CHANGING MOBILITY BEHAVIOUR

EUROPEAN CITIES AND SUSTAINABLE MOBILITY: CASE STUDIES

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French version binding.

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Sustainable Mobility

Published by the Foundation in 2018 under the title Sustainable mobility: an appeal to European decision-makers, our previous study showed the crucial importance of cities in the development of sustainable mobility on a continental scale, a key issue in the fight against global warming. Drawing on European and national policy, many urban hubs have been making a firm commitment to transport decarbonisation for two decades now. City-dwellers are aware of being exposed to the ill effects of pollution, and cities have a number of ways of limiting them, if not actually overcoming them. They can now give their citizens the improved quality of life that they are seeking for themselves and their children: reducing noise pollution and long- and medium-term health risks, improving movement flow and pedestrianising public spaces are all expectations of alternatives to “car-only”. New technology is working towards this, making it possible to combine several modes of transport in the most efficient way (known as intermodality), for example. The involvement of cities resulting from this recent realisation has turned some of them into veritable laboratories, capable of supporting the emergence of new mobility behaviour, the effects of which may spread to peri-urban areas and beyond.

With this situation confirmed, it was necessary to take a closer look at the actual policies applied by European cities and analyse, and even compare, the various strategies that they have developed to smooth the way towards sustainable mobility. Rather than list all of the private and public initiatives moving in this direction, we have decided to focus on eight major European cities, analysing the strategies that they have implemented. Although each individual city has its own geography and unique story when it comes to urban planning and transport, which shapes their movement towards sustainable mobility, some practices may seem more efficient than others and some lessons learned from experience have the potential to be transferred to other urban hubs. Ours is a qualitative study, addressing different transport strategies and looking for tools that are potentially universal: ones that might help all European cities to speed up their transition towards a sustainable model.

Representative of European diversity but comparable in size and more specifically their national importance, the eight cities in the study were chosen for their geographical position, density and spread and their role in the regional and national fabric to which they belong.

Once this baseline was established, each case study looked at the following measures:

- modal split (distribution of the different modes of transport);
- mode of governance of public transport companies;
- fleet of buses with non-combustion engines;
- number of bus routes with priority lanes;
- cost of monthly public transport pass;
- proportion of the population living less than five minutes from a stop;
- extent of the cycle route network.

We interviewed a number of local stakeholders to supplement these specific measures, which take account of both the accessibility of public transport and the potential for improving shared and soft mobility (mainly the bicycle). Those interviews enabled us to gauge current thinking and initiatives related to transport and also measure the level of political commitment of each city in the study in terms of moving towards sustainable mobility. This was also about not accepting preconceived ideas without even checking them: yes, to refer to one of selected cities, it is easy to see why, in the specific literature on this subject, Copenhagen has established itself as a pioneering force in terms of transport policy governance. But don’t other cities, particularly in Eastern Europe, deserve attention for the ambitious programmes they have launched, even though they might have addressed these issues too recently for them to actually be used as models?

It is appropriate to re-establish a distinction between the concepts of sustainable mobility and soft mobility that is too frequently omitted. Although the second naturally relates to the first, it would be misguided to deduce that a city should have to focus on soft mobility to the detriment of a wider consideration of individual mobility and motorised transport. In order to be sustainable in terms of not just pollution but also usage and efficiency, mobility cannot be dependent on environmental factors alone. Social and economic components, and therefore planning issues, remain crucial. For example, a revision of transport policy that simply focused on combating greenhouse gases might give way to the temptation to take the easy route by going for electric-only. This would ignore a central issue in terms of keeping traffic at liveable levels: this relates to dominant modes of transport but also the relationship between residential districts and centres of employment, and depends as much on the connections that a city has with its surrounding area as on its role in the fabric of the region and the country as a whole.

A study such as this could therefore not be restricted to promoting all-electric or all-bicycle: it had to put the emphasis on the specifics of the individual cities in terms of historic and geographical data for an improved analysis of what might go beyond the special features of each one, in order to come up with a broad outline of the aspects of good governance that could be applied across European cities in general. Current transport-related issues cannot disregard the way in which local and national policy has long favoured the emergence of individual mobility, most often reduced to the car, as was the case during the 30-year post-war boom in France.

It also has to be said that several of our selected cities have developed a Sustainable Urban Mobility Plan (SUMP), enabling them to obtain finance from the “Urban Mobility” section of the Directorate-General for Mobility and Transport of the European Commission. Any resulting planning needs to consider the functional urban area as a whole and involve “cooperation between different political domains, at different levels of government, with local residents and other principal stakeholders”. Actively promoting this tool, the Commission issues guidelines to provide local authorities with a framework for implementing their sustainability policy. It also encourages individual Member States to promote sustainable urban mobility plans at a national level and provide local authorities with support and the appropriate legislation.

Finally, it should be said that these case studies have mainly addressed urban mobility policy on the scale of a given metropolitan area, without focusing on their part in a national and international problem. Although it cannot therefore pretend to be exhaustive, our publication nevertheless provides a general picture of the main current trends in urban and peri-urban mobility: a freeze-frame that aims at least to be an aid to thinking that all key mobility players will find useful.

1 Depending on the availability and latest status of the figures.
2 In terms of how it might have influenced our study, we feel it important to point out that, overall, our interviewees in Eastern Europe were quicker to respond to our request than their Western European counterparts.
COPENHAGEN

Copenhagen is Denmark’s historic capital and largest city; located to the east of the island of Zealand, it faces Sweden, with which the city has been connected since the Øresund Bridge was opened in the year 2000: eight kilometres long, it provides access to Malmö from Copenhagen by road or train.

Despite its special geographical location, the Danish capital has very good national and international connections: in addition to its airport, the rail network links it to the rest of Europe via the Danish peninsula, while ferries departing from the port of Copenhagen provide access to Norway, Germany and Poland.

Often cited for its quality of life and ecological awareness, the City of Copenhagen is currently famous for its "bicycle" model: more than a sport, cycling has become a way of life.

FINGERPLANEN: AN INNOVATIVE CONCEPT FOR A CITY

Like most European cities, Copenhagen saw a steep rise in motor transport in the post-war years, with more and more households able to have their own car. Copenhagen’s urban landscape has been affected by the marked increase in individual mobility; investment by the city and surrounding towns has long been focused on this model.

Nevertheless, the city introduced a structured urban plan for increased sustainability as far back as 1947, aiming to improve the quality of life for the white and blue collar workers flooding into the city as a result of the post-war economic boom: with the concept already initiated during the inter-war period, the Fingerplanen was then presented as the best solution for escalating urbanisation due to the strong rural exodus towards the capital. From the very beginning, the concept looked to develop the city along five “fingers”, each one served by the private car model persisted into the 1970s. At the end of a decade marked by the first major oil crisis, Copenhagen was forced to develop and promote other modes of transport, including bicycles, which had long been a feature of the Danish capital. Owning and maintaining a car was becoming increasingly expensive for many residents, and the city put the focus on this easy and particularly economical mode of transport, taking advantage of the ideal geographical location, as the city is built on flat terrain.

The new paradigm also reflected a strong desire to make cities more “livable”, a policy for which the architect and planner Jahn Gehl became the major spokesperson. Turning its back on the functionalist thinking still in vogue in a number of European capitals, Copenhagen very soon sought to reduce the role of the car in the city, creating shared mobility areas. Streget, the city’s biggest shopping street, was pedestrianised in 1962. Parking spaces were also gradually removed from the city centre (at a rate of about 3% per year), and wide cycle lanes separated from car traffic were introduced to the streets.

The Danish capital did not start investing in its metro system until the new millennium. Two lines became operational in 2002 and 2007, with the third arriving in 2019; the latter is circular and serves the districts of Østerbro, Nørrebro and Frederiksberg in the shape of a ring, transsecting lines 1 and 2 in two places and giving quicker access to the city centre. A 4th metro line scheduled for 2024 will cross Copenhagen from the north (Orientkaj) to the south (Ny Ellebjerg).

The city also has a large number of bus routes; along with the metro and the S-Tog, the various districts have very good transport links. The main challenge lies in making these modes of transport sustainable, as buses still run mainly on petrol. On the other hand, accessibility could be improved, especially for people with reduced mobility.

COPENHAGEN, CITY OF THE BICYCLE

Copenhagen is often cited for its quality of life and innovations in the field of mobility. Yes, the city has often been mentioned because of the high rates of bicycle use by its residents, so much so that the bicycle has reached record proportions there – and there is also a "Copenhagenize Index of Bicycle-Friendly Cities" classifying cities according to their quality of life and bicycle-friendly services.

In any event, Copenhagen has an interesting urban transport policy. Although the ultimate objective is to achieve carbon neutrality by 2025, policies are focused less on a modal shift from the car to soft mobility than on offsetting private car use through the use of public transport and soft mobility (cycling and walking).

In actual fact, and like every major city, the issue of urban mobility is not restricted to the city itself: it is necessarily linked to the phenomenon of commuting caused by urban spread towards surrounding areas with few or no public transport links. Since the 1990s and the start of the new millennium, the metropolitan area of Copenhagen and numerous European cities have tended towards urban expansion and the densification of the built environment in surrounding municipalities, such as Frederiksberg for example. This led to a greater demand on transport, and most importantly a return to the use of private cars.

Still following the principles of the Fingerplanen, the Danish Environment Ministry recommended urban development close to existing railway stations; the main challenge lay in improving cooperation between the City of Copenhagen and the surrounding municipalities for the effective implementation of an urban plan satisfying both the need for densification and mobility requirements. It is important to note that the Fingerplanen was a vision without any binding laws: it was the political custom for the different parties to agree on the adopted line without recourse to legislation. Urban development in line with the plan was therefore more proof of political good will than the result of any legal requirement.

