

Parking management and incentives as successful strategies for energy-efficient urban transport

P **PUSH & PULL**



Final Report

PUSH&PULL - “Parking management and incentives as successful and proven strategies for energy-efficient urban transport”

PUSH&PULL is a term that refers to a policy of offering a combination of rewards / incentives and punishment to induce a change in behaviour.

The project aims to improve urban mobility by means of parking space management combined with mobility management (MM) measures. By introducing paid parking, increasing parking fees, reducing or restraining parking supply or implementing other similar measures, car drivers will be pushed to use more sustainable transport. At the same time, the income generated from parking space management can be used to invest in and promote alternatives, thus pulling or attracting users towards public transport, walking, cycling and other sustainable modes. This is the “core-funding mechanism” that is at the heart of **PUSH&PULL**.

The main objectives of **PUSH&PULL** are to:

- Save energy through a modal shift from car to other more sustainable modes;
- Help local economies by encouraging a more rational and managed approach to parking and helping cities to save money by avoiding the costs of construction of additional parking; and
- Build the capacity for followers who want to implement a similar system with the knowledge required to help to alleviate parking problems, and build political arguments to support them.

The project includes implementation of parking and mobility management in 7 cities and 1 University. All implementers have already or plan to set up the core-funding mechanism to use money gained from parking to finance sustainable mobility.

This publication was developed by all project partners. We kindly invite you to use and copy the contents of this brochure. When you use and disseminate material from this brochure we ask to refer back to the website push-pull-parking.eu

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Edition: January 2017

Editorial



Many European cities are negatively affected by a constant increase in motorised transport. Parking and dealing smartly with it through parking management plays a crucial role in the whole system of approaches, measures and actions to influence mobility behavior in favour of sustainable modes like walking, cycling or public transport as well as for the use of public space and thus for quality of life as a whole.

Even though parking is such an important topic, it is included very rarely as such in European projects and is not taken up sufficiently as a crucial element in Sustainable Urban Mobility Plans (SUMPs) so far.

The **PUSH&PULL** project aims to improve urban mobility in European cities by means of parking space management combined with mobility management measures. By introducing paid parking, increasing parking fees, reducing or restraining parking supply or implementing comparable

measures, car drivers will be “pushed” to use more sustainable transport. At the same time, the income generated from parking space management can be used for incentives to promote alternatives, thus “pulling” or attracting users towards public transport, walking, cycling and other sustainable modes.

This approach is an innovative and proven one in several cities in Europe. It has high potential for transferability to other cities in Europe. The potential to raise revenue for cities from what we call the core funding mechanism – revenue that can then be used to finance measures to encourage alternative, less energy intensive forms of transport – is a unique selling point especially at a time of economic crisis.

With its broad range of project partners, **PUSH & PULL** has delivered a wide variety of tailor-made local approaches aiming to reach a balance of car use by influencing parking and more sustainable modes in 8 demonstration sites in 7 European countries. The diversity of the approaches used means that whatever your local situation is, **PUSH & PULL** will have some ideas, lessons and recommendations to suit your needs and inform your own local initiatives. This brochure outlines the activities carried out within the **PUSH & PULL** project and the recommendations from involved stakeholders. Please also check out our good practice guides, training materials and fact sheets for further information on how to implement similar activities in your region. They are available at www.push-pull-parking.eu.

On behalf of the **PUSH & PULL** consortium, I wish you all the best with your efforts aimed at increasing the quality of life through influencing travel behavior and steering traffic in your city by parking management.

Robert Pressl
Coordinator of **PUSH&PULL**

The PUSH&PULL Approach

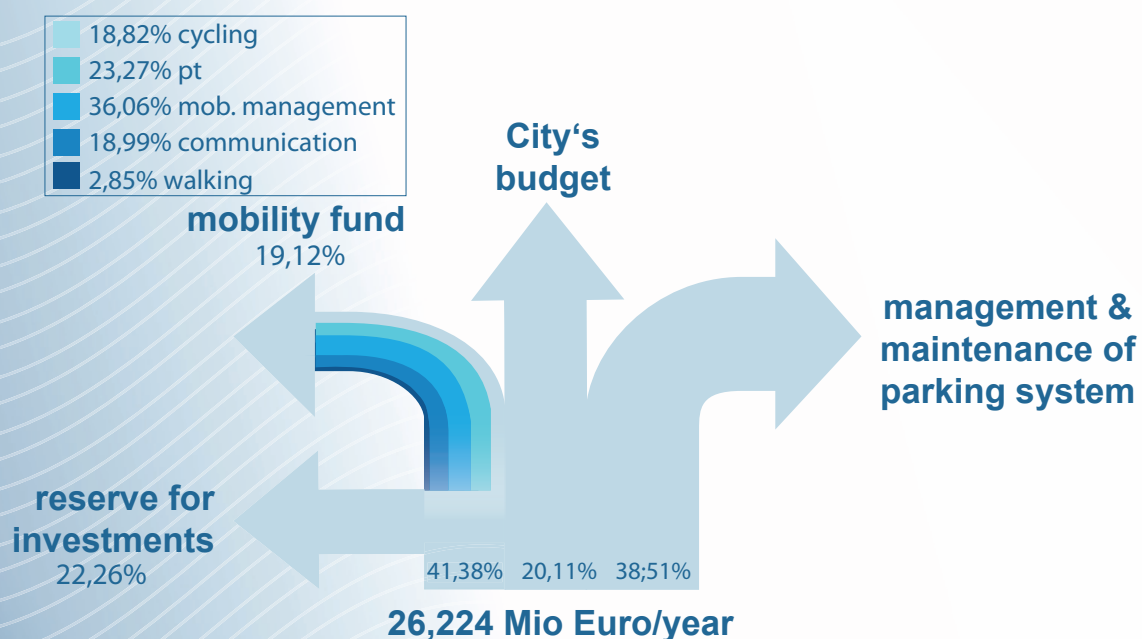
Parking management is an issue of enormous interest to almost all cities in the European Union. Increasing car ownership puts pressure on existing parking space and there is an urgent and real need to find ways to manage this problem.

The strategic objective of the **PUSH&PULL** approach aims to improve mobility by parking space management combined with mobility management. By introducing paid parking, increasing fees or reducing supply, drivers will be pushed to more sustainable transport. **The income from parking should be earmarked and use for improving and promoting alternatives, thus pulling users towards active transport, public transport or Bike and Ride (B&R) and Park and Ride (P&R) facilities.**

By combining parking management with mobility management, the effectiveness of mobility management and the acceptability of the parking management will be enhanced.

Parking management is a transport measure that has the potential to raise revenue for cities (a Core Funding Mechanism) – revenue that can then be used to finance measures to encourage alternative, less energy intensive forms of transport. Especially at a time of economic crisis, and for countries that are heavily affected by it, the revenue generation aspects have even greater relevance. Enforcement of the parking regulation is also a source of employment.

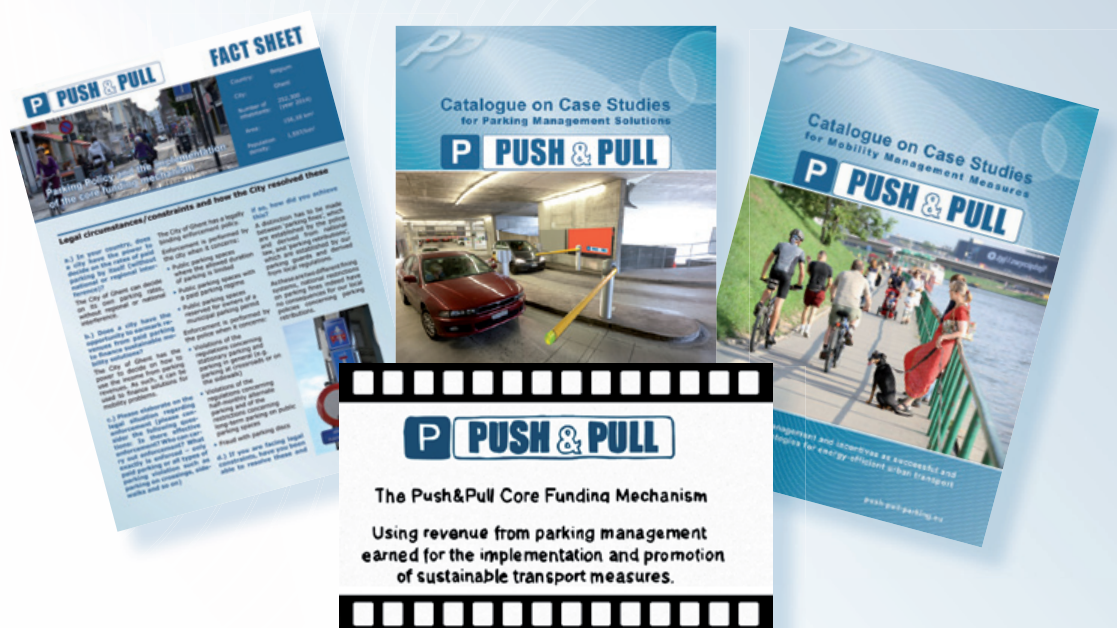
Once the **PUSH&PULL** approach is implemented, it turns into a permanent source of funding.



