

Benchmark for parking policies in large urban agglomerations (in France and Europe)

1. Benchmark – Large urban agglomerations in France¹

▪ Lille Métropole

**1,107,000 inhabitants (85 communes) – Area: 611 km² –
Density: 1,785 inhabitants/km²**

The parking policy

Lille Métropole's parking policy is one point of the Urban Transport Plan (UTP) that was approved in April 2011. This policy is part of a "common rationale aimed at controlling car use and recovering public spaces."

The objective is to end up with a policy that can be shared by all communes. The Parking Charter project has fuelled exchanges between communes. These discussions are based on the creation of a "Parking Committee" that will bring together Lille Métropole and member communes at least once a year, and re-launching the community Observatory on parking.

Guidance paper for a community parking policy

The urban community has devised a guidance paper project to define its new intentions in terms of parking. The idea is to lay the foundations of action coordinated around the existing parking provision and its management and control. The document is based on two objectives: harmonizing communal and community parking policies and defining Lille Métropole's investment conditions in terms of creating car parks and parking areas. It is worth noting that this guidance paper defines parking as a service and no longer as a right.

(1) Based on participants' presentations.

[Towards a parking policy at the users' service](#)

This document is based on the assumption that inter-communal relations will be seen as actively contributing to parking-related matters by highlighting the competences concerned (streets, transport, urbanism, car parks). It defines shared competences with regard to the mayor's power to enforce law and order in particular, in compliance with respective competences. Furthermore, it helps define policy principles and serves in

particular as a reminder of the will of the urban community, as laid down in the UTP, to serve as an experimentation ground for a decriminalization/decentralization scheme.

Thus, the guidance paper is a tool that aims to improve the coherence of the urban community's parking policy, while promoting proximity between communal policies.

The parking provision

The parking provision policy mainly comes under the authority of the urban community. The scope of its competences includes:

- car parks (construction of indoor car parks...);
- urban public transport (park-and-ride facilities, secure bicycle parking facilities, the deployment of 1,000 bicycle rack hoops devoted to trans-modulation);
- streets and signposting (longitudinal parking, surface car parks and parking areas, marking and signposting of regulated parking zones...);
- urbanism (parking rules detailed in the UTPs, organization and pooling of parking spaces in urban projects...);
- facilities (parking devoted to the Grand stadium, etc.).

Communes do however maintain a "residual competence" when it comes to creating parking areas within their private domain.

Furthermore, Lille Métropole has introduced a procedure aimed at examining applications towards creating car parks and parking areas, which applies to surface car parks and parking areas in particular.

The parking provision devoted to the Pierre Mauroy stadium in Lille

The development of the parking provision for the Pierre Mauroy stadium has been planned in relation to the public transport service. In view of forecasted flows, several modal share objectives have been set on the basis of the following two principles: maximizing the use of public transport (mainly the tube) and controlling the use of cars.

Thus, 11,000 parking spaces have been devoted to this new stadium, distributed throughout several car parks. The vast majority of these 8.000 spaces are as far from the stadium as the tube station (approximately a 10-minute walk). Preference has been given to multi-storey car parks in view of economising land space. Pooled uses have also been found based on park-and-ride facilities connected to the tube station: these are

managed on a daily basis by the agent, who puts them at the disposal of the organizer on event evenings.

Current results show that the objective related to the use of public transport has been achieved, but that the rate of use of car parks needs to be improved. The issue is to encourage people to park in these new car parks rather than in public areas around the stadium, while maintaining the same rate of use of public transport.

For this purpose, a follow-up committee made up of all actors concerned helps to ensure the coordination of parking-related actions: both in terms of the allotted provision and public spaces or the nearby private provision. These actions include the mechanisms aimed at protecting residents in neighbouring areas, booking offenders of illegal parking in public areas and actions on private car parks in neighbouring shopping centres. Discussions are currently underway to reinforce the pooling of such car parks.

Source: Lille Métropole

Parking management (pricing and control)

The urban community is competent to deal with the pricing of indoor car parks, whereas communes deal with pricing, and regulating and controlling on-street parking, in relation to the mayor's power to enforce law and order.

Four communes have set up a metered parking scheme (Lille, Roubaix, Tourcoing and Armentières) whereas some twenty communes have opted for blue zones.

New Technologies

Car parks in Lille and those devoted to the Grand Stadium are equipped with a dynamic parking guidance system, that is to say real-time signposting of parking provisions.

Following the example of certain communes, the city also sanctions traffic offences via electronically-generated fines.

Furthermore, the town uses the "Piaf" payment system (individual parking meters with slots), individual pay-and-display pay-per-minute ticket machines and is currently testing a terminal in a delivery area that aims to limit the parking time of delivery vans.

▪ **Lyon and its urban agglomeration**

**1,282,000 inhabitants (58 communes) – Area: 516 km² –
Density: 2,485 inhabitants/km²**

The parking policy

In terms of parking, issues in the urban agglomeration of Lyon are manifold and include a wide variety of territories. The dominant objective is to meet the following issues:

- land-use and the sharing of public spaces;
- the attractive power of shops and activities, and access to them;
- upholding housing in the town centre;
- preserving social equity;
- limiting car traffic;
- dealing with difficulties related to traffic;
- guaranteeing a certain image of the town;
- ensuring well-balanced public finances.

Furthermore, the urban agglomeration considers parking management to be a lever towards achieving various objectives in favour of a transport policy:

- developing alternative modes of transport;
- recovering public spaces;
- preserving the quality of air;
- technological improvements;
- financial objectives.

The parking provision

The public parking provision is divided up between the following actors:

- the 58 communes that make up the urban agglomeration;
- the urban community (Greater Lyon), in relation with private operators such as Lyon Parc Auto, Vinci, etc.;
- the authority in charge of organizing urban transport (SYTRAL).

The objectives of the urban agglomeration's UTP are firstly based on maintaining economic growth. Consequently, the authorities guarantee a certain number of parking spaces for short-term visitors. In Lyon, 35,000 on-street metered parking spaces are at their disposal (in areas forbidden for use by residents), as well as a network of indoor car parks.

Secondly, UTP objectives aim to reduce car traffic. Thus, the authorities are discouraging parking among users of tilting trains in favour of a modal shift, mainly by creating park-and-ride facilities on the outskirts of the urban agglomeration. In the short term, the urban agglomeration also intends to extend the uses of public domain and specialized parking zones, such as self-service bike-sharing facilities, car-sharing facilities or summer terraces. However such developments are putting direct pressure on available provisions.