Conceived in 1947, the plan is now a little outdated, with orbital motorways being built between the fingers to absorb general and commuter traffic, for example. A tram line is also under construction along a similar orbital route.

In terms of Copenhagen itself, major investment has been made in improving conditions for cyclists, creating safer and “rapid” routes, for example. The municipality is therefore looking to increase the modal share of the bicycle.

CONCLUSIONS

Although Copenhagen has long had an interesting and diversified transport policy, the space given over to private vehicles is not to be underestimated: private cars still account for 32% of the modal split. Like other European cities, the Danish capital faces rising urbanisation, calling transport policy into question on a permanent basis. Nevertheless, the phenomenon was identified quite early on, and the authorities were able to come up with a swift response: although not legally binding, the Fingerplanen has allowed for relatively controlled urban development, putting the emphasis on the quality of life for residents.

The main challenge for the city lies in improved collaboration between the political and administrative authorities of the various municipalities making up Copenhagen’s urban centre.

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5 CREATE Project (Congestion Reduction in Europe, Advancing Transport Efficiency), Comparative analysis of transport policy processes, Copenhagen and its region. http://www.create-mobility.eu

6 Scheduled to open in July 2018, this finally happened in September 2019.

7 Copenhagenize Index, https://copenhagenizeindex.eu
LAUSANNE

Located on the northern shore of Lake Geneva, Lausanne is the capital and largest city in the Canton of Vaud in Switzerland. The fourth biggest city after Zurich, Geneva and Basel, it had a population of only 140,000 people in 2019, but the greater urban area has almost three times that number (415,000 in 2019). The city is also a significant point of interchange between several Swiss cantons, benefitting from the economic dynamism of a region located on the borders of Lake Geneva (called arc lémanique) on the border with France and Italy.

By virtue of their geographical location, the Lake Geneva region and the City of Lausanne have witnessed a large rise in population in recent decades, forcing the city’s political bodies to rethink traffic flow. Its proximity to Geneva also means that Lausanne has now seen a significant increase in commuter traffic coming from the Canton of Vaud to the Canton of Geneva or vice versa.

Lausanne does not have its own international transport network but it is still appropriate to look at increased traffic flow within the Lake Geneva region. The city is actually involved in the Léman 2030 project, which is aiming to make considerable improvements to regional rail transport services. It is also involved in “Métropole lémanique”, the name adopted by the region following an agreement between the cantons of Geneva and Vaud in 2011.

Finally, it is important to remember that the City of Lausanne and its peri-urban area are located on the Simplon line connecting Switzerland and Italy; the opening of the tunnel at the beginning of the 20th century brought strong economic development to the entire Geneva region, especially the capital itself. Opened in the 1960s, the Grand-Saint-Bernard Tunnel further increased transport capacity between Switzerland and Italy, putting the region at the heart of trade channels within Europe.

AN IMPORTANT CAR TROPISM

Like most cities in Western Europe, Lausanne saw a marked increase in the use of motor vehicles in the immediate post-war years. Urban landscapes changed dramatically to accommodate the new type of individual mobility, especially at the end of the 1950s and the beginning of the next decade.

The city hosted “Expo 64” in 1964, a national Swiss exhibition that saw itself as a reflection of Swiss society at that point in history. The event had a nationwide effect, leading to a total rethink on urban planning, the structure of different districts and local mobility. Subject to the socio-economic context of the time, work focused on modernising urban and suburban traffic systems to make things easier for car drivers, whether they were residents or visitors: construction of the A1 motorway between Geneva and Lausanne, renovation of roads and bridges (Chauderon Tunnel, avenue de Provence, expansion of the east-west route via Saint-François), construction of new urban complexes (Bourdonnette district), and replacement of the tram by trolleybuses, which seemed more suited to roads dominated by cars at the time.

The City of Lausanne did indeed feel the long-term effects of these changes, but the city and its urban layout were also influenced by the local topography, sloping along the edge of Lake Geneva. Urban and peri-urban transportation routes are rather narrow, winding along the shores. There are not many wide transportation routes (motorways bypass the urban areas and major cantonal roads), and the classification of this wine-growing region – Lavaux – as a UNESCO World Heritage Site means that its historic character needs to be protected.

In terms of urban mobility, the city has therefore long focused on motor transport (cars and buses) and the metro. The M2 line (Ouchy-Croisettes) was opened in 2002, making Lausanne the first Swiss
city with a truly underground metro system. Now known as the M1 line of the Lausanne metro, an initial line was introduced back in 1990 to connect the City of Lausanne with its university campuses (the University of Lausanne and the Swiss Federal Institute of Technology) located in the municipalities of Chavannes-près-Renens and Ecublens, but the line was rather hastily constructed to carry students, and was actually a mix of metro and tram: as it isn’t exclusively for the metro, the line is traversed by the cantonal road at several points. Furthermore, on certain stretches, the line has only a single rail for both directions, greatly reducing room for manoeuvre in terms of speed. Given that student numbers are increasing year on year, the line represents a major challenge for the years to come.

Map 1 shows how the major public transport routes in Lausanne are laid out around the city centre and the edges of the Lake. Municipalities located to the north of the urban centre do not have such good access.

### METRO AND CARS FIRST

The Lausanne urban centre accounts for over half of the population and employment in the Canton of Vaud. The city’s dynamic social and economic attraction is all the more powerful because it has acquired a strong draw due to its proximity to the City of Geneva and relatively good access from French border areas. The HQs of a number of major international companies and sports federations have also located there, on the shores of Lake Geneva (Nespresso, Philip Morris International, Olympic Committee).

Looking at the city’s history in terms of mobility, it seems that it has looked to improve its tourist appeal and quality of life, turning the city centre into a pedestrian zone for a pleasant stroll between the medieval buildings in the historic centre. Wide pedestrian areas have also been introduced on the shores of Lake Geneva.

But the City of Lausanne has seen a marked increase in population and property prices since the year 2000. The latter is forcing more and more households to leave the city for the suburbs and ever further out within the canton in search of more accessible rents. The Lausanne urban centre has therefore seen a rise in commuter numbers from within and outside the canton and the border areas (mainly France): 2011 saw 49,000 incoming commuters.

This increase in numbers and the ensuing consequences are most evident on the A1 motorway, which is extremely congested at peak times. Many different factors contribute to the saturation of this route between Geneva and Lausanne, the two largest cities in the region of Lake Geneva: it also takes you from Geneva right across French-speaking Switzerland to German-speaking Switzerland, and along the lake towards the Canton of Valais. Given that there is no proper ring road, the A1 also offers a bypass around the City of Lausanne, providing a link to the peri-urban municipalities of the area between Geneva and Lausanne: there are no fewer than thirteen exits, several accessing major tourist, industrial and residential areas.

The same observation can be made concerning the ‘Route cantonale’ (main road), which follows more or less the same alignment, which means that there are two main traffic tracks within the area used as radial roads for the Lausanne urban centre itself and also carrying local traffic.

Increased population and commuter numbers have inevitably triggered a change in mobility habits. The city responded by launching “PALM” – the Plan d’Aménagement Lausanne-Morges in 2010 - structured around a number of annual and biannual plans designed to improve the use of space and mobility in the urban centre of Lausanne. A canton-led initiative, the plan follows directives published by the Swiss Federal Office for Spatial Development: criteria are set, and the relevant urban projects within the canton receive finance from the Confederation.

Some of this new development will definitely absorb a proportion of the traffic, but there is the question of the long-term vision. Lausanne faces the same issue as other major urban centres: various development projects should offer a swift response to existing urban spread, but improving transport links to the east and west raises the risk of accentuating the already significant phenomenon of gentrification, which could push the urban spread even further, causing the same problem again over the long term. The decision to respond to increased traffic with new roads for absorbing it has therefore rarely proved its worth; it usually results in increased traffic flows.

On the other hand, based along the lines of the Federal Law on Spatial Planning (LAT), one of the aims of which is to prevent urban sprawl by reducing the number of construction zones, the 2016 version of PALM defines a number of urban centres, including Lausanne, around which it would be essential to carry out development or redevelopment work. In theory, it would seem reasonable to plan for a densification of housing and activity zones around existing adaptable transport arteries (i.e. widening the cantonal road and improving public transport links to the east and west). This avoids building in inaccessible areas and the associated increase in private commuter journeys. At the same time, by increasing the attraction of areas around existing transport arteries, the area’s population and job opportunities increase, and the result is a reduction in the number of commuters joining the already congested road network.

### Development: criteria are set, and the relevant urban projects within the canton receive finance from the Confederation.

- construction of a Lausanne-Renens tram line (M3 metro line);
- improvement of transport links in the north of the city;
- widening of the cantonal road;
- improvement of public transport to Pully and Lausanne;
- construction of a new orbital motorway at Morges and a new station.

Several construction projects are scheduled and will have consequences for the City of Lausanne:

- construction of a Lausanne-Renens tram line (M3 metro line);
- improvement of transport links in the north of the city;
- widening of the cantonal road;
- improvement of public transport to Pully and Lausanne;
- construction of a new orbital motorway at Morges and a new station.

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11 According to official statistics for the Canton of Vaud, rural municipalities saw their population increase by 1.4% per year between 2000 and 2016 – when it had been stagnating since the 1970s. See “Statistics for Swiss cities in 2017: focus on urban mobility”, press release from 10 April 2017. View online: https://www.bfs.admin.ch/bfs/fr/home/statistiques/catalogues-bandes-donnees/communes/transports/2016/transports/2016_benutzerfreundlich.html

12 Paris has the same issues with the development of the Grand Paris Express, for example: Although access to metro lines is improved in the municipalities within the outer suburbs, there is a serious danger of a rise in land prices, sending poor households further out to the outskirts. We can therefore probably expect to see the issue of accessibility to public transport networks arise in twenty to thirty years or so.
that are already highly urbanised, by offering more housing options for example, there is the danger of this increase in residents leading to a probable increase in those same commuter journeys. Put simply, there is risk that the current situation will be repeated over the long term, with new infrastructures failing to absorb the traffic that they have generated.