Example of the Core Funding Mechanism in Gent, 2014

The PUSH&PULL Products

PUSH&PULL provides a set of materials and tools for parking management and mobility management, based on up to date research results and experience gathered through various project activities. All materials and products are available for downloading free of charge at www.push-pull-parking.eu



Fact Sheets

PUSH & PULL produced 8 Fact sheets summarising the experience of all the implementation partners with the **PUSH&PULL** core funding mechanism and the impacts of their local implementations.

Catalogues of proven mobility measures and of good practice on parking management

Based upon the needs of the **PUSH&PULL** implementation cities and sites, a collection of good practice measures to encourage cycling, walking, car pooling and public transport use as well as a collection of case studies on good practice on parking management are provided. The main criteria for the selection of these measures are “easy to implement”, “highly effective and efficient” and “high acceptance”.

A videoclip on the PUSH&PULL Core Funding Mechanism

A transfer of parking revenues to finance sustainable mobility is the main idea of the project. A general document and a 3-minute video clip explain this idea.



16 Good reasons for parking management brochure

The brochure (available in 18 languages) should strengthen the position of politicians, decision-makers and journalists in the process of taking what may be, at first glance, unpopular, but in fact rational and sustainable decisions to manage parking. The arguments are developed in the format of facts and figures with a picture / diagram and an explanatory text that is easy to follow and quickly summarises the key issues. For more complex issues, links to more detailed descriptions are provided.

Parking Guidelines for Romanian public administrations

The first Parking Guidelines for Romanian public administrations have been produced based upon experiences with parking management in several Romanian Cities.

Teaching materials and curriculum

PUSH&PULL developed 7 different units on teaching plus supporting training material. Their didactic structure enables their use in different types of learning and presentation formats. The materials are designed to be both mutually complementary and capable of being adapted by the instructors to the relevant teaching goals and instructional settings and situations. Slides and written material summaries are available (in 16 languages).

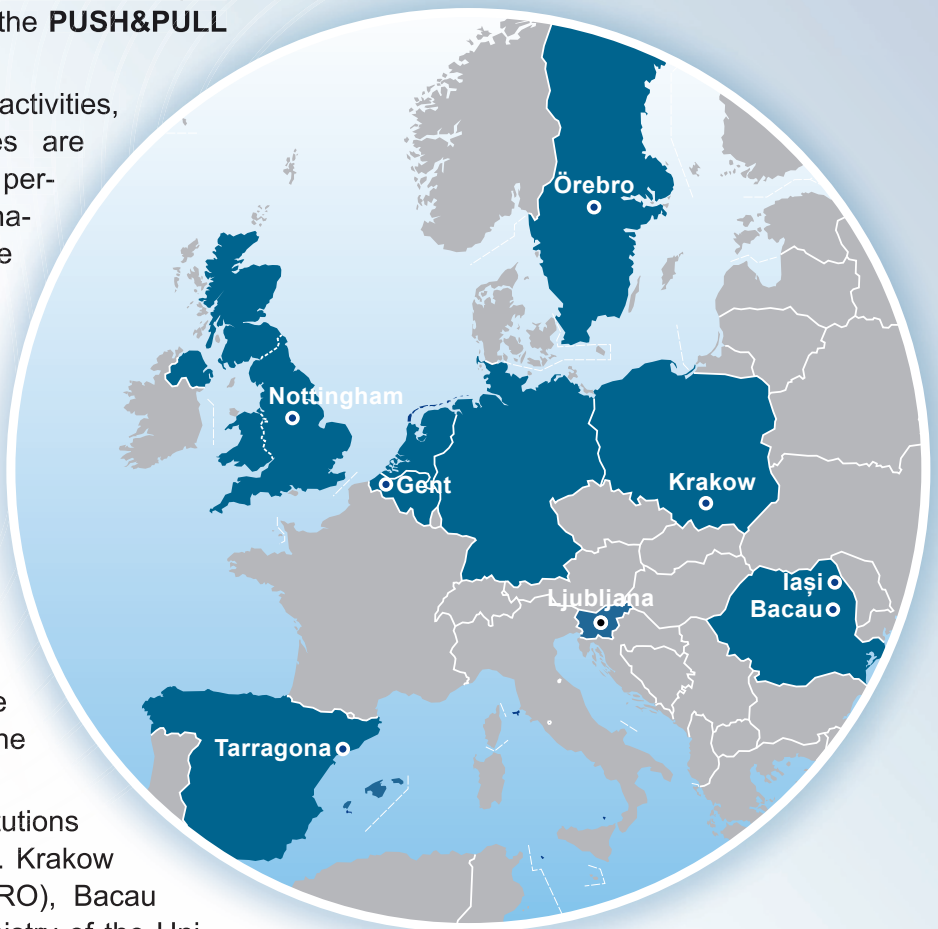
Overview on implementers

Combining the highly effective push measure of parking management with tried and tested techniques for mobility management/ measures for sustainable mobility and using the revenue raised from the former to help to finance the latter are regarded as core implementation activities within the **PUSH&PULL** project.

The mobility management activities, campaigns and measures are carried out to influence the perception of options for alternatives (to inform and raise awareness) and then, together with parking management, to give car users the opportunity to try out new travel choices (experimental behaviour). Additionally, the introduction of mobility management measures at the same time as parking management measures is intended to enhance the public acceptability of the latter.

Eight partner cities/institutions are involved in the project. Krakow (PL), Örebro (SE), Iasi (RO), Bacau (RO), the Faculty of Chemistry of the University of Ljubljana (SI), Nottingham (UK),

Tarragona (ES) and Gent (BE) implemented parking management measures and mobility management measures. Furthermore, all of them considered options to implement the core funding mechanism.



Krakow

Located in southern Poland and with ca. 760,000 inhabitants, Krakow is the second largest city in the country. It welcomes around 8 million tourists each year and hosts ca. 150,000 students. Despite growing car ownership, Krakow still demonstrates a very positive modal split with approx. 50% of all journeys being made by public transport (trams and buses). However, city growth, increasing vehicle numbers, the desire for greater mobility and years of neglecting road maintenance, have made road infrastructure and public transport the most challenging policy areas in Krakow. Krakow has introduced a paid parking zone in the city center many years ago (late 80's). The zone is functioning properly and provides income to the road administration and prevents people from long-term parking in the area. Drivers have to pay from Monday to Friday, from 10:00 until 20:00. Recently the "C" zone has been divided into smaller zones – P1 – P8 and enlarged, mainly covering the old Jewish district – Kazimierz and districts of Podgórze and Dębniki.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

The City of Krakow decided to implement the core funding mechanism, as an act of local law, particularly by decree of the Mayor of Krakow. Despite, due to legal constraints, the act being more general and giving some flexibility (i.e. according to currently available legal possibilities to the municipalities), the main message is that every year, during the making of the new budget, 20% of the income from the paid parking zone will be "earmarked" in the new budget as a funding source for sustainable mobility modes. It will cover mainly promotional activities, but also infrastructure and equipment, (i.e. bicycle racks, mobile services, improvements in walking environment, etc.). Taking into account that the income from the paid parking zone is ca. 40 million polish zloty per year, this means 8 million zloty for sustainable modes – which is generally more than the money dedicated for example



to separated cycle lanes before the **PUSH & PULL** project (ca. 2-3 mln/year).

The main issues during the preparation and implementation of the core funding mechanism were related to the complicated consultation and discussion process. Many municipal departments had to be involved in the process, but what was most important, the general idea of and the willingness to establish this funding mechanism were widely approved. The process was inline with the preparation and adoption of the new transport policy for Krakow, therefore many discussions about sustainable mobility and necessity to strengthen the role of especially "weaker" modes like walking and cycling were held.