And finally, UTP objectives contribute towards a form of resident parking that ensures that housing remains attractive. For this reason, residents are entitled to a preferential on-street parking price (16 euros a month) and car park prices. The unlimited subscription fee for households stands at 96 euros a month compared to approximately 160 euros a month, which is the normal fee throughout the peninsula, and 60 to 65 euros a month compared to 100 to 120 euros a month, which is the normal fee outside the peninsula. These subscription fees are calculated on the basis of 15 trips a month excluding weekends. Any subsequent outing costs 5 euros. It is worth noting that residents' subscriptions for these car parks discourage users from using their vehicles, as the fee has been set so as to ensure that residents are not paying more than they would for public transport.

Control

The urban agglomeration is faced with several challenges when it comes control management and assessing the rate of observance: improving on surveillance (there are currently only 45 officers for 35,000 parking spaces), changing the amount of the fine and implementing an electronic fining system (one of the first towns in France to do so), centralizing pay-and-display machines and the decentralization process.

Concerning fines, Greater Lyon receives a share of the revenue passed on by the government. In 2011, it totalled 16-million euros (8.5-million euros in 2005 and 21-million in 2009).

As for Lyon, it received 12-million euros in revenue for on-street parking in 2012. This sum is one of the highest revenues in the town's budget. Yet when operating costs and pay-and-display machine maintenance and control costs have been subtracted, the actual profit is very low.

New technologies

The urban agglomeration is doing its best to steer users towards using the provision at their disposal. It is therefore under the obligation to harmonize provisions and the price of on-street parking and indoor car parks. To do so it is developing new flow-management tools:

- a dynamic parking guidance system in car parks;
- guidance to parking spaces and on-street sensors (this new technology is currently being tested within the scope of certain projects);
- access to information regarding availabilities via the Web.

Yet certain technological innovations have come up against legal constraints, such as the Urban Freight Energy Pilot (FREILOT) project in which Greater Lyon and the city of Lyon are taking part. Furthermore, implementation of the "intelligent town" project makes it possible to envisage the development of payment-related e-services (bank card payments for on-street parking, NFC¹ technology) and information regarding mobility and parking. In indoor car parks, bank card payments already represent 80% of transactions.

(1) Near Field Communication is a wire-less communication technology

▪ Nantes Métropole

**590,000 inhabitants (24 communes) – Area: 524 km² –
Density: 1,127 inhabitants/km²**

The parking provision

Although communes in the urban agglomeration of Nantes are competent to deal with on-street parking, since 2004 the Nantes Métropole Urban Community has had jurisdiction over car parks and a mission of general coherence regarding communal parking policies, through such guidance papers as the Urban Transport Plan (UTP).

The urban agglomeration of Nantes has 12,000 on-street metered parking spaces, the vast majority of which are in the town centre.

On the 1st September 2013, Nantes Métropole was managing 9,000 off-street metered parking spaces, distributed throughout 13 indoor car parks and 14 enclosed car parks. In addition to this it also had nearly 6,700 'fall-back' spaces in 48 park-and-ride facilities.

The parking policy

As soon as its first UTP was drawn up in 1999, Nantes Métropole began using parking as a lever towards encouraging a modal shift in favour of the general transport policy.

Thus, maximum quotas for subscription holders for tilting trains have been implemented in car parks, which, associated with measures aimed at requalifying public spaces, extending on-street metered parking spaces in the town centre, and strongly developing the provision of 'fall back' spaces in the outskirts, have helped change the travel habits of many tilting-train users going to the town centre.

The current objective is still to ensure that the heart of the urban agglomeration remains accessible to those obliged to use their cars to get there, while developing a wide range of measures and services inviting him to use other modes of transport in parallel: structuring and reinforcing the public transport network, extending pedestrian areas and creating a limited traffic zone (LTZ), its "Bicloos" bike sharing scheme, long-term bike-hiring service, and helping to develop car-sharing and ride-sharing services.

Financial equilibrium

Since 2009 Nantes Métropole has had an additional parking budget for metered indoor car parks and enclosed car parks in the urban agglomeration¹.

(1) Park-and-ride facilities are excluded from the scope of application of this additional budget devoted to an industrial and commercial public service, as they are free of charge.

As soon as this budget was implemented, a problem of financial equilibrium became apparent with the authorities' promise to finance new car parks, including an indoor car park acquired through a 'sale before completion' scheme costing close to 10-million euros.

Thus, since 2009, the authorities have increased car park prices by achieving various objectives in favour of the parking and transport policy:

- discouraging work¹-related parking in the town centre and transferring it to park-and-ride facilities;
- regulating timed parking by ensuring the coherence of on-street and off-street parking. Short-term on-street parking is favoured, short and medium-term parking in enclosed car parks and medium and long-term parking in indoor car parks;
- facilitating parking for residents without encouraging a high level of household motorization;
- discouraging very long-term parking at the train station;
- ensuring the equilibrium of the additional budget by self-financing all costs related to the parking policy, with user-motorists financing parking services and their development.

Between 2008 and 2012, Nantes Métropole considerably increased prices in car parks in the town centre; these increases were greater still in car parks close to the train station.

The rise in car park prices

Town centre			Station		
	2008	2013		2008	2013
1 h	€1.40	€2.30	1 h	€1.40	€2.30
3 h	€3.10	€4.90	3 h	€3.20	€6.00
24 h	€10.00	€14.90	24 h	€10.80	€18.00
			7 days	€75.60	€161.40

Source: Nantes Métropole

These increases did not adversely affect the number of people using these car parks, and the number of people using them rose 10 % in the town centre at constant perimeter, reaching 2.5-million visitors a year. In the train station area, the price rise put an end to very long-term parking (exceeding 48 hours), yet not only did the amount of people using these car parks remain stable, it even rose 18 % at constant perimeter. Long-term users were replaced by short and medium-term users. Access to the train station has therefore been improved.

(1) The rise in the price of a permanent yearly subscription, which rose 30 % in five years, and the reduction in quotas have resulted in a 24 % drop in the number of tilting-train subscription holders in car parks.

What's more, the revenue created by the price increases enabled the authorities to invest in new car parks, in support of the transport policy and the requalification of public spaces in the town centre.

Thus, over the period ranging from 2008 to 2013, three new indoor car parks and five enclosed car parks have been opened, for a total capacity of close to 1,500 parking spaces.

On the scale of Nantes Métropole, prices have shown themselves to be veritable levers with which to promote a modal shift, while ensuring additional financial resources in favour of transport policies.

However, as seen in the examples of Lille Métropole (above) and Paris (below), we note that parking and pricing management is not based on obvious economic rationalization.

In a large urban agglomeration, the average yearly revenue related to pay-and-display ticket machines is about 515 euros per parking space; that is the equivalent of 2 hours' parking per space and per day. To improve on fining techniques, it may be realistic to consider that motorists are actually paying for 4 hours' parking per space and per day. This would double the level of collected revenue.

