2020
CiViTAS
Cleaner and better transport in cities
PARK4SUMP

Good reasons and principles
for Parking Management

park4sump.eu

Park4SUMP - Parking management as game changer for urban mobility

Park4SUMP aims to help cities integrate innovative parking management solutions into Sustainable Urban Mobility Plans (SUMPs) for a better mobility and quality of life.

The project aims at stimulating further innovation in parking management and turning parking policies from being reactive and operational as today to become more strategic, effective and holistic.

16 European cities have teamed up with our 6 technical partners and 3 supporting research and parking organisations to demonstrate and transfer the benefits of strategically and smartly managed parking in sustainable urban mobility.

This publication was developed by own research work but also by collecting information from existing studies and publications (e.g. from the predecessor project Push&Pull) by project partners and third parties, re-wording texts where appropriate and adding additional text. 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 park4sump.eu

Authors:
Robert Pressl and Tom Rye

Contact:

Robert PRESSL
E-Mail: pressl@fgm.at
Forschungsgesellschaft Mobilität FGM - Austrian Mobility Research AMOR

Robert PRESSL   **Tom RYE**

The first edition of the brochure "16 Good Reasons for Parking Space Management" was a great success, and we were asked countless times about when a second edition would be released. Now, in 2020, five years on from the first edition and as part of the H2020 funded project Park4SUMP, we are delighted to share this new version with you. We have updated the most important and powerful arguments from the first edition and added several new ones. Furthermore, we decided not only to provide arguments for parking management, but also to use the publication to increase our readers' knowledge of the basic principles of parking space management.

Once again, this brochure provides the knowledge required to build sound political arguments for using parking management to alleviate parking-related problems and in so doing to support sustainable transport. It should strengthen the position of politicians, decision makers and multipliers such as journalists in the process of taking what may be, at first glance, unpopular, but which are in fact rational and sustainable decisions to manage on- and off-street parking.

One of our main aims is to highlight the role and the potential of parking management to influence mobility planning and travel behavior, thus acting as a game changer in urban mobility planning. Our main objective is to show that parking management is one of the backbones of sustainable urban mobility planning (SUMP). There is a vital need to uplift parking from a pure operational task to a much more strategic planning approach. It is crucial to remember that parking management provides excellent value for money. The measure is low cost (very often without high infrastructure costs), can be implemented quickly and generates revenue to pay for itself, whilst also supporting other measures such as public transport and walking to bring about travel behaviour change.
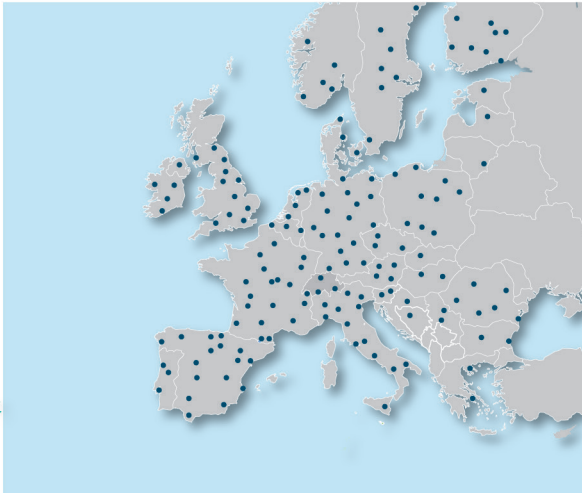
We hope that this brochure provides you with some new ways to look at parking management and explains its advantages for your cities.

Robert PRESSL and Tom RYE

Comparison of push measures

parking management

road pricing / congestion charging

- well accepted
- quick implementation
- little investments

- political controversal
- mid term implementation
- high investiment

The fact is: Parking Management is key to managing urban mobility.

Virtually every car trip ends in a parking space. Accordingly, managing parking spaces means managing the demand for car use and congestion. Compared to other transport policies aimed at managing car use, parking presents two clear advantages:

- Parking management does not usually require large investments, such as new roads or the extra public transport supply, and it can thus be realized in a relatively short time.

- Some kind of parking management can already be found in almost all larger towns and cities in Europe. This makes the public acceptability of parking management much greater than new ways to manage car use, for example a congestion charging scheme.

A more detailed version of this argument can be found at:

http://push-pull-parking.eu/docs/file/20150204_push_pull_a4_en_extended_argument_1.pdf

Photo FGM-AMOR

Principle: When faced with an apparent parking shortage, it is best to try to improve on-street parking management before increasing supply.

Parking chaos and long parking search times are often blamed on a parking shortage. A common response is that the city should provide new off-street parking. However, the management of existing parking is very often the smarter and more cost-efficient approach, as existing off-street parking nearby is often under-used. Appropriate on-street parking management strategies and measures can often solve the problem, shifting demand from on-street to off-street, and will be much cheaper than increasing supply. These strategies can encompass time limitations, adequate pricing and/or improved enforcement. In addition, the improvement of alternative modes is recommended. Rotterdam is a good example for shifting on-street parking to off-street parking.

BEFORE

Foto: Google Maps

AFTER

Foto: Jean-Pierre Jans

The fact is: Let's make our cities places we want to be

Generous parking requirements for new buildings and a focus on providing "enough" on-street parking make the city friendly to cars but not to people—drivable but not walkable. As Jane Jacobs (1962, 19) wrote, **"The more downtown is broken up and interspersed with parking lots and garages, the duller and deader it becomes, and there is nothing more repellent than a dead downtown."** Large areas of on-street parking space, especially in town and city centres, can have the same impact. We want more from our streets than just space for traffic and free parking. We also want economy prosperity, safety, health, walkability, and an enjoyable environment. This means that the principle of providing "enough" parking has to be challenged, and the other priorities of sustainable urban mobility plans, such as quality of life, and space for other modes, must be reflected in parking policy.
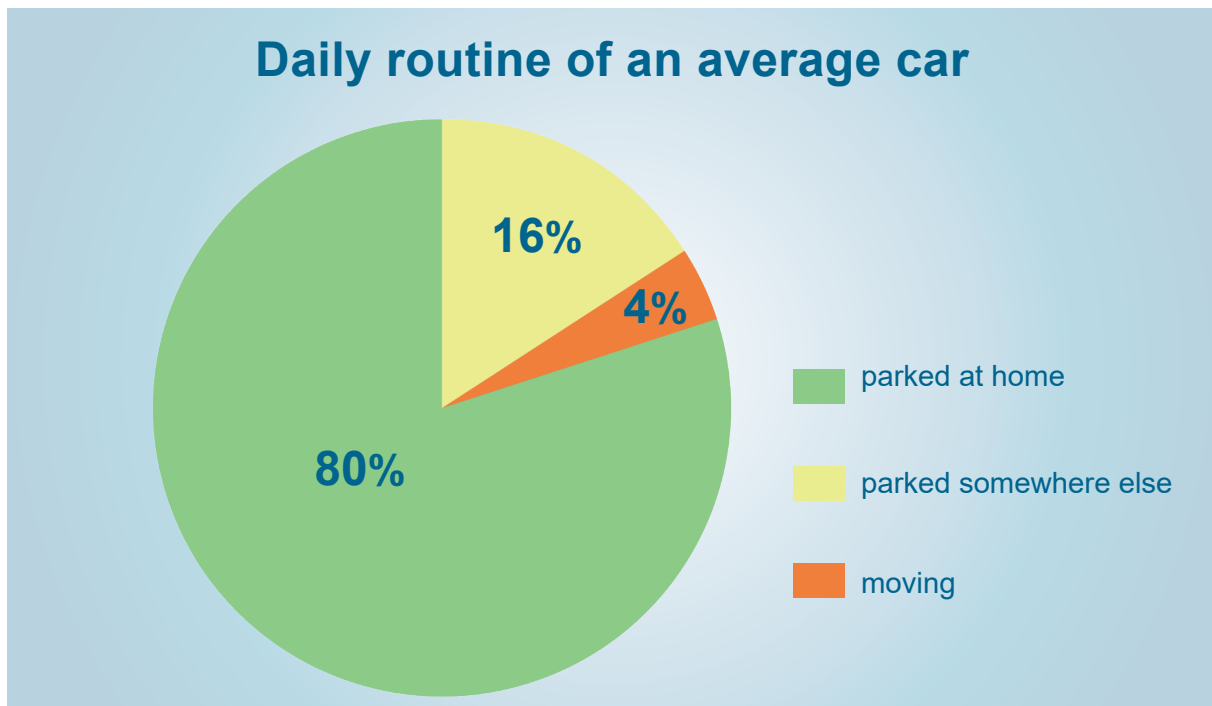
Photo FGM-AMOR