IMPLEMENTED PUSH-MEASURES

The main PUSH measures in Krakow included further extension of the paid parking zone. During the project lifetime, 2 new areas were introduced. Originally, it was planned to create buffer zones, but due to legal constraints (it is not possible for municipalities in Poland to stagger the level of parking fees), new areas became fully-paid parking zones. This measure affected mainly drivers commuting to the city center and inhabitants, customers and people working in the vicinity of the controlled parking zones.

The second most important PUSH measure was the introduction of the program aiming to reduce footway parking in the city center. It was implemented due to opening of 2 municipally-owned parking lots in the vicinity of the



city center. In some cases, the programme was implemented purely based on the rule of leaving at least 1.5 m for pedestrians. In other cases, some on-street parking spaces were eliminated only in some time-windows (allowing deliveries, or making possible to park on certain days of the week). The measure had a big promotional effect as well, influencing drivers' behavior and targeting illegal parking and bad conditions for pedestrians and cyclists in the city centre.

IMPLEMENTED PULL-MEASURES

- Introduction of new bicycle parking stands – for ca. 1,000 bikes.
- Mobility management information for new residents of Krakow.
- Actions to promote bike sharing service (called Wavelo) with the combination of using parking lots outside historical center of Krakow.
- A campaign on the use of a new P&R scheme with combination with tram lines operating into the city center.
- Campaigns (linked to European Mobility Week) to promote proper on-street parking and promoting use of new underground parking lots.

HIGHLIGHT

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The most successful measure was related to the enlargement of the paid parking zones. The main factors influencing this process were the high public acceptance and support from district councils, inhabitants and businesses (ca. 300 signatures of inhabitants were collected). General acceptance for this kind of push measures could be observed during the project lifetime. A lively discussion among councilors was held and a very positive voting result was achieved, with 26 votes supporting the changes and only 4 against them. Another highlight is the increasing the awareness on the overall problems of parking/congestion in the centre and other issues.

The other successful measure was the removal of a high number of parking spaces on-street, thanks to new possibilities to park off-street, but also due to strong pressure to improve walking and cycling conditions in the city centre.

Generally speaking, **PUSH & PULL** parking measures were strongly connected to the overall urban transport developments in the city, and can be treated as an important tool for the implementation of a new transport policy for Krakow (adopted in July 2015).

Gent

The city of Gent, located in the province of East Flanders, has a population of more than 250,000 citizens and over 70,000 students. The popularity of the city has ensured a constant increase of the population over the past decades. However, with this increase of people, there came also an increase in car ownership. In addition to that, more than 100,000 employees commute daily to Gent for work. To cope with these developments, Gent is committed to promoting mobility management and sustainable modes of transport.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

Gent already had a core funding mechanism in place before the start of this project and therefore was an inspiration to the other partners.

When the Mobility Company and its new financial structure were created in 2009, it became possible to directly use income from parking infrastructure for policy measures concerning mobility. This move placed the mobility policymakers from the city and the exploitation of the off-street & on-street parking in one company, with a great level of independence. This was made possible through regional (Flemish) law.

The Mobility Company of the city of Gent has the responsibility (and ability) to decide on how to use the funds it gets through parking exploitation and enforcement. A set amount of the money earned each year is agreed on to flow back to the city treasury. The remaining funds are used for maintenance & development of the mobility infrastructure. Part of the income is directed toward solutions for more sustainable mobility.

It is worth noting that, although there is a great level of independence, the expenditure estimates in the budget still need to be approved by the city council.



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IMPLEMENTED PUSH-MEASURES

Gent introduced new parking ratios for new developments. There is a minimum number of bicycle parking spaces that developers have to provide, depending on where they build and what they build. Also, there is a minimum and maximum number of car parking spaces that developers have to provide depending on where they build and what they build. For example, in the city centre they are allowed to create a maximum of 0 parking spaces, but towards the edge of the city they have to provide a minimum of 1 parking space for every 100 square metre development (if it's a company) or every bedroom (if it's a house), and a maximum of 1,5 parking spaces for each 100 squaremetres development or a house bedroom. As such there's both a maximum AND minimum. Why? Because it is not a desirable situation when public parking spaces in the street are clogged with extra cars (hence the minimum), but it is also not good to encourage extra car ownership (hence the maximum).

Gent initiated the project to not provide citizen parking permits for inhabitants of certain new building developments. When parking spaces are provided within a building project, this encourages the new inhabitants to actually acquire one and park there, instead of parking on the streets.

Gent increased parking tariffs in most of the city areas and introduced parking management measures all over the inner city as part of the new 'Parking Plan'. This included re-



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placing the old parking vending machines with more advanced ones.

Gent conducted an analysis of how it distributes citizen parking spaces throughout the city. The results of the analysis helped Gent to reorganise its parking spaces reserved for citizens, based on the actual need for these spaces throughout the city.

Gent improved the efficiency of its parking enforcement through digitalisation.

IMPLEMENTED PULL-MEASURES

- Gent introduced bicycle parking guidelines in its inner city, ensuring the availability of bicycle parking space within 100 metres of every citizen's doorstep in densely populated areas.
- Gent initiated a plan to promote car sharing.
- Gent enlarged the availability of public transport during evenings and nights.
- Gent hired a mobility manager for companies, who helps companies to draft and implement company transport plans.
- Gent initiated a bike sharing scheme where bikes have to be brought back by the user to the station where they rented it. This saves costs. Bicycle ownership in Gent is already very high.
- Gent hired a parking mediator who encourages the double use of parking spots.

HIGHLIGHT

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- The Parking Plan raised the parking tariffs throughout the inner city, the highest tariffs being introduced in the city centre, lower tariffs in areas on the edge of the city, and by limiting parking duration in the city centre and near the stations. This enabled more parking space for residents, who can park one car for free using their residents parking permit and can get a second permit for 250 Euro per year.
- Digitalisation of parking happened on several levels. New parking vending machines made sure that people no longer need a parking ticket. Their license plate and payments can be digitally checked by the parking guards. Residents parking permits were also digitalised.
- New bicycle parking guidelines were developed and have already been implemented in 5 neighbourhoods (with the rest of the city to follow). Residents in those areas now have public bicycle parking space within 100 metres of their doorsteps.

Örebro

Örebro is a city in Sweden with 144,000 inhabitants, located 200 km west of Stockholm. The population is growing by 1,500-2,500 new inhabitants every year. The city is a regional administrative centre, a university city and also a logistic hub with high access to national road and rail networks. The car ownership per 1,000 inhabitants has been stable for quite a long time in Örebro, but that means that the total number of cars in Örebro is still increasing. Despite that, cars are only 40% of the modal split in the inner city and the share journeys done by bicycles (34%) is almost as high in the modal split. Within the whole municipality 54% of all the journeys are done by car. In Sweden Örebro is known as a cycling city but the pull measures for cycling have not historically been combined with effective push measures on car parking. The paid parking zone is quite small and has not changed much over the last 20 years. In the paid parking zone drivers have to pay between 8am and 10pm on weekdays and between 9am and 1pm on Saturdays. Lower fees on street than off street (mostly private parking garages) have led to more long term parking on street than what the city and city trade board see as optimal.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

The Technical Department of the City of Örebro manages the revenues from paid parking in public space. When parking in public space is regulated in Sweden, revenues from paid parking have to be used for measures that the road/public space authority is in charge of and can carry out as a public street authority. That includes maintenance, building new infrastructure, physical traffic safety measures as well as parking and traffic regulations. The entire net income from parking revenues in Örebro is reinvested in public space, mainly in maintenance measures for sidewalks, bicycle lanes and public parks.

The City cannot use revenues from this paid parking to finance mobility management campaigns. But the core funding mechanism is



also implemented in another way in Örebro. At municipal workplaces (mainly in the city centre) with car parking lots at the same property (that is not public space), the city or a city-owned real estate company regulate the parking lots with fees. That is a consequence of a municipal decision that the municipality should not subsidize workplace car parking. At these workplaces the city installs good bicycle parkings, pumps, bicycle pools and other solutions that make it easier to choose an alternative mode of transport instead of using the car. At these work places mobility management campaigns can also be carried out, financed by paid work-place parking.

IMPLEMENTED PUSH-MEASURES

Main PUSH measures in Örebro include an extension of the paid parking zone, introducing charges at work place car parking lots, parking management programme for a new city district and new flexible parking standards with a maximum regarding car parking. The paid parking zone was extended by (at least) 416 on-street parking lots in 2016. That is a quite small extension but the city plan to implement paid parking and higher fees in a much wider area in the upcoming years.