- **Paris**
2, 244,000 inhabitants – Area: 105 km² –
Density: 21,289 inhabitants/km²

The parking policy

The insufficient level of on-street metered parking surveillance is reflected in the level of observance, which is just 10 % (that is one hour paid for per day and per space). Furthermore, the population's impression in terms of parking is out of sync with socio-economic reality. These are two reasons for considering optimizing parking management, to reduce on-street residential parking and regulate visitor-parking through effective pricing.

The parking provision

The on-street parking provision is made of 150,000 parking spaces for vehicles and 50,000 spaces for all two-wheeled vehicles. New street segmentation has been developed. The current provision of parking spaces devoted to shared self-service bikes and cars (Vélib' and Autolib', which are individual mobility alternatives in favour of reducing motorization among Parisian households), could be extended to mobile professionals (delivery areas). Surveillance would be improved in parallel.

The current parking provision is inadequate in view of the needs of mobile professionals, as parking spaces are not ensured, although they are prepared to pay for such a service (on condition that parking spaces are actually available when and where needed). Consequently, in addition to setting aside a certain number of parking spaces for their use, a management system manned by a reservation centre could be set up in view of modulating short-term parking to suit various forms of use. This would enable professionals to book parking spaces for variable time-spans.

Moreover, the "Pedestrian Paris" approach has taken shape, the objective being to recover public spaces and rid pavements of all the things that clutter them (motorized two-wheeled vehicles, café terraces, etc.), in view of repositioning them in current parking areas.

Developing the Autolib' strategy has helped begin a policy aimed at reducing the use of vehicles. Furthermore, following the example of several large European urban agglomerations, implementing a large-scale car-sharing system is encouraged, including among ordinary people. This system is based on pooling access to cars and therefore limiting car ownership, thus curbing the problems related to residential parking.

Measures adopted in Paris

Over the past years, the following measures have been adopted:

- zone reforms, by extending the perimeter of central, more expensive, zones;
- increasing the number of pay-and-display ticket machines;
- encouraging bank card payments.

Added to this is the national rise in fines from 11 to 17 euros on the 1st of August 2011.

Consequently, revenue generated by on-street parking rose from 47-million euros in 2010 to 62-million in 2012.

Yet the estimated rate of payment for on-street parking does not exceed 10 % and there are also considerable potential resources that remain to be exploited, provided surveillance is reinforced.

Indeed, revenue related to on-street parking is proportional to the rate of payment: the surplus stands at 62-million euros for a 20 % rate of payment and 124-million euros for a 30 % rate of payment (which corresponds to the rate of payment of a town like Grenoble for instance).

It is worth noting that surveillance reinforcement targets payment and the observance of parking duration, for a better use of on-street parking provisions.

Source: the city of Paris

▪ **Strasbourg**

276,000 inhabitants – Area: 78 km² – Density: 3,532 inhabitants/km²

The parking policy

Since the 1990s, the town has massively developed alternative modes of transport to cars. Thus, priority has been given to public transport, cycling lanes and pedestrian areas.

Today, in keeping with these developments, priority has been given to improving the living environment of inhabitants. Because human beings are at the centre of this project, quality planning has reduced the provision of parking spaces in the town centre.

The parking provision

Firstly, any parking spaces destroyed when the tramlines were extended have been recreated in areas such as in off-street car parks and park-and-ride facilities, etc. Certain car parks have also been replaced by bicycle parking areas boasting 450 and 850 spaces.

Within five years in the very centre of town, the parking provision has dropped from 1,600 to 1,200 spaces. In parallel, although the rate of use of cars has dropped significantly, the rate of ownership has dropped very little, which has resulted in an increase in the presence of cars parked on streets. Cars are therefore more present in residential areas. This problem must be dealt with in eco-areas aiming for 0.5 parking spaces per home.

The mechanism implemented in collaboration with town planners has resulted in a new parking organization scheme. It is made up of different car parks (multifunctional car parks, residential car parks, and park-and-ride facilities) all around the town centre and located at different scales of distance. The town's main objective is to group together residents' and visitors' vehicles in these car parks located outside the town centre. The success of this planning is based on the following three factors: the possibility of parking in the town centre for very short periods, when dropping something off for instance, competitive prices in off-street car parks, and the provision of public transport and shared self-service bicycles, to facilitate transfers from car parks to the town centre.

On the other hand, mobility management and parking organization on a larger scale often proves difficult, mainly because the smallest communes (on the outskirts) don't have the required technical competences and a comprehensive vision of collective issues regarding mobility throughout the area. The authority in charge of organizing transport and mobility should be given certain powers in such matters.

Economic model

The town's economic model of parking management has shown itself to be highly interesting. In 2012, the town made 6-million euros in revenue from on-street parking and 1 million euros from residential parking permits. Recouping and controls included, profit stood at 1.7-million euros. Yet the efficiency of this economic model is related to the high rate of car turnover (visitor parking) and the right amount of control staff; this does not work well in densely populated, mainly residential areas.

This model was established both on the basis of short-term on-street parking and long-term parking in indoor car parks. The mechanism of such a model therefore consists in reducing the provision of on-street residential parking spaces outside people's homes, in favour of car parks located further away, or making it more expensive.

2. Benchmark – Large European urban agglomerations¹

This comparative analysis takes into account eight European towns. Each has its own specificities, but their parking policy has three main objectives:

- reducing congestion and greenhouse gas (GHG) emissions;
- redeveloping public spaces;
- encouraging the use of public transport and eco-friendly transport (cycling, walking) to minimize car use.

(1) Based on M. Kodransky & G. Hermann (2011), Europe's Parking U-Turn: From accommodation to regulation, ITDP.

▪ Amsterdam (The Netherlands)

820,000 inhabitants – Area: 219 km² – Density: 3,650 inhabitants/km²

The competent authorities

The parking policy is drawn up by the town council. One of the obvious priorities of this policy is to promote cycling and walking, to restrict the use of cars.

All parking management is directed by a town department. The budget allocated to this department is an average of 140-million euros a year.

The parking provision

In 2010, 57.2 % of households owned a car; that is approximately 215,600 vehicles in circulation. In concrete terms, the parking provision is made up of 181,457 on-street parking spaces and approximately 30,000 off-street parking spaces. It is worth noting that the greater part of streets is made up of cycling lanes and pedestrian zones. Bicycles have priority over cars in the town centre to facilitate trips and promote their use.

