



CIVITAS PLUS IN NUMBERS

Achievements in sustainable urban mobility

Four years
summarised
in facts and figures



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Imprint

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Funded under the Seventh Framework Programme for Research and Technological Development, VANGUARD focused on the dissemination of research activities, results and experiences from cities and projects participating in CIVITAS.

Publication

This directory is intended for all those with an interest in CIVITAS. This publication is also available from the Knowledge base on the CIVITAS website:
www.civitas.eu.

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Introduction

CIVITAS Plus in Numbers highlights key results from the CIVITAS Plus phase of the Initiative, which ran from 2008 to 2012. Five demonstration projects were implemented during this period, involving 25 cities from 15 countries. Out of a total of over 300 measures, 48 have been selected for inclusion in this publication, based on their contribution to economic, environmental and social concerns — that is, to the three pillars of sustainable development.

During CIVITAS Plus, measures were implemented across eight thematic categories, and the results have been structured accordingly. Cities undertook activities ranging from practical to policy related, including both hard (infrastructure) and soft (awareness-raising and planning-oriented) measures.

The quantitative results, which are presented here by category, were compiled on the basis of participating cities' own careful monitoring. Cities were closely supported by a team of evaluators, who studied their achievements measure by measure. The "cluster reports" containing the evaluators' findings, which have also been used in the preparation of the present summary, are available in full in the CIVITAS Initiative Knowledge Base¹.

CIVITAS Plus in Numbers offers an insight into the results achieved by CIVITAS Plus cities in order to help other cities make a strong case for action in their own context. Following the evaluation methods used in the CIVITAS Initiative, headline indicators for economic, environmental, social and transport concerns can easily be identified. The indicators that appear depend on the areas relevant to each particular theme.

Are you aware, for example, of the economic savings that can be achieved by using compressed natural gas, mixing fuels, or introducing electronic parking and fleet management systems? Are you curious about the potential increase in a public transport operator's revenues if hospital employees switch from private cars as a result of a workplace travel plan?

In terms of environmental protection, are you interested in how many tonnes of carbon dioxide can be saved by four pedi-buses, a freight consolidation centre or a fleet of clean vehicles? Do you know how many litres of fuel, how many vehicle-kilometres and how many van trips can be avoided by introducing car-pooling schemes, cargo bikes, beer boats or travel plans?

When it comes to social concerns, the number of violent or threatening incidents on public transport fell in CIVITAS cities thanks to the introduction of on-board surveillance systems, while the number of accidents was reduced as a result of improvements in the visibility and safety of junctions and cycle tracks, along with better traffic surveillance. Bringing together groups of vulnerable traffic users, including elderly people, has helped to create networks that really address the needs of all users.

CIVITAS has become a permanent fixture of the European Commission's multi-annual framework programme for research, thanks to its important contribution to the ambitious targets set out in the EU's Europe 2020 strategy for the achievement of smart, sustainable and inclusive economic growth.

The 25 CIVITAS Plus cities had an opportunity to test solutions and demonstrate packages of measures integrated into the binding framework of a sustainable urban mobility plan (SUMP). Many politicians and transport practitioners regard such plans as the key to successful mobility measures, and it is no surprise that the European Commission's Urban Mobility Package, adopted in December 2013, responded to CIVITAS cities' recommendations² by committing to further support them in developing SUMP³.

Innovative urban transport solutions — CIVITAS makes the difference is the sister publication to CIVITAS Plus in Numbers. It offers more detailed facts and figures, combined with further anecdotal evidence from the 25 participating cities. Both publications are available on the CIVITAS Initiative website⁴.

Key

In line with the evaluation methodology used in the CIVITAS Initiative, the figures presented in this publication reflect the results from an environmental, societal, economic or transport perspective. Not all categories were applicable in each thematic evaluation.