The new parking standards are a great tool when it comes to affecting the parking and traffic situation around new buildings and in new city districts. The car parking minimum standards have been lowered dramatically and a ground level maximum allowance on car parking has also been implemented in the new standards. So there is no maximum if developers build garages, but that is probably self-regulating since it is very expensive to build parking garages. The new parking



standards include mobility solutions, such as car sharing and green travel plans, which could replace car parking lots and therefore lower the car parking standards. The bicycle parking standards are still minimum standards.

IMPLEMENTED PULL-MEASURES

- A sustainable living campaign including
 - a winter cycling campaign
 - a try e-bike campaign
 - a cycling school for adults and
 - a try car pool/sharing campaign
- A cycle parking programme / guidelines for bicycle parking.
- Mobility management information for planners and developers.

HIGHLIGHT

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The most successful measure has probably been the new parking standards. Developers in Örebro wanted a more flexible way of thinking regarding parking standards and the City did not want car parking to dominate new planning projects. So even though the new standards, with minimums, ground level maximums and alternative mobility solutions that can replace or complement car parking, have been debated much - the final result seems to be widely accepted. In a new city district with 2,000-3,000 housing units, called Södra Ladugårdsängen, the new standards have led to a complete package of mobility solutions (attractive public transport, high quality cycling corridors and car sharing for residents) instead of just a high number of car parking lots. In Södra Ladugårdsängen the number of car parking lots per apartment will be 0.5.

The expansion of the paid parking zone has also been a highlight. The average occupancy in the affected areas has dropped from 90% to just under 80% and the measures has been well accepted by the inhabitants.

Tarragona

On the shores of the Mediterranean, located in North-East Spain, former Roman Tarraco offers an important legacy of monuments in addition to the extensive beaches. Its archaeological remains are a World Heritage Site. The Catalan city of Tarragona has a population of 130,000 inhabitants and is home to a large port and the Rovira i Virgili University. Much of its economic activity comes from a large number of chemical industries located to the south of the city.

Since the approval of the SUMP in 2012, the Municipality is smoothly and continuously implementing measures to move forward towards a more sustainable mobility system in the city.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

According to the Spanish regulations, Municipalities in Spain have 3 different funding sources: local taxes; budget transfers from the Spanish or Regional Governments; and, finally, property/capital transfers and public licenses.

The overall budget is centralized in the Municipality and then distributed to every Department (Urbanism, Mobility, Tourism, etc.). Therefore, there are some legal constraints to implement the core funding mechanism at this level.

However, Spanish Municipalities can implement the core funding mechanism via their public companies. This alternative has fewer difficulties and legal constraints.

Thus, the city of Tarragona is currently implementing the core funding mechanism via the public parking company AMT ("Aparcaments Municipals de Tarragona") to fund the public transport operator and to fund some studies on sustainable mobility measures.

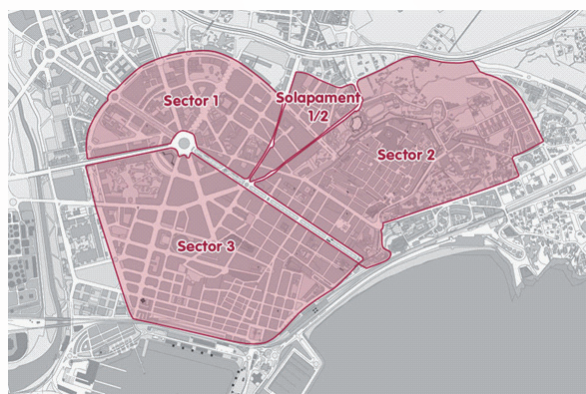


IMPLEMENTED PULL-MEASURES

The main PUSH measure in Tarragona has been the further extension of the paid parking zone and the introduction of new regulations.

On the one hand, regarding the extension of the paid parking zone, there are currently 3 paid parking areas. The first restricted access zone with a mobility plan ('sector 2' in the following figure) was implemented in Tarragona in October 2012.

The inner city of Tarragona is composed of the old city, called "Part Alta" (area 2), and the central city, called "Ciutat" (areas 1 and 3). Both quarters include 45% of the population of the city and almost all working, tourist and commercial places, and therefore most of the movements occurring in the city are concentrated in these areas.



On the other hand, there are currently 3 different regulations within the paid parking area of Tarragona:

Green - for residents	Orange - long-term parking	Blue - short-term parking
Residents: 0.40 €/day Non-residents: Max. stay: 2 hours - 30 min: 0.75 € - 1 hour: 1.10 € - 2 hours: 3.00 €	Residents: 0.40 €/day Non-residents: 2.30 €/day	Max. stay: 2 hours 30 min.: 0.75 € 1 hour: 1.10 € 2 hours: 3.00 €

The Orange zones have been implemented within the **PUSH & PULL** project lifetime and are the initial stage of a further development of Park&Ride facilities in the outskirts of the city.

IMPLEMENTED PULL-MEASURES

- Design and implementation of a new public transport network.
- New infrastructures to make the public transport network faster and more comfortable for the users (bus lanes, priority traffic light regulation for public transport at some crossroads, protective bollards for the bus lanes, etc.).
- Design and implementation of combined fares "P&R + BUS".
- Run a campaign to promote the use of Park&Ride facilities and Orange Zones with combined fares "P&R + BUS".
- Implementation of new mechanisms for a better degree of information for public transport users.
- Develop a primary pedestrian network, convenient, safe and accessible for walking.



HIGHLIGHT

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Despite the initial opposition from citizens, the parking management scheme is not anymore a political controversial issue. To achieve this, the Municipality of Tarragona organized over 50 meetings with district councils, citizens and key local stakeholders to raise awareness about the parking management measures. In fact, district representatives are currently asking the Municipality to extend the controlled parking area to all neighbourhoods.

Nottingham

Nottingham is a City in the UK having a population close to 319,000 (694,800 across the Greater Nottingham conurbation). The city's heralded integrated transport provision recently introduced 17.5km's of tram expansion taking the network to 34km with three lines; 45 battery electric buses operate on the Council's contracted Linkbus network and a further 13 BYD electric buses are being introduced in January 2017. Soon 53 new bio-methane fuelled double decker buses will be introduced. Nottingham maintains the highest bus use outside London. Annually 11million passengers use Nottingham's trams and almost 66 million are bus passengers.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

A lengthy administrative process was necessary to secure government permission to implement Nottingham's Workplace Parking Levy (WPL). Firstly, the Council had to conduct a consultation with the business community about the introduction of the Levy.

The relevant primary legislation, part III and schedule 12 of England's Transport Act 2000 had to be complied with. Under section 184 of this Transport Act the national government's Secretary of State for Transport was required to confirm the city's Workplace Parking Levy order which grants the necessary legal powers to operate the scheme.

The above legislation sets the principles for local authorities to introduce WPL schemes. A detailed description of the parking policy in Nottingham and the introduction of the Workplace Parking Levy (WPL) can be found at the **PUSH&PULL** Nottingham Fact Sheet - to be download from www.push-pull-parking.eu.

Barriers to the implementation of any congestion charging scheme remains that of political risk and public acceptance amongst local business and communities. Evidence from the city's consultation during the "Public Examination" suggests that typically the WPL is criticised on three grounds.



1. Being an additional burden on business and thus damaging to a city's economy.
2. Being ineffective as a tool to combat congestion.
3. Being unfair on the motorist who already carries a high tax burden.

However there is inevitably a lag between the introduction of a WPL and the completion of any concurrent public transport improvements and some short term "pain" may be acceptable to decision makers. This was the case in Nottingham as the WPL scheme commenced with the tram construction completed in 2015.

The political stability of Nottingham allowed decision makers to take a medium to long term view of their integrated transport vision and introduce radical measures towards achieving them.

The Council took the view that in the medium term, a world class public transport system providing high levels of mobility and accessibility, combined with the image of a modern progressive city enhances Nottingham's offer to inward investors and more than offsets the cost of the WPL.

IMPLEMENTED PUSH-MEASURES

In 2012 Nottingham City Council introduced a WPL, levying a charge on occupied private non-domestic off street parking places. Described as Workplace Parking Places (WPPs) they are defined as places occupied by vehicles used by employees, regular business visitors or students. It is the first charge of its type in the UK and Europe.