Following the example of European towns, the authorities have set up a residential parking permit system. This permit can only be used in a restricted zone around the user's home and its price is 150 euros a year. There is a very strong demand, but only 10 % of the parking provision is devoted to residents. Users are therefore under the obligation to wait several years before obtaining a residential permit. The authorities are voluntarily maintaining a low level to promote the use of private garages. With this in mind, each new construction in surrounding areas must include one garage per apartment.

Furthermore, certain categories of vehicles are entitled to priority spaces. On the one hand, part of these parking spaces is set aside for deliveries. All delivery companies are under the

obligation to load/unload their vehicle before 11 am then leave town. On the other hand, some parking spaces are devoted to the disabled, medical staff or car-share vehicles.

Over the years, different car-share companies have been created and have considerably developed the service. Each one must own at least 10 cars to be able to launch its activity.

Parking management (pricing and control)

On-street parking is metered in the town centre and in most surrounding areas. There are different parking zones and the price changes according to the situation, decreasing the further you get from that zone. This is why the hourly rate is 5 euros in the town centre and just 0.10 euros in areas further away. The deterrent effect of this pricing system enables the authorities to reduce the number of vehicles as much as possible in favour of cycling and walking.

The authorities have also created a certain number of "blue zones" where the use of the European parking disk is compulsory.

Controls are conducted by officers and a fine stands at 55.90 euros. This revenue is collected by the municipality, with the exception of that concerning the blue zones, which is collected by the government. It is worth noting that the town reinvests all this collected revenue in town planning of public spaces, or to develop urban transport.

In some shopping streets outside the town centre, parking has been developed differently to maintain street appeal. The price is just 0.10 euros per hour, from 9 am to 5 pm from Monday to Saturday. Parking is not authorized for more than an hour and is forbidden to residents. This system enables the authorities to maintain short-term parking, offer an affordable price to users and continue managing these zones.

Furthermore, several park-and-ride facilities have been created on the outskirts of town in view of encouraging the use of public transport. Access tickets to these car parks cost 8 euros and come with a ticket for two people, to be used on public transport over the next 24 hours (this offer can be extended to 48 or 72 hours). Once more, this system enables the authorities to promote an alternative means of transport to cars.

New technologies

Since 2006, a phone-payment system has been set up and is managed by three companies. Each one transfers the revenue generated to the municipality and receives a profit of 4 to 5 %. In the long run, the authorities' objective is to make sure most payments are made by phone or on the Internet.

Over the past years, the use of electronic registration plates has also developed to such an extent that most vehicles are now equipped with them. These plates are arousing increasing interest as they boast many advantages. They contain various pieces of information regarding

the vehicles and their levels of emissions in particular. Thanks to this system, the authorities plan to set the price of parking spaces and the residential permit according to the vehicle's level of emissions.

What's more, using these plates has enabled the authorities to test a control system using "car scanners". These cars are equipped with six cameras, drive at a speed of 40 km/h and control electronic registration plates by scanning them (approximately 160 scans per second). For the system to operate properly, three officers must follow these cars on scooters to distribute fines and control certain vehicles manually (foreign registration plates for instance). At present, the result of this test has proved convincing, seeing as the level of precision of this system is over 98 %.

Furthermore, the authorities are developing charging facility points for electric vehicles, in view of promoting their use.

- **Antwerp (Belgium)**

507,000 inhabitants – Area: 204 km² – Density: 2, 300 inhabitants/km²

The competent authorities

Since 2001, parking management has been entrusted to a semi-private authority: the parking operator "GAPA Antwerp". Within the scope of a public-private partnership (PPP) the town council has transferred all its parking competences to this operator: developing and managing public and private on-street and off-street parking. Its price grids however are subject to approval by the town council.

In return, GAPA is under the obligation to apply the rules in matters of parking, to cooperate with all private operators and take charge of staff and all management costs.

The parking provision

The parking provision stands at 38,318 on-street parking spaces in the town centre (93,516 on-street parking spaces in surrounding areas) and 11,280 off-street parking spaces.

One of the authorities' main objectives is to give priority to parking spaces for residents and optimize the parking turnover of visitors' cars. With this in view, the authorities have set up a residential parking permit scheme. According to regulations, inhabitants can benefit from two parking permits free of charge.

All permits, which are valid for two years, are distributed and managed via a database accessible on the Internet. In order to facilitate this management, the town has been divided up into several sectors. In this way, each resident is entitled to a permit for a chosen sector. In 2010, approximately 70,000 residential parking permits were in use.

Furthermore, the authorities are attempting to optimize parking spaces devoted to residents and are therefore considering making the car parks of certain offices and supermarkets available to them during the evening and at night.

Also, since the 2000s, the authorities have successfully promoted alternative means of travelling to cars. Indeed, transferring parking management to the operator GAPA has resulted in a modal shift of means of transport. The use of cars has dropped 50 % whereas the number of pedestrians and cyclists has risen by over 60 %.

Parking management is largely responsible for this phenomenon. By way of an example, certain parking spaces have now been set aside for car-sharing uses. The authorities have also reinvested part of the parking revenue to provide a self-service bike-sharing scheme.

Parking management (pricing and control)

The town is divided up into three metered parking zones: the town centre (zone 1), the remaining area located inside the ring road (zone 2) and the area outside the ring road (zone 3). The first two zones also include a number of "blue zones".

The following table below shows parking prices, including the "progressive metered" system. As shown, in two of the three zones, the price ranges from €0.60 to €3.50 per hour, according to the duration of parking.

Price of on-street parking

	Zone 1	Zone 2	Zone 3
Days	Monday - Saturday	Monday - Saturday	Monday - Saturday
Hours	9 am – 10 pm	9 am – 10 pm	9 am – 10 pm
Linear prices	-	-	€0.50/h
Progressive Prices	One hour: €1.50 Two hours: €2.50/h Three hours: €3.50/h	One hour: €0.60 Additional hour: €1/h	-
Day price	-	-	-
			€3.50/10 h (except in shopping streets and around indoor car parks)
			€2.50/10 h (except in shopping streets and around indoor car parks)
Maximum duration	Three hours	Ten hours	Ten hours

Source: GAPA

Control is ensured by officers and the price of a fine is 23 euros, regardless of the zone.

Over time, the operator GAPA has increased the number of parking spaces and pay-and-display ticket machines. By way of an example, this number has doubled between 2003 and 2006, rising from 500 pay-and-display ticket machines in 2003 to over 1,000 in 2006. These different increases, in addition to effective means of control, have considerably increased collected revenue. It is important to note that any revenue is reinvested in view of developing urban mobility projects, such as the self-service bike-sharing scheme for instance.

