showed that most of the relevant partner companies thought that bike sharing would not be profitable without an annual public subsidy to cover expected losses.

After local elections the measure was suspended due to lack of political support and the only mildly promising results of a second market survey. Nevertheless, the city continued working on its bicycle management strategy to stimulate demand and supply, including through a bike system for public transport commuters working downtown. Two recommendations based on this measure concern the need for a clear definition of the target group as well as the consideration of a national-level design rather than custom-made local systems in each city.

## Vitoria-Gasteiz (ES)

With a population of 233,399 inhabitants, Vitoria-Gasteiz is the capital of the autonomous community of the Basque Country. Unspoiled by massive urban sprawl, the city has always been noted for its careful planning, human dimension and attention paid to balancing new developments with environmental concerns and social initiatives.

Vitoria-Gasteiz participated in [CIVITAS MODERN](#).



Vitoria Gasteiz can offer the take-up level:	
Being inspired	Y
Structural dialogue	N
Studies	N
Systematic transfer	N
Languages:	English/Spanish
Availability of local politicians:	No

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## CIVITAS measures for take-up

### Sustainable Urban Mobility Plans

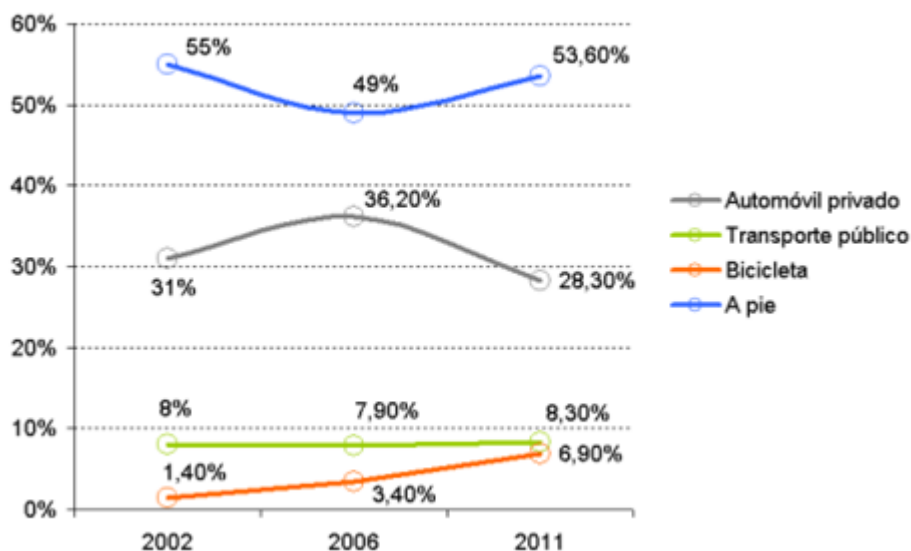
Vitoria-Gasteiz City Council, in the frame of its commitment to a sustainable development that let us to maintain our quality of life and turn cities and their surroundings in an ideal place to live, drew a Sustainable Mobility and Public Space Plan (SMPSP) that has been developed in the last years and that is starting to pay off.

An integrated model to regulate traffic, access and urban space organisation through the definition of superblocks is one of the strategies the city developed and is testing in the last years. The objectives of this initiative are to reorganise traffic to free up space, redefine the public transport network to improve accessibility and coverage, consolidate the network of cycling paths, set up a network of pedestrian walkways, and identify infrastructure required for parking and delivery of goods.

The scheme is targeting a reduction of at least 10 – 15 percent in overall traffic flows in the controlled areas, and 30 percent of travels to be made by bus or bike. Pedestrian areas are to be increased by more than 50 percent and bicycle lanes are being extended from 38 km to 140 km. A new traffic light system, already in use, gives priority to public transport, which has reduced travel times. Educational campaigns are sensitising citizens to safe and energy-efficient driving, which is projected to result in 15 percent savings in fuel.