The WPL has a dual role; firstly to act as a transport demand management measure and secondly to raise hypothecated funds for local transport improvements. Besides contributing to the **PUSH&PULL** pull measure the money raised by the WPL is funding two new tram lines, improvements to Nottingham Railway Station and quality enhancements to the Link-Bus services. The WPL scheme and public transport improvements comprise the overall “WPL package” with intention to complement each other to enhance the transport demand management effect.

For 2016/17 the charge per WPP is £379.

IMPLEMENTED PULL-MEASURES

- Branded publicity and promotions reinforcing **PUSH&PULL** objectives.
- Frequent, tailored ‘Totally Transport’ e-newsletters on for each business park.
- Reinforcing modal shift with on-site events and promotions.
- On request, branded Modeshift travel plans and tailored surveys, exploring the commercialisation of such services to business.
- Promoting cycle infrastructure grants, cycle maintenance and cycling provision.
- Expanding Car Clubs onto business parks.
- Demonstrating the effectiveness of real time information at workplaces and its ability to encourage staff to use public transport.
- A template for negotiating offers and rewards with Nottingham and UK transport providers.

- Coordinated improvements to transport services at business parks
- Promoting the new Robin Hood Card, Nottingham’s smart ticketing option allowing travel across the network of bus, tram and train operators.
- Continuing **PUSH&PULL** beyond the EU funding period by amalgamating the role into a new Go Ultra Low Nottingham project

HIGHLIGHT

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Nottingham’s **PUSH&PULL** project delivered six branded, high profile ‘Totally Transport’ events engaging workforces on all three business parks to choose more sustainable travel to work, to which over 400 staff attended. The project’s profile also provided the leverage to negotiate exclusive ticketing offers, resulting in tailored offers from all seven of Nottingham’s transport providers exclusive to the project.

Leveraging WPL revenue **PUSH&PULL** enabled two businesses to be awarded over £10,000 between them to install tram/bus real time display screens and software technology. Streaming live tram and bus information, along with local traffic disruption it has made public transport a more convenient option for staff. Through **PUSH&PULL** both businesses were the first in the region to introduce such a hi-tech solution to transport information.

Nottingham has one of the largest electric bus networks in Europe. For some years, a service has provided Nottingham Business Park with an essential but limited frequency bus for staff, minimising the potential to encourage staff to use it. **PUSH&PULL** is enabling a coordinated approach; understanding the business transport needs at the site and finding ways to modify and improve the service to meet business demand.

Bacau

Bacau city is located in the central part of the Romanian region of Moldova, 9km upstream the Siret-Bistrița confluence. Also known as “Bacovia’s city”, Bacău is the third biggest city in this region, having an area of 43km² and a population of approximately 145,000 (2011 census). The city is crossed by the European roads E 85 and E 57, connecting it to Bucharest, to the Northern side of the country, and to Transylvania.

According to data from the Traffic Police, the number of vehicles registered and used for family transport increased in 2015 to 45,000 vehicles, compared to 2008 (38,690 vehicles). The number of passengers transported by local public transport in Bacău decreased in 2015 to 8,729,000 passengers compared to 2010, when 11,809,000 passengers were transported. (Source: National Institute of Statistics).

In particular, along the main North-South connection, the intense car traffic causes congestion on roads and in parking areas.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

The core funding mechanism was implemented in Bacău and all the revenues from parking fees and fines go into the local budget and all the measures we want to implement shall be financed from this budget. One of the two responsible bodies for this core funding mechanism in Bacau is the local police, which is in charge of collecting the revenues and ensuring parking enforcement. For better effectiveness and a more visible mechanism, a special department was established under the City Hall administration (Parking Management Department) which is responsible for the parking management and is in charge of this mechanism.



IMPLEMENTED PUSH-MEASURES

Extension of the controlled parking zone to cover the whole inner city

The objective of this measure is to reduce car traffic in the inner city of Bacău by 10%. This has an effect on residents, customers, shop keepers, (car) commuters. This measure increased the enforcement for parking lots, parking spaces were transformed from free parking spaces into paid ones, and the fees were raised in these areas in order to discourage citizens to use private cars especially in the inner city.

The implementing of the concept of residential parking permits has been prepared and finally received political approval. It will be implemented in early 2017 as a direct result of the **PUSH&PULL** project.

IMPLEMENTED PULL-MEASURES

- Measure 1 – Organizing the well-known European Mobility Week event in Bacău.
- Measure 2 – Development of new cycling lanes on the main streets of the city.
- Measure 3 – Pupils & Student tickets - support for Public Transport use.



HIGHLIGHT

P **PUSH & PULL**

- The municipality of Bacău has prepared the ground to become a Smart City, by implementing the **PUSH&PULL** measures
- The **PUSH&PULL** project convinced decision makers that parking management is a must in Bacău
- By implementing the **PUSH&PULL** project results, Bacău Municipality contributed to the adoption of sustainable measures, in direct connection with the Urban Mobility Plan and the Sustainable Local Development Strategy, both of these documents being developed in Bacău.

Iasi

Iasi (263,000 inhabitants) is situated in the North-East Region of Romania. It is one of the largest cities in Romania with more than 60,000 students.

The number of private cars has increased dramatically in recent years - from 23,000 cars registered in 1990 to 140,898 cars registered in 2015 and this greatly affects environmental quality in the city. If we take into consideration buses, minibuses (1,562) and merchandise vehicles (21,661) we have a total of 164,121 vehicles in Iasi.

Iasi Municipality has an old-established system of public transport with buses and trams. Trams are old and not very convenient and some groups of the citizens do not use them. The total managed parking spaces in the city of Iasi is 4,989. From this total 3,355 parking spaces are on-street and 1,634 are off-street. All on-street parking (on the side of the roads) is free of charge. Regarding the off-street parking, of the 1,634 parking spaces only 596 parking spaces are charged manually by the hour, the remaining 1,038 are free of charge. Of the 1,634 parking spaces off-street 1,173 are in the inner-centre of the city. All the parking is controlled by the City.

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

The City of Iasi has recently modernized a large number of parking spaces in Iasi with support from European funding. The contract between the European Commission and the City says that European money can only be provided in case that the City of Iasi won't gain income from parking for at least a 5-year period. This means that the planned core funding mechanism couldn't be implemented in Iasi as planned at the start of the project.

So far the possibility of a future implementation of a core-funding mechanism for mobility measures has been discussed with City Hall representatives and also the public opinion about this concept has been explored (only 28% of the interviewed were positive about



the implementation of the concept). Even if the public opinion does not support the idea, the City Hall is open to the implementation of the concept in the future.

An important step towards this goal was including the concept of fully controlled parking in the centre of the city in the Sustainable Urban Mobility Plan (SUMP) of Iasi that was finalised and approved in September 2016.

Another reason why the core-funding mechanism cannot be implemented right now is the lack of sufficient parking revenues. Paid parking (only off-street) represents just a small fraction of all the parking in the city, and even those paid parking spaces are controlled manually by a city employee only for a certain period of time (from Monday to Friday between 7:00 and 20:00). A department to manage parking in the city is lacking.

IMPLEMENTED PUSH-MEASURES

The planned push measure entitled "Introducing the controlled parking area in the inner city" consists of two parts: number of parking lots with parking meters in the inner city and concept of fully controlled parking in the inner city. It was planned to have two off-street car parks with installed parking meters by the end of September 2016.

The second part of the measure - concept of fully controlled parking in the inner city - was officially adopted by the local authorities along with the approval of the SUMP of Iasi in September 2016.

With regard to the first part of the measure - number of parking lots with parking meters in the inner city- even if the exact date for installation of the parking meters has not been set, it can be reported that the acquisition of parking meters is in progress. However, the acquisition has been delayed because of non-approved documents that regulate technical details. The measure will be implemented in the future but not within this project's lifetime.

IMPLEMENTED PULL-MEASURES

- Implementation of an event called Bicycle Day / Car Free Day (2015).
- Implementation of an awareness campaign for students on the use of bicycles and sustainable means of transport – 5,000 students were informed about the benefits of cycling/walking. As a result of the after-survey there were more pedestrians and less car users in the area.
- Improvement of the Park & Ride concept in the city of Iasi.
- Promoting trams and electric transport. According to the National Institute of Statistics, in 2015 a survey showed that there were 60,576,000 tram users in the city of Iasi, meaning that in one year the number of tram users has increased by almost 10%.

HIGHLIGHT

P PUSH & PULL

The most successful and rewarding measure was including the concept of fully controlled parking in the inner city into the SUMP of Iasi and getting everyone to approve this concept (city council, public opinion, other organizations involved) along with the SUMP in September 2016. It was a long process and it took many meetings and discussions before the approval.