New technologies

Since 2004, a phone-payment system has been set up and entrusted to one single company. Once the user has registered, he uses his phone to send the company his registration plate number and the number of the closest pay-and-display ticket machine every time he parks his vehicle. He can then consult his parking history on his account, as well as his different invoices. In order to make this service more attractive, the first quarter of an hour is free of charge.

In 2007, according to the authorities, 15 % of motorists were using this payment system. GAPA is currently considering developing this system towards implementing it in indoor car parks.

Moreover, motorists can also have their own "smart park" parking meter. This card-reading device is hung on the vehicle's internal rear-view mirror. When the user parks his vehicle, all he has to do to activate the device is to insert a rechargeable card containing his own personal data. To make this device more attractive to users, the first ten minutes of parking are free of charge.

- **Barcelona (Spain)**

- 1,620,000 inhabitants – Area: 101 km² – Density: 16,150 inhabitants/km²**

The parking policy

In 2005, over a million vehicles flocked to the town centre every day, most of them searching for a parking space. In view of such congestion, the authorities opted for more efficient parking management, mainly thanks to the following two innovations:

- the implementation of a new on-street parking regulating system, with the creation of four distinct zones. The objectives of this system are manifold: limiting the duration of visitor parking, giving priority to residential parking and converting a certain number of parking spaces in favour of two-wheeled motorized vehicles and bicycles;

- developing an alternative system of transport to cars. To do so, the authorities have decided to devote surplus parking revenue (that is approximately 5-million euros a year) to managing a self-service bike-sharing scheme.

Since the implementation of this new parking policy, congestion has been reduced by 5 to 10 %. By way of an example, 100,000 daily outings were made by means of a bicycle in 2009, compared to 30,000 in 2006.

The parking provision

In 2010, the parking provision consisted in 187,372 on-street parking spaces and 613,085 off-street parking spaces, to meet the requirements of 608,830 users.

A large part of these parking spaces are now reserved for the use of residents. Each user is entitled to a weekly residential season ticket (sticker), usable in all zones for one euro a week; that is 50 euros a year. Yet parking spaces are not guaranteed and residents cannot leave their car in the same parking space for more than a week.

By way of comparison, renting an off-street private parking space costs an average of 100 euros a month (approximately 150 euros in the town centre and 50 euros in the outskirts).

At present there are 70 indoor car parks. Their construction and management is borne by a municipal department and a private company. A concession is generally established for 12 to 15 years, prior to negotiating the terms of the contract. By way of optimizing residential parking spaces, 20 car parks have been set aside for their exclusive use.

In view of promoting cycling and walking, the authorities have made several changes, with the creation of 150 km of cycle lanes and 440 self-service bike-sharing stop. When each one of these stops was created, 4 on-street parking spaces were destroyed; that is a total of 1,200 parking spaces.

A certain number of parking spaces have also been done away with in favour of pedestrians. In so doing, the historic centre of the town is now nearly entirely pedestrianized (only certain residents, taxis, and delivery firms have access to it).

Furthermore, owing to a strong increase in the use of two-wheeled motorized vehicles (300,000 currently in circulation), the authorities are under the obligation to take them into account in their parking policy. Consequently, they are allowed to park on pavements that are over 5 metres wide, and in indoor car parks.

Parking management (pricing and control)

As shown by the table below, on-street parking is metered in all four parking zones. Limiting parking time is a way of ensuring visitor turnover.

On-street parking prices

	Zone 1	Zone 2	Zone 3	Zone 4
Prices	€2.42/h	€2.26/h	€1.96/h	€1.08/h
Maximum duration	One or two hours	Two hours	Three hours	Four hours

Source: CGSP

Concerning the prices of indoor car parks, the price of a monthly ticket (usable every day from 7 am to 9 or 10 pm) ranges from 70 to 100 euros. As for residents, they can use these car parks at night (for 50 to 70 euros a month).

Controls are made by police officers and fines vary from 30 to 100 euros. The workforce is made up of 370 officers working on foot and in charge of controlling on-street parking, and 40 officers on two-wheeled motorized vehicles to help fight illegal parking. The use of electric scooters by officers is currently being tested, but results are uncertain for the moment owing to the low autonomy of batteries.

New technologies

The authorities are encouraging the use of electric cars and are developing charging points to anticipate on future requirements, in off-street car parks in particular, where 50 charging terminals have already been installed.

- **Brussels¹ (Belgium)**

1,300,000 inhabitants – Area: 161 km² – Density: 8,056 inhabitants/km²

The competent authorities

In Belgium, parking is managed at federal level and was decriminalized by the law dated 7th February 2003. In order to avoid completely undermining the powers of the police force, this decriminalization concerns only the following three types of parking spaces:

- on-street metered parking;
- blue-zone parking;
- residential parking.

Other types of parking, such as obstructive or unauthorized parking on reserved parking spaces (set aside for deliveries, persons with reduced mobility, coaches...) still falls under criminal law.

Decriminalized parking is dealt with by a street-managing entity. In the Brussels-Capital area, which is made up of 19 communes, there are 19 different managing entities. In this way, each

municipality determines a certain price and applies a different regulation. They draw up a regulation to set their prices and decide whether to maintain parking as a public service (in which case it is seen as a tax) or whether to entrust its management to private operators (in which case it is considered a fee).

In order to remedy this situation, the authorities have envisaged implementing a public parking service at regional level. This service aims to reduce the use of cars in favour of public transport and eco-friendly modes of transport.

Yet this choice of direction has not been approved by all political parties. In 2009, the authorities did however adopt an ordinance in this perspective. It allows for the implementation of a Regional parking policy plan, in view of harmonizing the policies of all communes concerned (approval scheduled in July 2013), and the creation of a Parking agency, in view of ensuring its coordination at regional level (order underway).

(1) Based on the presentation by Chantal Roland, in charge of the parking committee for the ministry in charge of the Brussels-Capital region.

The regional parking policy

The regional parking policy plan aims to harmonize prices, zones and the different parking dispensations that exist at regional level. Thus the plan provides for the creation of:

- metered zones in shopping areas where parking is limited to two hours and residential parking is forbidden during the daytime;
- metered zones where people can park for a longer period of time, with lowest prices being applied to urban areas with the greatest social diversity, and residential parking is allowed during the daytime;
- blue zones where parking is limited to two hours in areas where there is a need for turnover, but where requirements aren't as high. Residential parking is allowed in this zone.

Those breaking existing regulations will be required to pay a flat fine of 25 euros per half day.

According to the Plan, it is up to the communes to determine zone locations, and up to the Agency to check the coherence of these choices at regional level.

At present, 51 % of parking spaces are not regulated.