The fact is: the distribution of public space is often biased towards parking

It is not easy or cheap to increase amounts of public space in our cities, especially in times of austerity when public authorities have little money for buying more land. This situation puts the emphasis on the need to more fairly distribute that public space that already exists – a disproportionately large amount of which is currently given over to parking. In modern and smart cities it is quite unpopular to take the space from parks, playgrounds or areas where people like to meet and socialise. On the other hand, vehicles – both moving and stationary – benefit from more space than they should when taking into account relative modal shares. There are many examples of how a redistribution of space away from parked cars has been associated with improvements in the local economy – the City of Gent in Belgium is a case in point, as it leads its competitor cities in the region in spite or perhaps because of changes in its parking policy to cut amounts of on-street parking.
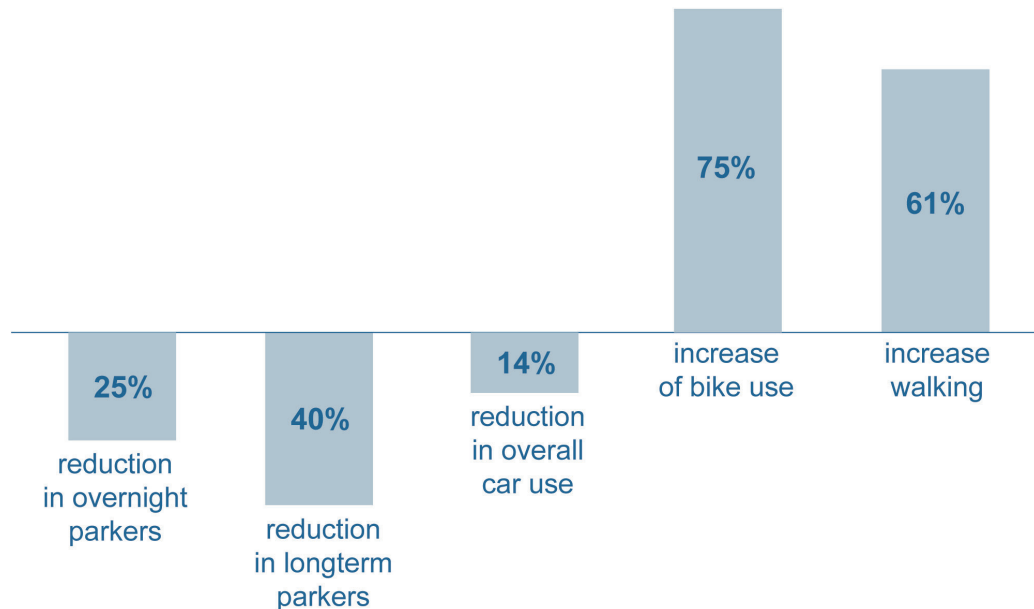
Another example is the Spanish City of Vitoria Gasteiz which managed to reduce share of car use from 36% to 24% and where the re-allocation of public space was one of the main objectives of its parking policy.

Daily routine of an average car

16%

4%

80%

- parked at home
- parked somewhere else
- moving

The fact is: For one car more than one parking space is necessary – this is inefficient use of scarce space

On average, private cars are parked 80% of the time at their owner's home, 16% somewhere else and are only actually travelling around 4% of the time – and of course parking is provided at almost every destination. Thus, parking supports a remarkably inefficient use of resources. Reducing parking availability gives an incentive to people to use shared mobility (public transport, ridesharing) where vehicles are in use a much greater proportion of the time, or to walk or cycle, all of which are much more efficient uses of urban space.

Results of active parking management in Munich

Source: Kodransky and Hermann, ITDP, 2011

The fact is: Parking management contributes to a better modal choice and therefore quality of life.

A policy of excessive parking supply contributes to traffic congestion and hinders accessibility for all: pedestrians, cyclists, public transport users or car drivers. Despite the provision of additional parking supply in cities over many years, traffic congestion has worsened; this clearly shows the need for parking management. Effective parking management strategies are the smart way to deal with limited accessibility and scarce public space.

In the beginning of the nineties the city of Munich started to focus on parking management as a way to reduce car use in the city centre. At that time congestion and long-term parkers were recognized as key issues affecting quality of life. Several measures were introduced; among others two residential neighborhoods were selected to reduce cruising for parking (driving round, looking for a vacant space). After carefully studying the right mix between residential and visitors parking, active parking management was introduced. A year later the results were astonishing: a 25% reduction in overnight parkers, a 40% reduction in long-term parkers and cruising and illegal parking almost eliminated. In 2008, after almost a decade of active parking management, in the whole inner city car use was reduced by 14%, bike use increased with 75% and walking by 61% (Kodransky and Hermann, ITDP, 2011).

Photo FGM-AMOR

Principle: We have to park our cars somewhere, but does this mean that we always need more parking spaces?

One of the most oft-heard complaints in town and city centres, especially from shopkeepers and small business-owners, is that there is not "enough" on-street parking space, and that more and cheaper on- and off-street space needs to be provided. However, it is important to see whether this really is the case before providing more and/or cheaper parking – not least because additional parking will encourage increased car use, as shown earlier.