The awareness and promotion campaigns that were implemented were successful in changing citizens' opinion and habits of the way they travel in the city. More people have now a positive perception about riding bikes and using trams in the city, and as a result of that, the number of users of public transport and bikes has increased.



Ljubljana

Ljubljana is the capital of Slovenia with around 290,000 inhabitants. According to data from 2014 most of the trips on workdays within the city are made by car. Residents are using cars for 42% of their journeys, 35% are done on foot, 11% by bicycle and 13% by public transport. As a capital and a university city Ljubljana attracts a lot of daily commuters (more than 100,000) and 90% of them travel by car (data for 2010).

IMPLEMENTATION OF THE CORE FUNDING MECHANISM

The core funding mechanism for the faculties in Ljubljana was implemented as a part of the new parking policy which was prepared and officially adopted within the **PUSH&PULL** project. The faculties stated that they would each year use 15% or more (but never less) of the annual amount of revenues for improving conditions for sustainable travel modes.

Since there is no shortage of parking spaces on-site, there is no immediate need to introduce parking policy. However, because the co-funder of the new premises (the European Union) put a condition that parking should be charged, the **PUSH&PULL** project provided a good solution at the right time. The latter condition was communicated to the employees throughout the project duration to ensure as little discontent as possible. During the parking policy implementation process, all leading bodies were involved in reviewing, approving and officially adopting the document. These included the deans, the management boards and the financial administration. One common parking policy was planned at first but in the end each faculty adopted its own document with slightly different content.

Three main problems had to be addressed. The first two were poor accessibility of the location using sustainable travel modes and an excess of parking spaces. The accessibility issue was addressed by appropriate measures within the travel plan. The reasons for



paid parking despite the excess of parking spaces was justified by communicating unequal existing conditions for different travel modes. Car users were simply preferred regarding access. The third problem was concerned with the process itself since preparing and adopting the parking policy was much slower than planned. The main reasons were slow response time from the faculties (often more than a month), delays due to reconciliation within the faculties' headquarters and upon the content of the document. Faculties also needed time to recognize the benefits of the proposed parking policy. This problem was overcome with patience since pressure on the faculties would only have resulted in further delays and unresponsiveness.

IMPLEMENTED PUSH-MEASURES

Paid parking for employees was implemented as a complex measure with three aims: to prepare and adopt a parking policy, to start charging for parking at the faculties and to put in place a core funding mechanism. Throughout the process representatives from the faculties such as secretaries, deans, technicians, human resources managers, financial administration and management boards of both faculties were directly involved. Employees were involved and informed through internal web page, emails, public presentations, interviews and surveys. A slightly different parking policy was prepared for each faculty and the documents were formally adopted in spring 2016 while the test period of paid parking for employees started on June 1st 2016. Since there



was no shortage of parking spaces very low fees were introduced in order to minimize opposition from employees. One faculty charges € 0,5 for each day when the employee uses the parking space but no more than € 8,0 per month, while the other faculty charges a flat rate of € 8,0 per month. However, these differences will also allow for monitoring and comparing the two approaches in the future.

IMPLEMENTED PULL-MEASURES

Travel plan for the faculties.

- Bicycle friendly employer scheme.
- Information package for students and employees.
- Bike to work campaign in summer 2015 and spring 2016.

HIGHLIGHT

P **PUSH & PULL**

By implementing paid parking for employees, adopting a parking policy and the core funding mechanism, the faculties became one of the first public employers in the country having such a scheme. The success is so much greater because there is no shortage of parking spaces at the site. Furthermore, in the case of Slovenia, the **PUSH&PULL** project came at the right time to have a nationwide impact. During the lifetime of the project the principle of the core funding mechanism was already implemented by a municipality administration which learned about the **PUSH&PULL** approach. UIRS also included the approach as a measure in the draft travel plan for the city administration of Ljubljana. Furthermore, there is a great potential in another 60 municipalities in Slovenia that are currently preparing SUMP within the national SUMP preparation programme. The **PUSH&PULL** approach was promoted amongst all these municipalities and presented in early 2016.

Key Findings from Impacts

All the results and impacts of the PUSH&PULL project's activities were meticulously measured and evaluated both locally as well as at the overall project level.

Occupancy rate of parking in new paid areas lowered by

15-20%

KRAKOW:

- Almost 3,000 parking spaces became paid (within 2 new areas)
- Almost 500 parking spaces eliminated from streets and pavements
- ca. 15% increase in number of cars parking off-street (incl. underground)
- ca. 10% decrease in number of bicycles parking informally

Extention of paid parking zone and increase of tariffs as backbone of Parking Plan

GENT:

- The parking standard ratios have been evaluated and legally checked and are functioning as they should.
- Full implementation of the Parking Plan with more than 1,000 new parking vending machines on the streets, new parking tariffs, extension of the paid parking zone, reduction of parking duration in city centre and station areas.
- Bicycle parking plans have been developed and implemented for 5 neighborhoods in the city. In those areas the bicycle parking capacity is almost doubled.
- Improvement of the efficiency of parking enforcement through digitalization

More than
800
municipal workplace parking spaces have been changed to paid parking

ÖREBRO:

- Almost 500 parking spaces included in paid parking zone (within 2 new areas)
- The average car parking occupancy in the affected areas has dropped from 90% to just under 80%
- Over 800 car parking lots at municipal workplaces have been regulated with fees
- Lowered minimum car parking standards by on average 16 – 80%
- A ground level maximum car parking standard

Increase of number of tram users by ca

10%

IASI:

- The concept of fully controlled parking in the inner city - was officially adopted by the local authorities along with the approval of the SUMP of Iasi in September 2016;
- Increase in the number of tram users by almost 10% compared to 2014.
- Due to the awareness campaign among students about the benefits of cycling/walking the evaluation show an increase of ca. 7% in pedestrian activity.
- A new parking lot for bikes in the City Hall's premises was introduced

Less traffic search
due to reduction of
occupancy rate from
99% to 77%

TARRAGONA:

- Lower occupancy rate of parking spaces. The average occupancy rate in the areas where the parking management scheme has been implemented is 77%, whereas it reached 99% in 2010 (almost saturated). This has also resulted in less parking search traffic.
- Lower average parking time. Short-term parking (less than one hour) increased from 17% to 37% while long-term parking (more than 4 hours) kept a steady downward trend (from 31% to 26%).
- Better use of public space. There are less parking violations (-22%) in the areas where the parking management scheme has been implemented.
- Better parking turnover. The parking management scheme resulted in a reduction in the number of cars that aren't moved during all day (-55% on average) between 2010 and 2014.

Implementation of
a paid parking
scheme
at two faculties
at new campus

LJUBLJANA:

- During the test period around 5% of the employees have used their car less than before. The most favourite alternative mode is bicycle.
- Take up of **PUSH&PULL** measures in several municipalities.

Increase of use
of sustainable
modes from
22% - 47%
at NG2
Business Park

NOTTINGHAM:

- This mode switch occurred almost entirely in the NG2 Business Park which saw mode share for commuting by sustainable modes rise from 22% to 47%. This is mainly a transfer from car to the new Tram line which has opened in the course of the **PUSH&PULL** project.
- However there was no mode shift in the other two Business Parks due to a big number of smaller companies who don't spend resources on travel planning and due to the a lack of high quality public transport infrastructure/services for employees .

Increase of fines
through improved
enforcement by
27%

BACAU:

- 100% of Public Transport ticket costs for students are financed with support of parking revenues.
- The enforcement has increased by 27% since 2015, as reported by the local police about the fines, after free parking spaces were transformed into paid parking.
- Activities in the European Mobility Week will become a permanent event.

Lessons Learnt & Recommendations



BASELINE SITUATION AND PREPARING THE GROUND

- Try to approach parking holistically and strategically: start with an overall strategy and goal, and translate these subsequently into operational plans. For example, the goal could be to improve parking for shoppers; the operational plan might include time limits on parking in shopping areas.
- If there is no shortage of parking spaces the implementation of parking policy can be very difficult. In this case, start small with your measures to show that they work.
- It is also important to clearly explain that users of different travel modes experience very different levels of service, with car users normally getting by far the best, and that parking management can help to redress this balance. Highlight benefits of parking policy at an early stage of the project such as, for example, additional budget, the potential for real improvements in accessibility (including for car users), and show how all user groups will benefit from the implemented measures.
- Work out your communication plan towards citizens and visitors in advance. Objectors will argue that any new charges are unfair, that they will drive away businesses, and that they are just another way for the City authority to make money. Use **PUSH&PULL's** "16 Good Reasons for Parking Management" brochure to prepare responses to these arguments.
- Ensure that you have reasonable data – for example, on the number of parking spaces. Do not put your trust solely in documents – do some on the spot checks yourself if you can.