One of the approaches the municipality tested to develop superblocks in 2013 was the concept called “traffic calming”. As funds are becoming scarcer due to the economic crisis, this kind of innovative actions will be more important to reach our objectives.

This whole new mobility scheme has already produced a noticeable shift in the city’s modal split, as can be seen in the following chart:



Since transport is the second sector to contribute to GEIs in our city (37% share), it is clear that the materialization of a mobility model less dependent on fossil fuels is a necessity. The next table shows the positive incidence in this matter, of the measures derived from the SMPSP over the last years:



GHGs emissions	2006	2011	Δ 2011/2006	2006	2011	Δ 2011/2006
Municipality	t CO <sub>2</sub> e		%	t CO <sub>2</sub> e/inhab		%
Domestic sector	269.927	254.632	-5,67	1,17	1,05	-10,60
Services	202.227	179.713	-11,13	0,88	0,74	-15,78
<b>Mobility</b>	<b>243.971</b>	<b>219.722</b>	<b>-9,94</b>	<b>1,06</b>	<b>0,9</b>	<b>-14,65</b>
Primary sector	79.422	78.551	-1,10	0,34	0,32	-6,26
City council	45.771	43.023	-6,00	0,20	0,18	-10,92
TOTAL	841.318	775.641	-7,81	3,65	3,19	-12,60

*GEIs emissions trends in Vitoria-Gasteiz during the period 2006-2011*

Besides the change of scale of the city due to its recent urban growth, some of the most difficult obstacles with which the Plan found along its development have been those relating to governance. One of the most challenging obstacle is the continued participation of all stakeholders in an ongoing process that has lasted more than seven years.

The Plan drivers have made considerable efforts to involve all the agents in a rich participatory process through the Forum calls and an intensive communication with citizens. Each of the undertaken mobility measures had a previous information campaign with illustrative material (brochures, posters), press releases, ad hoc content in the mobility page of the municipal website and even dissemination of information at street level by the local police service.

The last identified barrier was to obtain the support of the government team even after the political change occurred in the city after the last election in May 2012. The support of policy makers is required for technical decisions become a reality and was achieved demonstrating the technical feasibility and effectiveness of the measures and citizen involvement through the Citizens Forum for Sustainable Mobility.

It should be stressed the long-term vision which is always present in the mobility planning in the city, becoming a guide of great value to continue the path taken by the SMPSP in its first phase (2007-2011). Over this time, the Plan achieved a series of benefits for the city. Of the goals set at the beginning, we reversed the trend in the modal split, reducing the use of private car and increasing displacements in public transport, by bicycle and walking; we created functional networks for pedestrian mobility and for cyclists; and we gave value to the public space as a place for citizens living and coexistence. It is also noteworthy the progress reached in the public transport system, resulted primarily in reducing pollutant emissions and in saving travel time for users. All these achievements have also contributed to building Vitoria-Gasteiz as a greener city, our bet in recent years.

Among the challenges for the future, a priority workspace should be to reduce the number of trips to meet daily needs, a goal not achieved by the SMPSP so far. A specific lack is the mobility to work, where the private car is still the main mode of transport. The coexistence between pedestrians and cyclists is another issue we must face, however this topic is already being analyzed in the frame of the Citizen Forum for Sustainable Mobility. Finally, we must highlight the high degree of motorization in our city, like many others, which is a constant threat factor to reach a sustainable mobility scheme.

Despite these obstacles, we are confident that the planning of urban mobility in Vitoria-Gasteiz has a strong foundation and clearly defined guidelines to lead us along the right path. The design and implementation of this planning can be considered as innovative in many aspects; but, apart from this, our future success depends on the commitment and strong will of the technicians and all the social stakeholders involved, as well on the necessary institutional coordination.

## Demand management strategies

### Superblocks model

Regarding the implementation of these principles of sustainability in terms of mobility, the scheme chosen in Vitoria-Gasteiz is the superblocks model. To understand this concept, we must know that our cities were designed for cars rather than for the citizens. This starting point determined to a great extent the use of public space by pedestrians, cyclists and public transport. In order to reverse this trend and return the public space to citizens, Vitoria-Gasteiz sought a change in its structure related to the mobility model through the implementation of the superblocks scheme.