In the case of Lausanne, it would seem advantageous to combine the need for more homogeneous urbanisation with the development of transport arteries towards areas with as yet little or unsuitable provision, especially in the north of the urban centre, with the aim of increasing their attraction and freeing up the arteries traversing the city from east to west.

Cycling and the promotion of soft mobility are also among the measures encouraged by PALM. Nevertheless, the bicycle has a very small share of the modal split in Lausanne (1% according to the OFS). According to surveys conducted in a selection of 34 cities in French- and German-speaking Switzerland by the Swiss association ProVélo, Lausanne was rated second to last in 2017. Given the city’s topography and narrow transport arteries, this result is not surprising; many major routes are on a gradient, and cycle tracks are often beside the road, not providing much safety for cyclists. It is therefore regretful that you have to pay a supplement to take a bicycle on public transport: a free service might have been an interesting solution for encouraging residents and commuters to use their bicycles on arriving in the city-centre.

CONCLUSIONS

Lausanne has clearly focused on developing public transport, especially its metro system, to respond to the need for a modal shift from the car to more sustainable mobility. This is the most interesting solution in our view, given the city’s topology and role in the wider urban area of the Geneva metropolis.

But it is still important to give careful consideration to the consequences that the Federal Law on Spatial Planning (LAT) will have at Federal level, and its results when applied in cantons and municipalities in the form of the PALM and Cantonal Master Plans: a densification of construction zones might well be a response to uncontrolled urban spread, but without complementary initiatives, this policy could lead to the phenomenon of gentrification, and therefore an increase in costs that is in turn likely to cause further urban spread towards outlying municipalities with less provision for public transport. It is important to consider commuter traffic flows in order to respond to them with planning measures and the creation of new mobility solutions.

In the words of Pierre de Meuron at the Swiss Mobility Conference, this type of system is otherwise in danger of generating the "linear development of existing systems".

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13 The survey was carried out on a selection of users with online questionnaires and telephone interviews. The full study is available online: https://www.villes-cyclables.ch/fileadmin/redaktion/velostraede/2017-18/downloads/2018_rapportfinal_villescyclables_f.pdf
14 City of Lausanne, map of cycle routes
15 National Mobility Conference 2019. View online:
https://www.are.admin.ch/are/fr/home/transports-et-infrastructure/strategie-et-planification/mobilite.html
Located on the north bank of the river Tagus in the south west of the country, Lisbon is the sea-port and economic capital city of Portugal. It is the European city with the highest risk of seismic activity but still has the highest population in the country with 545,000 inhabitants. Along with eighteen other municipalities, its metropolitan area is home to 2.8 million residents in an area measuring 3,015 km², representing 26.7% of the population of Portugal at a density of 957 residents per km².

It sees 400,000 visitors a day, which represents an increase of 40.9% in the city above the level of the national population 16. Due to the demographic profile, relatively few people in the old centre have a car, with some districts having a population mainly aged over 65. However, 30% of the country’s jobs are located in Lisbon 17.

16 Joana Taborda (2019)

### EFFICIENT PUBLIC TRANSPORT

The first trams were introduced in 1901. The network rapidly became fully electrified over subsequent years. New lines were built, including lines 1 and 15, the first running north west from the centre and the second running west 18.

Public transport services continued to expand and a public bus service was introduced in the 1940s. But the number of trams and operating routes decreased in subsequent decades due to an increase in private motor cars and the reduced economic and social viability of the tram network.

The bus fleet was updated during that same period to meet growing demand and specific route requirements, and the metro was opened in 1959, reducing surface traffic congestion. At the end of the 1950s and 1960s, when the tram network was still only minimal, new technology facilitated an improvement in the speed of public transport and an increase in passenger capacity, comfort and safety (bus routes with special signals introduced) 20. Nevertheless, forty-five traditional trams were renovated in the 1990s and fitted with modern technology.

The company updated its bus fleet again between 2004 and 2006, acquiring better models in terms of safety and comfort (adding air conditioning, for example) and maintenance costs. Less polluting, the new vehicles brought the city in line with European Union emissions directives.

The Lisbon bus company launched the “One Less Car” initiative in 2008, promoting the use of public transport and the reduction of private car use. Like a number of other European cities, this was not enough to prevent the number of passengers on public transport decreasing in recent decades 20.

During the period of 2008-2009, the City of Lisbon invested in a number of projects designed to encourage cycling and walking: extra parking spaces, improved accessibility in certain parts of the city and improved safety measures for cycle tracks and lanes. Despite this, the city is still not ideal for cycling, partly due to its sloping topography (Lisbon is actually nicknamed the “city of seven hills”) and partly due to the presence of tram tracks and cobbled streets everywhere, not forgetting the rather unevolved behaviour of car drivers in this respect. The resulting lack of safety means that many parts of the city are not very accessible to bicycles, mainly west and north of the historic centre 21.

18 Carris s.d.; Joana Taborda (2019)

### FAVOURING INTERMODALITY

Lisbon has seen a surge in illegal car parks 22 and traffic disputes since 2011. The city is still congested due to a heavy reliance on private cars, despite the low percentage of car owners and the narrowness of many of the routes running through the hilly terrain. Lisbon is developing a new mobility pattern to reverse an approach historically focused on a desire to meet increasing traffic demands, which is based on promoting policies in favour of pedestrians, bicycles and public transport, while also looking into new modes of mobility 23.

Local development plans such as the “Lisbon Green Plan” and the “Lisbon Master Plan” have been introduced to define new transport alternatives encouraging sustainable mobility – vital for reducing traffic and its negative impact on the environment. The most recent plan, the “Lisbon Strategic Charter 2010-2024” launched in 2009, supports intermodality between bicycles and public transport and also considers the city from the viewpoint of pedestrians. Based on local policy, the new plans are being implemented in consultation with the local population 24.

19 Martínez and Viegas (2017); Nádia Andreia Mendonça Pedrosa (2015)
20 Nádia Andreia Mendonça Pedrosa (2015)
21 Félix and Batista de Silva (2013)
23 EUROPEAN Green Capital 2018
24 loc. Cit.

A number of initiatives have therefore been introduced: in addition to creating four restricted car zones in the city’s historic centre, a Low Emission Zone has been developed covering 30% of the Lisbon area. Improved car park management and restricted numbers of parking spaces have been combined with a park&bike scheme to encourage parking at entrance points to the city and the use of public transport and bicycles to access the urban centre with an integrated ticket system.

At the turn of the millennium, the bus company ran a number of modernisation programmes with the same aim of accessibility and intermodality. This included the installation of electronic displays showing waiting times at bus stops and metro stations, where users can also view the various available connections 25.

25 loc. Cit.
Finally, when the management of the bus company passed into the hands of the municipality in 2017, a strategic network development plan was drawn up. It includes EUR 60 million in investment, 250 new buses (mainly powered by natural gas and electricity), 21 new routes through residential areas, free Wi-Fi and a new mobile app providing real-time information (IZI Carris, Metro LX, Move-Me and Sapu Transportes). Nevertheless, most residents are unaware of their existence and information is hard to find, especially as there is a separate app for each type of transport. The system therefore needs improvement: it is vital to centralise all the information on a single app if the aim is to encourage intermodality across different modes of public transport. The population also needs to be more widely informed, and clear and accurate information must be provided to facilitate easier take-up.

There are now only six tram routes covering a distance of 48 km across the city, even though trams are still the best form of transport in the old city, where the tram cars have the right gauge for navigating the narrow streets. This is because Lisbon trams have become a tourist attraction over the decades, a symbol of the city’s past rather than an efficient daily transport solution. This success means that an enormous number of tourists use the trams, discouraging residents from using them, especially routes 15 and 28, where pickpocketing is common and journey times are relatively long. But there are signs of a recent political determination to invest in re-opening the old routes, as happened last year with route 24 from the banks of the Tagus to Campolide further north.

A bike-share scheme was launched in September 2017, with 140 stations offering 1,410 bicycles (two-thirds electric, given the city’s topology). 60 km of new tracks are planned or under construction to add to the present 90 km network currently undergoing renovation. Finally, public transport users can take their bicycle with them for free on most public transport (metro, bus, train and boat). The city is therefore improving intermodality, making it easier to switch between modes of transport.

By the same token, new bicycle- and pedestrian-only bridges will remove certain physical barriers (railway lines and major roads etc.). A number of 30 km/hr and other shared zones have been created in recent years to make soft mobility safer. However, there is no provision for bicycles at some train stations: escalators and lifts are not easily accessible on a bicycle, and sometimes not accessible at all.

CONCLUSIONS

Lisbon has a clear vision of how its urban mobility will develop. This is a consistent factor when redesigning public spaces and prioritising shared transport and soft mobility. The stated objective is to offer users guaranteed access to a mode of transport that is close by, efficient and comfortable all at once.

Previous measures are still in place for achieving this objective, such as restrictions for cars in some districts, lower speed limits and rationalising car parks. The city is also going to promote multifunctional diversity and optimise intermodality within districts. This will reduce the number and length of daily journeys, whether it’s for travelling to work or school or accessing the various services and shops. Some of these measures are detailed in the SUMP - Sustainable Urban Mobility Plan - for Lisbon.

Managing intermodality is crucial and requires regular updating. There are a number of issues attached to this objective, such as improving safety and providing seating at stations and bus stops, making sure they are comfortable in bad weather and increasing the number of screens showing timetable information and details of connections between modes of transport, either at stops or inside vehicles. Finally, bicycle access needs to be improved at various stations and depots, starting with Entrecampos.