Each household is entitled to possess two residential parking permits: the first costs 5 euros a year and the second 50 euros a year. An upper price limit of 50 euros has been set by order, which means that it cannot be increased. The fact remains that these particularly low prices

encourage users to own a car, although the current parking provision does not meet requirements.

Moreover, the Plan provides for the reorganization of off-street parking. It suggests reducing residential parking in favour of other users, such as mobile professionals, cyclists or persons using shared cars. To achieve this it plans to build indoor car parks exclusively for the use of residents, as well as park-and-ride facilities for visitors.

Concerning mobile professionals, the authorities have already adopted several measures. Certain parking spaces for instance are exclusively reserved for delivery companies between 9 am and midday, on penalty of a 100-euro fine.

The parking agency

In January 2011, the parking Agency was set up with 'limited liability company under public law' status. It is the new authority in terms of regional coordination, with the following mission:

- implementing the parking policy and monitoring that implementation (supervising inter-communal coherence);
- creating a parking observatory;
- organizing a service for the purpose of towing away vehicles;
- organizing, managing and controlling public car parks and park-and-ride facilities;
- organizing parking facilities in private car parks outside office hours;
- creating a parking provision for lorries and coaches;
- developing a parking provision for bicycles and motorbikes.

Another one of the Agency's missions is to harmonize parking control at regional level. It therefore plans to recruit personnel and step up controls.

Communes are stakeholders in the agency's operations through their interest in its capital. However, although each commune is entitled to 1 % of its capital, as yet none of them have claimed it.

Communes are also entitled to entrust certain missions to the agency, such as street control, or collecting revenue, but yet again, as yet none have done so.

It is worth noting that it is hoped such mechanisms will be implemented when the agency actually begins operating. At present, this lack of involvement can be explained by the fact that the Agency's range of influence is still limited.

Furthermore, as from July 2013, 15 % of parking profits will be handed over to this new agency.

The following chart sums up the three aspects of the public parking department:

- the department's objectives were initially laid down by an ordinance drawn up by the Brussels-Capital region, then adapted through the Regional parking policy plan;
- the implementation of the department's objectives was entrusted to the Parking Agency;
- concrete missions can then vary from one commune to the next.

- **Copenhagen (Denmark)**

- **560,000 inhabitants – Area: 88 km² – Density: 640 inhabitants/km²**

The competent authorities

All on-street parking management is managed by a municipal department, as is part of off-street parking.

Following the example of large European urban agglomerations, the parking policy aims to promote alternatives modes of transport to cars, redevelop public spaces and reduce GHG emissions.

The parking provision

In 2010, the parking provision stood at approximately 30,000 on-street parking spaces. Inhabitants residing in metered parking zones are entitled to residential parking permits costing 90 euros a year.

For several years now, the authorities have implemented the redevelopment of public spaces in favour of eco-friendly and shared modes of transport, to reduce the number of on-street parking spaces. A certain number of spaces have therefore been replaced by bus and bicycle lanes, bicycle parking spaces and new pedestrian zones. More recently, some spaces were even granted to vehicle-sharing companies.

In parallel, the authorities have increased the number of off-street parking spaces to partly compensate for the reduction in on-street spaces. Thus, in 2010, they invested over 100-million euros for the construction of three underground car parks in the town centre; that is 880 new off-street parking spaces. Indoor car parks are managed by the companies that built them via concession contracts granted by the municipality.

Some contracts are established so as to enable residents to rent a space in one of these car parks

(from 6 pm to 8 am) through the municipal department in charge of parking. Some delivery companies are also entitled to use this service.

Moreover, two-wheeled motorized vehicles, vehicles for people with reduced mobility and electric cars have priority and are therefore entitled to park throughout all zones free of charge.

In 2008, results were already clearly visible: only 31 % of inhabitants used cars, whereas 37 % used a bicycle, 28 % used public transport and 4 % walked.

Parking management (pricing and control)

The town-centre is divided up into three metered zones. The following table shows that parking is metered from Monday morning to Saturday evening in all three zones, and that day prices differ according to the zone in question.

	On-street parking prices		
	Zone 1	Zone 2	Zone 3
From Monday to Friday			
8 am – 6 pm	€3.9/h	€2.3/h	€1.3/h
6 pm – 11 pm	€1.3/h	€1.3/h	€1.3/h
11 pm – 8 am	€0.4/h	€0.4/h	€0.4/h
Saturday			
8 am – 5 pm	€3.9/h	€2.3/h	€1.3/h
5 pm – 8 am	-	-	-
Sunday	-	-	-

Source: M. Kodransky & G. Hermann (2011)

Users are entitled to use a weekly or monthly ticket (or card that can be charged via the Internet), and is valid in one zone and in one or two cheaper zones.

Controls are ensured by 115 officers and the price of a fine is 69 euros, regardless of the zone and type of offence. Every year, approximately 350,000 fines are drawn up, which amounts to approximately 24-million euros in revenue.

New technologies

A phone-payment system has been created and entrusted to two companies. It is used by 18 % of users and all profit belongs to the municipality. However, users are under the obligation to pay a subscription to both companies, as well as an additional sum for each transaction.

What's more, the authorities are developing a network of charging points for electric vehicles. Thus, eight charging stations have been created to anticipate on future requirements.

- **London (United Kingdom)**

8,174,000 inhabitants – Area: 1,570 km² – Density: 5,200 inhabitants/km²

The competent authorities

The town is made up of 33 boroughs and parking management has been entrusted to a local authority in each one of them. Each local authority works under the supervision of the town council and must therefore provide yearly reports presenting and justifying its management developments. Yet this system does give local authorities a certain amount of independence and they are therefore authorized to define the number of parking spaces, times and sanctions within areas under their responsibility. Parking policies therefore differ according to the borough. By way of an example, users are entitled to use residential parking permits throughout the town, whereas fines vary according to the zones.

London is the first town to have adopted a system in which parking prices in some areas depend on the CO₂ emissions of vehicles. Indeed, a dozen boroughs define the price of their residential parking permits in relation to emission levels. On average, the price increases whenever the vehicle emits more than 225 g/km.

Over the past few years, certain local authorities have not hesitated to make their rules even more stringent. The borough of Islington for instance has drawn up a list of 13 categories of vehicles according to their levels of emission and the annual residential parking permits range from 0 to 460 euros depending on the vehicle category.

As parking revenue is limited by the law, the use of surplus revenue is controlled. Local authorities are indeed under the obligation to reallocate them to projects related to urban transport. Thus, most of them use this surplus to finance a free pass to be used by elderly and disabled residents on public transport.