GET SUPPORT

- Public acceptability is a major issue and the only feasible way to get people to accept new parking management measures is to show them that things can improve as a result of the changes you are proposing; to be very clear about how those measures work and how much, if anything, people will have to pay; and to explain what any new parking revenues will be used for.
- Establish an Urban Local Support Group (ULSG). Representatives of stakeholders who form a ULSG can ensure that ideas emerging from the project – especially regarding the design and the implementation of the core funding mechanism between parking space management and sustainable transport measures and making this a self-sustaining process - are realistic and acceptable from all players. They have the potential to become a long-lasting legacy once the **PUSH&PULL** project is finished.
- Make sure you maintain good communication and relationships with those people with decision-making power (it may just be one person e.g. the Mayor). Strong political leadership is the best driving initiative.
- Tailored transport planning support measures e.g. for business is effective in gaining acceptance, create ownership and finally delivering modal change.



IMPLEMENT BOTH PUSH&PULL

- Follow the **PUSH&PULL** approach, i.e. while implementing restrictions, limiting access or simply enlarging paid parking zones, to always try to promote and improve other, more sustainable modes. A good example is new bicycle racks simply replacing parking spaces (for example if it caused limited visibility of pedestrians/cyclists) and having an additional awareness factor - giving a message to the society concerning constant policy changes towards sustainable modes. Or former parking space can be turned into new public space, or terraces for restaurants, encouraging people to spend time and money in the street.
- Timing of the measures plays a crucial role. It is important that the pull measures are implemented at the same time as the push measures and not six months later.



MAKE ENFORCEMENT MORE EFFICIENT

Move parking enforcers around in a larger region so that they don't get to know local people who persuade them not to enforce the rules.

Train parking enforcers to give advice to people on where to park legally and how the rules work, so that they are more "ambassadors" and not just enforcers.

Sometimes it is necessary to change the law. With decriminalization, of parking offenders can be brought under fiscal law and the enforcement of illegal parking can be dealt with under administrative legislation and thus needs no longer to be done by the police, but can be done by municipal or private organisations. This change of law seems to be a smart step towards more efficient operation of enforcement.



USE OF REVENUES

Be transparent with the use of the parking revenues – make it clear to the public how much money is made and what it is spent on. Earmark a portion of your parking revenues to finance sustainable mobility but also improvements for cars such as better road maintenance or better security in off-street car parks.



CHANGE FRAME CONDITIONS AND BUILD STRUCTURES

Create a Mobility Company. A Mobility Company within the City should be in charge of policy making as well as the operational aspects of parking so that a strategic dealing in favour of sustainable mobility development is guaranteed and revenues of paid parking can be used to fund sustainable mobility from a regular budget.

A message from the experts

Robert Pressl on enforcement

Paid parking only works well if it is enforced well. Usually paid parking is only introduced once problems with parking have become really serious. Politicians and authorities often are afraid of parking management in general and in particular of paid parking options, because when the topic is discussed in public it evokes mainly negative reactions from citizens and journalists. Even more difficult is the implementation of enforcement. Although the reasons for parking management and payment services are well understood by the residents, there often is an initial resistance against enforcement. The negative connotation of a rip-off strategy is detected when the enforcement appears on the agenda. But without effective enforcement the whole paid parking system has very limited impacts.

In many countries enforcement is still a task performed by the local police. And this task is very seldom their highest priority (the police often has not enough staff to do the basic tasks). So, a strategy to hand over enforcement to other (private) bodies has been proven very effective. This measure is certainly a smart step towards more efficient operation of enforcement.

Robert Pressl is the Coordinator of the **PUSH&PULL** project and works for Austrian Mobility Research FGM-AMOR.



Tom Rye on parking standards

Parking standards for new development regulate how much parking is built for new buildings. Most countries have minimum requirements, and building developers can build more if they want. Minimum standards push up the cost of buildings and create urban areas that are dominated by car parking – space for cars, not people.

An alternative is maximum car parking allowances – limiting how much parking is provided in new buildings. Cities that have done this for all or part of their areas, like Krakow, Edinburgh, Amsterdam or Ljubljana have not found that it stops companies from locating in their area – in fact, quite the opposite – these cities' economies continue to grow strongly. The City of Oxford, England, stopped allowing parking to be built with new buildings in its city centre in 1973, but it too remains a highly successful city economically, and one with a very sustainable transport system. Finally, reducing parking requirements frees up more land for green space and makes houses and flats cheaper to build, whilst having a real impact on how people choose to travel.

Tom Rye is an expert trainer in the **PUSH&PULL** project and is Director of the Transport Research Institute at Edinburgh Napier University, UK.



Martina Hertel on Parking management for 'liveable' cities

Parked cars using public space are in competition to green and recreational areas as well as to pedestrian crossing and bike parking facilities. The spatial needs of pedestrians, cyclists, delivery vehicles and public transport are often neglected in favor to parked cars or cars blocking sidewalks, bike paths and bus lanes. In dense urban areas residents, commuters, shoppers and visitors compete for existing car parking.

Through parking management, (higher) parking fees and the reduction of on-street parking space motorists can be persuaded to use private, off-street or distant car parking facilities or – even better – to shift to more sustainable transport means. With the instruments of parking management municipalities are enabled to control their public street use and possibly reshape overused areas towards 'liveable' cities with less noise and air pollution, less search traffic, less accidents and more space for walking, cycling, playing and enjoying urban life.



Parking cars can be shifted either underground (most expensive solution), in parking garages or to more distant parking lots, but before that, municipalities should encourage and support people to use sustainable transport modes. To reduce the amount of cars in neighborhoods, administrations could privilege carsharing providers, because studies have shown that one shared car replaces up to 20 privately owned cars.

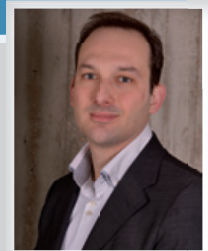
The administration has to keep in mind that as soon as the reduction in numbers will take place, they have to 'reuse' the space for other purposes. Otherwise new cars will fill the gained space.

Martina Hertel, researcher, Department for Mobility, German Institute of Urban Affairs (Deutsches Institut für Urbansitik – www.difu.de)

Giuliano Mingardo on parking and retail

Is paid parking killing the High Street? This question has been raised in many European cities in the last years and has generated hot debates between policy makers and retailers. The point of view is different: on the one side the retail sector suggests that parking in and around shopping areas should be of high quality, abundant and preferably free of charge. The supporting argument being that parking plays a fundamental role in consumers' choice where to go shopping.

On the other side policy makers generally agree with the first request [parking should be of high quality] while disagree with the other two [be abundant and preferably for free]. The supporting argument



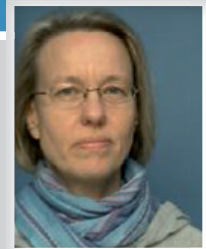
(Source: <http://www.carsharing.de/bcs-studie>)

being that parking plays an important but minor role in customer decision where to go shopping, while attractiveness of the area and quality of shops are far more important. Evidence collected in different cities in Europe suggests that free and abundant parking do not have any positive effect on urban retail. On the contrary, normally speaking they generate additional car use (not additional customers) and, as a consequence, reduce quality of life and attractiveness of urban areas.

The key issue is to realize that all stakeholders – parking sector, retail sector, policy makers and politicians – have the same goal: to have a beautiful and attractive city centre full of people which spend their money in it. Contrary to what retailers might think, parking operators and politicians have no interest in doing something that might chase customers away. Parking operators make money with [car] customers, so why would they set the price too high if they think drivers are not willing to pay for it? Politicians score with positive numbers about local economy, so why would they implement policies that lead to empty city centres? Realizing that all stakeholders have a common interest is the first step towards the development of an attractive city centre. Don't waste time and resources in discussing whether or not your city needs paid parking (we already know it does), but focus on the right issue: how to make the city centre attractive!