A parking beat survey will show actual occupancy of spaces during weekdays and weekends, and give a good indication of who (commuters, residents, shoppers, shopkeepers themselves) are parking in which spaces, and for how long. It will show where demand is very high and where, often very nearby, there are empty parking spaces. Management measures such as changed prices or lengths of stay can then be introduced to redistribute demand, and people can be made aware of the empty parking spaces a short walk away. It is important also to establish a link between prices in off-street car parks and parking on-street, as paid off-street parking can often be under-used because prices are lower on-street and drivers prefer to search for a free space there.
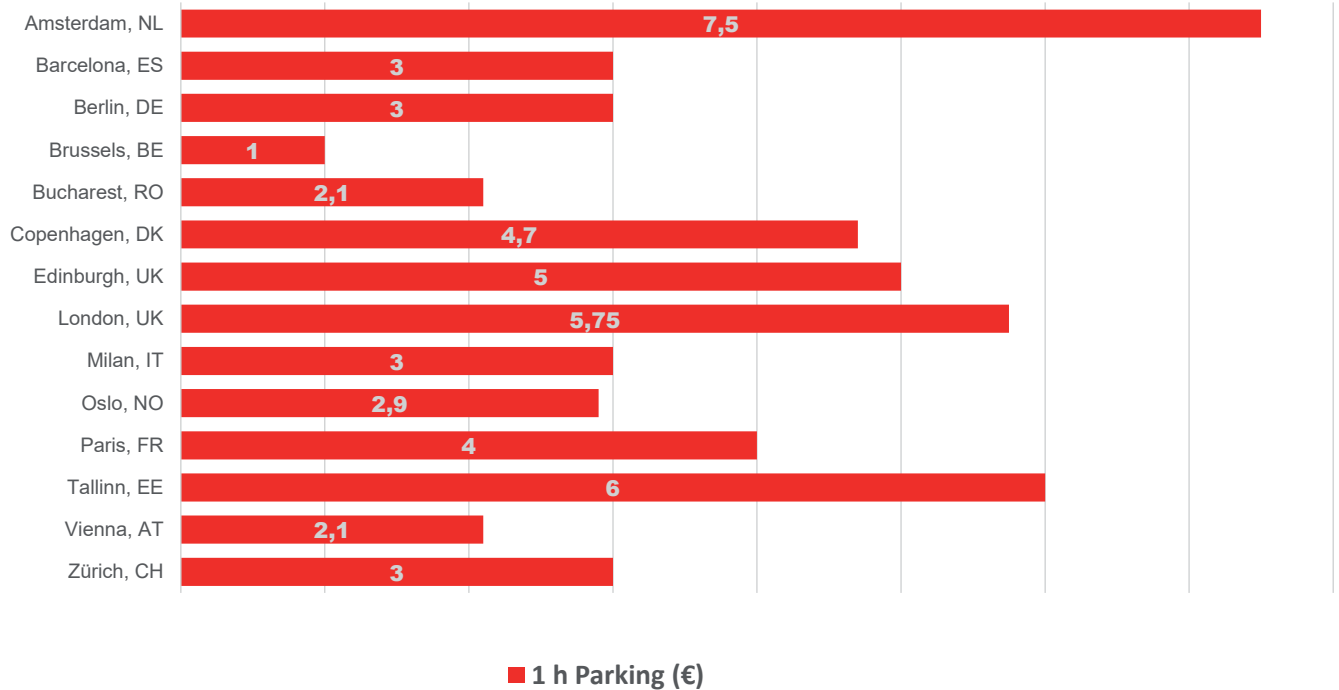
Photo: Paradox intervention from the Metamorphosis project.

The fact is: parking benefits from public space – a good which is not in fact free

"All parking has a cost, even if there is no charge for drivers to use it – the space used could be used for something else (opportunity cost) and parking spaces have to be operated and maintained. If drivers do not pay for parking, then instead the cost is shared by everyone in a city, either through higher general rents (and therefore prices) for shops in a shopping centre, or perhaps through higher local taxes, where a municipality has subsidized a new car park. This is money that could often have generated higher benefits if it were spent elsewhere." Tom Rye says: "Generally, parking is perceived as a public good and, as such, something that drivers (especially) think should be free". On-street parking uses public space but as the parking policy of the City of Groningen (NL) points out several times, when a space is occupied by a parked car then it is effectively privatized by the driver who has parked there, and no-one else can use it. Similarly, crossovers (ramps) across sidewalks for vehicular access to properties can only be used by the owner and their guests and hence again privatize public space. All this demonstrates the needs for SUMPs to consider whether parking is the best use of public space at all or whether there are higher value uses, valuing people rather than cars.
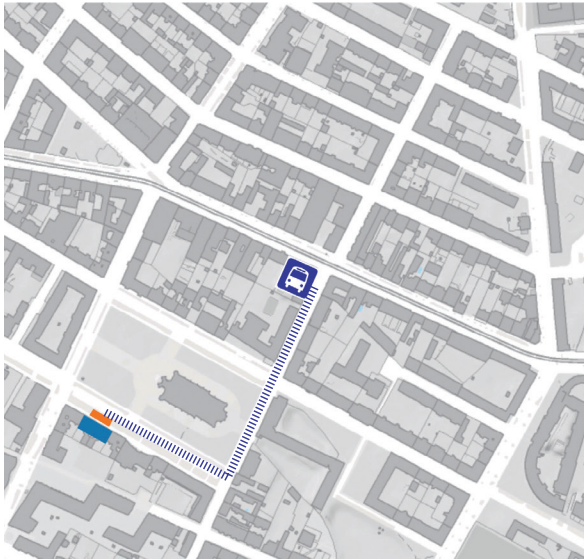
Fee for 1 hour on-street parking in the most expensive part of the city

City	1 h Parking (€)
Amsterdam, NL	7,5
Barcelona, ES	3
Berlin, DE	3
Brussels, BE	1
Bucharest, RO	2,1
Copenhagen, DK	4,7
Edinburgh, UK	5
London, UK	5,75
Milan, IT	3
Oslo, NO	2,9
Paris, FR	4
Tallinn, EE	6
Vienna, AT	2,1
Zürich, CH	3

■ 1 h Parking (€)

The fact is: What we charge for parking often does not reflect its true value

The figure shows the maximum prices for 1 hour of on-street parking in inner cities in a sample of European cities. If one considers that a parking space takes up around 15 square metres of land, then a €1 an hour charge translates to a "rent" of 6,7 cents per square metre per hour, or 67 cents for ten hours per day (a period when charges typically apply) or 200 Euros per square metre per month assuming similar occupancy for 30 days a month. Most buildings in central areas have multiple floors, yielding much more rent for each square metre of ground area. Where parking structures off-street are provided, the investment costs add to the amount that must be charged if the true cost of the parking provision is to be recouped from the user – but it often is not, instead enjoying as subsidy from the municipality to keep the price "down" to 4€ to 5€ per hour.

Parking directly in front of home.
Distance to PT stop is 30x longer

PRIVILEGE FOR CAR USERS

Parking in front of home is forbidden but possible
in a collective garage in same distance as PT stop

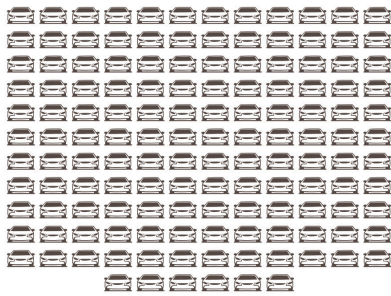## FAIR FOR ALTERNATIVE MODES

The fact is: Providing parking facilities will negatively influence the choice of alternative modes, encourage people to use their car and so increase congestion.

Since the publication of the UK Department for Transport report "Roads and the Generation of Traffic" (1994) research has demonstrated that the provision of new road capacity increases traffic levels and often congestion with them. There is also a very clear relationship between providing parking and car use – where parking levels are higher, a higher proportion of trips is made by car. Finally, it is also clear that cities with some of the lowest levels of congestion, such as Vienna and Zurich, have pursued a policy over many years of pricing parking and reducing parking availability in new buildings. The City of Nottingham in England, which taxes off-street parking places provided for the staff of large employers in the city, has lower congestion than comparator cities that have no such tax. Thus, if congestion reduction is an objective of SUMP, parking management must be a core part of the plan. If cities do not regulate parking at the same time as they improve alternative modes, then all efforts to encourage people to use public transport, walk or cycle will be much less effective – instead, a classic push and pull approach is needed.

