

# CIVITAS ELAN

LJUBLJANA • GENT • ZAGREB • BRNO • PORTO



## Innovative cities

Before and after CIVITAS



# Content

<b>Foreword</b>	<b>3</b>
<b>Introduction</b>	<b>4</b>
<b>Ljubljana</b>	<b>5</b>
<b>Gent</b>	<b>15</b>
<b>Zagreb</b>	<b>25</b>
<b>Brno</b>	<b>35</b>
<b>Porto</b>	<b>43</b>
<b>Youth Congress</b>	<b>51</b>
<b>Evaluation</b>	<b>52</b>
<b>Common Measures</b>	<b>54</b>
<b>Facts &amp; Figures</b>	<b>55</b>
<b>Conclusions/Recommendations</b>	<b>58</b>



## Dear Readers

"Ljubljana is the most beautiful city in the world", is what I often say when referring to the Slovenian capital, which has coordinated the CIVITAS ELAN project from 2008 to 2012. I say this because I truly believe it. In the last few years, the Municipality of Ljubljana has fulfilled many wishes of its residents and visitors. Through several reconstructions and urban redevelopment projects the city has gained many new pedestrian areas, green spaces, riverbanks, bridges and squares which have been closed for motorised traffic and therefore increase the quality of life in the city. Living in Ljubljana has been enriched by activities that encourage socialisation and provide space for social interaction. These improvements have been rewarded by international expert juries; just recently, for example, the City of Ljubljana received the European Prize for Urban Public Space 2012 for the refurbishment of the banks of the River Ljubljanica, and the Access City Award 2012 for transport and related infrastructure.

Many of these improvements would not have been possible without the CIVITAS ELAN project and I'm happy that through ELAN not only Ljubljana, but also our partner cities – Gent, Zagreb, Brno and Porto – have made a giant step towards more sustainable mobility in urban areas. The ELAN project has been one leg of a journey towards quality of life for the citizens of its five partner cities.

While the cities had different starting points, they shared common goals and benefitted from the four years they spent travelling together, learning, innovating and improving as they went. Knowledge about sustainability, quality of life and accessibility has increased over the ten years of CIVITAS (in which Ljubljana proudly participated for eight

years) and for the first time, there are signs that the private car is losing its role as a status symbol, at least among young urbanites in Europe.

Through concrete improvements and large scale awareness-raising and marketing campaigns and manifold activities to increase the attractiveness of public transport, walking, cycling and cleaner fuels, ELAN triggered changes in travel behaviour. The project also gave citizens a voice in numerous citizen engagement activities, which was found by all to be enriching. This is one small example of how such projects are contributing to the creation of the new Europe. ELAN helped promising ideas get from the laboratory to the mainstream. Successful pilots, strategies and surveys within the project triggered further investments, such as structural funds in Ljubljana, a new CIVITAS project in Brno, and many other European co-funded projects in Zagreb and Gent.

While the journey of innovation and improvement towards sustainable mobility continues for the five ELAN cities, this brochure shows our pride in having accomplished this ambitious and sometimes challenging leg of the journey together. ELAN helped cities, organisations and people grow together.

I would also like to take this opportunity to thank everybody who helped make ELAN the success it was, acknowledging that the most hard-earned results are not always the most visible ones!

**Zoran Janković,**  
*Mayor of Ljubljana*



## Different starting points – shared targets

CIVITAS ELAN brought together five European cities spanning from the northwest (Gent) to the heart of Europe (Brno), to the southeast (Ljubljana and Zagreb), and the southwest (Porto). These cities represent the cultural, historical and linguistic diversity of Europe. The ELAN cities also share a number of commonalities: they all host large student populations and are important economic and cultural centres in their countries. They also face similar challenges in urban mobility and are all striving for sustainable accessibility solutions that ensure quality of life for their citizens and visitors.

The cooperation opened new horizons for the partners. It enabled transfer of knowledge and sharing of experience, which can be difficult in smaller countries with few cities of comparable size. This exchange of experience was particularly beneficial in challenging areas such as sustainable urban mobility planning (SUMP), freight management, bio-fuels, alternative bus technologies and citizens involvement in transport policy decision-making processes.

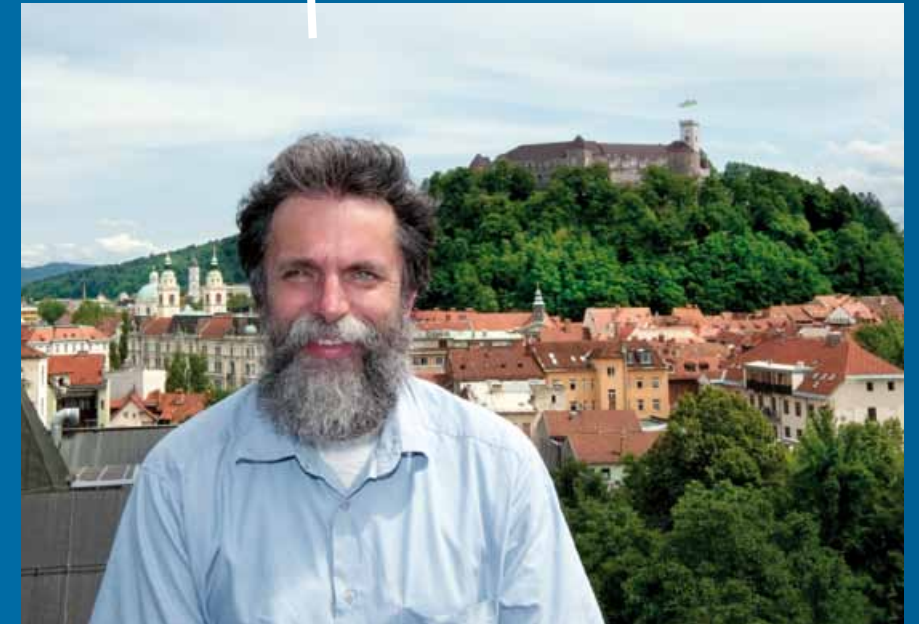
Being part of a notable European initiative such as CIVITAS also helped to build and strengthen cooperation between local actors and even unlocked doors within organisations, facilitating activities that had previously been blocked and providing an innovation laboratory for new ideas. Through this, a positive competition emerged, motivating cities and partners to test innovative and ambitious solutions. In all five cities, ELAN gave mobility issues a push that led to further initiatives and new structures which carried on after the end of the project. By demonstrating measures in a clearly-defined area (the so-called CIVITAS ELAN corridor), it was easier to create and measure the combined effects of activities and to achieve high visibility in the area.

ELAN dedicated much effort to citizen and stakeholder involvement in mobility planning. Several hundred public events, training sessions, workshops and roundtables were held. Printed information and on-line tools were developed in the ELAN cities to raise awareness, inform, consult and engage citizens and stakeholders in sustainable mobility matters. ELAN took to heart a key lesson learned from previous demonstrations within CIVITAS: the most tenacious challenges often were not of a technical nature, but related to acceptance. While the five participating cities have different political and participation cultures, the benefits of citizen and stakeholder engagement are now widely acknowledged. This became particularly visible as politicians increasingly started a dialogue with citizens in areas where there was no obligation to do so.

Citizen and stakeholder engagement contributed to the acceptance and quality of activities. Moreover, some more traditional experts, generally opposed to sustainable mobility, moderated or even changed their views through public discussions. While the long-term impacts of CIVITAS ELAN are difficult to predict, some are very clear: both the initiative on cycling streets in Gent and the demand-responsive transport scheme in Ljubljana led to changes in legislation. Methodologies developed in the CIVITAS context such as traffic counting, measurements and surveys, stakeholder involvement and evaluation have been found very useful and will continue. New structures and strategies such as transport authorities and integrated transport policies – largely influenced by the “CIVITAS ELAN spirit” – are being prepared and will carry on. Finally, there are also examples of transfer of CIVITAS measures to other cities, such as from Porto to Lisbon, from Gent to Antwerp, from Brno to Bratislava and from Ljubljana and Zagreb to other Slovenian and Croatian cities.



## LJUBLJANA Slovenia



**Ljubljana, the capital of the Republic of Slovenia, is perceived as a human scale city. With approximately 280,000 residents living in 275 km<sup>2</sup>, it combines small-town friendliness and a relaxed atmosphere with all the amenities of a modern capital.**

### Ljubljana is...

dotted with picturesque places and fascinating corners – recently renewed pedestrian zones, riverbanks, squares and bridges for pedestrians and cyclists.