Giuliano Mingardo is senior researcher and lecturer at the Department of Urban, Port and Transport Economics (RHV) at Erasmus University Rotterdam and founder of the Mobility Management Academy (www.eur.nl/mma)

Åse Svennson on Evaluation



Conducting proper evaluation is very essential, but unfortunately, it rarely is a key target when dealing with new measures and strategies in transport planning. There are different types of evaluation such as assessing results, impact and processes; they are all significant but in different respects. A common feature, though, is to use evaluation to learn about successful / unsuccessful strategies and measures, and understand what makes them successful or unsuccessful. Evaluation makes knowledge grow and improves the possibility of not repeating mistakes. Evaluation is honest towards those affected and often also cost effective.

In the whole process of planning, implementation and operation of measures, the evaluation is extremely useful for others who may be considering the implementation of the same, or similar measures. In the process evaluation of, **PUSH&PULL** the need for scientific data on the effects of the implementation emerged as a key recommendation to attract followers.

Having strong evidence in the form of scientific data is also very useful when communicating with decision makers, journalists and people being skeptical towards your measures/strategies. I would therefore highly recommend, at the start of the project, to plan for – not necessarily extensive – but proper evaluation, and actually get it done.

Åse Svensson is an associate professor in Traffic Engineering at Transport and Roads, Lund University

Ana Drăguțescu on parking management

The worrying increasing levels of individual car use and car traffic that boosted immensely the congestion and pollution levels, particularly in densely populated urban areas, have clearly led to the obvious need for greater control over the parking system. Current trends suggest that the number of car owners most likely will increase, leading to an exceeding of capacity and an amplified pressure on parking spaces in existing locations and new developments, that will become harder and harder for the cities to endure.



After several decades of endless parking demand fulfillment, local administrations began to understand that the excess supply of parking space represents a discrepancy of the entire policy system that will continue to foster congestion, threaten economic prosperity, community vitality and the attractiveness of many historic locations in city centers.

In most of the New Member States there is an obvious tendency to deal with parking problems in a reactive manner, responding to a specific problem should it appear in a certain location.

One important message I would like to pass on, is that parking represents a fundamental transport resource that needs to be efficiently, properly and structurally managed. It can easily become a powerful travel planning tool.

Even if parking management could turn out to be an unpopular measure for the citizens, highlighting its benefits for the society leads to a much higher acceptance even for drivers that will more easily find a parking spot without having to

juggle their way through the parked cars across the entire city.

Nevertheless, it has to be part of the policy decisions for the city, properly adapted to specific contexts, with solutions that meet the relevant specific requirements. Also, it is extremely important to mention that parking management shouldn't be exclusively used as a separate strategy, isolated from other sustainable travel initiatives only solving drivers' problems in specific locations.

It is recommended, also vital to reassess transport investment priorities and the implementation of effective parking management systems in cities.

Ana Drăguțescu is an urban planner specialised in Sustainable Mobility



View from the Parking Industry

Laurence Bannerman

President of the European Parking Association EPA

P&P: Is it possible to consider integrated parking management as a sustainable mobility tool?

L. Bannerman: Yes! UITP indicates that 40% is the average public transport usage ratio for all daily urban trips made in EU cities. This means, having subtracted other modes, that private vehicle transport contributes to at least 50% of the total daily mobility demand. By virtue of the sheer numbers of the millions of daily trips, car parking inevitably plays an essential role in urban mobility. Thanks to integrated parking management this value can be reduced to 25%, so there is progressive recognition that managed parking is a, if not the, urban mobility system's tool.

P&P: Can we get away from the image of parking as only revenue generating and consolidate the consideration that it is an important service activity?

L. Bannerman: Yes we can. To do so we must first consider the presence of residents and administrative, commercial and business activities. Subsequently it is important to understand the different parking demand time periods of the different types of clients together with the demand that is generated by the mix of these activities in the different urban areas. In establishing a functional reorganisation of parking supplies we need to know who the desired different parking customers are, in order to be able to accommodate, integrate or reposition the different demands:

- a. Residents** – on and off street long term parking near their homes;
- b. Non residents** – on and off street for short and medium term turnover parking;
- c. Non resident long-term users** – workers in off street, Park & Ride structures and use of public or alternative transport;
- d. Special users** – disabled parking, embassies and consulates, taxis and hotels;

- e. Loading and unloading bays** – important for business and commercial activities.

Support for paid parking is confirmed when it is clear that parking fees ensure space availability.

P&P: What do we need to bear in mind when studying the correct pricing for parking?

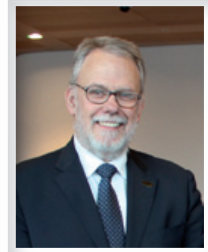
L. Bannerman: Parking fees and related controls are an economic and operative tool:

A combination of parking policies, differentiated parking supplies and parking fees contribute to:

- a more efficient/intelligent use of private cars;
- re-determining the overall mobility demand integrating different mobility modes;
- optimizing and enabling the use of space that is a precious commodity.

Parking fee must be evaluated considering that:

- free parking in central areas should not exist;
- the higher the demand the higher the fee. The on street rotation parking fees ought to ensure that at least 5% of the parking spaces in the high demand zones are available;
- on street parking fees should be higher than the fees for equivalent time in the off street parking infrastructures in the same catchment area;
- the cost of the P&R daily parking, together with the cost of the daily travel ticket must be considerably lower than the daily cost for parking in the central parts of the city;
- parking for residents is a delicate matter. The overall logic must mainly avoid creating an incentive for excessive car possession;
- the more the car is polluting the higher the fee for the parking ticket and/or the parking permit should be;
- parking fines must be proportioned to the parking fees. It must not be convenient for the car users to pay parking fines instead of parking fees.



View from EPOMM – European Platform on Mobility Management

Karl Heinz Posch and Patrick Auwerx

Both have worked for EPOMM almost since its inception in 1999.

P&P: Why does EPOMM participate in the PUSH&PULL project?

KH Posch: We were invited to join the consortium because of our dissemination network with hundreds of city contacts and because mobility management is part of the **PUSH&PULL** concept. **PUSH&PULL** was prominently presented at our yearly conferences, the European Conference on Mobility Management, ECOMM, as well as in our newsletter; and we co-organised some **PUSH&PULL** trainings. Parking is often an integral part of mobility management, especially for site based activities – in principle the **PUSH&PULL** core funding mechanism is already in use on several of such sites. And our participation fosters the discussion among our members.

P&P: What is the relationship between parking and mobility management?

P. Auwerx: The core intent of mobility management is changing behaviour: to use more sustainable modes or to use the car in a more efficient way. And in mobility management, this is mainly achieved through organisation, communication and fiscal policy – and much less by technology and infrastructure. Thus it provides incentives for desired behaviour and disincentives for undesired behaviour – push and pull measures. Exactly as in the project. And a major part of the disincentives lies within the activities of parking management. Moreover, paid parking can be a source of finance for the incentives.

P&P: Is the PUSH&PULL core funding mechanism thus really part of mobility management?

P. Auwerx: Not automatically. But you can find examples e.g. some universities have introduced paid parking and with that have financed bicycle parking, campaigns and infor-



mation, shared use bicycles for staff and students, as well as cheaper tickets for public transport. When mobility management is combined with land use planning, parking plays a very important role: either parking can be subsidised via minimum parking requirements – leading to excess parking spaces and undesired behaviour: more driving. Or parking can be restricted through maximum parking allowances. This saves everyone money and leads to less driving.

P&P: What is the benefit of being an EPOMM member regarding parking?

KH Posch: Currently EPOMM has 11 member states. They exchange ideas and policies and can learn from each other. There is a lot of activity on city level as well as on European level – but policies on the national level is often missing. Yet national legislation can have a large influence on the options cities have. For example on whether parking revenue goes to state or the city; or whether a city can organise enforcement or if this is the exclusive right of the police; or whether it is at all possible to use parking revenue earmarked for mobility management measures. Countries can learn from each other what works best.

P&P: What are your final remarks on PUSH&PULL – what would you like to state to the readers?

KH Posch: Managing parking is a fantastic opportunity to steer mobility. My experience in EPOMM has shown me, that courageous steps to introduce some form of parking management, even on a very small scale, quickly lead to success. Good parking management has the potential to transform a city.

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PUSH&PULL, funded by the Intelligent Energy – Europe programme.

Detailed information about the project and its results can be found on the project's website **www.push-pull-parking.eu** along with news, useful links and contacts. There is also a download centre where the best practise catalogues, the brochures, the arguments, the videos, the training materials and the fact sheets are available for free download.



Co-funded by the Intelligent Energy Europe
Programme of the European Union

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