Furthermore, in 2003 the authorities implemented an urban toll fee to restrict the use of cars in the town centre. This area now extends over 38 km², and a 12-euro toll price is applied between 7 am and 6.30 pm from Monday to Friday. The authorities believe this system has helped reduce congestion, CO₂ emissions and increased the use of public transport by more than 30 %. Yet revenue falls short of expectations due to the fact that operating costs have proved very high (approximately 140-million euros a year) and because traffic has dropped.

London is also one of the only large urban agglomerations to have opted for metered parking for two-wheeled motorized vehicles.

- **The example of the City of Westminster**
253,000 inhabitants – Area: 21 km² – Density: 11,783 inhabitants/km²

The parking provision

The parking provision encourages residential parking with 32,000 on-street parking spaces set aside for residents and 6,000 spaces devoted to visitors. In 2009 however, some residential spaces were made accessible to visitors between 10 am and 4 pm.

Residents are therefore entitled to parking permits, the price of which varies according to the vehicle's engine:

- 156 euros a year for 1,200 cubic centimetre engines or more;
- 111 euros a year for engines 1,200 cubic centimetre engines or less;
- 59 euros a year for motorbikes.

A private company also set up a car-sharing scheme and over the years, the borough has increased the number of on-street parking spaces granted to this company, which now boasts over 100 spaces. Parking is free for these shared vehicles, as well as electric and hybrid vehicles.

Certain parking spaces are also now reserved for mobile professionals such as doctors, and public works and civil engineering companies.

Parking management (pricing and control)

On-street parking is metered throughout the entire borough. It has eight parking zones in which prices range between 1.30 and 5.20 euros per hour, according to the time of day (during the rush hour or outside rush hour times). Users are not allowed to remain in a parking space for more than four consecutive hours.

Since 2008, parking in the borough has also been metered for two-wheeled motorized vehicles, with four different prices:

- 1.20 euros per hour;
- 4.10 euros per week;

– 15.90 euros per month;

– 117.50 euros per year.

Control is ensured by officers employed by a private company.

In 2010, the yearly revenue for parking stood at 35-million euros.

New technologies

A phone-payment system has been set up and entrusted to a private company that takes 10 % of the revenue.

The borough also encourages the use of electric cars. Thus, 12 charging terminals have been created and users are entitled to a free residential parking permit.

- **Munich (Germany)**

1,378,000 inhabitants – Area: 310 km² (22 districts) – Density: 4 360 inhabitants/km²

The competent authorities

During the 1990s, the authorities devised a new parking policy aimed at reducing congestion and long-term parking. To do so, in 1998, the authorities invested 140-million euros in the "Mobinet" project, in partnership with several private actors. This project concerns two areas of the town and consists in meticulously studying their specific requirements, then redeveloping each street according to its needs. This system is a way of optimising parking for residents, visitors and mobile professionals as much as possible. The project ended in 2003 and the result proved highly conclusive. Since then, the municipal council has been sole in charge of the parking policy.

The parking provision

In concrete terms, the parking provision includes 54,000 on-street parking spaces distributed throughout 58 zones. Based on the example of both "Mobinet" areas included in the project, each of these zones have been redeveloped according to its own characteristics and needs. The authorities have therefore adapted the parking provision to the requirements of each type of user.

A certain priority has however been granted to residents. For this reason, they are entitled to a residential parking permit costing 30 euros a year.

It is worth noting that a second residential parking permit also exists for mobile professionals and costs 120 euros a year. This permit is reserved for companies and shopkeepers and is not specific to a particular vehicle. But it does not guarantee their access to a parking space.

There are 120 park-and-ride facilities within close proximity of the train stations throughout the surrounding areas and four types of park-and-ride facilities according to their location and price:

- nine car parks in areas close to the town centre (1.50 euros a day and 17 euros a month);
- sixteen car parks in nearby surrounding areas (1 euro a day and 8.50 euros a month);
- car parks in more remote surrounding areas (0.50 euros a day and 7.50 euros a month);
- car parks in the outer areas of town (free of charge).

Furthermore, the parking policy has helped promote alternate means of transport to cars and reduced CO2 emissions. Thus in 2008, 36 % of trips were made by car, 21 % by public transport, 14 % by bicycle and 29% on foot, whereas eight years before 42 % of trips were made by car, 32 % by public transport, 8 % by bike and 18 % on foot.

Parking management (pricing and control)

There are six categories of parking zones, and all their parking spaces are now metered (from Monday to Saturday and from 9 am to 11 pm):

- residential parking zones (where parking is allowed solely for holders of residential permits);
- mixed parking zones (where parking is allowed for residents and visitors), where the price is 1 euro per hour and 6 euros per day;
- mixed parking zones where the use of discs is compulsory for visitors (for a maximum duration of three hours);
- short-term parking zones where the price is 1 euro per hour for all users (for a maximum duration of two hours) ;
- short-term parking zones in the historic part of town, where the price is 1 euro per hour for all users (for a maximum duration of two hours), but in which residents are entitled to use their permits as from 7 pm;
- zones where parking is forbidden.

- **Stockholm (Sweden)**

871,000 inhabitants – Area: 6,519 km² – Density: 130 inhabitants/km²

The parking policy

The current parking policy was established in the 1970s. The authorities' main objective is to harmonize and optimize parking in the town centre and surrounding areas.

The budget presently allocated to parking management stands at approximately 10-million euros a year, whereas parking-related revenue stands at approximately 50-million euros a year.

Furthermore, in 2007 the authorities implemented an urban toll system following a 6-month experimental phase the previous year. The main objectives of this toll were to improve traffic flows, reduce traffic by 10 to 15 % in busiest streets and reduce emissions of atmospheric pollutants while improving the quality of urban environment.

The toll zone, which includes 280,000 inhabitants, is delimited by 18 gates. The toll fee is paid by the owner (and not the driver) of the vehicle within 14 days of passing through the toll gate control point (a registration plate reading device enables drivers to pass through without stopping).

This urban toll fee has reduced traffic jams by 30 to 50 % and reduced emissions of atmospheric pollutants within the area by 10 to 14 %.

The parking provision

Following the example of most large European towns, the authorities have set up a residential parking permit system. Yet their objective is now to promote off-street parking for residents. The price of the residential parking permit has therefore been increased to 77 euros a month since 2009 to reduce the gap between the prices of on-street and off-street parking.

Yet in 2011, the price of an off-street residential subscription was 140 euros a month and 44,000 residents were still in possession of an on-street parking permit.

The company Stockholm Parkering, which is owned by the town, manages more than half of its off-street parking provision; that is 17,000 parking spaces in the town centre. Every year, the company pay 10 % of its revenue to the town. By way of an example, it paid back 4.5-million euros in 2010.

Two private companies, Q-park and EuroPark are in charge of the remaining off-street parking provision.