### Challenges encountered

Ljubljana is the economic, political, educational, cultural, historical and administrative centre of Slovenia and so experiences a high influx of daily commuters. Cars have become more affordable and their role as a status symbol has increased. As a result, their number has grown significantly (around 130,000 commuting vehicles per day), while use of public transport has fallen. Motor vehicles generate a large amount of traffic, particularly road freight. The volume of traffic is also affected by the city's star-shaped layout and its development along five main arterial roads.

### CIVITAS ELAN in Ljubljana

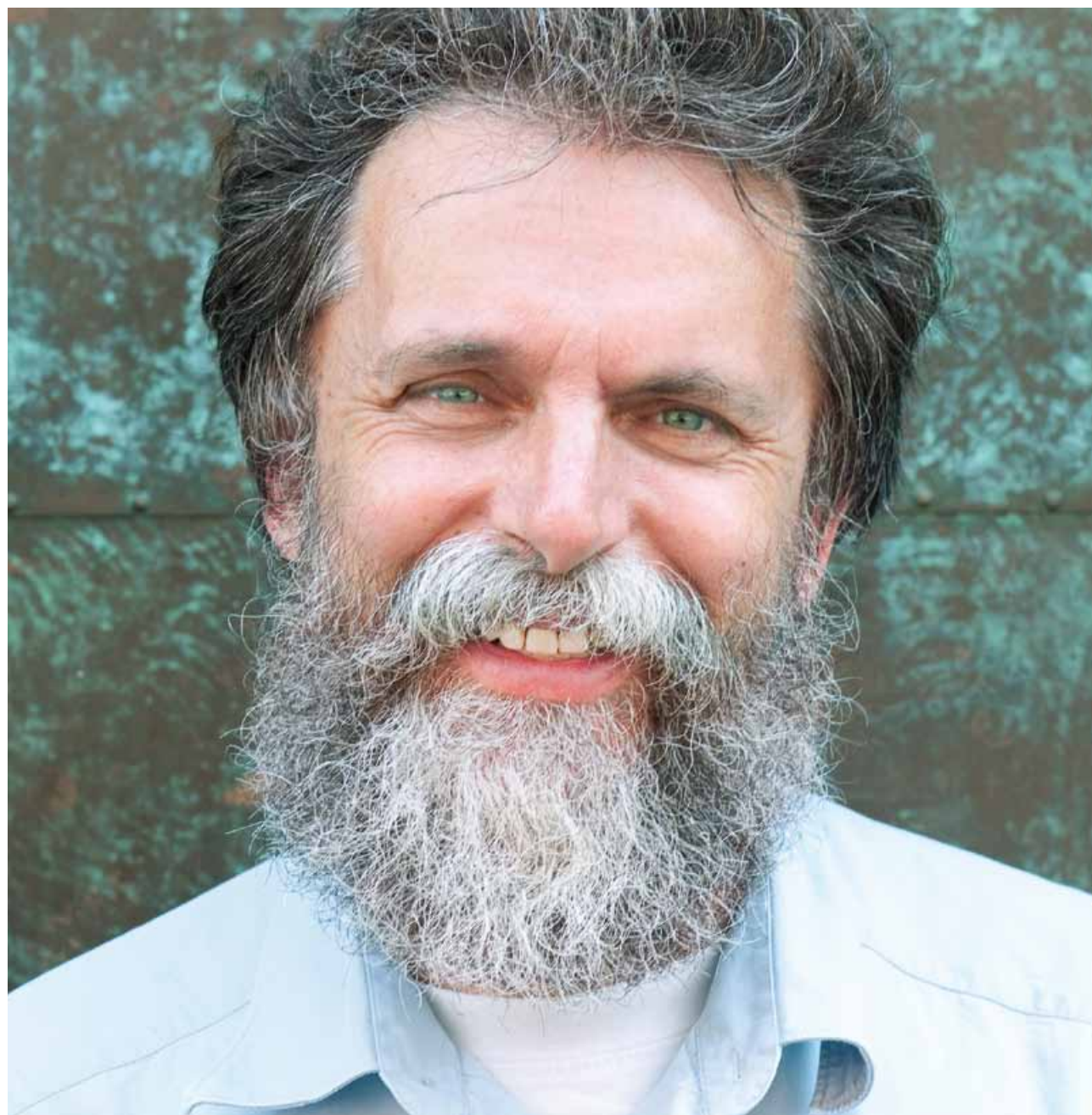
The city of Ljubljana has responded actively to the challenges of increased motorised traffic by drafting and

adopting a range of key documents defining strategic and operational objectives for the regulation of sustainable transport in the city. Discussions about the city's sustainable transport policy have been particularly intensive in the last three years and the CIVITAS ELAN team in Ljubljana has played a very active role. The results of these discussions are summarised in the Transport Policy of the City of Ljubljana and the Instructions for Design of Transport Infrastructure in the City of Ljubljana, which will be submitted to the city council for approval before the end of 2012. The aim is to significantly reduce car use, to make public transport “greener”, more attractive and accessible to all and to improve conditions for walking and cycling, by, for example, expanding pedestrian zones and upgrading cycling infrastructure. This should help achieve the city's 2020 target modal split of one third of trips by walking and cycling, one third by public transport and one third by car. The CIVITAS ELAN project, and its predecessor CIVITAS MOBILIS, combined with other sustainability projects, are helping to create a sustainable, green city that offers a high quality of life to all citizens.





# A day with JANEZ IN LJUBLJANA

"Hi, I'm Janez from Ljubljana. I generally take the train and use my folding bike to get to work. Ljubljana has changed a lot in the last four years. It's become a lot more attractive to live in."



▲ In the morning, I take a train to the main station. At the station I switch to my folding bike for the rest of the trip. A bike is the fastest way to get around the city centre and I enjoy my morning ride.



▲ Ljubljana has changed a lot in the last few years. We have new bike lanes, new **pedestrian areas**  in the city centre and **lots of modern new buses** . They don't stink like the old ones did. It makes cycling much more pleasant.




▲ In the city centre you can see a lot more cyclists today than a few years ago. It's really booming. I like looking at all the different types of bikes.



▲ I always take the route along the river past all the restaurants and coffee shops.





▲ Today I met someone from the **Cycling Platform of Ljubljana**  on one of the newly-renovated squares near the river. I find I often get to chat with people on the street, especially on sunny days.



▲ The beautiful historic centre of Ljubljana is much nicer now with all the pedestrian zones and without all the cars.  
▼ But today when I arrived at work I found a car directly in front of our shop – and it's in the pedestrian zone.



▲ It makes me mad when people think they can park wherever they want so I called the towing service. They told me they would come right away and remove the car.



▲ Because I still had some time before I started work, I rode to the bakery around the corner to buy some breakfast.  
▼ The car was already gone when I got back. The towing guys were fast!







▲ While the car was heading for its new "parking place", I saw my daughter coming from the market near my shop.



▲ She told me that she had come by to surprise me and introduce me to Danilo, her boyfriend. But he was off searching for his car, which had disappeared. Of course I realised immediately whose car I had had towed.



▲ I explained everything to my daughter and we had a good laugh. I bet Danilo will never park in the pedestrian zone again!

## LJUBLJANA'S MEASURES

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### 1. Update of the sustainable urban mobility plan

Ljubljana developed a range of multifaceted policies based on a comprehensive long-term strategy. It encourages new efficient means of local planning making use of existing budget, staff, knowledge, technology and infrastructure resources to create synergies and a lasting impact.

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- Six CIVITAS ELAN Open Academy events were organised
- Eight foreign mobility experts participated at the Open Academy
- The SUMP was updated to reflect new insights and methods



### 2. Real-time information

Ljubljana has equipped bus stops with electronic displays with a direct communication technology called Zigbee to ensure accurate information about bus arrivals that passengers can rely on. Because of the displays, which are very well accepted among citizens, public transport is more attractive.

i

- 57 real-time information displays at 54 bus stations show the predicted arrival of the buses
- A bus shuttle removes the need for a car for short distances



Ljubljana is a sustainable, green city with new pedestrian zones, riverbanks, squares and bridges for pedestrians and cyclists.





### 3. Demand responsive services

Ljubljana is the first city in Slovenia to develop a demand-responsive public transport service. To ensure mobility for people with disabilities, two electric vehicles named “Kavalir” provide service free of charge in pedestrian zones.



- 2 free-of-charge electric vehicles were introduced in pedestrian zones
- 86 % (186) of the entire city bus fleet are low-floor buses
- 128 of those are equipped with ramps for the disabled



### 4. E-ticketing and public transport portal

In an effort to make public transport more user-friendly, convenient and attractive, Ljubljana introduced e-ticketing in buses and developed a public transport portal with real-time information and a route planner for the entire public transport system.