Environment



Economy



Society



Transport



25 MEASURES – 16 CITIES

THEME Car-independent lifestyles

Many CIVITAS measures aim to get people out of their cars and onto public transport or bikes. Modern information technology, safe and secure infrastructure, bike-rental and city-bike solutions are some of the measures implemented by CIVITAS Plus cities. More sustainable car use was also encouraged via car-pooling and car-sharing schemes.⁵



712

Craiova (Romania) introduced a new car-pooling scheme for employees of the public transport provider. The scheme was estimated to have cut 6,190 vehicle-kilometres over two months, saving the equivalent of 712 litres of fuel.⁶



95%

Surveys revealed that 95% of people using the city cycle scheme in Aalborg (Denmark) were satisfied with the rental system, and 86% were happy with the system's green image.⁸



292

By the end of the CIVITAS project, the new car-sharing system rolled out in Brescia (Italy) had 292 members and six vehicles, and the level of acceptance had risen by 7%.¹⁰



3.4%

Ljubljana (Slovenia) implemented a comprehensive cycling strategy, which included promotional campaigns to raise awareness of safe cycling. This resulted in a 3.4% increase in the modal share of cycling.⁷



97%

The four bicycle rental stations created in Bath (UK) had a high acceptance rate of 97% and were greatly valued by users.⁹



21%

Perugia (Italy) introduced a new car-pooling parking area at the university, complete with entry barrier. Among interviewed university employees, 21% had switched from driving to other means of transport, and 9% of these employees stated that they had discovered the advantages of car pooling.¹¹



40 MEASURES – 22 CITIES

THEME Clean fuels and vehicles

The use of cleaner fuels and vehicles reduces local air pollution and greenhouse gas emissions, helping to improve quality of life for citizens. Many cities are making efforts to encourage the spread of clean and energy-efficient public and private vehicles for passenger and freight transport. CIVITAS Plus cities tested vehicles running on biodiesel, biogas and compressed natural gas, as well as hybrid vehicles. They developed expertise in procurement and tendering and also explored opportunities to source biofuels locally.¹²



30

Iasi (Romania) showed that the use of alternative fuels can reduce pollution levels in areas with dense traffic. Out of the city's fleet of 100 buses, 30 were converted to use liquid petroleum gas.¹³



14%

Ljubljana (Slovenia) tested five hybrid buses, and 20 buses running on compressed natural gas were introduced in the 200-strong bus fleet. Fuel costs fell by 14%. A cost-benefit analysis showed that the net present value will be positive two years earlier than in the case of conventional diesel buses.¹⁵



83%

In Funchal (Portugal), three hybrid vehicles were purchased and made available to the public transport operator and municipality employees in order to help demonstrate the advantages of hybrid technologies to the public. In a public survey, 83% of respondents considered the renewal of municipality vehicles to have been useful or very useful.¹⁷



-6.5%

In Bath (UK), a diesel-electric hybrid double-decker bus was field tested. The vehicle was estimated to have 44% better fuel efficiency. Measurements showed a 6.5% reduction in carbon dioxide in tailpipe exhaust emissions.¹⁴



30%

In Perugia (Italy), 20 buses (16% of the fleet) were fitted with a dual-fuel kit developed to fuel a diesel engine with a mixture of methane and diesel. Following the introduction of the conversion kits in the older fleet, fuel costs fell by around 30%.¹⁶



90%

When CIVITAS Plus started in Gorna Oryahovitsa (Bulgaria), the idea of alternative fuels was quite novel. Only 55% of surveyed citizens were aware of such fuels and of the contribution they could make. By the end of the project, the proportion had risen to 90%.



45 MEASURES – 21 CITIES

THEME Collective passenger transport

As public transport is a key element of sustainable mobility in cities, new ways must be found to maximise its potential locally in order to future-proof the way people get around. Public transport can be made more attractive by increasing operational efficiency, harmonising tariffs and timetables, improving accessibility and upgrading interchange facilities.¹⁸



16%

Utrecht (the Netherlands) introduced a single transport pass that allows access to regional public transport, public bicycles, some trains and park-and-ride services. Among former car drivers, 16% said they would carry on using public transport to get to work even if the pass were discontinued.¹⁹



2.88

The high-quality bus corridors in Donostia-San Sebastian (Spain) had a cost-benefit ratio of +2.88 (greater benefits than costs) and a net present value of EUR 28.4 million.²¹



50%

Following the introduction of real-time information for blind and partially sighted passengers at bus stops in Brighton & Hove (UK), 50% of those who registered to use the system said they were more likely to travel independently.²²