The superblocks are urban units of varying dimensions where motorized mobility is moved to the surrounding streets and, so that the inner streets are reserved for pedestrian and cyclist mobility, for the public transport, neighbors and services. Through traffic is removed and the interior roads become calmed streets.

Ultimately, superblocks are a measure of urban planning that allows ordering mobility with the aim of reducing public space for the cars and giving it back to the citizens. To deploy the superblocks model it is necessary to establish first a hierarchy among the various types of roads. This way we distinguish between basic streets (through streets) and secondary or inner streets (living streets). These last streets will be closed to vehicles that just want to pass through and will be open way for the others at certain times.





*Urban planning scheme based on the superblocks model - Source BCN Ecología*

Starting from this innovative model of urban planning, pedestrian and cyclist infrastructure in our city is integrated in and adapted to the superblocks scheme. This superblock model contributes this way to enhance the pedestrian condition in Vitoria-Gasteiz and, at the same time, to strengthen the bicycle as a mode of transport more effective and safe.

In the end, rather than defining a new hierarchy for pedestrian and cyclist infrastructure, this model envisages a mobility scheme that limits the space and the speed of passing vehicles. This scheme results in a public space and an urban landscape with more quality, which makes urban displacements more attractive, comfortable and safe, both pedestrian and by bicycle.

Before CIVITAS, the traditionally strong pedestrian mobility culture in Vitoria-Gasteiz was threatened by the rise of the car and physical growth that was making pedestrian mobility less and less competitive. With the support of CIVITAS, the city planned the redesign of public space into 77 superblocks, reserving the space within each block for pedestrians and cyclists. It tested the implementation of one demonstration block and established 16 other blocks within the project period. The measure was highly innovative, as it radically banned public transport and most car traffic from the insides of superblocks and aimed to convert much of the inner space into pedestrian areas with playgrounds, benches, vegetation and wifi connection.

Regular meetings with technicians, politicians and citizens' associations assured a strong consensus for the measures to be implemented. The superblock model was proposed in the city's Sustainable Mobility Plan and was closely linked to other CIVITAS measures (see measures 4, 5, 6, 7 and 10). A big campaign targeting citizens helped foster favourable attitudes toward a new culture of sustainable mobility.

Pedestrian area in the demonstration superblock increased from 45 percent to 74 percent. Noise measured inside the superblock dropped from 66.5 decibels before the action to 61 decibels afterwards due to the reduction of motor traffic. Air quality improved with a 42 percent reduction in CO<sub>2</sub> and NO<sub>x</sub>; and a 38 percent reduction in particulates. The measure affected the rest of the city in terms of reduction of motorised mobility and, to a lesser extent, an increase of cycling and pedestrian mobility. Citizens' satisfaction was very high. The CIVITAS project helped the municipality to secure additional funds for public works from the Spanish Fund for Local Investment.

## Part 2. CIVITAS Thematic tools

### 2.1 Assessing options for more efficient road pavement markings

Municipalities usually undertake road surface markings maintenance through the combined use of their internal staff and outside contractors. The evaluation of the work of external contractors is often done only in a qualitative manner: this does not allow assessing if the budget allocated for road surface markings is spent properly.

Within the framework of the EU FP7 funded project CIVITAS Plus RENAISSANCE, CIRIAF (an Interuniversity Research Centre based at the University of Perugia) developed a tool to verify and judge the quality of road surface markings by means of a scientific and experimental approach.

This approach - based on the measurement procedures defined by the European standard EN 1436 - considers many parameters affecting the quality of road surface markings, such as texture and condition of road surface, traffic flow, weather conditions, road lighting. Two full experimental campaigns were performed in Perugia (Italy) and one in Bath (UK), allowing to refine the algorithms and to develop a robust procedure.