- The online trip planning tool Google Transit was established
- 676,000 Urbana e-tickets were sold



### 5. Green procurement for the city fleet

Ljubljana is introducing criteria for the procurement of new vehicles aimed at the adoption of hybrid vehicles and company bicycles in the city’s fleet. The green procurement practice has an effect on fuel consumption, noise and emissions, and is also expected to promote the hybrid vehicle market in general.



- Hybrid vehicles currently represent 10% of the city administration’s fleet
- 50 company bicycles are in use by the city administration



### 6. Pure plant oil for vehicle propulsion

Ljubljana has been testing pure plant oil for vehicle propulsion in laboratory settings and in practice. This can help reduce dependence on fossil fuels and minimise negative impacts on the environment. Plant oil can now be used as fuel for modified diesel engines and other vehicles.



- Three vehicles were converted for operational use on pure plant oil
- 33 public presentations were held on the measure

## CHALLENGES ENCOUNTERED



The biggest challenge was that some key stakeholders, including some mobility experts and decision makers, weren’t yet ready for innovative solutions. Some say that if CIVITAS ELAN had started in 2012, it would have been easier. Much effort was needed to convince people to change their travel habits because for the majority, this demanded changing their lifestyle and a shift from car to sustainable modes of transport.

One of the most challenging tasks was citizen engagement as in several cases previous social patterns were of non-participation rather than effective citizen engagement and participation. This had a significant impact on planning and implementation of measures.

## SCALING UP



Ljubljana felt the need to revitalise public space, which meant also addressing transport infrastructure and urban redevelopment. CIVITAS ELAN contributed with innovative ideas and hands-on solutions. In four years of hard work, the term “sustainable mobility” was put into practice, and the path that the project outlined will surely be followed. The most obvious step is Ljubljana’s new sustainable urban mobility plan, which defines a vision, objectives and plans for measures until 2020 and is scheduled to be adopted by the city council in 2012. It integrates many measures that were developed or implemented in CIVITAS ELAN which will be upgraded or modified but will certainly continue in some form.

### Our View



Students of the Academy of Arts and Photography, winners of the local selection process for ELAN Youth on The Move Congress

#### "Thanks to CIVITAS ELAN..."

...and the City of Ljubljana for giving us this opportunity to participate in the ELAN Youth on The Move Congress. We didn’t even imagine how much adventure involvement in this project could bring!"



## FUTURE VISION

Ljubljana's vision is by 2025 to be an ideal place for people with diverse lifestyles to live in harmony with the natural and social environment. During the preparation and implementation of CIVITAS ELAN, Ljubljana gained rich knowledge and experience related to mobility; it designed strategies, plans and models that will help in further developing sustainable mobility; and it learned how to involve a variety of stakeholders, how valuable citizen engagement is in achieving public acceptance for major changes and how to harmonise different views and opinions. Many partners have created policy regarding the project measures. Results and lessons learned during this period will be used in other projects in the future. Most importantly, this project has opened minds to ideas that are enriching our lives.



### My View



Photo: Miha Fras

### Prof. Janez Koželj, Deputy Mayor of Ljubljana

#### "I'm glad that CIVITAS ELAN..."

...focussed on mobilising citizens for sustainable mobility. I've seen the efforts made in Ljubljana to create platforms, organise workshops, establish discussions with experts and the public and plan events and activities aimed at putting sustainable mobility high on the political agenda in our city. The measures we have implemented so far are a good start and prove that we can do more, especially if there is political will and a positive response from citizens."

## GENT Belgium



Gent is a bustling historic city with art and culture of the highest quality, an overflowing calendar of events and numerous shops, bars and restaurants.

### Gent is...

an ambitious city when it comes to clean and better mobility. With 24 CIVITAS measures, Gent has continued its policy of sustainable mobility development. The first Sustainable Urban Mobility Plan (SUMP) was prepared in 2003. A thorough revision is taking place in 2012-2013, stressing such topics as freight delivery, traffic calming methods and expanded citizen participation. Gent also aims to become a climate-neutral city by 2050. All departments, including the mobility department, are working toward that concrete goal. The CIVITAS ELAN measures also contribute to a cleaner and better city.

### Gent's achievements in a nutshell

Within CIVITAS ELAN, Gent further developed specific themes such as mobility management for companies, schools and events. Some brand new ideas also originated from the ELAN measures, including a website for event organisers and a walking map for schoolchildren from abroad.

More and more, Gent is becoming a real cycling city.

With over 400 km of cycle lanes and other modern cycle infrastructure, the modal split of home-to-work trips by bike has risen to 19 %. New initiatives such as the cycle website, the cycle street, bike boxes for secure storage and many others have enhanced the ever-increasing cycling culture.

Public transport infrastructure improved within ELAN: bus shelters were redesigned and hybrid buses were put in operation. ELAN also allowed investment in safety training schemes for drivers and passengers.

A new traffic guidance system was developed. It monitors parking capacity and manages traffic in and around the city during events and road work. The route planner for bicycles was a first for Belgium. Planning your own routes without obstacles like tram tracks or cobblestones is handy and safe.

Many of the measures in Gent will have a life after CIVITAS. For example, the city's fleet management is now embedded in daily practice and energy savings in public transport will continue. The evaluation tools developed within ELAN will also be integrated into the daily routine of the Mobility Department.



# A day with SIMON IN GENT

"Hi, I'm Simon from Gent. I'm a student and go almost everywhere by bike. It's the fastest way to get around in Gent. Everybody does it".



▲ I started an internship this morning in a company that's participating in **MOBI Week** <sup>M</sup>. MOBI Week is a programme to help employees choose the best way to travel to work. I took the scenic route along the canal.



▲ It's beautiful in the old harbour and full of students and tourists in the summer, all enjoying the city landscape. You can't go along there without meeting a friend, but I was in a hurry today...



▲ I passed the **bicycle barometer** <sup>M</sup> which counts every cyclist who passes. I was number 969 this morning.

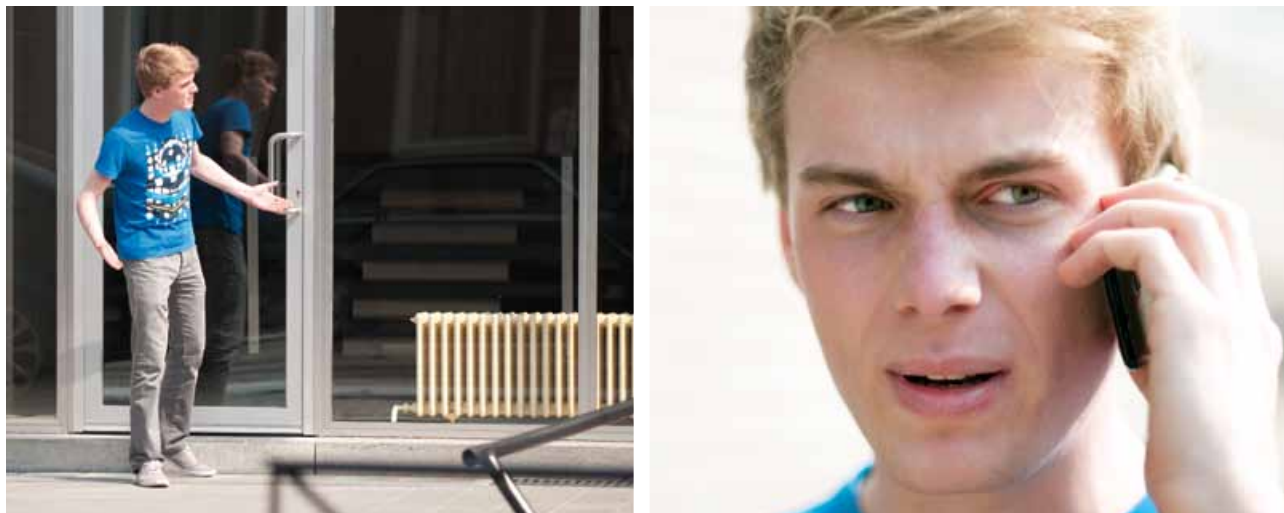


▲ I also passed a **bike box** <sup>M</sup>. When I get my first real job, I'll rent one too. That way, my bike will always be safe.





▲ I was excited about my first day. I locked my Student & Mobility bike quickly - I rented it this morning because mine was a total wreck – and went in. My first mobility management campaign awaited me!



▲ Coming out of the office later, I couldn't believe it. My bike was gone! First I called the police. Then I called my girlfriend.



▲ Saskia calmed me down. Then she offered to pick me up. With the bike **route planner** **M**, she found the office easily.



▲ 10 minutes later, Saskia arrived on her tandem. She's an angel! We rode by the beautiful old trees on the **new cycle lane** **M** and went for a drink in the city. Saskia helped me forget the bad experience.