Reduction of building costs by replacing individual parking spaces per appartment by car sharing spaces

138 appartments

138 parking spaces - 1 for each appartment

10 car sharing spaces

Use of space: 3.450m^2
Costs: 307.000 €

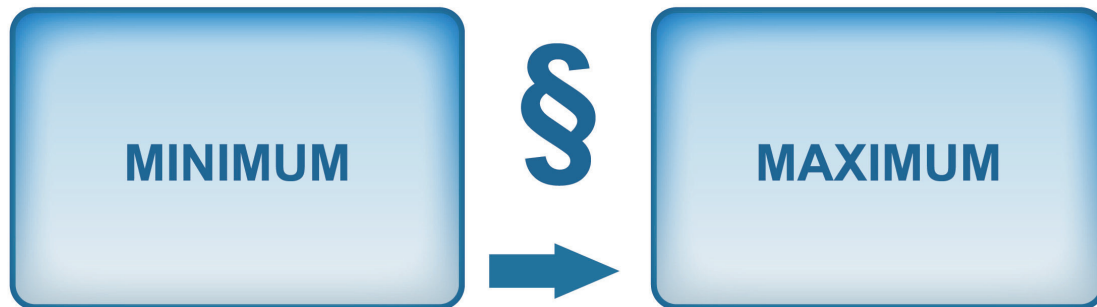| Use of space: 250m^2 |
| --- |
| Costs: 15.000 € |

Use of space 25m^2/parking space incl.for maneuvering

Source: Intelligent Wohnen im Wohnquartier. VCD 2018 (Graph adapted by FGM-AMOR)

Principle: It is smarter to offer new residents a range of mobility options than just to require a minimum number of parking spaces to be provided.

Many cities still require the same amount of parking to be provided for new apartments regardless of where they are or who will live in them. This drives up construction costs and land requirements and hence the price of the new dwellings. A flexible approach where parking provision is related to accessibility by public transport, cycling and walking, to on-street parking controls and to the income of the people who are the target market for the flats can lead to a more effective provision of parking spaces and more affordable housing. The graph above shows starkly the cost of providing individual parking in a development compared to providing only parking for car shared cars.

Parking Standards

The fact is: Parking standards can have a positive impact on housing and other real estate projects.

Very often the costs for building a parking space in a garage or underground can be between €20,000 and €40,000. In many urban (re)development project parking plays an important role, especially from the point of view of financial feasibility of the project. Parking requirements – also known as parking standards or parking norms – are a fundamental issue for real estate and the key to secure the link between urban regeneration and sustainable mobility. Maximum parking standards should take the place of minimum standards, especially in areas where there is effective control of on-street parking.

Parking standards could be related to accessibility of the area at least by public transport. If an area is well served by public transport less people using the development area need a car. Minimum parking requirements can also be eliminated in order to stimulate sustainable growth, as recently happened in Sao Paulo (ITDP, 2014) or already for a number of years in Amsterdam, Zurich, in some parts of Paris or in much of the UK.

Photo: Martin Rojak

Principle: Reduce CO_2 emissions instead of increasing them.

Mitigating the effects of climate change in cities is becoming a hot topic – in particular, cities are looking for ways to reduce the impact of high temperatures on their residents. However, converting on-street parking to green space with trees could also help to mitigate climate change by changing a space that contributes to car use and therefore emissions to one which acts as a sink for CO_2. If an average car drives 35 km a day and by eliminating a parking space this reduces this daily mileage by 7 km, with an average emissions level of 180g CO_2/km then this cuts 1.26 kg of CO_2 per day. Meanwhile, assuming that the trees planted are additional and two can be planted in each former parking space, they will absorb up to 6400 kg of CO_2 per day (depending on the type of tree and taking into account photosynthesis). Additionally each tree (20 m tall and with about 600.000 leaves) produces on average 4,6 tons of oxygen, enough to meet the needs of about 10 people.
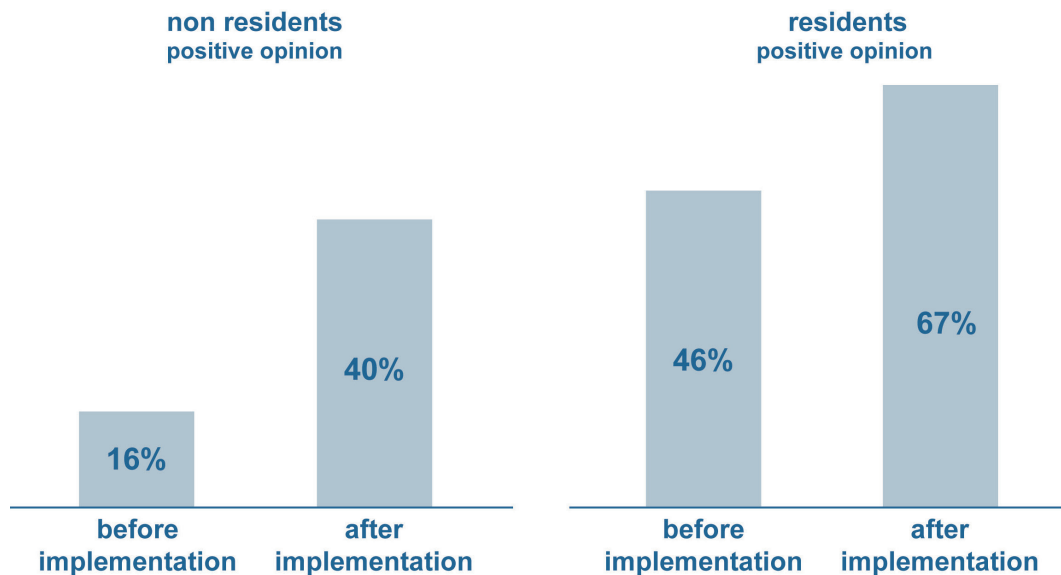
Principle: Political support does not disappear when parking management is introduced.

If parking management measures are planned carefully, are fair and where the money goes is transparent and, most of all, where they improve the city and the parking situation, then they do not cause politicians to lose elections – in fact many cities find that once one neighbourhood has had parking management introduced, it is seen to work so well that many other neighbourhoods ask for it as well.

Acceptance of parking space management
Vienna, district 6-9

non residents
positive opinion

residents
positive opinion

16%

40%

46%

67%

before
implementation

after
implementation

before
implementation

after
implementation

Source: COST 342, 2005

The fact is: People usually moan before new parking management is introduced but initial opposition turns to support when they realize the impacts!

Parking Management improves quality of life in cities and though the population might moan when it is planned, but your citizens will like it once it is implemented. Cities like Amsterdam, Copenhagen, Munich, London, Gent, Zurich, Strasbourg, Barcelona and so on have a long tradition in the implementation of parking management and the citizens benefit from this policy.

 "The impacts of these new parking policies have been impressive: revitalized and thriving town centres; significant reductions in private car trips; reductions in air pollution; and generally improved quality of life" (Kodransky and Hermann, ITDP, 2011). This quote – from American researchers studying the European approach to parking management - perfectly summarizes the potential of parking management for creating better cities.