Urban densification also remains a challenge that cannot be met without prioritising soft mobility: it is all the more important to separate different types of traffic to avoid conflict between road users and provide an attractive continuous cycle network.

Thinking along the same lines, Lisbon can also increase the size and number of pedestrian zones and the extent of the exclusion zone for the most polluting vehicles with the aim of reducing the speed and volume of vehicle traffic close to major cycle tracks and lanes. Achieving this means promoting the use of park-and-ride facilities and adding further restrictions to the number of city-centre parking spaces, even raising prices.

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LJUBLJANA

Ljubljana is the political, economic, cultural and student capital of Slovenia, now independent from the former Yugoslavia. This makes it the country’s most attractive and dynamic city by far. With some 280,000 residents, over 130,000 people commute there every day\textsuperscript{31}. The road systems around the city are even more congested because major volumes of international freight traffic add to the flow of commuters: the city is located at the intersection of various European Union corridors leading to the Mediterranean, Baltic and Adriatic seas.

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SUBURBAN DEVELOPMENT

Ljubljana has long relied on private transport. The number of private vehicles passing through the city was as high as 97,000 back in 1994 and has since risen to 130,000. Public transport was all the more under-used because it remained under-developed until recently. Added to the resulting high levels of pollution, traffic congestion hardly makes for a good quality of life\textsuperscript{32}.

Combined with the heavy industrialisation of the city after the Second World War, the resulting sense of a mediocre quality of life has contributed to a negative trend in the urban population. The middle classes and high mobility capital (mainly young educated families) have migrated to the surrounding areas, looking to improve their daily lives – leading to the phenomenon of suburbanisation\textsuperscript{33}. In turn increasing commuter journeys between different regions to the detriment of soft mobility and keeping a lid on the cost to the environment. The city’s major growth has also caused the municipality of Ljubljana to gradually swallow up neighbouring villages, increasing urban sprawl. Although urban plans are in place for controlling growth and restricting uncontrolled construction, redevelopment work in the city centre is still rare and expensive\textsuperscript{34}.

Some of the old districts in the city centre became deserted back in the 1960s and 1970s\textsuperscript{35}. This intense process of peri-urban development continued into the early 1980s, with insufficient or little anticipation of the local needs triggered by the inflow of people: most of the new districts have a greater spread because the buildings are lower than in the city, and they lack the appropriate infrastructure.

From the beginning of the 1980s, the emphasis was on building single-family homes as close to the city centre as possible, making for better use of existing public transport. But the simultaneous fall in the cost of private transport (fuel and vehicle costs) meant that private cars became a way of life for commuters.

The migration of young people and educated families from Ljubljana to neighbouring municipalities picked up again in the period 1998-2002; the trend was for these families to work in Ljubljana and send their children to school there, turning residential areas into dormitory districts. The spread of construction made it hard to organise urban public transport systems, since the city acquired another 10,000 daily commuters in the last ten years, even though their homes are located in areas that are difficult to reach by any form of transport other than the private car.

During the post-socialist restructuring, the centre of Ljubljana saw strong development in the economic sectors (offices, shops, tourist infrastructure), encouraged as much by the private sector as by the city government. This accentuated the decline of the residential sector, leading to the gentrification of some districts and a conflict of interest between commercial development and heritage preservation on one hand and traffic congestion and car park issues on the other.

A “Concept for the Spatial Development for the City of Ljubljana 2020” was implemented at the end of the first decade of the new millennium. It makes urban design policy and current legislation part of a sustainable development plan aimed at meeting social, political, cultural and environmental needs. Its purpose is to densify the centre as far as possible, complementing efficient transport infrastructures and improving cooperation with neighbouring municipalities.

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DEVELOPING SOFT MOBILITY

The capital has an extensive transport network. The bus service is convenient and relatively cheap, but has long remained unattractive because of

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Map 1: Ljubljana urban area where there is less access to public transport (Bjørnstad et al. 2019)

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\textsuperscript{31} CIVITAS (2013b)
\textsuperscript{32} SEEEMS (2010)
\textsuperscript{33} Aleksander Jakob (2006)
\textsuperscript{34} loc. cit.: Dimitrovska-Andrews (2006)
\textsuperscript{35} Aleksander Jakob (2006)
urban congestion due to a lack of special bus lanes and priority access at intersections. But the situation has improved in recent years as a result of the efforts made and initiatives introduced. Public transport is becoming more comfortable, faster and more regular.18

For a number of years now, mobility has been a key objective for the city, which was slow to respond to negative trends in this area and where housing is concerned.17 The following needs to be taken into account:

- the growing number of private motor vehicles in the city;
- the increase in daily journeys into the city for work, shopping and leisure;
- the decrease in urban, suburban and trans-regional public passenger transport;
- the growing volume of cross-border freight traffic, and to a lesser degree seasonal tourist traffic passing through and around the city.

Until recently, there were no political initiatives aimed at keeping affordable housing in the city for a major percentage of the active population – those who are comfortably off but still vulnerable (young families in particular). Nor was there an urban and spatial development policy aimed at concentrating new retail and residential buildings in low-density city-centre areas, which would have reduced urban sprawl.

A number of mobility measures could have been introduced long ago, such as reducing the speed limit in a number of city areas, modernising public transport and prioritising special lanes for it, providing the infrastructure for soft mobility and opening park-and-ride facilities on the outskirts to encourage intermodal transport into the city.18

The Slovenia Centre for Statistics issued its first Regional Development Programme in 2007. Among other objectives, it allows for an average of 80% of the urban population of Ljubljana to live less than 15 minutes’ walk from public transport19 (in the city centre, 93% of the population already live less than 500 metres from a bus stop20). Similar plans are under development for the greater urban area of Ljubljana. As shown in figure 1, the accessibility objective has been achieved in the centre and along major corridors where the busy public transport routes are located. These same routes are generally connected to the main stations, with departures in all four directions along the major European corridors (TEN).

With regard to mobility, no serious progress was made until after 2010, mainly due to the ELAN project led by CIVITAS and the MOBILIS project. As part of this project, the city replaced the traffic light system in 2013, adopting a statistical model to optimise bus service performance. Some city intersections now give priority to public transport. This system reduces lost time, making the public transport service more efficient and attractive for passengers.21

Further green mobility projects and developments are the result of strong political will and the increasing involvement of residents.22 This notably includes two new park-and-ride facilities in 2015, the expansion of the bike-share network in 2015, the acquisition of “clean” electric vehicles for the public transport fleet and the development of the “Kavalir” service in the pedestrian zone, offering free vehicles for residents - and tourists - with reduced mobility.

The advent of digital systems and continued rapid take-up has also changed behaviour: there are now online portals, apps and an online map, making it easier to combine different types of public transport (buses, trains and shared bicycles); Geopedia, GISPortal, A to B: LJ and Urbana. And one major introduction is the “Urbana” single ticket for use across different modes of transport (including shared bicycles). The 2020 objective is therefore well underway, which should see a shift from the old uni-modal distribution profile where the private car was widely dominant (67% modal share for the private car as against 20% for soft mobility and 13% for public transport) to a new distribution profile where walking, cycling and public transport will take over (around one-third for each type).23

All of these different projects have led to an expansion of the pedestrian area in the city centre (100,000 m²), which is closed to all motor vehicles, and a significant increase in the take-up of the Bicike (LJ) bike-share scheme. The city is now rated 8 on the Copenhagenize Bicycle Friendly Cities Index 2017. Ljubljana has introduced a development plan based on soft mobility, mainly the bicycle, and more environmentally friendly public transport.

CONCLUSIONS

What Slovenia’s capital still lacks is any coordination between mobility and planning policy. This problem goes back a long way. The city needs to reduce the number of commuters coming into the city centre every day, for example by increasing the development of multi-functional districts to make for more short journeys. Ideally, these districts need to stay within the city’s urban perimeter, the aim being to restrict urban spread, which would in turn result in additional traffic at peak commuter times.

In order to increase intermodality, a vital factor for the shift from private cars to public transport and soft mobility, would be to greatly increase the number of direct connections between the various modes of public transport: between stations and bus stops, these stops and bike-share stations etc.

It is equally important to improve soft mobility accessibility, safety and convenience when it comes to soft mobility. This means reducing physical barriers to pedestrian movement and promoting the use of bicycles for daily journeys. It would be a good idea to provide special lanes for each type of traffic to avoid conflict between different road users, and this would also make it possible to provide a safe, convenient and attractive continuous cycle

Map 2: public transport network in Ljubljana

15 Regional Development Agency of the Ljubljana Urban Region (2010)
16 SEEMMS (2010)
17 Regional Development Agency of the Ljubljana Urban Region (2010)
18 LPP (2013)
19 CIVITAS (2013c)
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21 Dejan Crnec (2017)
Continuing in the same vein, Ljubljana can continue to increase the number of pedestrian zones and reduce motor traffic speeds, especially close to major cycle lanes. Reducing city-centre parking spaces and upping the cost would also help to encourage greater use of park-and-ride facilities, improving pedestrian flow.

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### MILAN

Milan is the regional capital of Lombardy and Italy's second largest city after Rome in terms of population. Some 1.3 million people live there, with around 3.2 million in the high-density metropolitan area.

Milan is the country's main economic hub; its highly diversified economic infrastructure ranging from industry to tourism makes it extremely dynamic and innovative and, according to Eurocities, it has given itself the reputation of an international capital of fashion, food and quality of life.

With around one million people using the city every day and 5.6 million tourists a year, the percentage of privately owned cars has gone down in recent years.