▼ Sitting on the sunny terrace, I got an **SMS** **M** from the student organisation telling me that my bike had been taken to the depot because I only locked it with the spoke lock and not the chain. Wow, that was a relief! Now I could relax and enjoy the day...





## GENT'S MEASURES



### 1. Working on a cleaner fleet

The car fleet of the city administration was reduced in 2010. Eco-driving lessons were organised for frequent drivers and employees of the city are now car sharing with Cambio cars during working hours. Cambio will have 9 e-cars in its national fleet by the end of 2012.



- 18 % of cars were removed from the city fleet
- 7 % was saved on fuel use thanks to eco-driving
- Correct tire pressure leads to 4 % less fuel use

### 2. Better service on public transport

Gent installed a traffic light control system to favour trams. Bus stops were redesigned with 'Kassel curbs' to guide low-floor buses precisely to the stop. Many got real-time passenger information displays and redirected cycle lanes. The youth programme 'Trammelant' prevented vandalism in target districts.



- 130 bus stops were redesigned and made safer
- Preliminary results of traffic light controls are encouraging
- There are 53 % fewer complaints about pupils in buses



The City of Gent and seven partners implemented 24 CIVITAS measures and invested over €7.5 million in innovative activities!

### 3. Measuring energy on trams led to energy savings

By monitoring the energy levels for a long period, the public transport company De Lijn developed six small technical adjustments which led to huge savings in their energy consumption. The idea will be extended to Antwerp, where even greater savings are expected.



- 20 % less energy leads to a saving of €200,000 a year
- New specifications are embedded in future tenders
- The concept of energy saving is exported to other cities



### 4. Creating broad community support for the station redevelopment

Dedicated communication with different stakeholders of the large redevelopment project has been of great benefit. Many problems were solved or avoided through extensive interaction and cooperation between the project developers and the stakeholders, such as the weekly "reduced discomfort meetings".



- Four stakeholder group meetings held per year
- 2 dialogue cafés (170 participants) & 5 info markets (±1000 people)
- Weekly meeting to address urgent problems



### 5. Secondary school pupils reflecting on their travel behaviour

CIVITAS made it possible to work with teenagers on mobility issues. Several schools participated in the school projects and kids prepared campaigns for better and safer home-to-school trips. They also investigated the mobility and traffic problems encountered on their way to school.



- 23 schools analysed their school environment, detecting problems and obstacles
- Pupils learned how to campaign amongst their peers



### 6. Traffic guidance system

The former parking guidance system was replaced by a traffic guidance system. Information boards direct cars to the nearest available parking in the city centre. In case of road work, a large event or an accident, the system gives alternative routes and redirects traffic.



- 108 LED traffic guidance signs throughout the city
- Positive acceptance by users
- Now integrated in the city's event management guidelines







## 7. First steps in city freight

The newly installed city freight platform is made up of stakeholders such as shop owners, local businesses, politicians, the public transport company, the logistics sector and the Economic and Mobility Department of the city. Within this platform, local problems are tackled and solutions developed.



- A city freight platform has been set up
- Four free loading and unloading points have been installed
- There is a 80 % reduction in unauthorised use of loading points



## 8. New parking strategies

A new parking system was established around the main station, whereby people can leave their cars for a maximum of five hours. Various stakeholders were consulted on parking in new housing estates. This positive experience will be used for other areas in the city.



- Half-day parking led to a 11 % reduction in parking demand
- New housing areas will have new parking strategies
- Car sharing is embedded in new housing areas



## 9. Safe cycle streets

Belgium's first "cycle street" was installed in Gent. The principle is very simple: cyclists have priority over cars. Since the "red carpet" for cyclists was installed, their share has increased substantially.



- Cycle traffic on the "bicycle street" increased by 36 %
- 63 % of citizens perceive Gent as a cycling city
- New national cycling-friendly legislation was implemented



## 10. Mobility and event management

Mobility management for events was an unknown area until recently. Gent now has a questionnaire for event organisers, a close dialogue with organisers and a new website [www.gentevenement.be](http://www.gentevenement.be), which gives advice on sustainable transport during events and provides legal documents for organisers.



- A new website to stimulate the organisation of car-free events
- Closer cooperation with the Environment Department
- 14,000 visitors used Park&Ride at Light Festival

# CHALLENGES ENCOUNTERED



### Getting the political support for some measures

Gent's bio-diesel measure started well, but due to differences of opinion on a sensitive matter, the measure ended up in a dead end alley and could not be saved. In the end, nothing could be done but cancel it. Similarly, the establishment of a camera surveillance system could only be implemented after a change in political representation.

### Technical challenge

Most solutions in mobility planning are not completely new: camera surveillance, hybrid buses, a traffic guidance system and traffic light controls all exist in other cities. But since each city has different standards and legal frameworks, simply copying and pasting is not enough. To be successful, every measure needs a tailor-made local approach.

# SCALING UP



- The public transport company De Lijn will further invest in clean vehicles and will exploit the energy saving measures at full speed, not only in Gent, but also in Antwerp and for the coastal tram.
- The City of Gent will continue its fleet management, including sending drivers to eco-driving courses and investing in a clean fleet.
- The bike boxes will be integrated in the cycling parking policy, with 20 extra bike boxes to start with.
- If successful, the loading points will be copied in other busy shopping areas.
- Mobility management for schools, companies and events will be continued and embedded into the Mobility Department.

## My View



Martine De Regge,  
Alderman for Public Works and Mobility

### "Thanks to CIVITAS,...

...our city had the chance to do more and better things than we can usually do with the given resources. It is beneficial that there is some room for experimentation, testing and trials so in the end, the decisions taken are well thought of."



## FUTURE VISION

Within CIVITAS ELAN, Gent worked closely together with all project partners. The conclusion is that the closer this cooperation is with partners dealing with mobility, the better and more profound the solutions. In that respect, CIVITAS ELAN taught us how to deal with risk management and process evaluation. These are both necessary for a clear understanding of the potential problems with stakeholders and partners. CIVITAS ELAN helped Gent to set clear, smart objectives, to better set goals and to measure the results afterwards. Although Gent is a forerunner in citizen participation, CIVITAS ELAN forced us to experiment with new techniques and with social media, allowing us to communicate with a wider group of stakeholders.



## WELCOME TO ZAGREB Croatia



Zagreb is the capital and largest city of Croatia with almost 800,000 inhabitants in an area of 641km<sup>2</sup>. In 1994, Zagreb celebrated its 900<sup>th</sup> birthday. The city's university was founded in the 17<sup>th</sup> century, making it one of the oldest in Europe. Today it has more than 65,000 students.

### Zagreb is...

the cultural, scientific, economic and administrative centre of Croatia. The city attracts economic and business events, as well as trade fairs and tourism (666,000 tourists in 2011). Zagreb has a rich cultural life with many concert halls, theatres, museums and art galleries.

A steep rise in the number of private cars has caused congestion and air quality problems in the city centre, calling for urgent action. Public transport consists of buses, trams, a funicular and suburban trains. There are more than 200km of bicycle paths, although a real network is still lacking. The city centre boasts many pedestrian areas, parks and green areas. Despite improving conditions for cyclists, pedestrians and public transport, individual cars still play a significant role.

### CIVITAS ELAN in Zagreb

As part of CIVITAS ELAN, Zagreb wanted to restrict the use of cars, to change citizens' travel habits and improve links between transport modes. The city made public transport more attractive, secure and energy efficient.

Within the project, 70 energy-efficient low-floor trams, 100 low-floor buses running on bio-diesel and 60 buses running on natural gas were introduced in the public transport fleet. Safety and security in public transport were increased, with the number of accidents reduced by 37.6%. A new e-ticketing scheme was introduced in trams and buses and information for travellers was improved. The waste management fleet now runs on bio-diesel. Efforts were made to improve conditions for sustainable transport modes (a web portal for carpooling, new cycling lanes and bicycle parking lots, a public bicycle scheme for students). Studies and research activities on various mobility issues point to new directions for transport improvements and mobility plans.

### Citizens first

Information sharing and dialogue with citizens revealed citizens' interest in mobility issues and their readiness to be involved in finding solutions. Encounters, presentations and discussions held at different levels and involving different groups of stakeholders have opened the door for further improvement of public participation processes.

### My View



### Shop owner in Vlaanderenstraat

#### "These yellow marked parking places...


...for delivery trucks make my life and the truck drivers' lives much easier. My suppliers can always park at a short distance close to my shop. The only thing they have to do is take a free ticket from the ticketing machine. So no endless looking for a parking spot, which saves CO<sub>2</sub>, and means no more double parking on the street."



## A day with VLATKA IN ZAGREB

"Hi, I'm Vlatka from Zagreb. I'm a retiree enjoying my golden years. I walk most places and use the bus or tram for longer distances. Zagreb is a wonderful city and easy to get around - even for older people."