In Vienna a 'Before-After' survey shows the difference in attitudes before and after the implementation of parking management in Vienna. Summing up, the acceptance after implementation was considerably higher than before. For non-residents, those with a negative attitude decreased from 68% to 54%, whereas positive opinions increased from 16% to 40%. The positive attitude of residents increased after implementation to 67% (from 46 % before), whilst negative attitudes decreased from 34 % to 30 % (COST 342, 2005).
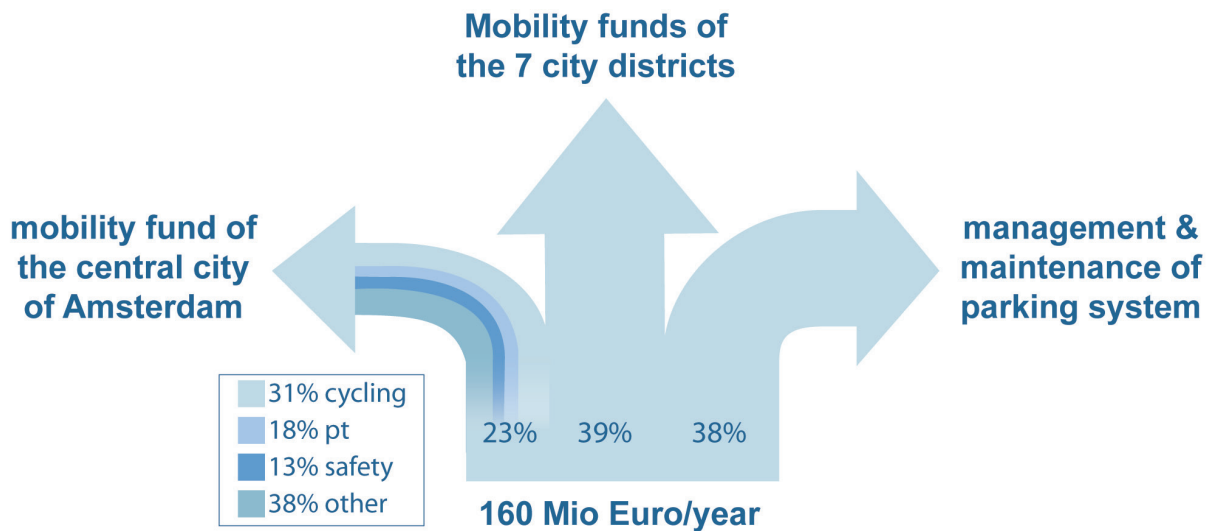
Photo: FGM-AMOR

Principle: District budgets as an incentive to raise acceptance for paid parking.

If a part of the money raised from paid parking is given to a community council in a local area to decide how to spend, this can increase the acceptance of paid parking as a measure, since it becomes obvious how the money is spent and local residents and businesses feel more in control. Of course the money does not have to be spent on transport measures but could be spent on other things to improve the local environment, playgrounds and so on.

Use of parking fees in Amsterdam

Mobility funds of
the 7 city districts

mobility fund of
the central city
of Amsterdam

management &
maintenance of
parking system

31% cycling
18% pt
13% safety
38% other

23% 39% 38%

160 Mio Euro/year

Source: The Amsterdam Mobility Fund, 2014

The fact is: Parking Management can raise municipal revenue that can be used to encourage sustainable mobility!

Very often cities are dependent on national governments for a large part of their budgets. In recent years cuts in these budgets have taken place almost everywhere. Property taxes are in many cities a primary source of local revenue. With the exception of very few cities, real estate values have decreased overall in Europe, reducing local revenues. Parking management or, still better, the PUSH&PULL approach can contribute to raise municipal revenue without increasing - or even reducing - the fiscal pressure on residents and at the same time improve the quality of alternatives to car use. These revenues should be (at least partly) earmarked for funding sustainable mobility measures.

In Amsterdam, for example, the gross revenue from paid parking for 2012 was ca. 160 Million Euro. Some 38% of this money was spent on the management and maintenance of the parking system, 39% went to the general city budget, and 23% was spent to fund mobility measures (31% for cycling, 18% for public transport, 13% for safety improvements etc.). This forms the Amsterdam Mobility Fund. Other cities like Gent, Barcelona, Graz or Nottingham (with the Workplace Parking Levy) are following a similar approach.

More details on the Amsterdam Mobility Fund can be read here:
http://push-pull-parking.eu/docs/file/tub_amsterdam_mobility_fund_final.pdf

Further information on the PUSH&PULL project is available at www.push-pull-parking.eu

Photo FGM-AMOR

Principle: Three powerful instruments for parking space management: duration, fees and permits.

In locations where parking demand exceeds supply, rather than responding automatically by providing more parking, management tools can be used to prioritise who gets access to the limited space. The key instruments are **limiting duration** of stay; **pricing**; and issuing **permits** (sometimes at a cost) for certain types of user such as residents to give them preferential access to space. It is best to start in the areas of highest demand with low-key restrictions (low prices, generous maximum stay limits) to get acceptance of the principle. Prices can be raised at a later date, or lengths of stay reduced.

Rates depend on policy and objectives

Source of Photo: ©iStock.com/faberfoto_it

The fact is: Correct rates, prices and appropriate fines are key to the success of parking management.

Long-term investment in parking garages – whether private or public – in most cases has been a core part of the parking policy in many areas. In theory, rates should be well balanced – in the garages as well as on-street. But the relationship between price of off-street and on-street parking is not the same in different cities. Some cities apply higher on-street fees, others have higher off-street prices. Generally speaking, higher on-street parking fees – compared to off-street – might lead to lower search traffic and make garages more competitive. This is an important strategy when negotiating with private investors regarding the building of garages.

See also Argument "Reducing parking search traffic".

Principle: Make sure that priority users can find a space easily

Whilst parking management may seek to reduce overall parking supply, there may be some drivers for whom local politicians want to make it "easier" to find a space. These may be residents, and/or shoppers. (In later stages of parking policy development in some cities, the emphasis on shopper parking may reduce, but when parking management is first introduced it is often seen as a key issue, and in many cities it remains a key issue – although of course shopper/leisure traffic can also cause congestion and pollution.)

A rule of thumb followed by many parking professionals is that maximum occupancy should not be permitted to exceed 85% and if it does prices should be increased. The 85% "rule", if achieved, means that traffic searching for a parking space (and resultant congestion) is minimised. Some commentators have suggested that following the 85% "rule" may lead to oversupply and certainly it should be applied only to on-street parking, where supply is fixed, and not for calculating the amounts of parking to be provided with new buildings.
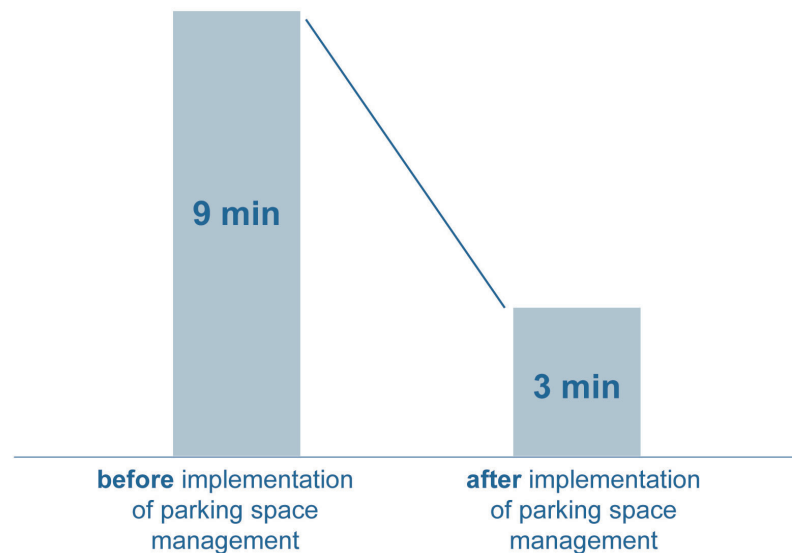
Photos: Stadt Zürich

Principle: The parking supply cap from Zurich - For each new garage parking space an on-street parking space needs to be removed

The parking supply cap aimed to achieve a balance between the demands for more pedestrianisation and the demands of businesses for a continuing supply of parking spaces. Therefore a direct balance is struck: when new off-street parking is built, there is an equal reduction in the number of on-street parking spaces. The space on-street is used instead for cycling facilities, pedestrianised and green areas.

Average time to find a parking space

Vienna, districts 6-9

9 min

3 min

before implementation of parking space management

after implementation of parking space management

Source: COST 342, 2005

Fact is: Parking Management leads to less park search traffic!