**HISTORIC TRAMS**

Although there have been trams in Milan since 1841, the company managing the network wasn’t established until 1931. The network expanded from then on, incorporating the surrounding villages, whilst the bus service also saw sensitive development, including routes to the outskirts. The demand for mobility increased rapidly, especially during the post-war economic boom, until the first metro line was opened in 1964, followed by a second line five years later. Tram line 15 was opened at the same time, and soon proved to be the most popular due to the new “Jumbotrams” able to carry over 250 passengers from the centre of Milan to the southern outskirts (Rozzan). The same rolling stock has since been added to other city-centre lines. (ATM s.d.). A third metro line was completed in 1990.

In 2002, Milan was one of the very first European cities to develop a self-service car system – managed by Legambiente. The public transport management company made a commitment to sustainable mobility around the same time: a certification procedure for approving high-quality environmentally friendly systems was introduced, aimed at both improving passenger safety and comfort and optimising fuel consumption.

A considerable number of buses were upgraded between 2009 and 2011 in pursuit of minimal environmental impact (particulate filters and electric buses). Tram and metro networks saw investment of EUR 350 million, plus an additional EUR 300 million for the purchase of 40 new metro carriages with regenerative braking. 75% of public transport overall is now powered by electricity.

**MOTOR TRAFFIC RESTRICTED**

Milan has seen a true urban mobility revolution since 2010. The city saw the pressing need to curb atmospheric pollution and reduce congestion on major transport arteries – largely due to commuters: over two million daily changeovers between the city and metropolitan area add to the three million journeys within the city itself. New measures have begun to restrict car traffic and promote sustainable mobility: walking, cycling, public transport and “clean” cars.

Initial testing for creating a restricted paid parking zone called “ECOPASS” was introduced in 2008 and 2009. The results of a referendum were positive, and a 8.2 km² zone restricting week-day traffic in the city centre was introduced under the name of “Area C” (see map). This decision definitely led to improved quality of life for people living and working in and visiting this part of the city: pollutant vehicle traffic in Area C went down by 29.2%, road accidents by 26% and parking space use by 10%. A further positive outcome of the policy was a notable increase in the average speed of public transport at peak times.
However, the number of daily car journeys across the city was still as high as 3,678,000 in 2014. Milan decided to repeat the experience in 2019, creating a new restricted traffic zone called “Area B”. This covers 75% of the city. The most polluting vehicles have gradually been banned (classification restrictions will increase year on year) as have dangerous goods vehicles exceeding 12 meters.

After becoming official in 2008, the announcement that EXPO 2015 would be held in Milan also played a major part in the restructuring of transport provision in the city. A lot of investment was made in expanding the public transport system and upgrading vehicles, with the municipality of Milan looking to solve three major problems that it foresaw during the exhibition:

- increased atmospheric and noise pollution exceeding EU thresholds;
- traffic congestion on city access routes;
- cars parked in public spaces.

Allowing for these issues, the city began developing a three-year SUMP: Sustainable Urban Mobility Plan) in 2013. Addressing the city’s economy, social structure and general atmosphere, the plan covered the issues of sustainable mobility, equality (safety and social inclusion), environmental quality and finally innovation and economic efficiency.

With regard to mobility, the main aim was to curb traffic by restricting polluting vehicles, at the same time providing safety and comfort for new supporters of soft mobility: reducing dependency on private cars also allowed for re-allocating spaces in favour of active mobility and focusing on accessibility - both physical (reducing barriers etc.) and economic. Walking didn’t actually seem to be a very popular option for moving around, but there is little recent data for estimating the modal share of pedestrian mobility within the city.

Milan devised a number of strategies under SUMP. The public transport scheme was taken to a metropolitan level to reduce congestion and improve safety: regional train, tram and metro services extended, bus routes improved to make them faster and more attractive, including financially.

The quality of urban mobility and public transport is now seen as an essential factor; the development of public spaces has become a priority, especially with the creation of 30 km/h zones where it is safer for bicycles and pedestrians, as they now have increased priority over motor vehicles.

Again, to coincide with EXPO 2015, the city opened 80 new self-service bike stations (which were then relocated to match demand more effectively), adding 3,500 bicycles to the fleet including 1,000 electric bikes for the 36,000 annual scheme members. This puts Milan in the top five cities with the best self-service bike schemes in Europe. However, despite the introduction of special traffic signals prioritising cyclists at some intersections, there is still a clear lack of safety when cycling in Milan.

The municipality of Milan also began upgrading its self-service car scheme back in 2013, with a unique faster booking interface and annual membership fee of EUR 1,100 including parking costs. Around 650 self-service electric cars were made available by SHARE’NGO in 2015. This resulted in the city introducing a robust network of recharging points for electric vehicles. Finally, back in 2015, Milan was reported to be the first European city to issue a tender for providing self-service scooters.

Map 1: Map and layout of restricted zones C and B (Source: urbanaccessregulations.eu, 2019)

Map 2: local cycle route in Milan, OSM data
Since 2016, these improvements to services have been supplemented by specific initiatives focusing on the development, reorganisation and promotion of intermodality: since 2016, the city and ATM have been developing a number of mobile apps providing real-time information for both vacant parking spaces and shared bicycles, offering the best intermodal journey for the user’s available time and budget. Apart from giving access to sustainable mobility, these apps also provide lots of useful data to feed into official statistics and improve the service.

Finally, a new metro line (M4) is currently under construction. Scheduled for 2023, it will ultimately link the western district of Lorenteggio to Linate Airport to the east of the city, passing through the city centre but not the historic part. The new line will be connected to the M1, M2 and M3 lines. Three stops from the airport will be operational as early 2021, with the line reaching the city centre in 2022.

The city decided to join London, Bourgas, Bordeaux, Warsaw and Lisbon for the **Smart District Project: Sharing Cities** which aims to associate cities and a number of companies operating there beyond national borders, sharing digital solutions for improving mobility in ‘smart cities’, also referred to as “intelligent cities”. Milan also aims to promote a new kind of collaboration between the public administration, private companies, civil social organisations and the local population, as these different entities are not only seen as stakeholders in decision-making but also as potential solution-providers.

### CONCLUSIONS

The City of Milan has long had to deal with being a powerful attraction. It is one of western Europe’s great cities, generating over five million daily journeys in its metropolitan area, not to mention the many tourists. Managing flow and restricting traffic congestion is a constant challenge. Milan has managed to reduce car traffic over the years by improving public transport: the city has improved services in terms of both quantity (bus routes and metro lines and self-service vehicles) and quality (hybrid/electric buses, trolleybuses, European standards).

Despite a robust bike-share network, cycle networks and the promotion of cycling are not very evolved. This also applies to walking, as the city has not prioritised the creation of pedestrian zones. The overall safety of so-called “weak” users has proved to be a major issue: conflicting road use needs to be reduced, as soft mobility has low priority, whether at intersections (traffic signals for cyclists) or with reduced speed zones. It would be advantageous to expand the options for linking bicycles and public transport to support intermodality.

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The capital of the Czech Republic, Prague is the economic and cultural centre of a country that is itself located at the heart of Europe: with a population of 1,300,000, the city is equidistant between the Baltic and Adriatic Seas and the Atlantic Ocean and the Black Sea. A number of historic continental trading routes converge there. Famous for its great architectural beauty, the “city of a thousand spires” owes its nickname to the Baroque-style buildings that attract droves of visitors there every year. It is just as rich in terms of employment, contributing to the heavy traffic congestion, with a large number of workers living in the areas around the city, which are also home to industrial zones. The increase in population means that drastic measures need to be taken to curb the daily influx of private cars and HGVs on the capital’s motorways.

HISTORIC TRAM NETWORK

The first horse-drawn trams appeared in Prague at the end of the 19th century. The network expanded rapidly, with the introduction of electric lines, even before the municipality assumed the task of managing them in 1907. Without being in competition, bus and trolley bus lines completed the public transport network, making it one of the most remarkable in Europe by the beginning of the 20th century.

The enormous increase in private cars did nothing to halt the expansion of the city’s railway system, but the co-existence of all of these systems in the streets of Prague had become increasingly problematic by the beginning of the 1950s. A metro project was initiated in 1898, but nothing came of it and it wasn’t until 1974 that the first line was opened with the help of the USSR. It was expanded back in the 1980s and the turn of the millennium.

As part of the Eastern Block, Prague followed the example of Germany in continuing to operate its tram lines, unlike most of the cities in France, which abandoned this mode of transport, only to reintroduce it decades later on the back of huge investment. Dopravní podnik hlavního města Prahy a.s., Prague’s public transport company, remained under public ownership even after the breakup of the Soviet Union and the creation of the Czech Republic. The municipality is therefore still in control, despite the arrival of a number of private companies within the sector. The acquisition of new vehicles over the last few decades has improved the quality of a service that had long been reliant on outdated Soviet-made equipment. Now supplied exclusively by the Czech manufacturer Škoda Transportation S.A, 43% of the fleet has been composed of low-floor tram cars since 2017, providing easy access and speeding up the service. Identical to the ones chosen by Copenhagen, the latest generation Škoda 15T tram cars also have free Wi-Fi. Buses and metro carriages have also benefited from similar modernisation. The traffic light system was redesigned several years ago, prioritising public transport to ensure frequent services and reliable timetables.

In terms of public transport, the volume of users is mainly spread across the metro (34.53%), buses (32.65%) and trams (29.48%), way ahead of the train (3.13%), the funicular railway (0.16%) and ferries (0.05%). The three existing metro lines therefore absorb most of the journeys, even though they connect only a small number of city-centre districts. The three lines intersect as a triangle in the historic centre (see map 1), providing direct access to most of the city centre.

Prague has decent rail links with the rest of Europe, with three main passenger stations and three goods transport networks. Its international airport was updated and expanded in the 1960s. When a new port was built on the Vltava river (German: Moldau), passenger ships proved very popular with tourists.

TRAFFIC CONGESTION

The city itself may have an efficient transport system, but the same cannot be said of the outskirts, which is why 89% of commuters still use their car to travel to work every day.