▲ As I do every day, I took my shopping trolley to the Dolac market this morning to buy some fresh vegetables. At the tram station a gentleman wanted to help me with my trolley, but then he realised it wasn't necessary in the new **low floor tram** . They make it easy for older and handicapped people to get in. Also for parents with kids.




▲ The tram driver saw us on his little monitor but he didn't know that the gentleman wanted to get on too.



▲ He closed the door behind me and the handsome gentleman could only say goodbye.





▲ I said goodbye too and watched him out the window. I hoped to see this nice gentleman again. ▲ I validated my trip on the **ticket validator**  with my annual seniors' pass. These machines really make it easy.



▲ Public transport in Zagreb has changed a lot in the last four years. The City of Zagreb, the public transport operator and the EU have invested a lot to make it more attractive, especially for older people. When I think how exhausting it used to be...



▲ Now we have low floor trams, new display boards and attractive new tickets and machines. ▲ On the Dolac market I bought some fruit and vegetables for lunch. I love shopping at the stalls.



▲ I went to Flower Square afterward to have a coffee in my favourite coffee shop. When I passed the flower market I saw the nice gentleman again. He was buying flowers. Whoever gets those is a lucky woman...




▲ But I got a big surprise in the coffee shop. The gentleman came to my table and gave the flowers to me saying: "I knew we would meet again. These are for you!" He introduced himself. His name is Alojz.



▲ I invited Alojz to come to the **CIVITAS ELAN info-point**  with me. It's in an old tram. The people there are very friendly and have lots of useful information on getting around Zagreb.






▲ We watched a **carpooling promotion video** . I have to remember to tell my kids about it. After the video, Alojz suggested we go to ZG Forum, Zagreb's communication point with the public.



▲ Alojz showed me the renovated ZG Forum and some **brochures about mobility**  in Zagreb.



▲ We even found a **brochure on public transport for older people** . It was really helpful.



▲ We had lunch together afterward in a nice restaurant. I can eat the vegetables I bought tomorrow...

## ZAGREB'S MEASURES

### 1. Improvements in public transport

The public transport fleet now uses less energy (energy management in trams) and emits less CO<sub>2</sub> (buses running on bio-diesel and CNG). New low-floor buses and trams provide more comfort and better access for all passengers. Security improvements were achieved by introducing CCTV cameras in vehicles.



- 70 low-floor trams, 100 bio-diesel and 60 CNG buses were co-financed
- 147 displays at PT stops show real-time information
- CCTV cameras were introduced in 120 trams & 74 buses



### 2. Introducing new modes and environment-friendly fuels

A carpooling scheme was developed and mobility plans for big companies along the demonstration corridor were prepared. A bicycle sharing scheme for students is in place. Bio-diesel waste disposal and street-cleaning vehicles were introduced into the public fleet.



- 450 users of carpooling scheme registered (as of June 2012)
- Mobility plans were prepared for 8 companies along the corridor
- 47 bio-diesel waste disposal vehicles were co-financed



Zagreb implemented 14 sustainable mobility measures within CIVITAS ELAN, all under one motto: "Citizens first!"





### 3. Information sharing

The info-point, a refurbished heritage tram, serves as an information source. "Tram Wednesdays" and round tables allowed citizens and journalists to obtain information, as did a website, an e-bulletin, a Facebook fan page and three short films on mobility.



- 21,630 info point visitors and 1,400 participants at different events
- 60,000 website and 165,000 Facebook hits; 3,170 film views
- Some 200 media appearance



### 4. Comprehensive mobility dialogue

Citizens and experts were invited to discuss mobility issues in their neighbourhoods. This opportunity to express views, share concerns and to meet Local Committee representatives was welcomed. The results were presented to a board of local political leaders.



- More than 150 citizens participated in a mobility dialogue
- 143 citizens were trained on communication with city authorities
- A toolkit was prepared on organising successful consultations



### 5. Safety for seniors in public transport

A series of workshops with senior citizens was held on safer use of public transport. Training with public transport drivers was held to raise their awareness on the needs of older passengers. A brochure with tips on how to use public transport safely was published and a short film "Alojz and Vlatka" was produced.



- Some 500 older people learned about safer public transport use
- 8,000 brochures were distributed and a short film produced
- 160 public transport drivers were trained



### 6. Surveys, studies and research

Several mobility surveys, studies and research activities were undertaken on different mobility issues which point to indicate new directions for traffic improvements and mobility plans. Two large-scale surveys on citizens' satisfaction with public transport and their travel habits were conducted.



- 2,000 citizens took part in surveys on the quality of public transport
- A study on an intermodal interchange was carried out
- Research on freight delivery and congestion charging conducted

## CHALLENGES ENCOUNTERED



A local event organised to mark the end of ELAN activities enabled local partners to look back at the challenges as well as forward to the future. While further capacity building is still needed, partners gained knowledge and experience related to the management of European projects. They were able to cope with most of the challenges (overcoming an initial lack of effective communication and of understanding of partnership principles), but some challenges will require time and effort beyond the project. These include ensuring more efficient coordination mechanisms supporting mobility decision making, improving the practice of mobility dialogue with citizens, securing regular data collection on mobility, researching the needs of different user groups and working on integrated and multi-sector transport and mobility planning.

## SCALING UP



Various approaches and techniques can be recommended for taking up by other cities. For example, community level mobility dialogues with citizens could be replicated in other cities. Special emphasis on older people as public transport users also delivered excellent results. These activities could be extended and continued on a permanent basis in Zagreb, and also transferred. Energy saving and emission reduction techniques were applied on a broad scale and could be transferred to other cities, namely energetic recovery systems for trams and public fleets using CNG and bio-diesel. Studies on new directions for transport improvements and mobility plans will support sound decision-making and up-scaling of measures in Zagreb.

### My View



Mira Papež, retired economist, 63

**"I use public transport every day..."**

...and I am very satisfied with the improvements in the last four years. Travelling in the city is so much better now. With the new low floor trams, it is easier to enter and exit the vehicle. New displays at tram and bus stops help in travel planning."



# FUTURE VISION

Project implementation showed the benefits of continual communication among different stakeholders, the value of consultation when looking for concrete mobility solutions and the absolute necessity for efficient coordination of all mobility actors.

The practice of motivating citizens to contribute while planning mobility improvements will be improved and built upon in the future.

The cooperation established between public transport operators, mobility experts and other transport actors as well as dialogue with citizens and specific stakeholder groups should be further cultivated and practised. This will lead to sustainable, clean and energy efficient mobility solutions with priority given to public and all types of non-motorised transport, limiting individual car traffic to a reasonable level and achieving harmony between different transport modes based on a well-developed mobility culture. This vision is in line with Zagreb's vision as an incubator of sustainable urban concepts, an entrepreneurial spirit and people-focussed values.



**My View**  
Jelena Pavičić Vukičević, Deputy Mayor

**CIVITAS ELAN Final Event, 15 May 2012**

"I highly value the ELAN outcomes, which have certainly brought benefits to sustainable mobility in the city and to the quality of life of Zagreb's citizens. The project provided the opportunity to build the capacity for better management of European projects, and we are all glad for the opportunity we were given to cooperate and learn from partners from other European cities. Together with the Mayor of Zagreb, I will strongly support "life after ELAN" to sustain what partners from different sectors have achieved."

Welcome to  
**BRNO**  
Czech Republic



Brno is the second largest city in the Czech Republic with a population of nearly 400,000 and an area of 230 km<sup>2</sup>. It lies within two hundred kilometres from the European capital cities Prague, Vienna and Bratislava. The city is an important tourist centre for the region of South Moravia.

**Brno is...**

a city with many notable historic, architectural and cultural sites that provide evidence of its rich history such as St. Peter and Paul Cathedral and Špilberk castle. The most famous example of modern architecture in Brno is the Villa Tugendhat, a historic site inscribed on the UNESCO's World Cultural Heritage list since 2001.

**Challenges encountered**

Brno has a well developed public transport system with trams and trolleybuses forming its low-polluting backbone. It has one of the largest trolleybus networks in Europe consisting of 147 vehicles covering routes of 94 kilometres and transporting 45 million passengers a year and, at 65 %, the modal share of public transport remains relatively high in Brno. But along with the technical infrastructure, the standard of service provided is also important; the city wanted to build upon its advanced public transport infrastructure to further develop its culture of sustainable mobility and reverse a trend of decreasing public transport use. Thus Brno sees increasing the

quality of public transport as one of its challenges. Another challenge facing Brno is the changing needs of the city's shrinking and ageing population. Furthermore, the city needs to ensure that new residential areas have access to sustainable modes of transport. Brno wanted to address these issues while seeking solutions to make its transport system more sustainable.