The definition of two new synthetic indicators, CIS-Q (CIVITAS Indicator for Stripes – Quality) and CIS-C (CIVITAS Indicator for Stripes – Cost) allows to rate the global efficiency in terms of technical performance and cost of the management system of road surface markings of a municipality road network.

The methodology can be applied all over Europe, since it can consider several types of materials, road surface conditions, traffic flows and weather conditions without restrictions.

#### Contact:

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<b>Take-up level:</b>	
<b>Being inspired</b>	<b>YES</b>
<b>Structural dialogue</b>	<b>YES</b>
<b>Studies</b>	<b>YES</b>
<b>Systematic transfer</b>	<b>YES</b>
<b>Languages:</b>	<b>Italian/English</b>

## 2.2 CONDUITS Decision Support Tool

With the aim of achieving a common and more holistic approach to the assessment of ITS and traffic management measures, the EU-funded CONDUITS project (2009-2011) defined a set of key performance indicators (KPIs). With the input of some 30 cities from Europe and beyond, a total of 13 KPIs were defined across the main policy areas of traffic efficiency, pollution reduction, road safety, social inclusion and land use. Selected KPIs were then tested in Paris, Rome, Munich, Tel Aviv and Ingoldstadt.

Building on these KPIs, a Decision Support Tool (DST) has been developed with support from Kapsch TrafficCom. CONDUITS\_DST is designed to help decision makers understand what will be the expected wider impact(s) of a particular measure prior to a potential system decision or deployment. The tool has been developed in several stages: a first version covering pollution reduction was developed in 2012 and expanded in 2013 to encompass two traffic efficiency KPIs: reliability and mobility. In 2015 the tool was extended even further with the integration of the CONDUITS direct and indirect safety KPIs, estimated by means of predictive traffic safety models.

CONDUITS\_DST was evaluated in a preliminary case study in Brussels on part of a bus line, before and after the implementation of a system granting priority at traffic lights. As a result, the city of Brussels is now considering mainstreaming the use of CONDUITS\_DST for the evaluation of all new traffic management measures. The tool was further used in Tel Aviv, where it assisted the local authority in its evaluation of different traffic signal strategies to providing public transport priority and their corresponding impact on crossing pedestrians within the framework of the CIVITAS 2MOVE2 project. Within the same project the tool was also used by the city of Stuttgart to evaluate a priori the benefits that could be gained by a traffic control measure aimed to minimise emissions.

Take-up level:	
Being inspired	YES
Structural dialogue	YES
Studies	YES
Systematic transfer	YES

## 2.3 Using Behavioural Change Principles

In the Netherlands there were many experiments with behaviour change during the Optimising Use (Beter Benutten) programme. This programme included measures like rush hour avoidance which provided incentives to change modality, route or time of travel or work at home. These measures now have been evaluated and for the next phase of the Optimizing Use programme, they are enriched with new insights in behavioural change, like the theories of Kahneman, Ariely and Cialdini. Furthermore, we now have more insight in the behaviour we are trying to change.

When designing new measures CIVITAS cities can profit from this experience and these tools to make the behaviour change more effectively.

In CIVITAS we used this method during our master class in the forum in Casablanca, which was rated highly by the participants. See <http://www.faciliteeratelier.nl/?p=1646> for more details.

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Take-up level:	
Being inspired	YES
Structural dialogue	YES
Studies	YES
Systematic transfer	YES
Languages:	Dutch/English

## 2.4 Business Model Canvas in Sustainable Mobility

The Business Model Canvas is a strategic management and lean start-up template for developing new or documenting existing business models. It is a visual chart with elements describing a firm's value proposition, infrastructure, customers, and finances. It assists firms in aligning their activities by illustrating potential trade-offs. The Business Model Canvas was initially proposed by Alexander Osterwalder based on his earlier work on Business Model Ontology.