-0.24

MEGAJOULES

Coimbra (Portugal) assessed the impact of a new e-ticketing system introduced during CIVITAS Plus. In terms of energy consumption per passenger-kilometre, the results demonstrated significant savings of 0.24 megajoules.²⁰



30%

By introducing a new system to ensure the prompt repair of defective public transport ticket machines, Brno (Czech Republic) took a great step towards improving the quality of its public transport. Following measure implementation, downtime for ticket machines fell by 30%. In addition, a positive cost-benefit analysis indicated that the original investment should be repaid within the ticket vending machine's lifetime.



15%

Iasi (Romania) installed new ticket vending machines along the city's CIVITAS corridor. There was a 15% increase in respondents' satisfaction with the new ticketing system between May 2011 and September 2012.²³



48 MEASURES – 18 CITIES

THEME Demand-management strategies

Demand-management strategies can reduce traffic by means of a variety of economic incentives, regulatory measures and modern communication technologies. CIVITAS Plus cities experimented with a range of demand-management measures in order to explore the merits of different initiatives and share lessons learned. Measures included access restrictions, road pricing, parking policies and marketing campaigns. Among the incentives tested were special parking tariffs for low-emission vehicles, financial rewards for avoiding peak times, and a “mobility credits” scheme that attaches a financial value to cutting or exceeding emissions.²⁴



-32%

Aalborg (Denmark) introduced a low-emission zone in which access regulations are based on vehicle emission standards. The zone encouraged the purchase of newer, cleaner vehicles, which resulted in a 32% reduction in carbon dioxide emissions.²⁵



58%

Bologna (Italy) put together a new pricing and monitoring policy for parking. In a public survey, 58% of citizens supported the new parking-charge structure.²⁷



25%

Szczecinek (Poland) invested in closing the gaps in the cycle path network. As a result, the number of cyclists increased by 25% and the modal share of cycling rose from 18 to 19.2% along specific routes.²⁹



18

Utrecht (the Netherlands) rolled out a digital parking-fee system that facilitated payments by customers and enforcement by the city. As a result, it was possible to cut the number of enforcement officers by 18, from 63 in 2008 to 45 in 2012.²⁶



6%

Traffic restrictions introduced as part of the Superblocks concept for access restrictions in Vitoria-Gasteiz (Spain) led to a 6% drop in traffic.²⁸



50%

Improving the system for access to the existing low-traffic zone was the focus of demand-management activities in Funchal (Portugal). Retractable bollards and licence plate recognition and software management systems were introduced in order to manage access to the city's historical centre. These efforts reduced traffic in the area by 50%.



59 MEASURES – 23 CITIES

THEME **Mobility management**

CIVITAS Plus cities made efforts to influence travel behaviour through mobility management, including marketing, communication, education and information campaigns. The ultimate goal of mobility management is to create a new mobility culture using initiatives such as company travel plans to encourage employees to use sustainable modes of transport to get to work; campaigns to raise public awareness; and educational programmes in schools.³⁰



-13%

The primary objective of the travel plans introduced in Brighton & Hove (UK) was to reduce the number of single-occupancy car journeys among commuters and increase the number of safe and sustainable trips. The number of car journeys to and from schools within the corridor was reduced by 13%.³¹



67,657

The city of Tallinn (Estonia) developed a training programme for bus drivers on energy-efficient driving in order to cut fuel consumption and improve road safety. The measure was deemed highly cost-effective in socioeconomic and financial terms. A cost-benefit analysis showed a net present value of EUR 67,657 and a benefit-cost ratio of 1.567.³³



10%

As the tramline in Gdansk (Poland) was at full capacity during peak hours, the city focused on improving the quality of the public transport service. The "Change Your City" campaign was extended to the entire public transport network, leading to a positive shift in attitude of 10%.³⁵



2,225

Following a communication campaign organised with the participation of children in Monza (Italy), 10 walking bus routes were initiated in four primary schools. The reduction in carbon dioxide emissions was estimated at 2,225 kilograms.³²