Cruising for parking (parking search traffic) leads not only to additional costs for drivers (extra time and fuel) – but it has also negative externalities for society such as extra pollution, noise and accidents. Kodransky and Hermann, ITDP, 2011 estimate that up to 50% of traffic congestion is caused by drivers cruising around in search of a cheap parking space. Evidence suggests that effective parking management with economic mechanisms that harmonize on-street and off-street parking fees can considerably reduce cruising for parking.

A before-after evaluation in Vienna's districts 6-9 shows a decrease in parking search traffic from 10 million passenger car km per year to 3.3 million km, that is, two thirds. While before the introduction of the management of parking places parking search accounted for 25 % of the total volume of traffic, it now accounts for only 10 %. It was ascertained in the districts 6 to 9 that the average time it takes to find a parking place has been reduced from about 9 minutes to barely 3 minutes after the implementation of parking space management (COST 342, 2005).

A more detailed version of this argument can be found at:

http://push-pull-parking.eu/docs/file/20150204_push_pull_a4_en_extended_argument_4.pdf

Photo: Stadt Freiburg

Principle: Plan for the ground area needed for a garage but only build it if really needed – based on observed, not predicted demand. In the meantime, use the space for some other purpose.

The principle is to anticipate predicted parking demand, to have a plan to deal with this but not to build parking to meet all predicted demand until the development is functioning and actual parking demand can be observed. Again in Freiburg Vauban this approach was taken: firstly, space was reserved for a parking garage (but it was not built); secondly, the space was used, "temporarily" for a playground; thirdly, actual parking demand was observed and found not to require the additional parking garage. On top of this, the fact that the space is now used as a playground makes it more difficult, from the point of view of public acceptability, to convert it to parking.

Photo FGM-AMOR

Principle: Parking enforcement is needed because parking regulations improve the parking situation

Parking management tools will not work unless they are enforced. When something that was previously free for all to use becomes regulated and/or priced, and enforcement is introduced, there will often be negative reactions. How then to keep these reactions to a minimum? First of all, make the regulations and enforcement fair: for example, make the fine higher where parking obstructs other traffic, and make sure that everyone has the same risk of getting a fine if they break a rule. In the introductory phase, do not give a fine for the first or second offence, just give a warning. Let people know where and how the money raised is spent. And train the enforcers so that they can help people with parking and other questions, and not just give out fines.

Photo FGM-AMOR

Principle: Experiment with new uses for parking spaces – if it doesn't work you can always put it back!

It is often difficult for people to imagine changes to the streetscape and this means that they may overreact, often negatively, to new proposals. This is especially the case for those people who are "typical" participants in public consultation / participation activities.

But a parking space on-street is something that can be changed temporarily and changed back if necessary – and doing this makes it easy for people to see that the change is often one they can easily live with, or even enjoy. The City of Rotterdam has used this approach in many streets, changing parking spaces to restaurant terraces, public space or bike parking on a temporary basis to show people that it can work and to gain acceptance for a later, permanent, change.
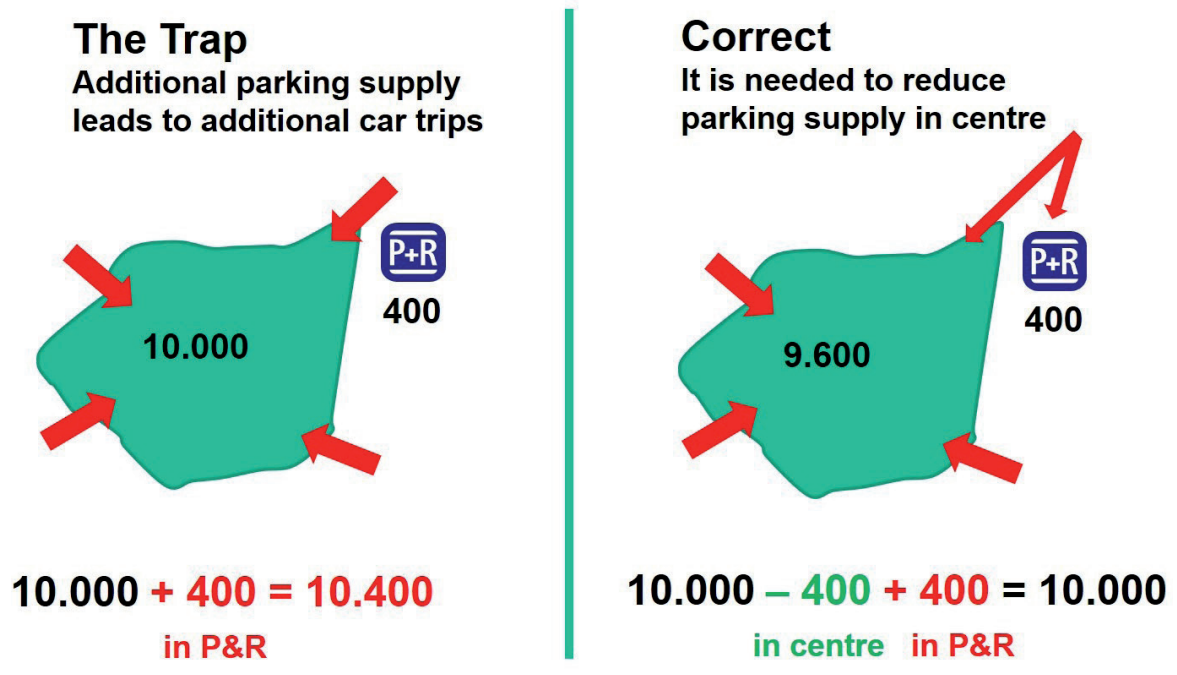
Photo: Hr. Schön

Principle: Shared parking garages as way of supporting more sustainable transport behaviour

Rather than each building having its own parking, build a separate larger car park some distance away to serve all buildings in the development.

It is common for each new house or apartment building to have its own parking garage. An alternative arrangement that reduces construction costs, frees up space immediately around the buildings for green areas, and encourages people to use sustainable modes, is to build one single large parking garage to serve the whole development, but at some distance from the dwellings. A pioneer of this approach is the well-known Freiburg Vauban development in Germany, where residents can drive up to their apartment building to load and unload their cars, but where parking is in a single large parking garage about 300 metres away. The extra distance from home to the parked car encourages walking, cycling and public transport use for local trips and frees up space around the dwellings for more pleasant uses like playgrounds and cafes.

The Trap
Additional parking supply leads to additional car trips

P+R
400

10.000

$$10.000 + 400 = 10.400$$
in P&R

Correct
It is needed to reduce parking supply in centre

P+R
400

9.600

$$10.000 - 400 + 400 = 10.000$$
in centre   in P&R

Principle: Park and ride should substitute for, not add to, city centre parking

Park and ride is often seen as a panacea to parking problems and is called for whenever parking management is introduced in town and city centres. However, there are several important principles to remember if the investment in P&R is to truly support the city's SUMP and to work properly (and hence make the investment and operating costs worthwhile):

» New P&R parking should not add to total parking supply in the city. If it does, this will just increase car use. So, 500 new P&R spaces should replace not add to 500 spaces in town.

» In smaller cities, P&R may not be worthwhile – most travel demand comes from within the town and free parking is available on-street a short walk from the centre so people will not bother to park on the edge of town and get a bus.

» P&R bus, tram or rail services must be attractive, cheap and easy to use.

» Even a big P&R system with say 10.000 spaces in a city of 200.000 people will only cater for a small part of total travel demand.