In 2012 we adapted this for use in the field of sustainable mobility with success in the end conference of the Cyclo Project in Ancona. This allowed over 50 City policy makers to take a new look at their work, and they discovered interesting new concept to develop new sustainable mobility services, and partners to develop them with.

In 2013 we used this at the CIVITAS Forum in Brest, to help cities discoverer a model to sustain services after CIVITAS funding ran out, therefore enabling CIVITAS PLUS cities to continue with the lessons they learned during CIVITAS.

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Take-up level:	
Being inspired	YES
Structural dialogue	YES
Studies	YES
Systematic transfer	YES
Languages:	Dutch/English

## 2.5 Toolkit on Organising Successful Consultations

This stakeholder consultation toolkit provides guidelines, tips and checklists to help you with the planning and execution of a range of consultation activities.

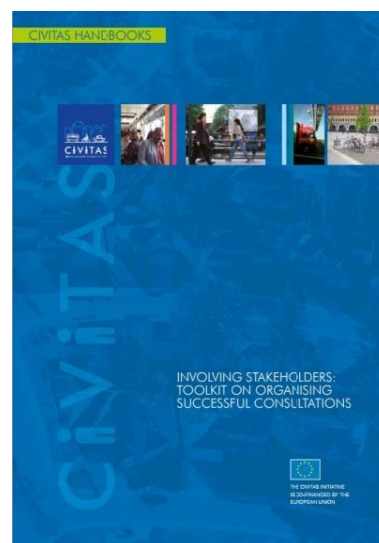
Besides the fact that stakeholder consultation is increasingly becoming a legal requirement there are many ways in which decision makers and practitioners can benefit from it.

Stakeholder consultation:

- Improves the quality of decision making, since those with a vested interest contribute from the initial stages
- Identifies controversial issues and difficulties before a decision is made
- Brings together different stakeholders with different opinions, enabling an agreement to be reached together and preventing opposition at a later stage, which can slow down the decision-making process
- Eliminates delays and reduces costs in the implementation phase
- Gives stakeholders a better understanding of the objectives of decisions and the issues surrounding them
- Creates a sense of ownership of decisions and measures, thus improving their acceptance
- Renders the decision-making process more democratic, giving citizens and local communities the power to influence decisions and, as a result, a greater sense of responsibility
- Builds local capacity
- Enhances public confidence in decision makers; and
- Creates opportunities for stakeholders and decision makers to learn from each other by exchanging information and experiences

This toolkit has been written primarily for those working in local mobility departments within the CIVITAS network, but can be useful to anyone interested in achieving sustainable urban mobility. It is aimed at those who are involved in planning and implementing transport measures and explains how stakeholder engagement can be achieved and how it can help them in their work.

Click [here](#) for the full toolkit.



<b>Take-up level:</b>	
<b>Being inspired</b>	<b>YES</b>
<b>Structural dialogue</b>	<b>YES</b>
<b>Studies</b>	<b>YES</b>
<b>Systematic transfer</b>	<b>YES</b>
<b>Languages:</b>	<b>Dutch/English</b>

**Contact:**

Jan Christiaens

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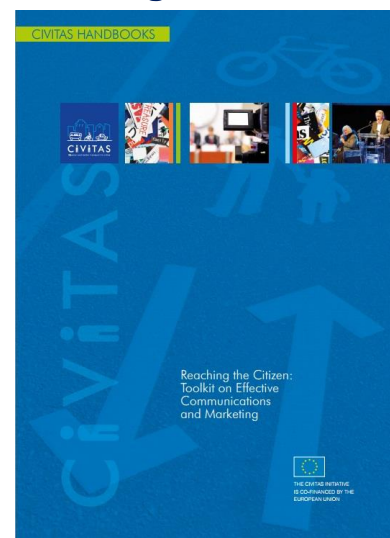
## 2.6 Toolkit on Effective Communications and Marketing

The Communications and Marketing Toolkit provides guidelines on communicating with citizens about sustainable urban mobility options. Reaching citizens effectively requires specific approaches. Communicating directly and indirectly with them through various means helps ensure the success of sustainable urban measures, while demonstrating transparency and willingness to engage citizens in dialogue and involve them. This in turn can help public authorities achieve more effective policy and progress. The information and advice contained in this toolkit is designed to assist local, regional and national authorities with various communication considerations.