**CIVITAS ELAN in Brno**

In a four year span the local CIVITAS ELAN partners implemented six measures: three by the City of Brno and three by DPMB, the city's public transport operator. All of the measures will continue after the end of the project.

The primary goal of Brno's participation in CIVITAS ELAN was to increase the number of public transport users through communication and service quality improvement. Innovations such as more and detailed transport information and vehicles designed for the transport of disabled passengers make travelling easier and more comfortable.



# A day with ELIŠKA IN BRNO

"I'm Eliška from Brno. I'm a restorer and have been working on the restoration of the famous Villa Tugendhat. I take a bus or tram to get to work because everything is well connected in the city."




▲ Today I took a day off and used the opportunity to show my son Pavel the place I've been working for the past few years. He always wants to know what I actually do in the famous Villa Tugendhat from Ludwig Mies van der Rohe.



▲ We went to the stop to catch the tram, but first we had to buy tickets.

▲ Bad luck. I don't know how it happened, but my coins got stuck in the machine.



▲ Before I could call the public transport operator to let them know about the problem, a repairman arrived and repaired the **ticket machine** . He told me they have an on-line control system that detects problems automatically.





- ▲ Then our luck got better. Pavel's favourite tram - the green CIVITAS one – arrived at the platform.
- ▼ He likes sitting on my lap and looking out the window at people.



- ▼ We got off at the next stop and changed to the minibus that takes us right to the villa. The **minibus M** has a low floor and is specially designed for handicapped people. It was nice to see the villa in the sunshine.



- ▲ In the villa I showed Pavel what I've been working on and told him the story of the stolen wooden wall. It had been missing since World War II until I found it by chance in a canteen at the university. That was an exciting day!



- ▲ After our visit, we went back to the city centre. As we were passing the new **mobility centre M**, Pavel pointed in the window and said "Dad!". My husband Libor was inside. When he was finished, he suggested ice cream. Who could refuse?





## BRNO'S MEASURES M

### 1. Transport information centre for citizens

In the Integrated Mobility Centre, residents and visitors of Brno can obtain useful information on getting around in the city and its surroundings.



- The Integrated Mobility Centre is open seven days a week
- 5,000 visitors came to the centre in the first six months
- 7.5 % of visitors to the centre are international visitors

### 2. Improved bus services for the disabled

Dedicated lines with specially adapted vehicles provide better and more comfortable public transport services for disabled travellers.



- Brno now has 5 minibuses in operation
- Up to 6 wheelchairs fit into each minibus
- Almost 900 disabled and 11,500 other passengers per month

## CHALLENGES ENCOUNTERED



The difficulty in providing bus service to disabled passengers is a good example of the challenges faced in Brno. Initially, the technical solutions needed to provide better public transport for the disabled were hard to implement because of an outdated fleet with very few low-floor vehicles. There was also a lack of understanding of passenger needs but citizens were not used to making their voices heard and to communicating with transport operators and local authorities. CIVITAS ELAN helped to establish this dialogue with the result that the dedicated lines and the vehicles used on them comply very well with the needs of less-mobile passengers.

## SCALING UP



The Integrated Mobility Centre, offering a range of travel information in one location, was very useful for visitors as well for citizens and those, such as students, who were new to the city. After evaluating the results, similar information points may be established at other intermodal interchanges. Discussions with disabled citizens proved very valuable. Their concrete feedback helped make public transport more suitable for all kinds of passengers. This form of consultation could be very fruitful for other cities as well. Optimising energy consumption in trams and trolleybuses was also a very effective measure with a high transferability potential, particularly to cities using older tramways.

### My View



Zdeněk Jarolín,  
Head of the Technical Department of DPMB, a.s.

#### "In 2010 and 2011 the system for the optimisation...

...of the energy consumption in public transport saved more than €65,000 while the system itself cost only €60,000."

The City of Brno and its partner DPMB, a.s. implemented 6 measures and invested over € 2.1 million during the 4 years of the CIVITAS ELAN project.





## FUTURE VISION

One of the success factors of the project was efficient coordination and communication between the City of Brno and its public transport company. A key lesson for Brno was to involve citizens in finding solutions. Many useful suggestions were made at workshops and discussions organised within the ELAN project. In Brno, the number of older people and people with reduced mobility is increasing. The experience during ELAN raised awareness of their needs and will help the City of Brno to give these issues further attention. The Integrated Mobility Centre in Joštova Street has been a big success. Here, not only is information provided but data is also collected and feedback is gathered from visitors on improving public transport. It can be assumed that the centre, one of the most successful CIVITAS ELAN measures, will become a part of everyday life in Brno and will continue helping citizens plan their daily trips.



Welcome to  
**PORTO**  
Portugal



Porto, Portugal's second largest city, is located in a setting of rare natural beauty on the Atlantic coast. It stretches across 41 km<sup>2</sup> and is home to 263,000 inhabitants.

### Porto is...

a city of history, culture and architecture, famous for its Port wine and characterised by friendly people and a mild climate. Its university is one of the largest and most prestigious academic institutions in the country and Porto is home to 60,000 university students, most of them located in the Asprela area. The city is also the hub of a highly industrialised region.

### Mobility issues

Increasingly in recent years people have moved from the city centre to the suburbs, leading to new mobility patterns. Urban sprawl has brought about longer trips which cause serious congestion at the city's main entry and exit points. The car is the first-choice mode of transport with a share of 43 % compared to 25 % for public transport and 32 % for walking. In the past, transport policy focused primarily on the expansion of road capacity but is now increasingly concerned with the improvement of the public transport system.

### CIVITAS solutions in Porto

Porto joined CIVITAS ELAN as a way to achieve the necessary changes towards an urban transport system that guarantees all citizens high-quality mobility and limits its environmental impact. For that reason a specific area was chosen, the Asprela quarter, where these mobility difficulties are most evident. The city has been adopting mobility management techniques to minimise the effects of increased road traffic and has made efforts to change people's travel habits. To this end, Porto opened a Mobility Shop that provides information, gathers travellers' feedback and monitors mobility issues. The information point also coordinates marketing and awareness-raising campaigns. A system that provides real-time information on the services of different operators was launched and a new web platform helps people to arrange carpooling. One of the project expectations was that a demand responsive transport service during the night and a light weight bus could help to reduce the use of the private car in the city. An intermodal interchange point was also planned and designed, as were new bicycle lanes to improve the mobility of Asprela's students.

### My View



Ladislav Macek - Deputy Mayor of Brno

**"The CIVITAS ELAN project was a unique opportunity for us ...**  
...to share experiences in sustainable transport. It was a great chance to implement pilot projects in the City of Brno and their operation will continue."



# A day with INÊS IN PORTO

"Hi, I'm Ines. I'm moving to Porto next month and have to find a flat. I think the best way to get to know a city is to walk and take the bus or metro."



▲ Last Monday I took the train to the main station in Porto. It's one of the most beautiful train stations in Europe. From there, I took the metro down to the Douro River. I read that the metro is the fastest way to get around Porto.



▲ It was beautiful at the river. Lots of nice restaurants and cafes. And all the boats carrying the famous Port wine.



▲ I bought a newspaper to check the real estate section. I definitely want to live in the city centre.







▲ I sat down on the grass by the river with my paper. I found a flat that looked really interesting.



▲ I called right away and arranged to see it in the afternoon.



▲ Then I took the metro to Porto's **Mobility Shop** . I wanted to get some information on a free mobile phone app I had heard about called "**MOVE-ME**" ! ▼ You can find any place in the city with it.



▲ I took the metro back to town to see the flat. A girl sat next to me in the metro. She saw me using the app and asked me about it. Then when I left the metro I forgot my mobile phone. Sometimes I'm a real scatterbrain.



▲ Luckily the girl – her name was Laura – picked up my phone and saw my target location on MOVE-ME.  
▼ Laura was really kind. She found me with the app and brought my mobile back. That day I found both a new flat and a new friend.





## PORTO'S MEASURES M

### 1. Improved conditions for pedestrians and cyclists

Infrastructure for non-motorised modes has been adapted to contemporary needs. Cycling paths were built to facilitate the increasing number of students using bicycles. Accessibility for pedestrians was enhanced by lowering curbs, regulating the width of pavements and adding tactile elements.



- Public transport was given priority at crossroads
- Bus bays at stops enable better access by passengers
- Bus shuttle service eliminated the need for cars for short distances

### 2. Public transport is becoming faster

While an excellent metro system forms the backbone of public transport in Porto, CIVITAS ELAN improved access in places that the metro doesn't reach. Bus lines in the ELAN corridor now use dedicated lanes and have priority at traffic lights.