28%

With guidance from the city of Coimbra (Portugal), the local public transport company developed and implemented a travel plan for the local hospital. Partnerships were also established with private companies to share trip costs. This led to a 28% increase in average operating revenue (+EUR 0.007 per passenger-kilometre) related to hospital employees who switched from private cars to public transport.³⁴



87%

An integrated mobility centre was opened in Brno (Czech Republic) in order to improve communication with passengers and provide a one-stop shop for mobility information. One year later, a visitor survey reported 87% satisfaction with service quality and with the relevance of the information provided.³⁶



32 MEASURES – 17 CITIES

THEME Safety and security

Safety and security make sustainable transport options feasible and attractive. CIVITAS Plus cities looked into new ways to ensure the safety of urban travellers, especially cyclists, pedestrians and vulnerable groups such as children and elderly people. Initiatives included traffic calming, improving cycling infrastructure and introducing anti-vandalism measures.³⁷



53%

Following the introduction of the innovative Trammelant bus in Ghent (Belgium) to teach youngsters the implications of vandalism on public transport vehicles, the number of incidents involving this target group fell by 53% around schools involved in the Trammelant programme.



25%

Gdansk (Poland) introduced promotional activities to reduce the number of incidents of vandalism at public transport stops. The "Clean Stops" campaign helped raise passengers' perceived sense of security by 25% between 2011 and 2012.³⁹



19

Szczecinek (Poland) installed a traffic surveillance system that led to a significant reduction in the number of transport accidents. At 11 intersections, the total number of accidents per year was reduced from 27 to 8, and the average time needed for a police patrol car to arrive fell from 16 to 5 minutes.⁴¹



-50%

The introduction of a surveillance system in public transport vehicles in Craiova (Romania), along with communication equipment that transmits images and information to a dispatcher, led to a 50% reduction in fraud among passengers in 2012.³⁸



-24%

Tallinn (Estonia) invested in improving the visibility and safety of crossings and cycle tracks. This led to a 24% increase in the number of drivers giving way to pedestrians.⁴⁰



50%

As 65% of traffic accidents involved senior citizens, an extensive awareness-raising campaign on safety and security for older people was launched in Zagreb (Croatia). Weekly meetings between senior citizens and public transport representatives helped to improve understanding and change behaviour. Zagreb succeeded in reducing the number of accidents (across all age groups) by 37.6%.⁴²



46 MEASURES – 21 CITIES

THEME Transport telematics

Modern transport telematics systems offer opportunities to make urban transport faster and more efficient, and support travellers. Communication technology can be used to coordinate traffic flows with the help of satellite-based applications, global positioning systems, wireless data transmission, automated traffic counting devices, and high-resolution cameras. Such technologies make it possible to give priority to public transport, improve parking management and better enforce road rules. They can also provide passengers with real-time information and mobile guidance.⁴³



4%

Using a new bus management system, Iasi (Romania) managed to improve timekeeping by 4%. This contributed to a reduction in operating costs and to a positive net present value of EUR 6,290,299, according to the measure's cost-benefit analysis.⁴⁴



90%

Aalborg (Denmark) introduced 50 buses equipped with flat-screen monitors displaying real-time information. The service was considered to be useful by 90% of surveyed passengers.⁴⁶



120

The scaling up of the traffic control centre measure in Skopje (Former Yugoslav Republic of Macedonia) meant that 120 rather than just 28 intersections could be included. The success of the measure was made possible through participation in CIVITAS and additional financial support from the European Bank for Reconstruction and Development.⁴⁸



2

The MOVE-ME application introduced in Porto (Portugal) provides real-time travel information to smartphones and other geo-referenced mobile devices. Users are able to identify the best combination of transportation from their departure point. The city's investment in MOVE-ME had a return period of seven years, a benefit-cost ratio of 2, and an internal rate of return of 29%.⁴⁵



60,000

In Donostia-San Sebastian (Spain), over 3,500 requests for real-time information were made each day via SMS or online. With the introduction of electronic display boards at bus stops, it was assessed that around 60,000 additional passengers had access to real-time travel information.⁴⁷