By the same token, just over 80% of the city’s population own a car (621 cars per 1,000 residents in 2016), which they feel is necessary to reach their second home in the country, where there is a marked absence of public transport. Finally, map 2 is a good illustration of how motorways only bypass part of the city, contributing to congestion in the centre.

Map 1: Metro and tram lines in Prague (Source: dpp.cz 2019)

Map 2: Motorways bypassing the City of Prague.
A number of motorways do enter the municipal boundaries of Prague, but without providing access to efficient public transport. Despite the provision of ten or so park-and-ride facilities at the end of the three metro lines, the city is lacking in hubs that would make it easy to switch from one mode of transport to another, providing connections for reaching destinations as quickly as possible. Their absence also explains the low-take-up of suburban trains, the “S Lines”, despite the single tariff introduced in 1992 across the entire Prague Integrated Public Transport (PID) network.

Intermodality is also hampered by the lack of connections between the network run by the Czech railway company České dráhy and municipal public transport. Located to the east of the city centre, the central station is linked to the metro by line C, but this doesn’t go directly into the centre, so it’s necessary to take a bus at the “Muzeum” station to reach the old city. The centre, so it’s necessary to take a bus at the tram network.

This lack of connection between the various modes of transport also applies to Václav Havel Airport, which has no access by train, but it probably won’t be operational until 203064.

SOFT MOBILITY LONG OVERDUE

It wasn’t until the end of 2018 that the city started gathering data on the number of cyclists and pedestrians at strategic points within the city, with the initial aim of targeting investment in soft mobility instead of motor transport. Investment is even more urgently required, as Prague has long had a reputation for being dangerous for cyclists: no cycle tracks or lanes in the city, lots of cobbled streets, tram lines and traffic congestion have discouraged fans of travelling on two wheels.

In order to remedy this state of affairs, some 125 km of roads are being adapted to accommodate cyclists. The city is also looking to upgrade the existing network, running road safety awareness campaigns to reduce conflict between road users. However, it seems odd that the Town Hall and a large proportion of the old city, which is mainly pedestrian zones, is closed to cyclists at times of the day when there are the most tourists – from 10 a.m. to 5 p.m. – when they are paradoxically open to cyclists at peak times when there is the highest risk of accidents. This does not encourage the use of bicycles, and it’s not helped by the fact that major motor traffic arteries and routes through pedestrian zones have no special facilities for them. Special routes bypassing or crossing the city centre need to be introduced as quickly as possible, alongside more direct cycle-only routes65.

Soft mobility therefore seems to be a secondary concern in terms of current planning. Added to that, there is a widespread absence of synergy between the desire to improve the cycle track network and the objective of reducing the number of car owners over the long term66.

CONCLUSIONS

Over a century old, the public transport systems in Prague are among the oldest in Europe. One of the city’s biggest strengths is that it can rely on a tram network that has not been neglected at any time. Always improving this stable service, the city is also able to rely on three metro lines, which absorb a lot of urban journeys, and channel investment into expanding and improving what is already there. But those same links with the past leave urban public transport systems without any useable connections between municipal transport services and rail services, making the whole network less attractive.

Cars are now devalued as a mode of transport, but remain essential in rural areas. Completion of the motorway bypassing Prague would reduce road traffic in the city, which could only benefit public transport and soft mobility. Although public transport companies are investing in their vehicle fleets as an initial step towards improving quality, investment in linking the various modes of transport, including park-and-ride facilities where people can leave their cars and use public transport, would seem vital for speeding up city travel and improving the quality of life for residents.

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With decent links to outlying areas, the capital’s rivers, canals, roads and railway lines provide it with excellent connections to the country’s major cities and airports, plus Brussels, Antwerp, Paris and a number of German cities along the Rhine.

A PORT CITY

Rotterdam has always been focused on its port activities and the huge volumes of people and goods that it generates from all over the world. After the city was almost completely destroyed by the bombardments during the Second World War, the urgent demand for housing, offices, shops and leisure in a number of specific central areas within the city was accompanied by the migration of port activity far away from the centre. The port now covers 42 kilometres from east to west as far as the North Sea, freeing up the old port district: this has seen a lot of innovative regeneration work since the 1960s.

Whereas the post-war reconstruction was rapid, leading to mismanaged growth in urban and port zones along the Rhine and worsening the urban sprawl, economic development at the port and the need to keep it attractive soon gave rise to a number of urban planning challenges for the city46; apart from the increased flood risk, a wide range of urban cultures, a considerable increase in employment while the city was under reconstruction, keeping control of very high levels of investment and the need to convert the former port areas in the right way all had to be allowed for.

Like many European cities, Rotterdam has long suffered from congestion on its roads, especially major arteries leading to the main areas of employment47. Congestion also affects residential and business districts further out, creating an area around the city known as the Groot-Rijnmond, where peak traffic times are a daily problem48.

The municipality developed a spatial plan to address this in 1987 under the banner of “compact city”49. This involved containing and even restricting the volume of traffic movements by attempting to reduce distances between residential areas and major focal points, including employment hubs, in a city that had been built without questioning the viability of a model favours private cars. The plan therefore also looked at making cycling part of the daily traffic volume and the need to ask commuters to abandon their cars and combine public transport with cycling: it proved essential to minimise car traffic on main roads whilst also prioritising any traffic essential to the economy (e.g. the movement of goods generated by the port).

In the 1980s, the municipality also had the innovative idea of actively reintroducing the old port district into the urban area for better links between the north and south of the city, crossed by the river Meuse50. Bridge and metro construction projects were initiated to support the emergence of new homes and office blocks in the city centre – also designed to cater for companies managing current port activity and the new port authorities.

NEW LIFE FOR PUBLIC SPACES

The beginning of the 21st century saw a desire in the city and port authorities to restrict the carbon footprint of any new economic and industrial development projects. For example, a waste recycling industry was introduced involving ships, trains and freight lorries so that they would carry recyclable waste instead of returning empty. The dominance of the car in urban areas then became even more problematic because taking back public spaces was the priority. Debate focused on pedestrian zones and safety for cyclists, which needed to be officially recognised. The city’s “Spatial Development Strategy” came up with a dual objective: building a strong economy with more job opportunities whilst making residential parts of the city attractive to achieve a more balanced population make-up.

This was how the city started the modal shift away from cars to soft mobility, aiming to prioritise slow traffic in the city centre, enhancing the quality and attraction of the pedestrian districts. Parking spaces were removed from the streets with the same aim of taking back public space by easing the flow of pedestrians and cyclists.

Three main strategies were applied:

– the municipality’s own investment in a “Park and Walk” scheme. The system is based on building five public parking areas around the city centre. Pedestrian walkways lead straight to economic, retail and cultural hubs in the city centre, connecting the car parks with each other.

– a little bit further from the centre, another series of park-and-ride facilities allows people to leave the car close to one or more public transport lines, including the metro for a number of them. These park-and-ride facilities need to be expanded, especially as the city intends to extend its city-centre low emissions zone – either geographically or in terms of the vehicles allowed there.

– at the same time, a “Traffic Elimination” policy saw the authorities curbing the circulation of private cars in the city centre to provide better connections between soft mobility and public transport.

The city is also working on diversifying and densifying the city centre. Many retail-dominated districts actually empty out in the evening, as there are no residential areas, not even close by. Creating new housing there would help reduce this phenomenon, eliminating a not inconsiderable percentage of daily journeys. Apart from the direct environmental impact, improving inner-city travel will not only encourage intermodality but also provide better links between the city’s various zones (especially the hubs in the north, south and west)51.

The municipality is also looking to improve the quality and safety at public transport stations. With regard to trams, prioritising the three lines running from the central station is to be added to the creation of new interurban lines and many more regional ones. Investment is also ear-marked for developing passenger transport on the river, such as the Watertaxi on the Meuse, for example52. Apart from a better use of space, there is also an urban planning aspect to the project: it makes people think of the river as a way of moving around and not just a physical barrier to pedestrians and cyclists. River transport also has the advantage of very low emissions, not causing congestion and a low risk of hold-ups53.

TOWARDS THE BICYCLE MODEL?

Far from being insignificant, the modal share of the bicycle in Rotterdam is historically lower than for other major cities in the Netherlands: it stood at 22% in 2008, against 38% in Amsterdam, even then54. And the number of city dwellers owning a bicycle is 10% less than the national average.

It was not until the 1980s that the municipal authorities began investing in specific infrastructure for cyclists, launching the first awareness campaigns about the benefits of cycling and reporting on the work completed to facilitate it.
This policy was part of “The Bicycle Master Plan” (BMP) run by the Dutch Transport, Public Works and Management Ministries. The plan requires five main points to be addressed in order to assist the development of soft mobility:

1. A modal shift from cars to bicycles;
2. A modal shift from cars to public transport and bicycles;
3. Improving safety for cyclists;
4. The creation of bicycle parks and theft prevention;
5. Communication.

Rotterdam has invested around EUR 40 million in reconfiguration work and services for cyclists in the last ten years\(^3\). This kind of practical support for cycling can be found in most Dutch cities, where the number of residents making the bicycle their prime modal choice over the private car is rising all the time: 51% of Rotterdam residents travel by bicycle whenever they consider it possible, a similar share to Amsterdam. In 2016 81% of the population owned a bicycle, 43% used the bus, tram or metro, and only 20% had bought or driven a car the year before in 2015\(^3\).

Rotterdam is therefore fully committed to sustainable development for its urban transport, investing in solutions that protect air quality or with a minimal negative impact (i.e. cycling and walking).

The Rotterdam 2030 mobility plan also insists on public transport and electric vehicles, whether public or private: the city is financing a number of projects for improving its public hybrid and electric vehicle fleets. However, since 2012 (a year after the Fukushima disaster), legislation is no longer moving towards a commitment to the general deployment of electric vehicles: as noted by Lode Messemaker, legislation has a tendency to avoid risk by following the law rather than grasping opportunities based on existing social habits\(^6\). But progress is still being made with this, mainly through public-private partnerships.