- 700 users registered for carpooling
- DRT bus service was tested from Thursdays to Saturdays
- The bus served 1,106 users during its operation

Because of CIVITAS ELAN, Porto is now even more committed to sustainable mobility and citizens are more willing to change their travel habits.



## CHALLENGES ENCOUNTERED



In order to achieve the ambitious targets of CIVITAS ELAN, a range of stakeholders had to cooperate. For the MOVE-ME app, for example, data from 15 public transport operators had to be integrated. CIVITAS served as a door-opener and motivator to bring local actors together.

Citizen engagement was not previously embedded in the political culture. In a concrete example, a local traffic plan had to be changed after (successful) backdoor influence-peddling, despite the fact that citizens were in favour of the original plan. However local decision makers have started to take this topic more seriously since CIVITAS and have developed their own activities to inform and involve citizens.

## SCALING UP



Focusing the measures in Asprela, the largest academic and health centre in Portugal with over 60,000 visitors daily, and combining this with strong dissemination activities ensured high visibility and self-enhancing impacts. It can be said that integrated packages of measures, adapted to the context of the relevant area, could be successfully applied in other areas. Activities like the carpooling campaign in the universities, the night bus "GATO", the bus shuttle, and particularly the MOVE-ME smart phone app have good potential for transferability. The Mobility Shop was the first place in the city dedicated to public transport information. It also served as the CIVITAS ELAN PORTO headquarters, making the project activities transparent to citizens.

### My View



Gonçalo Gonçalves, City Councillor of Urbanism and Mobility, City of Porto

#### "After almost four years of intensive work..."

...we can say that our city has gained a lot of experience on sustainable mobility issues and we are now starting to feel the improvements that CIVITAS ELAN measures brought to Porto and to its citizens. The project was a good experience and we expect to extend measures to other parts of the city."



## FUTURE VISION

CIVITAS ELAN gave mobility and transport issues a big push. Decision makers and citizens are now much more aware of the issues and are more willing to change their travel habits. Innovative campaigns and the high visibility of the measures contributed to this.

ELAN helped to bring forward activities that had been on the agenda before but didn't have enough political support, such as the bicycle path in the Asprela area. CIVITAS also acted as a motivator and catalyst to bring together 15 public transport operators to provide travel information via a smart phone application.

Porto's recently formed Metropolitan Transport Authority will further promote the results of CIVITAS and might take over the management of selected measures such as the Mobility Shop.

There have also been challenges. For example, it is difficult to convince people of the benefits of citizen engagement when powerful stakeholders intervene and jeopardise the whole process.



## YOUTH CONGRESS Brno/2011



40 pupils from all five cities came together to participate in CIVITAS ELAN's Youth Congress. This lively event was held in the City of Brno and started with an introduction of the pupils' home cities via a dance performance, a video clip or a three-dimensional model of the city.

The main item on the agenda was the so-called Mobility Treasure Hunt, which was a big scavenger hunt through Brno to show the pupils different sustainable transport modes. They were split into groups and had to solve riddles at the checkpoints. The winner was the group that solved all the tasks in the shortest time.

Finally the pupils gathered their ideas for more sustainable mobility in Brno by providing recommendations based on their experience, which were forwarded to city representatives.

The Youth Congress was an opportunity for participants to exchange new mobility ideas, to learn about other cities and cultures and to make friends from across Europe. In addition, it enabled transport professionals to

view the issues they are dealing with daily from the perspective of an important user group.



### My View



João Falcão e Cunha -  
University Professor and ELAN Measure Leader

#### "The CIVITAS ELAN project enabled..."

...for the first time in Portugal such a large number of transport companies (2 public and 13 private) and modes (bus, coach and metro), to come together to share information with users on destinations, routes, timetables and real-time information. This made possible the INFOBoard information system and the MOVE-ME mobile information system.

The Metropolitan Area of Porto and the University of Porto applied to the IBM 2012 Smarter Cities Challenge with a project based on the work and results of CIVITAS ELAN.

The University of Porto is setting up a Centre for Research in Smart Cities and the work and results of CIVITAS ELAN was instrumental in this respect. All researchers involved in CIVITAS ELAN are associated with this new centre."



# EVALUATION: What? Why? How?

## Measuring, understanding and interpreting were key activities



*With the ELAN Kavalir electric shuttle, the shopkeeper Janez can now easily access his shop in the old part of Ljubljana.*



*Thanks to the cycle route planner in Gent, Simon takes his bike more often. He can now calculate the fastest route without cobblestones or tram tracks.*



*Thanks to ELAN, Vlatka now uses innovative ITS services in public transport – even at her advanced age.*



*Eliška can easily get all the transport information she needs in Brno in the new Integrated Mobility Centre built within the ELAN project.*



*When Inês came to the University in Porto, an information brochure prepared by ELAN explained how easy and fast it is to use public transport.*

Is this really so? How many citizens actually changed their behaviour? And for those who did, what made them change? Have ELAN measures actually contributed to improving air quality and liveability in the cities? Understanding this is extremely important for the decision makers and technicians in our cities so that they can improve urban mobility, implement the most efficient measures and win over as many people as possible to a sustainable lifestyle.

For this reason, ELAN collected reams of data and solicited input from thousands of citizens. All in all:

- ➔ 134 surveys asked for the opinion of 65,000 citizens
- ➔ 33 people worked actively in the evaluation teams
- ➔ 370 on-the-ground workers collected data
- ➔ 216 meetings took place with citizens, shopkeepers, politicians, and others
- ➔ 237 traffic counting points were established
- ➔ 165 emissions measuring points were set up
- ➔ 80 new vehicles were tested.

A team of evaluators worked together to understand the information that was collected, to interpret it correctly and to draw the right conclusions. ELAN used the most advanced methods to collect data and to discuss the way new measures were implemented

## Ljubljana



In Ljubljana a city-wide public opinion survey was conducted on the awareness/ acceptance of all measures. Detailed data comparison and cross-analyses were carried out for all measures, which enabled a good understanding of the importance of each one.

## Gent



In Gent a bikeability index was established to assess objectively the quality of the cycling infrastructure. Various aspects of 298 road segments in the city centre were examined for safety, amenities and obstacle. This index is used to determine where improvements are necessary.

## Zagreb



In Zagreb an airborne multi-sensory imaging system was developed to obtain traffic data in the ELAN corridor. Video images and the data collected were also used in a micro simulation model of the corridor.

## Brno



In Brno a new approach to measuring the modal split was developed. It provides complete information on travelling in peak and off-peak hours, and on weekends. At the same time it investigates the satisfaction with such things as cycling paths and changes in PT schedules.

## Porto



In Porto a new dynamic traffic model was developed to test different traffic scenarios and to analyse the air quality and noise levels. Data on traffic and air quality were collected for the construction, calibration and validation of the model.



## COMMON MEASURES

In order to exchange knowledge and to foster take up of good practice, CIVITAS ELAN defined four so-called common measures. These covered topics that were relevant and challenging for all the partner cities, namely **freight management, stakeholder involvement in large infrastructure projects, safety and security, and clean vehicles in public fleets.**

While the measures were mainly implemented city per city, the common measures served as a platform for mutual inspiration, learning and exchange between the cities.

In practical terms, small groups were formed for each common measure with representation from each city. They arranged workshops and site visits to share experiences with cities outside the project, organised surveys in order to compare the situation in the different ELAN cities and maintained close contact via regular meetings and telephone conferences. As a result, ideas were transferred and partners were inspired to think about new projects, such as in citizen engagement and in fleet management.

While there were critical voices calling for active participation by all partner cities and better planning of exchange activities, almost two thirds of the participants stated that the common measures were successful in transferring knowledge and good practice.