Primarily created for cities that are part of the CIVITAS family, the principles are equally applicable in other cities that are keen to promote sustainable urban mobility measures. The toolkit contains materials that will help you to create a strategic communications plan, organise events, and develop and distribute traditional and online media materials. It also provides general advice on reaching consumers directly, including the use of branding and promotional products. Surveys, workshops and training events concerned with urban mobility repeatedly emphasise the importance of communication and collaboration with citizens. According to the 2009 study *Aiming for Sustainable Urban Mobility: A Survey of European Cities' Interests towards CIVITAS, Training Programmes and Information Resources*, for instance, 31% of local mobility departments (transport practitioners) and decision makers recognised this as a critical factor in the successful implementation of mobility measures.

The toolkit comprises 10 core sections:

- Communicating Effectively with Citizens
- Forming Effective Messages
- Analysing and Creating Brands



- Using Promotional Products
- Organising Successful Events
- Working with the Media
- Maximising Media Relations: Making News
- Essential Tools for Citizen Communications
- Using Social Media/Web 2.0
- Working with External Bodies

Click [here](#) for the full toolkit.

Take-up level:	
Being inspired	YES
Structural dialogue	YES
Studies	YES
Systematic transfer	YES
Languages:	Dutch/English

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## Part 3 Long-term evaluation of CIVITAS Measures

CIVITAS is all about cleaner and better transport in cities. In order to know whether transport has become cleaner or better, it is essential to have solid evaluation data. Within previous CIVITAS – actions and projects big efforts were already made to standardize evaluation processes and methods to make sure the CIVITAS Community learns from its experiences. CIVITAS CAPITAL wants to put this to practical use by offering 9 cities the chance to gain greater insight into the long-term results of measures that they implemented during their participation in previous CIVITAS city projects.

CIVITAS CAPITAL and specifically partner Transport Research Institute at Edinburgh Napier University is currently looking for candidate cities who have good quality evaluation data from one or more previous CIVITAS measures and who would like to explore how this measure has developed since the project within which it was implemented, and its long term impacts. The main goal is to establish the long-term effects of CIVITAS measures. CAPITAL is particularly interested in measures undertaken in the fields of mobility management, public transport and demand management. This list is however not exclusive. Should you be interested in evaluating any other measure within a CIVITAS-project, please let us know.

As a city you will receive support in designing the methodology and in the analysis of the evaluation data. Cities that are already planning an after-study on CIVITAS-measures or have done so in the recent past, are especially invited to apply. Candidates can get additional funding for this after-study through the application for the third Call of the CIVITAS Activity Fund. It is anticipated that the long-term evaluation of up to eight different measures will be funded through this call.

As well as measuring long term impacts, the activities related to this call will help cities to examine how well the measures they select have functioned over time, how they have been spread to other parts of the city and to other cities, how they have had to be modified, and how easy or problematic it has been to keep them functioning, and why.

### Criteria for candidates and bids

- Involvement in a previous CIVITAS-project and implementation of at least 1 CIVITAS-measure
- Solid and well-documented evaluation data should be available on both before- and after-measurements (summarised in a good quality Measure Evaluation Result Template (MERT)).
- Willingness to repeat the after evaluation in your city
- Willingness to share the results with TRI and the wider CIVITAS community.

### Timing

Ideally, the after-study is carried out in exactly the same period as it was done within your CIVITAS-project that should normally be a “neutral” month.

### Contact:

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For questions about long-term evaluation: Tom Rye, [t.rye@napier.ac.uk](mailto:t.rye@napier.ac.uk)



Take-up level:	
Being inspired	NO
Structural dialogue	NO
Studies	YES
Systematic transfer	NO
Languages:	English