CONCLUSIONS

For Rotterdam and most of the major cities in the Netherlands, climate change issues are even more poignant because the city could find itself below sea level if current global warming trends are confirmed. The economic and environmental issues arising from this threat also affect its international port activity (and resulting road transport).

Aware of the need to make further improvements to the strategy introduced over the last few decades, the city can boast high-quality intermodal “park-and-walk” facilities connected by pedestrian walkways and, most importantly, the park-and-ride facilities allowing commuters and tourists to park their vehicles allowing commuters and tourists to park their cars at a cheaper rate and reach the city centre by public transport, help to reduce car traffic. Promotional and awareness campaigns can improve the economic viability of current and future facilities as surface parking spaces become rarer and more expensive.

A greater increase in soft mobility, especially the bicycle, happens not only as a result of awareness campaigns, but also a strategy aimed at enhancing the connectivity, convenience and safety of the cycle track network. There is a need to curb potential conflict between cyclists and car drivers, especially at intersections where it is vital to make a clear separation between the two modes of transport.

Planning is also key to thinking in Rotterdam when it comes to environmental policy. Despite the redevelopment of the old port district, urban spread remains a factor with serious consequences for mobility, automatically involving many individual daily journeys. New urban areas now need to be developed around living spaces that already have retail businesses and job opportunities.

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VIENNA

The historic and cultural capital of Austria, Vienna is in the north east of the country and it’s the most highly populated city, although it’s relatively compact. Celebrated for its museums and music culture, the capital is a major tourist hub and prized for its Imperial architecture, despite the damage caused by the Second World War. Crossed by the Danube, it occupies a strategic position on the trading routes along the river from east to west and also on the routes linking the Baltic Sea with Southern Europe.

Vienna’s population has seen continuous growth over the last forty years or so (rising from 1,530,000 in 1981 to 1,897,000 in 2019), and lots of people are moving to the outskirts, increasing the number of commuters. Two major stations form the main hub for regional and international journeys, and Vienna International Airport is served by over 30 airlines.

UNDERGROUND TRAMS

The world’s largest German-speaking city at the time, Vienna started its first horse-drawn tram service in 1865. The network expanded and steam lines were added in 1883. At the end of the 19th century, the Austrian capital managed to revolutionise its public transport network in less than six years, electrifying the trams and opening the Stadtbahn, a system of railway lines crossing the city. All the tram lines – known as “Bom” – passed into the ownership of the municipality in 1907 and the entire network was electrified by 1922. The municipality took over the Stadtbahn three years later, electrifying that as well.

At the end of the Second World War, during which 60% of all vehicles and a major proportion of the network were destroyed, the demand for reconstruction led to the birth of the Wiener Stadtwerke company embracing public transport, gasworks and electric power stations. Then known as the "Unterpflasterstraßenbahn (USTRAB)", a simple metro system was opened in 1959: the idea then wasn’t to curb the increase in road traffic in Vienna but to control it so that it would not impede the flow of cars and trams on the surface, hence the idea of building an underground tunnel across the city. The popularity of motorised road transport also led to the tram lines being converted at the same time, including line 13, which was replaced by a double-decker bus route in 1961.

Negotiations for building a proper tram system began in 1966 following a recommendation issued by the Planning Commission of the Municipality of Vienna. The first tram car wasn’t up and running until 1978 – on line U1, and the basic 30 km system wasn’t completed until 1982. It gradually expanded from then on, now standing at over 80 km.

Vienna residents were able to use a single travel pass across all of the city’s public transport services from 1967, which made access to the city much easier for people living in the suburbs, who previously had to buy several tickets to reach the centre.

A new milestone was reached with the introduction of an annual travel pass in 1982. At the same time, the quality of the service improved with the acquisition of the first Ultra Low Floor trams in 1998, providing access to people with reduced mobility. The lower floors also enabled lower platforms to be built, which didn’t require access ramps or stairs, in turn reducing the impact on the landscape. The first electric buses (Wiener Linien) were introduced in 2012.

THE COUNTRY OF PUBLIC TRANSPORT

Often nicknamed “Das Land der Öffis" – “the country of public transport" - Vienna set the example for many other European cities: it also established an emotional connection between residents and their transport services, which they happily refer to as “Öffis“. This proximity is mirrored by the modal split: rather than use the car, 38% of the population prefer to travel by bus, tram or train, compared to 27% in Berlin and 18% in Hamburg. The success of the public transport services is also the result of the annual pass costing EUR 365 – EUR one per day.

As can be seen in map 1, Vienna has no bypass for motorists to use, although the S1 runs along the edge of the city to the south. This means that the city sees a lot of through-traffic. The Ringstrasse, on the other hand, has provided a way of bypassing the city centre since the end of the 19th century. A key component of Vienna’s road system, this main artery is sadly often clogged with or even closed to traffic, especially because events commonly held there can close it up to three times a week. Motorists then have to follow a major diversion, with public and soft transport users having to avoid a major route that is vital to smooth traffic flows in the heart of the city.

The current stated objective is to lower the car’s percentage of the modal split by 2025 by reducing the space given over to motor traffic. In 2017, roads, car parks and other infrastructure dedicated to cars took up about 65% of the space allocated for travel, when only 27% of journeys in Vienna are by car. Policies aim to lower the percentage of cars to 20% by 2025 by creating public spaces designed for intermodal travel from existing car parks.

At the same time, there needs to be specific encouragement for soft mobility by creating long-distance cycle tracks: known as Radialstrecke, they allow cyclists to reach an average speed of 15 km/h. These rapid routes are designed to connect major urban development zones and potential urban zones. Integration with the rest of the Vienna cycle network and a

81 Encyclopedia Britannica, Vienna. [https://www.britannica.com/place/Vienna/Evolution-of-the-modern-city]
83 Zeit Online (2018)
link with Lower Austria may indeed offer a real alternative to commuters[88]. Located to the east of the city, the international airport is served by the A4 motorway and the railway. And since 1964, fast ferries have provided a link between Vienna and Bratislava, the two European capitals closest to each other, in under 90 minutes[89]. This waterborne alternative via the Danube is a more direct route than the train or motorway, even though they permit higher speeds. This is the only fast ferry link in Europe.

CONCLUSIONS

One of the city’s priorities is to promote intermodality i.e. encourage people to combine different modes of transport to reach their destination. The authorities are trying to increase the attraction of intermodality by introducing self-service bike stations, promoting car-sharing and making it easier to switch between different modes of transport by creating hubs[90]. The City of Vienna has already made progress since the 1990s, when the first municipal strategies for mobility were being developed. STEP 2025 is the most recent example in terms of planning. The city seems to be well-prepared in terms of a mobility policy for the future. The modal split and popularity of public transport are positive indicators, but timetables are not a strong point in this regard. More surface space still needs to be given over to public transport to make it a more reliable option, and this will also benefit soft mobility, making walking and cycling more attractive.

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Sustainable Mobility

In the light of the case studies collected here, it is clear that the various urban mobility models are dependent on the geographical, political and economic situation of the individual city.

Given the hampered economy of the Communist states, you might think that cities located in Eastern Europe would have less evolved public transport services than western cities. But our studies show that, although they have adopted “soft” mobility models (such as cycling, walking and shared soft mobility overall) either late or not at all, these cities have public transports systems accounting for a significant modal share, especially Prague and Vienna. Ljubljana could be seen as a counterexample, the capital of Slovenia coming last when we rated the modal share, and the second has one of the lowest in our selection. Again, it would appear that the public-private governance factor has little influence on the use of public transport and its viability in the urban environment.

A LARGER CITY MEANS A SLOWER CITY

Across all of our case studies, commuter mobility seems to be the greatest problem in terms of congestion and environmental impact, this being particularly evident in Ljubljana, Rotterdam, Lausanne and Milan. Journeys to and from major economic centres are seldom suited to bicycle use, especially with regard to safety. The cities where this model is more popular are also the ones that have also focused on short-distance urban development, like Copenhagen and Rotterdam. On another note, modal share for bicycle use is particularly low in Lausanne (around 1%) and Lisbon (0.2 %), cities on sloping terrain, which is hardly conducive to non-motorised travel on two wheels.

Most of the cities turned towards these forms of mobility or the promotion of public transport during the period 2008-2010. A reduction in the modal share of the car was observed in some of them, but it is hard to measure the true modal shift towards the bicycle, as much of the data was too old or incomplete.

In actual fact, although all of our selected cities are looking to promote cycling as a means of transport to different degrees, we might question whether a “fashion effect” is at work here, which doesn’t appear to offer a consistent response to sustainable transport issues.

There is also a general trend towards connected mobility, with various apps helping users to manage their journeys efficiently. These apps are developed by both private enterprise and cities and the public transport companies themselves. At the same time as making it easier to move around, they also provide lots of interesting information about users’ daily mobility behaviour. In that sense, harnessing the data could ultimately assist urban mobility planning, matching user habits and behaviour more closely by either adapting to it or trying to change it.

SUSTAINABLE MOBILITY: A UNIVERSAL CONCEPT?

It is unlikely that we will ever see a development model for sustainable mobility that would happily apply to all European cities without taking their specific political, economic, social and geographical situation into consideration. Although some examples assume that it is possible to introduce certain forms of mobility without considering the differing contexts, we believe that it would be unrealistic to want to develop a single model or set it as an example.

However, our case studies show that certain cities are better able to adapt their own social, political and economic context to planning for new facilities.
that will be sustainable and effective over the long term. It remains an imperative to take account of the specific context of the individual city when thinking about mobility overall and its potentially negative impact.