## FACTS AND FIGURES

### → Clean vehicles and supporting infrastructure

- Energy management for electric vehicles: energy saving measures for about 380 trams (Brno, Zagreb and Gent) and 147 trolleybuses (Brno) save up to 20 % of electricity per vehicle - equalling €200,000 (Gent) and €65,000 (Brno) respectively per year for the fleet
- 25 hybrid buses (20 in Gent, 5 in Ljubljana), one hybrid truck (Gent); six hybrid vehicles in the city administration brought the average CO<sub>2</sub> emissions of the city's car fleet from 250 g/km down to 131 g/km (Ljubljana)
- 19 electric vehicles: four car sharing cars, seven city fleet cars, eight electric vans in the city and private fleets (Gent)
- 100 low-floor bio-diesel buses (Zagreb)
- 47 bio-diesel waste disposal vehicles (Zagreb)
- 80 CNG buses (60 in Zagreb, 20 in Ljubljana) and two CNG cars (Gent)
- CNG filling stations in Ljubljana and Gent
- 26 bus drivers, 54 municipal drivers and 35 car sharing clients trained on eco-driving (Ljubljana and Gent)
- Light-weight prototype minibus demonstrated how efficiency of public transport can be increased, 500 users per day (Porto)
- Noise level of the public transport fleet reduced by more than 3 dB on average (Zagreb)

**NEW VEHICLES, ALTERNATIVE FUELS, ENERGY MANAGEMENT, EFFICIENT DRIVING**

### → Stakeholder involvement & awareness raising

- 10,000 walking maps distributed (Gent)
- 13 out of 15 contacted entities ended up with a company travel plan or are working on it, resulting in a stable modal shift of 6 % towards sustainable mobility at a technology park between 2008 and 2011 (Gent)
- 39 event organisers, cultural venues and organisations requested accessibility leaflets (e.g. "How to get to the opera by tram/foot/car") to distribute to their visitors. Eight event organisers were provided with mobility plans. One of them, the Odegand festival in Gent, experienced a modal shift of 4 % towards more sustainable transport modes.
- 21,630 info point visitors and 1,400 participants at citizen engagement events (Zagreb)
- More than 150 marketing and awareness-raising events led to high visibility of the project and promoted a change of mobility behaviour (Ljubljana)
- More than 2,600 people reached by individualised mobility marketing and a further 2,500 by other awareness raising and communication campaigns (Ljubljana)
- More than 1,500 citizens participated in a series of ELAN workshops and events and around 19,000 were involved through surveys and questionnaires. (Porto)
- Brochure produced with information on sustainable mobility (public transport routes and info, public bicycle stations, pedestrian zones, P+R and parking), distributed to 120,000 households (Ljubljana)

**MAPS, BROCHURES, WORKSHOPS, INDIVIDUAL MARKETING, CITIZEN PARTICIPATION**





## → Improved information, quality and safety of trips on sustainable modes

- 700 bus stops equipped with improved timetables, 130 bus stops received new information panels (Ljubljana)
- 110 bus stops improved (new shelters, improved curbs, bypasses for cyclists) (Gent)
- 175 real-time information displays for public transport (Ljubljana, Gent, Zagreb, Brno and Porto)
- Smart phone app (MOVE-ME) featuring integrated travel information had 32,000 requests in the first month (Porto)
- Electronic ticketing system implemented in entire public transport fleet (250 vehicles, Zagreb) and 159 ticket vending machines upgraded with remote diagnostics technology (Brno)
- Video surveillance system installed in 89 buses (Ljubljana) and 194 trams and buses (Zagreb)
- More than 50 smart traffic lights (Porto, Gent) and a traffic light control system (Gent) give priority to public transport
- Youth campaign leads to decrease of almost 60 % in incidents with youth and to increased respect and understanding between public transport staff and young people (Gent)
- Traffic guidance system with 26 variable-message signs on major roads and 82 electronic parking guidance signs led to at least 14,000 visitors of Gent Light festival parking their cars at P+R (Gent)
- A new metro/bus interchange improves intermodality (Porto)
- Night bus service “GATO” for students demonstrated on Thursday, Friday and Saturday nights (Porto)
- Four loading points for lorries installed (Gent)
- Almost 9,000 visitors at the Integrated Mobility Centre in its first 9 months of operation (Brno)

**REAL-TIME INFORMATION,  
ELECTRONIC TICKETING, BUS  
PRIORITY, MORE SERVICE**

## → Walking and cycling taken serious

- 17 interventions from the pavement action plan implemented (Gent)
- The number of cyclists increased by 36 % between 2010 and 2012 on the cycle street created within ELAN (Gent)
- Four km of cycling lane, two redesigned traffic intersections with new and improved sidewalks and pedestrian crossings along with a number of cycling and walking promotion events (Porto)
- 6,000 rental bicycles for students equipped with a theft prevention chip and a unique engraved number (Gent)
- 50 bicycles for city administration and city constables replaced more than 400 car trips per year (Ljubljana)
- New public bicycle system for students of Faculty of Transport introduced as a pilot project (Zagreb)
- 60 new parking spaces for bicycles along the CIVITAS ELAN corridor as well as 1.8km of cycling lanes (Zagreb)
- 27 bicycle boxes (Gent)

**CYCLE STREETS, BIKE LANES,  
BIKE PARKING, SHARED  
BIKES, THEFT PREVENTION**

## → Improved access for all travellers

- Willingness of bus drivers to support impaired passengers increased from 50 % (2008) to 95 % (2011) after receiving special training (Ljubljana)
- The number of trips by impaired passengers in public transport grew from 50 per day in 2010 to 500 per day in 2011 (Ljubljana)
- 16 workshops for older people on sustainable mobility, 8,500 copies of a booklet with practical tips for safer use of public transport distributed (Zagreb)
- 70 low-floor buses and 70 low-floor trams introduced in the public transport fleet; 160 drivers trained on older people’s needs (Zagreb)
- 5 minibuses provide service for less mobile passengers (Brno)

**BUS DRIVER TRAINING, WORK-  
SHOPS FOR SENIORS, LOW-  
FLOOR BUSES AND TRAMS**





# CONCLUSIONS/ RECOMMENDATIONS

## Innovation in practice

CIVITAS enabled five major European cities to implement a set of integrated measures in a dedicated area of each city. Co-funding from the European Commission helped to develop promising ideas further meaning successful measures with a laboratory character can be mainstreamed. In this way, successful pilot projects help to fill existing ideas with life and often trigger further investments in sustainable urban mobility, either from the cities themselves, from European institutions and/or from structural funds.

The opportunity to learn from each other and from other CIVITAS cities was a key success factor. But it was not only the transfer of knowledge but also the encouraging examples that helped to break initial reluctance and enable innovation. Furthermore, ELAN has shown that learning is not limited to project partners; various measures were taken up by cities outside the project. In some

cases, the project influenced national legislation, leaving a lasting legacy.

Innovation is most valuable when it is connected to learning and creates long-term impacts. ELAN cities benefit not only from methodologies tested in the project, such as user needs surveys, traffic volume counting of all modes, citizen and stakeholder engagement or sound evaluation. New structures and policies that institutionalise change, such as the public transport authority in Porto, the mobility agency in Gent or the transport policy in Ljubljana are proof of this.

**ENABLING INNOVATION,  
CREATING LASTING CHANGE,  
MAINSTREAMING SUCCESS**

## Putting sustainable mobility on the local agenda

A project like CIVITAS ELAN raises awareness among decision makers and the public. This fact can be a big help when testing innovative measures. Integrated initiatives, however, require collaboration among a range of actors both in participating and non-participating organisations. While it can take real effort to achieve fruitful cooperation, even within the same organisation and department, it is possible. In ELAN, there were several cases where key local actors collaborated who had never done so before.

It is crucial that the project's activities be visible and approachable to citizens and less powerful stakeholders and that such groups have the power to influence them. If done properly, it not only increases the acceptance of activities, it even improves the quality of solutions. On the other hand, it should be noted that different starting points and (political) cultures call for adjusted approaches and

that both citizen involvement and marketing for sustainable mobility need clear aims and targets. While several of the ELAN measures showed that money put into sustainable mobility can create direct returns on investments, it is nonetheless important to look beyond the short-term perspective to solutions that guarantee a return on investments. And if, for example, the health sector will benefit from cost savings due to promotion of active mobility, it should also be involved in its financing.

**ENCOURAGING DECISION  
MAKERS, INVOLVING CITIZENS,  
INSPIRING COLLABORATION**

## Recommendations for managing large-scale demonstration projects

The CIVITAS ELAN project demonstrated that it is worthwhile to invest in comprehensive and professional project management in a city. This leads to better results, to stronger integration of measures and to more commitment among partners. Some tips for city administrations planning to implement similar projects are:

- ➔ Create a clear structure. Make sure that Measure Leaders meet on a regular basis and that they inform each other about what they are doing within the project. A shared understanding of all measures improves interaction as well as mutual inspiration.
- ➔ Communication with non-CIVITAS partners is crucial. Measure Leaders may not always have the decision-making power to implement their measures. Those who have that power should be informed and involved at all times.
- ➔ Inform politicians and decision makers about your project. Keep them up to date and ask them to push the project forward whenever needed. Decision makers can inspire each other.
- ➔ There should be one person with an understanding of the project's entire city budget (including the budget of all local partners) and one person per partner organisation should clearly understand the funding rules.
- ➔ Close interaction among the city's local coordinator, the local evaluation manager and the local dissemination manager is important.
- ➔ Investing in team building and motivation makes it much easier to help local partners understand why detailed reporting, time sheets and contributions to deliverables are so important!

**CLEAR STRUCTURES, GOOD  
COMMUNICATION, TEAM  
BUILDING, BUDGET CLARITY**





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