Furthermore, two-wheeled motorized vehicles, electric cars and cars that transport persons with reduced mobility are given priority and can therefore park free of charge. The authorities

have also set up a self-service bike-share system in view of promoting an alternative means of transport to cars.

In 2011, it was clear that the parking policy had borne fruit, as shown by its convincing results: 44 % of trips were made by car, 29 % on foot, 24 % by public transport, 10 % by bicycle and 3 % by two-wheeled motorized vehicles. In the town centre, results were even more convincing: 67 % of trips were made using eco-friendly methods, 25 % by public transport and only 8 % by car.

Parking management (pricing and control)

The town is divided up into 3 types of metered parking zones: blue, red and green. The following table shows that prices differ according to the type of zone in question and can alter according to the time of day. The green zone is a short-term parking zone (one hour at the most), located near the central train station.

On-street parking price

Zone	Time	Price
Blue	9 am – 5 pm	€1.7/h
	5 pm – 9 am	Free of charge
Red	9 am – 5 pm	€2.9/h
	5 pm – 9 am	€1.7/h
Green	Single price	€4.6/h

Source: M. Kodransky & G. Hermann (2011)

Since 2007, all controllers have been working for two private companies: "Svensk Bevakningstjänst" is in charge of control in the northern half of town and "Securitas" is in charge of the southern half. Each one is under the obligation to employ at least 150 controllers and carry out controls on foot and by car.

By way of an example, Securitas deploys 50 to 60 controllers on foot from 9 am to 5 pm, then 18 by car (two controllers per vehicle) from 5 pm onwards.

Users are under the obligation to affix a bar code sticker on their windscreen to be able to park. The controller scans the sticker (using a PDA¹) to check that the user is in order with the rules. PDAs operate using "Paris" software, which enables controllers to obtain all information regarding residential permits, payments underway, etc. by scanning the vehicle's number plate or sticker.

This mode of operation helps to optimize the controller's work. At present, approximately 1,500 fines are issued every day and fine prices range from 48 to 90 euros according to the type of offence.

At national level, the upper limit on the price of a fine is 116 euros. Each municipality is able to set the price of fines issued in their sector, provided they don't exceed this upper limit.

The work of both private companies is assessed twice a year by the authorities according to the rate of correct parking. In order to maintain their respective contracts with the town, 75 % of vehicles must be correctly parked.

New technologies

Since 1992, a phone-payment system has been set up and its management has been entrusted to three companies: EasyPark, Telep and Mobill. Approximately 10 % of users currently use this system.

(1) PDA: Personal digital assistant, also known as a "pocket PC".

The mode of operation of all three companies is particularly simple and offers users several advantages.

By way of an example, the EasyPark operator deducts the parking price directly from the user's account, who can then obtain a receipt by SMS or e-mail. What's more, several stickers can be related to the same account, which means the user can use the same bar code for several vehicles.

A subscription with this operator costs about 3 euros a month and each transaction costs approximately 0.50 euros. EasyPark keeps 3 to 4 % of its revenue and pays the remaining sum to the municipality. However this rate changes according to the operator. By way of comparison Telep keeps 10 % of its revenue.

In view of anticipating on the use of electric cars and despite a small number of vehicles, the authorities have installed four free on-street charging terminals as well as 150 off-street terminals.

- **Zurich (Switzerland)**
376,000 inhabitants – Area: 88 km² – Density: 4,230 inhabitants/km²

The parking policy

The town policy is based on a restriction of parking spaces in favour of alternative means of transport to cars. Thus, 450 kilometres of streets have been devoted to public transport and 340 to cycling lanes. In town there is a bus stop or tram stop every 300 metres on average.

This will to encourage such a modal shift began with the construction of a tram line in the latter part of the 1970s. The population approved the project and accepted the investment of 130-million euros to build the tram line through a referendum vote.

The parking provision

The parking provision includes a total of 270,000 parking spaces, 220,000 of which are located on private land and 50,000 on-streets.

Users are entitled to a residential parking permit costing 13 euros a month or 160 euros a year. Following the example of all such permits, it does not guarantee the user with a parking space.

Certain mobile professionals, such as market vendors can benefit from a day-long parking permit.

Since the end of the 1990s, the authorities have been trying to maintain a balance between the provision of on-street parking and off-street parking. Thus, in the town centre, one on-street parking space is done away with every time an off-street parking space is created (this constraint does not apply in surrounding areas). For over 20 years, the authorities have therefore developed an off-street parking provision that makes up for the suppression of on-street parking spaces.

Regarding street planning, the authorities have set up "30 km/h buffer zones" that boast many advantages. By way of an example, these zones no longer have pedestrian crossings seeing as streets can be crossed without danger at any point. Parking spaces are arranged at an angle in order to considerably reduce traffic.

Furthermore, certain on-street parking spaces have also been done away with in favour of bike parking spaces.

Over the years, the parking policy has shown itself to be conclusive as far as the town's objectives are concerned. Indeed, pursuant to all these initiatives, the use of cars has dropped considerably in favour of public transport and eco-friendly modes of transport.

Parking management (pricing and control)

There are two types of parking zones:

- blue zones, where parking is free and authorized during an hour and a half with a European parking disc (the time limit varies according to the zone);
- white zones, where parking is metered and prices change every half hour, as shown in the following table (prices are adjusted on average every three years).

On-street parking prices (white zone)

			€4.00	
		€3.20	+ €0.80	
	€1.20	+ €1.60	+ €1.60	
€0.40	+ €1.20	+ €1.20	+ €1.20	Price (euros)
€0.40	€0.40	€0.40	€0.40	
30 minutes	60 minutes	90 minutes	120 minutes	
		Times (minutes)		

Source: M. Kodransky & G. Hermann (2011).

Controls are ensured by municipal officers and the price of a fine ranges from 33 to 66 euros depending on the type of offence.

The following table is a summary of the comparative analysis of the parking policies of eight European towns.

Parking policies of European towns

	Amsterdam	Antwerp	Barcelona	Copenhagen	London	Munich	Stockholm	Zurich
Parking provision								
On-street metered parking + off-street metered parking	X	X	X	X	X	X	X	X
Residential parking permit	X	X		X	X	X	X	X
Park-and-ride facilities	X					X		
Car-sharing	X			X	X			X
Self-service bike sharing		X	X		X		X	
Regulations								
Public-private partnership		X					X	
Reinvestment of revenue in sustainable modes of transport	X	X	X					
New technologies								
Charging terminals for electric cars	X		X	X	X		X	
Real-time display boards indicating free spaces in off-street car parks			X			X		X
Phone payment	X	X		X	X		X	
Cutting edge technology	X	X					X	

Source: CGSP