The development of a sustainable transport policy is highly dependent on the ability of local, regional and national public authorities to come up with their own model that takes the degree of social acceptability into consideration. On that point, it would be interesting to see how and to what extent flow is defined by transport rather than routes and means of transport being dictated by flow. On balance, it would be a matter of designing mobility arteries to dovetail with existing behaviour: no urban transport thinking can ignore the daily schedules and needs of individual users.

Nor should it be forgotten that true accessibility to sustainable mobility also has an important part to play. For example, it is reasonable to believe that the bike-only model introduced in Copenhagen could never be copied in the old city of Lausanne.

The attractiveness and economic accessibility of private transport have too often been used to justify urban spread and planning road systems to areas with scant public transport provision. Only a few of our selected cities have resisted the temptation of the car-only model, making for urban spread that is well thought out and attractive (shops close by, neighbourhood life, commercial zones).

Transport and urban planning have often focused on functional matters: according to the analysis by Andreas Krue[93], roads are perceived and constructed in relation to a primary function, without thinking of how they fit into the urban environment. Although we have seen change happening for a decade now, with architectural projects seeking to incorporate the environment and consider the quality of life of users and residents, the function-led trend still dominates. The City of Lausanne illustrates this well: although efforts have been made in terms of soft mobility and encouraging the use of public transport, the primary concern of PALM when it comes to mobility seems to be the reduction of congestion on roads leading to and within the city, to the detriment of more detailed thinking around sustainable densification within the city, taking account of individual mobility.

However, the success of any public policy greatly depends on its social acceptability: if it is to work, users need to be prepared to swap their mode of transport for a more sustainable solution. This needs to be taken into account in the development of public policy but also in the judicious use of communication, educational and marketing tools, and even direct encouragement. If Copenhagen has succeeded in developing its bicycle model, this is actually down to a massive promotional campaign and concrete initiatives that also showed users the real benefits of travelling on two wheels instead of four.

Thinking that all you need are effective marketing tools and good communication to introduce a specific model in a city would be just as unrealistic as claiming that a single model could be adapted to every European city. This approach needs to be applied to existing behaviours and to what can be done in terms of a city’s specific topography. Copenhagen and Rotterdam have triumphed with their bicycle model, but you could well imagine that the model in Lausanne would need to be based on the metro instead, or that the City of Prague is more suited to developing sustainable mobility focused on trams etc.

Finally, we must not forget to consider the issue of urban mobility at national level for the country in question. Take Copenhagen, for example: the city may be exemplary for its soft and sustainable mobility initiatives, but its relationship with its hinterland remains problematic, with most of the railways running on diesel.

DYNAMIC CITIES

From the 19th century onwards, global governance was influenced by the principle of the Nation-State and the concentration of power with distinct political bodies. Against this background, diplomatic relations developed between States for their mutual benefit.

This model repeatedly came into question during the post-war years, partly for reasons connected to political context (cold war, advent of the US economic model, fall of the Communist regime in the USSR etc.) and partly for economic reasons. Now that the dominant model is one of a capitalist liberal economy, 21st-century governance is making a major change in direction, moving towards a more horizontal structure that does not necessarily rely on regulatory intervention led by national governance.

Contextual factors relating to the social, economic and political structure of the time are often responsible for such phenomena:

1. The “horizontal” economy (operating between companies and based on public-private partnerships) was able to emerge within a capitalistic economy; this led to the regionalisation of activities around major employment hubs. Urban centres became a bigger draw, and there are more people living in cities than in rural areas today.

2. By the same token, innovations in terms of technology and communication are making physical distances a relative concept, allowing regional governance to be introduced.

3. The multilateral relationship between States is on the decline; there is an awareness that increasing the economic power of an individual region has a not inconceivable effect on political and diplomatic relations between States.

This gives cities considerable room for manoeuvre, hence the emergence of new local and regional synergies. Faced with major challenges such as the fight against climate change, cities are communicating with each other via discussion platforms for the purpose of creating hubs for the exchange of knowledge and information. In terms of the thinking around a more sustainable transport structure, C40[94] and Eurocities[95] are notable private initiatives, as are public projects such as Civitas[96], which receives financial support from the European Commission.

The importance of cities has continued to grow in this respect, to the point where they can now dictate the dominant model. Whether they are a metropolis, megalopolis, regional or political capital, cities are vital hubs for national economic and cultural development and technical, social and political innovation[97]; they focus activity and they are tremendous laboratories for innovation, and most societal challenges unfold at their level.

A number of studies show that cities are now vital tools for filling the gulf created by dead-end multilateral policies between separate States. 21st-century cities are dynamic, organised systems that - thanks to the increasing influence of the “bottom-up” approach - are able to shape global policy through local initiatives[98]. They have the potential to generate standards suitable for general application from their own specific requirements.

When, in 2017, Donald Trump’s government announced its intention to withdraw the United States from the Paris Climate Agreement signed under COP21, a number of American cities did not simply express their disagreement with the President[99]; they confirmed their desire to pursue the path opened up by that agreement, to the point of increasing local commitment. Although the true effectiveness of such undertakings cannot be measured – or has not been measured, anyway – it is still evidence of a desire to be engaged and an increasing defiance of centralised policy.

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CONCLUSION

Whether they are a metropolis, megalopolis, regional or political capital, cities are now establishing themselves as real-scale laboratories for innovation. Central to societal challenge, with the potential to create new regional and local synergies, they play a major part in planning and implementing initiatives designed to promote sustainable mobility – now a global imperative due to climate warming.

Although the historical and economic backgrounds of the individual countries and cities in this study have led to differing policies in terms of urban planning and public mobility, the convergences are clear. Post-war industrial development and economic growth have enabled the population, especially the middle class, to buy their own car, long considered to be the most practical means of transport for living in the quiet suburbs and working in the city. There might have been a delay between Western and Eastern Europe, where the phenomenon arrived later, but the triumph of the private car was nevertheless widespread.

At the turn of the millennium, all the cities we looked at started introducing all-encompassing sustainable urban mobility schemes. Most of them focused on the decarbonisation of public transport vehicles, but a number of them made efforts to speed up the modal shift towards soft mobility, mainly in favour of the bicycle. But these micro-mobility solutions are evolving to different degrees for individual cities, whether for economic or geographical reasons or in the light of local political implications.

It is important to remember that no single perfect model for developing sustainable mobility can be applied to every European city, and that it is vital to take their specific geographical, economic and social characteristics into consideration. However, some initiatives and measures are ideal for application elsewhere:

- optimisation of public transport services and infrastructure at one and the same time, making them more accessible, efficient and affordable in urban city zones;
- inclusion of peri-urban development, essential to the economic draw of any hub;
- making the public truly aware of the benefits of soft mobility by working on developments to make it safer and give it priority;
- encouraging intermodality by acknowledging the fact a balanced blend of the three main modes of urban transport (car, public transport, bicycle) is the most efficient.

Finally, it is clear that change will only be given priority if there is a strong political will; encouragement to change behaviour, such as creating pedestrian zones, sometimes involves unpopular decisions. But they do prove to be a necessary evil at times, provided that they are accompanied by the appropriate alternative solutions.

The Foundation was created in 1978 by Jean Monnet, the designer of the first European Community and the first honorary citizen of Europe. He entrusted all his archives to the Foundation. An independent institution serving the public interest, a non-partisan and a non-militant structure, the Foundation receives support from the State of Vaud, the Swiss Confederation and the City of Lausanne. It operates out of the Dorigny Farm, located in the heart of the campus of the University of Lausanne, its main partner.

Today the Foundation houses and exhibits many other private archives, notably those of Robert Marjolin and the European papers of Robert Schuman and Jacques Delors, as well as iconographic and audio-visual documents. It includes a specialized library and a European documentation centre. The Foundation collects testimony from key actors and witnesses as a part of its filmed interview programme. It thus provides users, and especially researchers, with a coherent corpus of documentary resources on the origins and development of European construction and on Switzerland-Europe relations. Every year, the Foundation awards its Henri Rieben Scholarship to several advanced PhD students.

Thanks to the internationally recognised importance of these collections and to the collaboration between Jean Monnet and Professor Henri Rieben, who chaired the Foundation until 2005, the Foundation has become a European intellectual crossroads and an essential venue for meetings, debates, and reflection about major current European issues. It regularly organises conferences, European dialogues, and international symposia, forming partnerships with prestigious institutions. It periodically awards its Gold Medal to prominent political figures who have worked for the common interest of Europeans; among the laureates are José Manuel Barroso, Emilio Colombo, Mario Draghi, Valéry Giscard d’Estaing, Jean-Claude Juncker, Helmut Kohl, Romano Prodi, Helmut Schmidt, Martin Schulz, Jaiever Solana, and Herman Van Rompuy. The Foundation also welcomes many visitors and researchers, who are given assistance in their work, in addition to contributing to the training of students. Thanks to support from the State of Vaud, the Foundation created a new activity in 2016, a “think tank” made up of a group of experts, currently working on sustainable mobility in Europe.

An editorial mission supplements the range of the Foundation’s activities. The Red Books Collection, which was created by Henri Rieben in 1957, has been co-published with Economica since 2007 and now comprises 218 titles. A new series of shorter publications, the Debates and Documents Collection, was launched in 2014. These publications tend to highlight the Foundation’s documentary collections, its public events, or the expertise of its members and partners.

Every year, the General Assembly of the Council of the Foundation - consisting of about 550 members from all walks of life - is held, as well as the Scientific Committee. Pat Cox, former president of the European Parliament and the European Movement International; Bronisław Geremek (2006-2008), member of the European Parliament and former minister of Foreign Affairs of Poland; and Henri Rieben (1978-2005), professor at the University of Lausanne. Since 2012, the director of the Foundation has been Gilles Ginin, doctor in international relations and lecturer at the University of Lausanne.
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