7.2%

The optimisation of traffic management in Usti nad Labem (Czech Republic) and the establishment of a central traffic control station helped to reduce congestion and improve traffic flow, allowing traffic to move 7.2% faster than before the introduction of the measure.⁴⁹



14 MEASURES – 12 CITIES

THEME Urban freight logistics

Goods delivery vehicles make up a significant share of the traffic in European cities and are a major contributor to deteriorating air quality, rising carbon emissions and congestion. CIVITAS Plus cities encouraged the use of cleaner freight vehicles and developed solutions to better coordinate freight logistics. Apart from cutting congestion and lowering emissions, more efficient freight deliveries free up space for sustainable modes.⁵⁰



-10,180

A new freight consolidation centre was established in Bath (UK) to serve two cities using two electric vehicles for the last mile of deliveries. There was a reduction in the number of delivery trips to the city centre, and the service also included the take-back of packaging for recycling. This resulted in a 10,180 kilogram reduction in carbon dioxide emissions.⁵¹



80%

When Ghent (Belgium) set out to tackle the issue of freight management, a very high rate of misuse of the existing loading/unloading bays was discovered. Efforts to increase the visibility of the loading spaces and enforce controls resulted in five times fewer violations. Although the aim was a 20% reduction, in the end a reduction of 80% was achieved.⁵²



-5,678

Utrecht (the Netherlands) introduced the electric Beer Boat for deliveries to catering facilities along the city's canals. The boat operated six times a day, four days a week. The measure resulted in 5,678 fewer road vehicle trips to the city centre and a 13% reduction in carbon dioxide emissions.⁵⁴



17%

In an effort to determine the most appropriate urban freight solution for the city, Ljubljana (Slovenia) modelled the potential impacts of a freight consolidation centre. According to the model, the approach would result in a reduction in fuel consumption of 2.2 litres per day (17.7%) and a reduction in emissions of between 17 and 18%



42%

In a bid to reduce the impact of freight traffic, Brighton & Hove (UK) pedestrianised part of the East Street area. This resulted in a significant reduction in traffic, including freight vehicles. The number of light goods vehicles fell by 13%, heavy goods vehicles by 6% and traffic in general by 42%.⁵³



-26,849

Donostia-San Sebastian (Spain) established a new consolidation centre and introduced six electric cargo bikes. New goods delivery regulations were also implemented. The cargo bikes saved up to 26,849 kilometres per year in van and truck journeys.⁵⁵

Looking forward!

This brief snapshot of key CIVITAS figures illustrates that better mobility and more liveable cities can be achieved across geographical, social and political boundaries.

CIVITAS Plus saw cities across the European Union confirm sustainable transport as a priority and make great strides towards realising truly sustainable urban transport systems.

Although much has been done, there is still more to do in order to fully optimise cities for sustainable mobility.

Among the myriad economic and social factors that combine to create a city, transport needs to be an area of focus. Mobility has a huge impact on our lives: the way we live and work is greatly influenced by the way we move.

It is important to bear in mind that European cities are constantly evolving, and that any changes implemented must meet both current needs and the needs of future generations.

City planners, public transport operators and political leaders must strike an appropriate balance between accommodating the growth in transport demand and changes in modal trends, and facilitating competitiveness and growth, while at the same time ensuring and improving quality of life in urban areas.

This requires looking regularly at transport systems and asking questions about their efficiency and sustainability. At its heart, CIVITAS is about progressing towards better mobility and greener cities. The complex nature of the transport and mobility question can be addressed, to a great extent, by adopting an integrated approach. Sustainable urban mobility plans can be a great support to cities and towns that wish not only to help their citizens get from A to B more efficiently, but also to become safer, more attractive spaces offering a high quality of life and sound environmental performance.

The CIVITAS website www.civitas.eu offers detailed information and downloadable documents describing how cities planned and implemented concrete measures during their participation in the Initiative. It also contains guidance to help other cities achieve similar goals. In addition, the CIVITAS Measure Directory contains a wealth of browsable information.

The inspiring examples presented in this publication, and in the extensive collection of CIVITAS literature available online, provide a blueprint for a more sustainable future. The shape that this future will take is in the hands of our cities and their citizens. The CIVITAS Initiative will continue to be an important part of how the story unfolds...

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