» P&R sites should ideally be placed close to travellers' origins and not near the destination as this will reduce travel and CO_2 emissions the most and the acceptance of switching to public transport is higher as if one has already driven the biggest part of his trip.
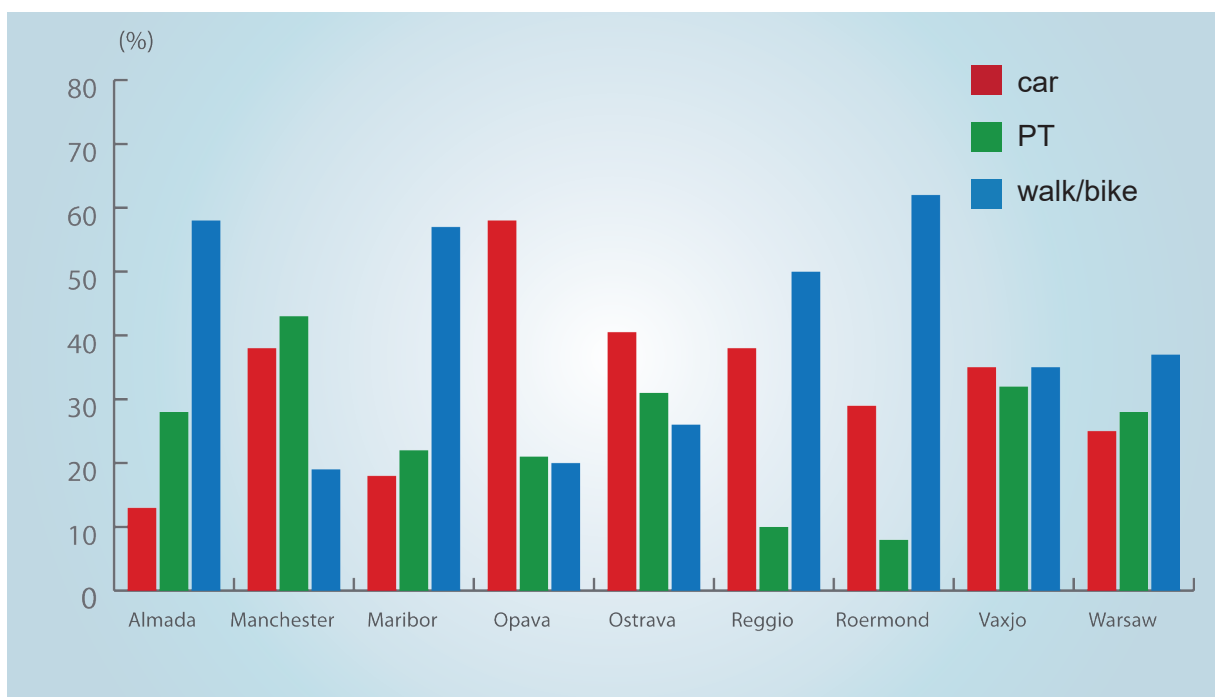
Photo FGM-AMOR

Principle: Multiple uses of scarce parking space to free up other public space

Parking spaces are often empty for much of the time – for example, supermarket car parks are rarely occupied at night and only near full at peak shopping times. Multiple use of such spaces can reduce demand on parking in other areas, freeing it up for other uses; and/or reduce investment costs in new off-street parking. The Belgian City of Sint Niklaas implemented the concept of shared parking on a street called Vijfstraten, one of the main corridors into the city centre. The city wanted to create segregated cycleways on Vifjstraten, but could only do so by removing on-street parking spaces currently used by residents. The city made an agreement with a supermarket located on the street to allow residents of Vijfstraten to park in the supermarket car park instead of on the street. Peak residents' parking demand does not coincide with peak shopper demand so there is enough parking for everyone.

Sint Niklaas implemented another clever approach following the multiple use of scarce public space for parking. The loading and unloading zones on Stationsstraat are used as bike parking areas outside the hours when loading and unloading are permitted.

Average shopping spending per trip multiplied by mode share multiplied by visit frequency per year

Source: The RESOLVE M&E Tool – Consumers survey (2017+2018)

The fact is: Car customers are often not the best customers

Often an automatic link is made especially by shopkeepers and local politicians between the amount of parking provided for shoppers, and the success of local shops – but all the evidence shows that the reality is much more complex than this. Shoppers value the range of shops and the shopping environment, and there is no clear link between retail success and the amount of parking provided and how much if anything it costs to park. This complexity is also reflected in the results from research with 8 cities from North, South, Eastern and Western-Europe - The RESOLVE M&E Tool – Consumers and retailer survey (2017 and 2018) (see graphic) – this shows clearly that in most cities car drivers are not those who contribute most to the retail economy. Thus, it is important to provide what shoppers who do not arrive by car require, which is often a high quality, people-friendly shopping environment, not dominated by traffic. For those who do travel by car, it can be important to make it easy for them to park (although not necessarily for zero cost) which means charges and time limits so that parking spaces near shops are not occupied by long term parkers.

Stationary traffic also causes risks!

Photo: Robert Pressl

The fact is: Parking management contributes to road safety!

Due to their small physical size children face a high risk of accidents at junctions or pedestrian crossings where cars are parked too close – even at low vehicle speeds in housing areas with dense parking on both sides of the street. Parking management and especially the connected enforcement of regulations and laws make a major contribution to road safety by ensuring good visibility for pedestrians at crossings and all road users at junctions. In high density urban turn of the century neighborhoods, where the streets are 'overused' by parked cars, even the fire brigade argues for proper enforcement to ensure access when there is a fire.

Photo FGM-AMOR

Argument: Even when enforcement exists on paper it is often only partially implemented because the wrong staff are entrusted with the task.

Enforcement is often split among different organisations. While the police often take care of parking violations, city-owned or private entities control paid parking. The latter are mostly working effectively, but the police often lack time and have more important tasks to do than controlling parking infringements. A solution that is often employed in this situation is to pass responsibility for enforcement activities the police to city-owned or private entities. They monitor any parking violation and forward it to the police who levy the actual fine.

One step further is to de-criminalise parking violation completely so that non-police staff can do the enforcement alone. A major advantage of this solution is that income from former fines is now income for the city instead of the state.

Photo FGM-AMOR

Argument: Using public space should never be free of charge, not even for clean vehicles.

Some cities give preference or benefits to drivers of zero-emission vehicles by providing parking at a reduced or even zero charge areas where other vehicles have to pay to park. But is this really the right way to deal with scarce public space? An e-vehicle still uses the same space than a conventional vehicle.

Another example of such use of public space is the installation of charging stations at the curbside which are then often reserved for the parking and charging of e-vehicles. Even fast- or hyper-chargers in public space should be the roadway itself or placed in completely redundant areas. Standard charging facilities are better placed in off-street parking venues.

Photo FGM-AMOR

Principle: Have objectives of parking management, not generating revenue, as the main focus of parking policy, and communicate this principle to the public.

Consider which problems / aims you want to address, for example:

» do you want to fight congestion or reduce parking space occupancy; or

» do you want to protect residents' access to parking; or

» do you want to support local business / shops; or

» do you want to avoid day-long parking for commuters; or

» do you want to free public space from parked cars and nudge them to off-street parking etc.

Parking fees are mainly a management tool to steer mobility behaviour, to manage parking occupancy and saturation, and to balance modal share.

Photo FGM-AMOR

Principle: Standards are not forever. Maximum standards for car parking and minimum standards for bicycles are recommended.
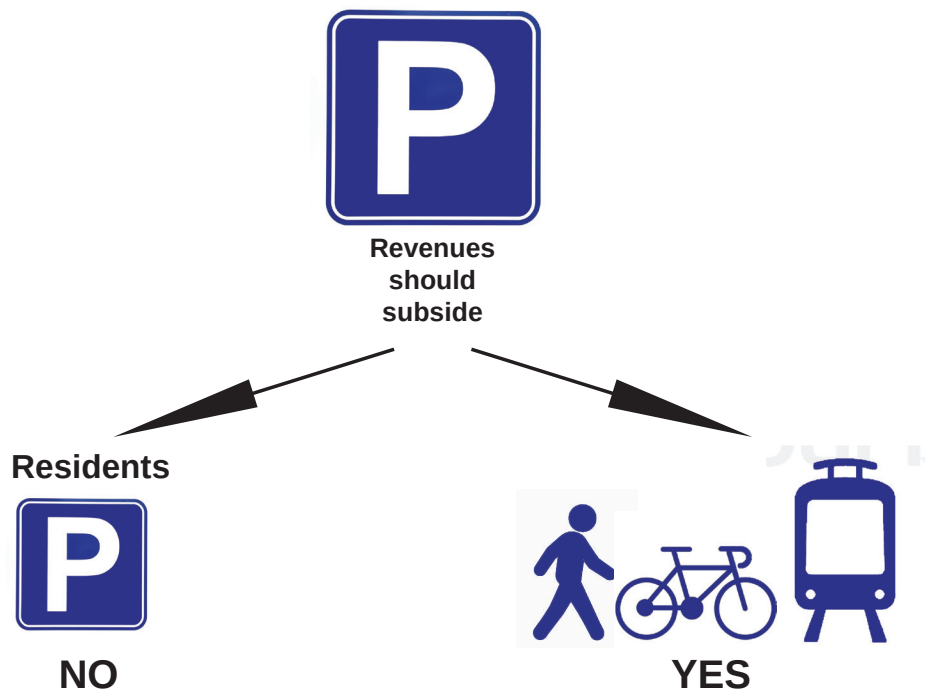
In order to further facilitate transition to less car dependency and more active modes, cities should reconsider standards for traditional car parking AND for bicycle parking. In line with the recommendations of the European Cycling Federation, existing developments without bicycle parking should be retro-fitted, either by converting car parking spaces into bicycle parking or by providing parking facilities near / adjacent to the buildings, and both on- and off-street. An adequate number of power sockets should be installed for recharging e-bikes.

Principles on standards:

» Apply maximum standards for car parking as much as possible

» Apply area-oriented standards, based on different (SUMP based) accessibility profiles of cities (downtown, inner city, outskirts, agglomeration, medium sized, metropolitan, business, residential, mixed uses…)

» Apply minimum standards for bicycle parking (e.g. housing, shopping, etc.) e.g. 1/bedroom + 10% for special bikes in shared bicycle parking facilities (e.g. apt.)

» Monitor and modify standards regularly according to changing mobility patterns and modal split trends.

The combination of both standards is a modern, appropriate and energy-efficient approach to influence mobility behavior. A next step might be to opt for one integral mobility standard for new developments, whereby parking pay off and alternatives to parking can become the subject of negotiations for meeting mobility targets.

The Belgian City of Ghent is a good example of area-oriented standards. Based upon the city's bicycle parking guidelines, residents now have public bicycle parking spaces within 100m of their doorsteps in areas where the standards have been implemented.

Revenues should subside

Residents

NO

YES

Principle: Residential parking permits shouldn't be cross-subsidised.

Cities often feel that they need to deliver parking spaces for their residents – more like a duty, than like a provision of a service that has a value. But this value has to be paid. In many cases cities don't claim the full costs for using this parking space from their residents but cross-subsidise the administrative costs, the costs of maintenance and enforcement by using surplus from parking revenues from non-residents. But such a practise doesn't influence modal choice of residents towards sustainale transport – especially when the zone of the controlled parking where the resident has a permission to park his car is large. Instead, these revenues could be used much better when being invested into incentives to walk, cycle or use public transport following the real push&pull principle.

Idea taken from „RECLAIM THE KERB: THE FUTURE OF PARKING AND KERBSIDE MANAGEMENT" (Centre for London 2020)

The workplace parking levy
from vicious circle to virtuous circle

Vicious Circle

- Kongestia
- Pressure to increase car capacity
- Provision of (free) parking
- More commuter car traffic
- Alternative modes become less attractive
- Shift from pedestrian, cycle and PT to car
- Fewer passengers lead to less budget for investment into PT
- Reduced service offer on PT and less attractive active modes
- Further shift from PT to car

Virtuous Circle

- Kongestia
- Need to make alternatives more attractive
- Workplace Parking Levy
- Revenues from parking invested into alternatives
- Alternative modes become more attractive and car use more expensive
- Shift from car to pedestrian, cycle and PT
- Fewer emissions, less noise, better use of space
- More passengers lead to more income which is invested into PT
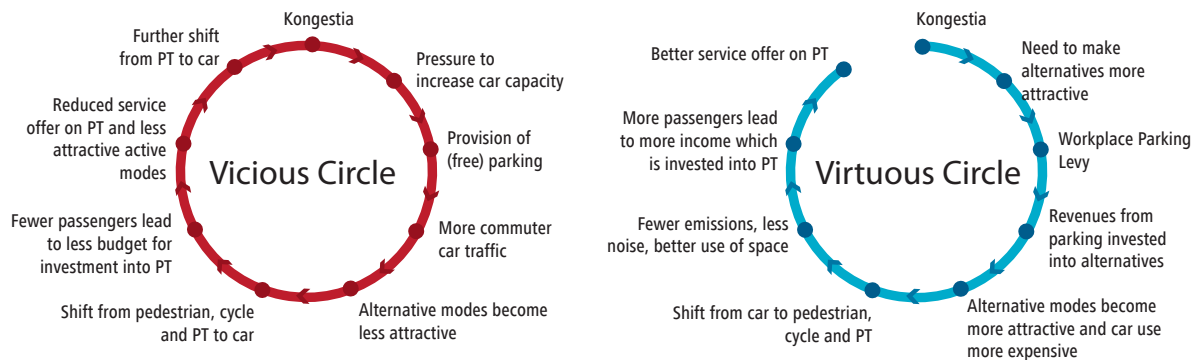- Better service offer on PT

Photo: FGM-AMOR

Principle: people who choose to use a free off-street parking space should contribute to the costs that their driving imposes on everyone else

In Great Britain, the law allows cities to impose a levy or tax on parking spaces provided off-street by employers for their workers. One city, Nottingham, has used this law and since 2012 has imposed a charge, called the Workplace Parking Levy (WPL), on all businesses with 10 or more staff parking places off-street, since commuters account for around 70% of peak traffic in the city, imposing congestion related costs of GBP 160 Million (around 178 Mio €). Employers pay the levy and it is up to them whether to pass the cost on to their employees. For 2020/21, it will be GBP424 (around 460€) per space. Obviously, travel behaviour is only influenced if the staff work for an employer that makes them pay all or part of the levy – but 8 out of 10 do. Evaluation of the WPL by Loughborough University has shown that it has reduced congestion in Nottingham compared to the situation in similar English cities; and that the economy in Nottingham continued to grow as much or faster than in its competitor English cities, after the imposition of the WP and improvements in sustainable alternative transport, whilst car traffic declined by 9% compared to 2004. The income from the levy is used to fund sustainable transport alternatives.

Obviously the imposition of a parking levy is not a legal possibility in most EU member states, but this example from England is useful to make the argument in your country or region that the law should be changed to allow cities to have a parking levy if they wish, as a useful tool in their armoury of measures in a Sustainable Urban Mobility Plan.

Figures taken from „RECLAIM THE KERB: THE FUTURE OF PARKING AND KERBSIDE MANAGEMENT" (Centre for London 2020).

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